AGENDA

The PZC Meeting will start at 6:35 p.m. or immediately upon completion of the Special IWA Meeting.

The Packet for this meeting is available at https://mansfield.civicweb.net/filepro/documents/11052?preview=14474&splitscreen=true

CHANGES TO MEETING PROCEDURES DUE TO COVID-19

In accordance with Governor Lamont's Executive Order 7B and social distancing guidelines recommended by the CDC to prevent community spread of COVID-19, members of the PZC with the exception of the Chair will be participating in the meeting via telephone using the call-in instructions provided below. Members of the public may submit comments in writing, call-in using the instructions below, or attend the meeting in person to speak on public hearing items. Per normal meeting procedures, public comment will only be accepted during scheduled public hearings. The Town will do its best to provide for physical separation between meeting attendees as recommended by the CDC.

Members of the public that are not planning to comment during the public hearing portion of the meeting are encouraged to watch the meeting using the meeting broadcast information provided below.

Meeting Broadcast

The meeting is broadcast on Charter Cable Channel 191 and can also be live-streamed at https://townhallstreams.com/towns/mansfield_ct. Meeting recordings are available for 12 months after the meeting.

Call-In Instructions

Step 1: Go to a quiet space.

Step 2: Starting at 6:15, you will be able to call into to the following number: (571) 317-3122 from any phone

Step 3: When prompted, the access code is: 969-633-685

Step 4: The system will ask you to enter an audio pin or press #, press #

Step 5: If you are using a phone with a mute function, please use this when you are just listening and not speaking to reduce background noise

Public Hearings

The meeting will be open to any members of the public wishing to comment on public hearing items. In addition to in-person and call-in participation, public comment on public hearing

items can also be submitted via email to planzonedept@mansfieldct.org. Email communications must be submitted by 4:30 p.m. on the day of the meeting to ensure that staff has time to add them to the digital meeting packet available at the link posted above. During public hearings, the Chair will call first on staff, the applicant, and then individual members before opening the hearing to public comments. He will ask if there are any members of the public wishing to speak first in support of the application, and then in opposition to the application. Please identify yourself by name, and if there is more than one person, wait for the Chair to call on you before speaking.

1. CALL TO ORDER AND ROLL CALL

2. APPROVAL OF MINUTES

A. March 2, 2020 Regular Meeting Minutes 6 - 10

03-02-2020 PZC Minutes-Draft

3. PUBLIC HEARINGS

A. 6:35 P.M. 11 - 314

Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-1)

P1364-1,2 Letter from Scott Jordan, UConn

1364-1,2 Agenda Item Report Zoning Map Amendment and Site Plan Application

P1364-1 EDC Memo 2-20-2020

P1364-1 MNHDC Zoning Map Amendment Application Materials

P1364-1 Neighborhood Notification

P1364-1 Public Hearing Legal Notice

B. 6:40 P.M.

Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2)

Plans and Other Application Materials

P1364-2 Site Plan revised to 03 12 2020 315 - 976

P1364-2 Traffic Summary South Eagleville Road-Updated 03-09-2020

P1364-2 Site Plans Revised to 03 02 2020

P1364-2 Stormwater Management Report-Revised to 03 02 2020

P1364-2 Site Plans Revised to 02 12 2020

P1364-2 Grading & Drainage Plan Revised to 02 26 2020

P1364-2 Unit Floorplans and Building Elevations

P1364-2 Revised Affordability Plan
P1364-2 Statement of Use
P1364-2 Stormwater Management Report Revised to Feb 2020
P1364-2 Hydrocad Report Revised to 02 27 2020
P1364-2 Drainage Easement
P1364-2 CT Water Letter
P1364-2 2019-11-25 Traffic Summary Report
P1364-2 Geotechnical Report
P1364-2 Test Pit Locations
P1364-2 Site Plan Application
P1364-2 Revised Site Plan Checklist
P1364-2 Sewer Permit Application
P1364-2 Traffic Summary

Staff and Consultant Comments

P1364-2 Supplemental Agenda Item Report- 03 15 2020 977 - 1092
P1364-2 Memo from Jennifer Kaufman, Inland Wetlands Agent 03 11 2020
P1364-2 CME Comments 2-28-2020
P1364-2 Applicant Response to February 2020 CME Comments
1364-1,2 Agenda Item Report Zoning Map Amendment and Site Plan Application
P1364-2 CME Comments- 2 19 2020
P1364-2 Applicant Second Response to CME December Comments
P1364-2 Applicant Response to CME December Comments
P1364-2 CME Comments- 12 23 2020
P1364-2 Applicant Response to Comments-Affordability Plan
P1364-2 Applicant Response to Dec 2019 Staff Comments
P1364-2 Staff Preliminary Comments-Dec 2019
P1364-2 Memo from Fire Marshal

Communications

P1364-1,2 Letter from Scott Jordan, UConn 1093 - 1102
P1364-2 Applicant Extension to Statutory Deadlines
P1364-2 Email from Edith Allison, MNHDC, 02 27 2020
P1364-2 Design Review Panel Minutes
P1364-2 Landscape Comments-R. Favretti, Design Review Panel
P1364-2 Traffic Authority Minutes-1-22-2020
P1364-2 CWC Water System Advisory Approval
P1364-2 EDC Memo 2-20-2020

Notifications

P1364-2 Abutter Notification Form 1103 - 1110
P1364-2 Proof of Mailing
P1364-2 DPH Watershed Notification
P-1364-2 Notification to Windham Water Works for Mansfield Projects - Mansfield Housing-signed

P1364-2 Public Hearing Legal Notice

4. OLD BUSINESS

A. Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-1)

B. Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2)

C. Application of the Taylor Family Trust (owner/applicant) to amend the Zoning Map to change the zoning of a portion of property located on the north side of Storrs Road, between 9 Timber Drive and 1768 Storrs Road (Parcel ID 2.5.22) from Rural Agriculture Residence 90 (R-90) and Professional Office 1 (PO-1) to Planned Business 3 (PB-3). (PZC File 1365)

Tabled to April 6, 2020 public hearing.

5. NEW BUSINESS

A. Historic Village Review-Parking lot for Stone Hill, 483 Storrs Road (formerly known as Echo Grange) 1111 - 1120

Staff is waiting for clarification on the request from the applicant. A staff memo will be uploaded upon receipt of the requested information.

483 Storrs Road Site Improvements-Agenda Item Report
483 Storrs Road-Revised Paving Plan 03 15 2020 (Red Shaded Area to be gravel)
483 Storrs Road Site Plan-August 2019 Approved
483 Storrs Road-Revised Paving Plan 03 11 2020 (Red Shaded Area to be gravel)
483 Storrs Rd Site Plan Modification Application - Paving

B. Modification to Special Permit, Hops 44 Restaurant, 625 Middle Turnpike, Nancy McKenney, owner/applicant. 1121 - 1127

MOVE to receive the application of Nancy McKenney, Hops 44, to modify the Special Permit approval for 625 Middle Turnpike and refer to staff for review and comment.

Application to Modify Special Permit-Hops 44, 625 Middle Turnpike

6. REPORTS FROM OFFICERS AND COMMITTEES

A. Chairman's Report

B. Regional Planning Commission

The next meeting of the CRCOG RPC is scheduled for March 19, 2020 at 7:00 p.m., West Hartford Town Hall

C. Regulatory Review Committee 1128 - 1129

The next meeting of the Regulatory Review Committee is scheduled for March 20, 2020 at 9:00 a.m., Conference Room A, Town Hall

2-26-2020 Draft Special Mtg Minutes

D. Planning and Development Director's Report

E. Other Committees

F. Other

7. COMMUNICATIONS AND BILLS

A. Testimony to General Law Committee in Support of H.B. No. 5293: An Act Concerning Municipalities and the Sale of Alcoholic Liquor 1130 - 1191

Steven Ferrigno Testimony

Mayor Moran Testimony

Kenneth Rawn Testimony, Vice Chair PZC

Adrienne McPherson Testimony

B. 72nd Annual Conference of CT Federation Planning & Zoning Agencies 1192 - 1199

CT Fed of PnZ Agencies-72nd Annual Conf

Conference Postponed

8. ADJOURNMENT

MINUTES (Draft)

Members Present:	S. Accorsi, B. Chandy, L. Cooley, D. Plante, K. Rawn, V. Ward
Members Absent:	P. Aho, C. Cotton, R. Hall
Alternates Present:	J. DeVivo, K. Fratoni
Staff Present:	L. Painter, Director of Planning and Development; J. Kaufman, Senior Planner/Inland Wetlands Agent; J Woodmansee, Planning Specialist/Zoning Agent

CALL TO ORDER AND ROLL CALL

Vice Chair Rawn called the March 2, 2020, regular meeting of the Planning and Zoning Commission to order at 7:27 p.m. Members present are Accorsi, Chandy, Cooley, Plante, Rawn and Ward. Alternates DeVivo and Fratoni are seated for absent members.

Ward MOVED, DeVivo seconded, to add to the Agenda under New Business, Item A, Testimony on Raised Bill H.B. No 5293, An Act Concerning Municipalities and the Sale of Alcoholic Liquor. Motion PASSED unanimously.

APPROVAL OF MINUTES

Accorsi stated that she watched the video of the February 18, 2020 meeting. Chandy MOVED, Plante seconded, to approve the February 18, 2020 meeting minutes as presented. Motion PASSED unanimously.

ZONING AGENT REPORT

Noted.

PUBLIC HEARINGS

Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8.30g, C.G.S. (PZC File 1364-1)

Rawn opened the public hearing at 7:30 p.m. Members present are Accorsi, Chandy, Cooley, Plante, Rawn and Ward. Alternate members DeVivo and Fratoni are seated for absent members.

Kathy Dorgan of Dorgan Architecture and Planning and Robert Newton of BSC Group are present on behalf of the applicant. Painter noted that this is a continuance of the public hearing

that was opened on 01/21/2020 and noted additional correspondence including: a memo from the Economic Development Commission dated 02/20/2020, a 03/02/2020 letter from Scott Jordan of UConn, and her staff report dated 3/2/2020. Dorgan stated for the record that the applicant agreed to incorporate the record of the public hearing held by the Inland Wetlands Agency on the associated Inland Wetlands License application (W1612) into the record of this hearing.

There were no questions for the applicant from the Commission. The following people spoke in support of the application:

- Jay Rueckl, 128 South Eagleville Road
- Edith Allison, Member of Mansfield Nonprofit Housing Development Corporation Board of Directors
- Marie Cantino, 122 Dog Lane
- Karen Zimmer, 100 Hanks Hill Road
- Doreen Simonsen, 43 Chatham Drive
- Peter Millman, 122 Dog Lane
- Ann Kouatly, 98 Fern Road
- Carrie Silver-Bernstein, 56 Jonathan Lane
- Lisa Garvey, 104 Jonathan Lane

No comments were received in opposition to the application.

Ward MOVED, Fratoni seconded, to adjourn the public hearing at 7:45 p.m. and continue it to Monday, March 16, 2020, at 6:35 p.m. in the Council Chambers. Motion PASSED unanimously.

Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g C.G.S. (PZC File 1364-2)

Rawn opened the public hearing at 7:46 p.m. Members present are Accorsi, Chandy, Cooley, Plante, Rawn and Ward. Alternate members DeVivo and Fratoni are seated for absent members.

Kathy Dorgan of Dorgan Architecture and Planning and Robert Newton of BSC Group are present on behalf of the applicant. Painter noted that this is a continuance of the public hearing that was opened on 01/21/2020. She also noted additional correspondence including: traffic summary dated 2/12/2020; Site Plan dated 03/02/2020; comments from CHA (CME) dated 02/28/2020; letter from Scott Jordan of UConn on 03/02/2020; and the memo from Fire Marshal Adam Libros dated 03/02/2020. Dorgan provided members with updated copies of the Site Plans and stated for the record that the applicant agreed to incorporate the record of the public hearings held by the Inland Wetlands Agency on the associated Inland Wetlands License application (W1612) and the PZC public hearing on the associated zoning map amendment (P1364-1) into the record of this hearing..

Dorgan presented an overview of the Site Plan and building designs noting that each unit is designed to meet user's needs, enhance the existing neighborhood and will be built to last. Dorgan also noted that the applicant has Newton reviewed one-way traffic flow entering and exiting the development, parking, sidewalks, site lightings and plantings.

Members questioned Dorgan and Newton on specific aspects of the site plan, including the need for an additional curb cut onto South Eagleville Road, the number of parking spaces that would be provided per unit; the location of the nearest WRTD bus stop; the number of affordable units and affordability levels; where school buses would stop (on-site or on South Eagleville Road) and whether on-site management would be provided.

Painter called attention to the drainage easement that has been provided by the abutting property owner and the need for the Commission to determine whether the easement area would be counted toward open space requirements as part of any future redevelopment of the abutting property. If the Commission determines that the area could not be counted as open space, an alternative drainage design would be used. Newton described the proposed approach to the drainage outfall and techniques used to help the outfall blend into the natural environment. Painter noted based on the proposed design, staff would support counting the easement area toward open space requirements for the abutting property.

Painter also noted that DOT has approved the placement of a traffic light at the intersection of Separatist Road and S. Eagleville Road And asked Newton to address the traffic volumes and speed of traffic on South Eagleville road with regard to potential project impacts.

Newton stated that with this 42-unit development, peak hour demand is estimated at 30 vehicles or 1 car every 2 minutes. Painter noted that the recommendation for a one-way circulation driveway with the exit at the eastern curb cut was made by the Traffic Authority to address concerns with site visibility based on the speeds identified in the study conducted for the Separatist Road intersection. Approval of the curb cuts as designed will be needed from DOT as South Eagleville Road is a state road.

Chuck Eaton of CHA (CME) reviewed the plans on behalf of the Commission and noted that all of his comments have been addressed with the exception of those noted during the Inland Wetlands hearing.

Before opening the hearing to public comment, Painter noted that the comments provided during the associated hearing on the Zoning Map amendment would be incorporated into this hearing.

Jay Rueckl, 128 S. Eagleville Rd., reiterated his support for the project. He also expressed concerns regarding the traffic and impact of the proposed one-way drive circulation on his ability to enter/exit his property. He identified a preference for either reversing the entry/exit points or changing to two-way circulation to reduce conflicts with his property.

Ron Kolanowski, 13 Eastwood Rd., stated his support for the project.

Bill Simonsen, 43 Chatham Drive, (member of the Mansfield Housing Authority, Board of Commissioners) stated his support for this project.

B. Chandy MOVED, D. Plante seconded, to adjourn this public hearing at 8:41 p.m. and continue it to March 16, 2020, at 6:40 p.m. Motion PASSED unanimously.

OLD BUSINESS

Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural

Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8.30g, C.G.S. (PZC File 1364-1)
Tabled to March 16, 2020.

Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g C.G.S. (PZC File 1364-2)
Tabled to March 16, 2020.

Application of the Taylor Family Trust (owner/applicant) to amend the Zoning Map to change the zoning of a portion of property located on the north side of Storrs Road, between 9 Timber Drive and 1768 Storrs Road (Parcel ID 2.5.22) from Rural Agriculture Residence 90 (RAR-90) and Professional Office 1 (Po-1) to Planning Business 3 (PB-3) (PZC File 1365)
Tabled to April 6, 2020

NEW BUSINESS

Testimony on raised bill H.B. No 5293, An Act Concerning Municipalities and the Sale of Alcoholic Liquor

Painter read the proposed correspondence to the members of the General Law Committee.

Cooley MOVED, DeVivo seconded to formalize the submission authorizing support of House Bill 5293. Motion PASSED unanimously.

REPORTS FROM OFFICERS AND COMMITTEES

Regional Planning Commission

The next meeting is coming up later this month.

Regulatory Review Committee

Painter noted that the Committee is working on short term amendments regarding housing which will be attractive to different family types and revising the density bonus section for affordable housing.

Planning and Development Director's Report

Painter noted that the UConn Hockey Arena EIE will be on the next Agenda for review and that the regional economic development plan will be released this Spring.

COMMUNICATIONS AND BILLS

ADJOURNMENT

The meeting was adjourned at 8:40 p.m.

Respectfully Submitted:

Jillene B. Woodmansee
Planning Specialist/Zoning Agent

UCONN
UNIVERSITY OF CONNECTICUT

Office of the Executive Vice President for
Administration and Chief Financial Officer
Scott A. Jordan
Executive Vice President
for Administration
and Chief Financial Officer

Via E-Mail Only

March 2, 2020

Paul Aho, Chair
Mansfield Inland Wetlands Agency
Mansfield Planning & Zoning Commission
Town of Mansfield
Aubrey P. Beck Municipal Building
4 South Eagleville Road
Mansfield, CT 06268

RE: **W1612** – Petition of the Mansfield Nonprofit Housing Development Corp for a Multifamily Development at 113-121 S. Eagleville Rd.; **P1364-1** – Petition of the Mansfield Nonprofit Housing Development Corp to Amend the Mansfield Zoning Map; **P1364-2** – Petition of the Mansfield Nonprofit Housing Development Corp for a Site Plan Approval

Dear Chair Aho and Agency/Commission Members:

The University of Connecticut ("UConn") has been on record with the Town of Mansfield ("Town") that it is opposed to development of undergraduate student housing in proximity to the University. However, UConn has a long history of supporting projects that provide real affordable housing opportunities in the Town and that do not focus on undergraduate student housing. Accordingly, I write on behalf of UConn to let you know that UConn does not oppose the above-referenced Petitions proposed by the Mansfield Nonprofit Housing Development Corporation ("Applicant").

These three Petitions present an application that materially differs from the other pending applications in Town that are being pursued as undergraduate student housing in the guise of multifamily housing. The Applicant here is a local non-profit development entity whose mission is to make more affordable housing available in Mansfield. The Applicant also has strong organizational links with the Mansfield Housing Authority ("MHA"), a municipal agency, and MHA is proposed to be the Administrator of the Applicant's Affordability Plan. We also understand that MHA received substantial predevelopment funding for this project from the Connecticut Department of Housing.

Eagleville Green is to be located in the narrowly-prescribed geographic area to which the South Eagleville Road – Housing Opportunity Zoning District applies, and is of modest size. It is proposed as a mixed-income rental housing development, with an assisted housing component, that we hope will be available to UConn graduate students, faculty and staff.

352 MANSFIELD ROAD, UNIT 1122
GULLEY HALL
STORRS, CT 06269-1122
PHONE 860.486.3455
www.evpacfo.uconn.edu

An Equal Opportunity Employer

We appreciate this opportunity to comment on the above-referenced Petitions.

Sincerely,

Scott A. Jordan
Executive Vice President for Administration and Chief Financial Officer

Encl.
CC: John Carrington, Interim Town Manager, Town of Mansfield (via E-Mail)
Robert Corbett, UConn
Robert Sitkowski, UConn

352 MANSFIELD ROAD, UNIT 1122
GULLEY HALL
STORRS, CT 06269-1122
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MEMO

To: Planning and Zoning Commission

From: Linda Painter, AICP, Director

Date: March 2, 2020

Subject: **Eagleville Green ▪ 113-121 South Eagleville Road**
PZC File 1364-1 ▪ Petition to Amend the Zoning Map
PZC File 1364-2 ▪ Site Plan Application
Mansfield Nonprofit Housing Development Corporation, Owner/Applicant

OVERVIEW

The applicant is proposing to amend the Mansfield Zoning Map to change the designation of 113-121 South Eagleville Road (Parcel ID 16.57.5) from RAR-90 (Rural Agricultural Residence) to SER-HO (South Eagleville Road Housing Opportunity Zone). As required by Article 10, Section A.2.c, any application to create an SER-HO zone must be accompanying by a concurrent site plan application for the property. Accordingly, the applicant has submitted a Site Plan application for a 42-unit multi-family residential development. Furthermore, no zone change to create an SER-HO zone may be approved unless the site plan application is also approved by the Commission. As these two applications are linked together by virtue of the above-referenced regulation, both applications have been addressed in this memo.

Owner/Applicant: Mansfield Nonprofit Housing Development Corporation

Subject Property: 113-121 South Eagleville Road

Location: South side of South Eagleville Road, between Maple Road and Westwood Road

Size: 5.2 acres

Existing Zoning: RAR-90 (Rural Agricultural Residence)

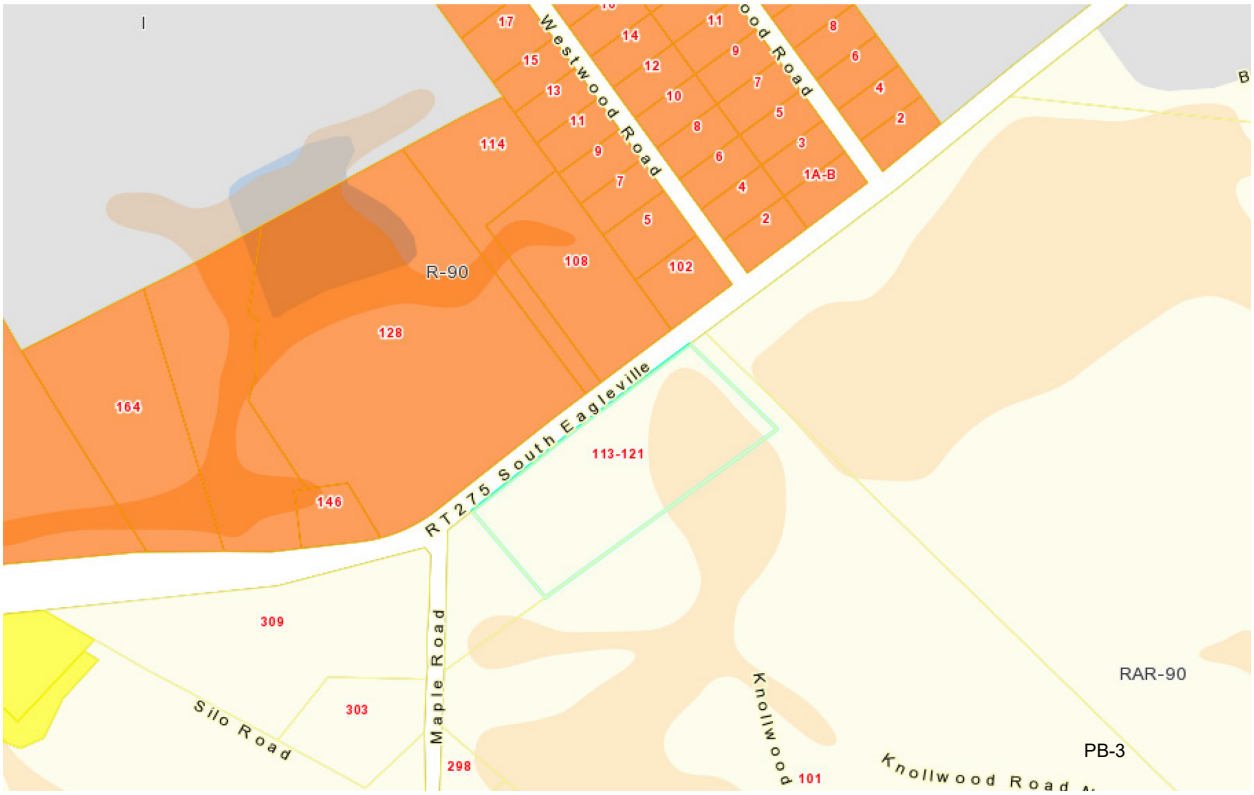
Proposed Zoning: SER-HO (South Eagleville Road-Housing Opportunity)

Proposed Use: 42-unit multi-family residential, including 13 affordable (income restricted) units

Roadway Classification: Arterial

	Adjacent Zoning	Adjacent Land Use
North	R-90	Single-Family Residential, Multi-Family Residential
South	RAR-90	Multi-Family Residential (Knollwood Apartments)
East	RAR-90	Knollwood Apartments entrance; Moss Sanctuary
West	RAR-90	Natural Gas Facility

Location Map



FRAMEWORK FOR REVIEW AND CONSIDERATION

Section 8-30g, C.G.S.

Both applications have been submitted pursuant to Section 8-30g, C.G.S., which provides an alternative appeals process for affordable housing developments. If the Commission were to deny either or both applications, or approve the site plan application with restrictions that have a "substantial adverse impact on the viability of the affordable housing development," the applicant may appeal such decisions to the Connecticut Superior Court pursuant to the provisions of 8-30g. These provisions place the burden on the Commission to prove that:

> The decision is necessary to protect substantial public interests in health, safety or other matters which the commission may legally consider; such public interests clearly outweigh the need for affordable housing; and such public interests cannot be protected by reasonable changes to the affordable housing development.

Accordingly, the Commission must consider the above standard when making a decision on the applications.

Zoning Map Amendment

With any proposed amendment to the Zoning Map, the PZC must weigh anticipated public and private benefits versus anticipated public and private costs. The Commission has the legislative discretion to determine what is best for the community as a whole, and the Zoning Map can and

should be modified to meet changing circumstances, Plan of Conservation and Development goals, objectives and recommendations or to address a recognized public need.

In addition to the requirements of Section 8-30g, C.G.S., Chapter 124 of the Connecticut General Statutes, the Commission is required to:

- Take the POCD into consideration and state its findings on the record with regard to the consistency of the proposed map change with the POCD (Sec. 8-2, 8-3(b) and 8-3a)
- State for the record why the change is being made (Sec. 8-3(c))

Site Plan Application

Section 8-3(g), C.G.S. outlines the requirements for site plan applications, including the following:

- The Commission cannot make a decision on a site plan application until the Inland Wetlands Agency (IWA) has submitted a report with its final decision. In making its decision, the PZC must consider the report of the IWA, and if the PZC establishes terms and conditions for approval that are not consistent with the final decision of the IWA, the reason for such terms and conditions must be stated on the record.
- The Commission may only deny or modify a site plan if it fails to comply with requirements already set forth in the zoning or inland wetlands regulations and any decision to modify or deny the application must state the reasons for the denial or modification.

ZONING MAP AMENDMENT

Approval Criteria for Zoning Map Amendments

Article 13, Section D of the Zoning Regulations establishes the following criteria for changes proposed to the Zoning Map by property-owners or residents. The applicant has submitted written responses regarding consistency of the proposed change with the approval criteria as part of the Statement of Justification submitted with the application.

- The proposed changes will promote the public's health, safety, property values and general welfare;
- The proposal is complete and contains all required application information;
- The proposal is consistent with the goals, policies and recommendations contained within the Mansfield Plan of Conservation and Development;
- The proposal is consistent with the expression of regulatory intent and purpose contained in the provisions of Article 1 of these regulations and Section 8-2 of the Connecticut General Statutes, as amended.
- Any proposal to amend the Zoning Map has comprehensively considered: the size and physical characteristics of the subject area; the character and supply of land currently zoned in the subject classification; and the effect of the proposal on existing land uses in the surrounding area.

Analysis

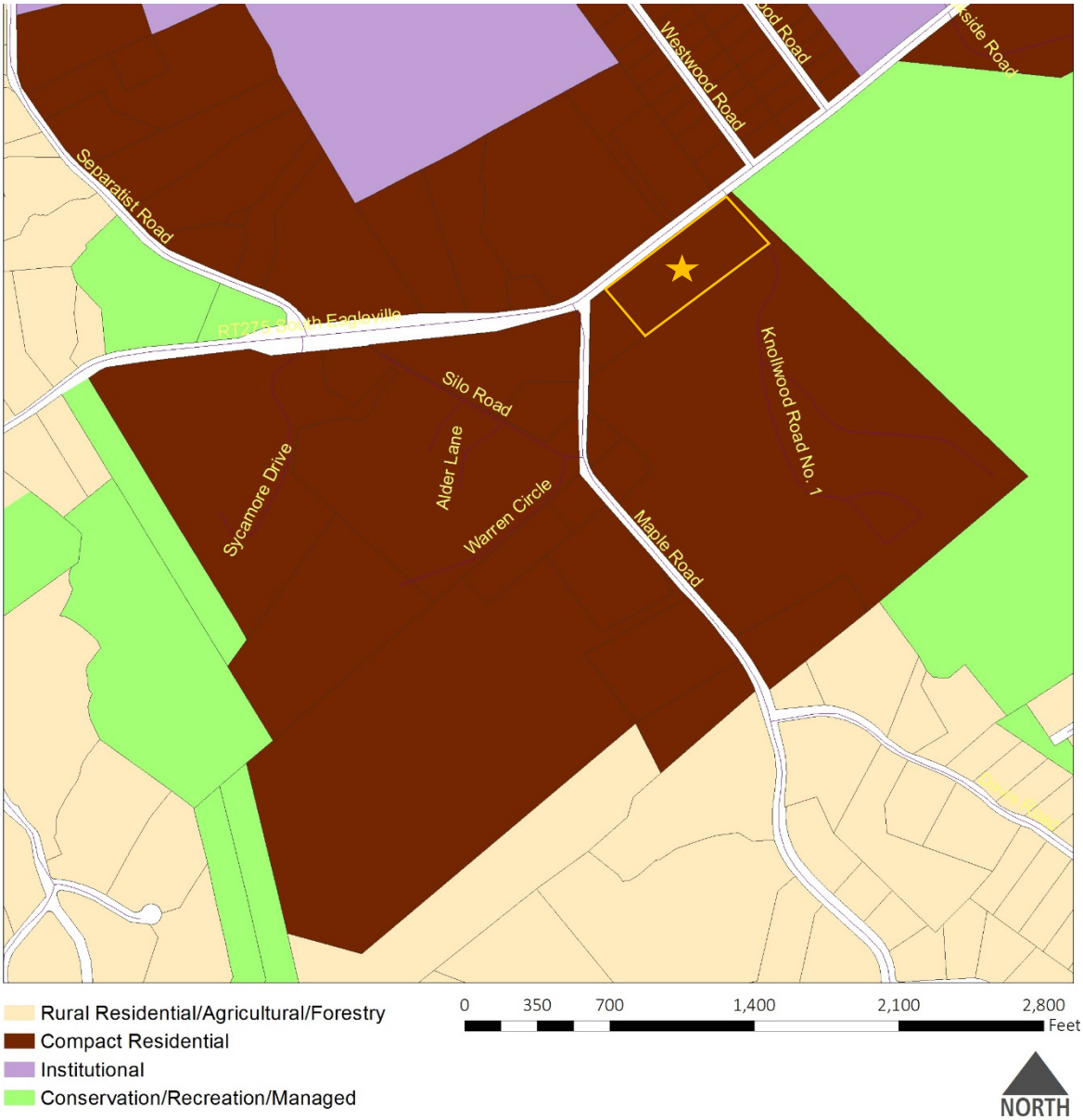
Completeness of Application

The applicant has submitted a Statement of Justification, legal description of the proposed SER-HO area, and a map depicting the proposed zone change area and properties within 500 feet. The applicant also provided a copies of a Phase 1 environmental assessment conducted in 2018 as well as a debris pile investigation conducted in 2019. Additionally, a traffic statement was provided with the site plan application.

Consistency with Plan of Conservation and Development (POCD)

As shown on the following map, the property is identified on the Future Land Use Map as **Compact Residential**.

Mansfield Tomorrow POCD Future Land Use Map



Key characteristics are summarized below in *italicized text* with staff's analysis following in regular text. Please refer to pages 8.27 through 8.28 of the POCD for full text related to the Compact Residential future land use designation. The following analysis is provided in addition to excerpts of the POCD provided in the application for the zoning map amendment.

- ***Purpose and Characteristics.*** *To accommodate residential growth in compact, walkable developments accessible to employment, the University and shopping areas. Compact Residential designations were applied based on existing or potential access to public water and sewer infrastructure and proximity to areas of activity such as the UConn campus and commercial centers. These areas are intended to promote higher density living where walkability and access to transit are more available than in the rural parts of town. The priority in these areas is on compact residential development patterns that allow more residents within walking and biking distance of destinations such as UConn, Storrs Center and the East Brook Mall area.*

  The area to be rezoned is located within approximately one half mile of Downtown Storrs and the UConn campus. The property is connected to both via sidewalks on South Eagleville Road and Eastwood Road and is also served by the Windham Regional Transit District. The property also has access to public water and sanitary sewer systems.

- ***Rezoning/Development Approvals.*** *Any request for rezoning or development approvals to allow a higher density of development in areas designated Compact Residential needs to adequately address the following issues in accordance with the Sustainability Principles outlined in Chapter 1 of the POCD:*

  - *Minimizing and mitigating impacts to natural systems and resources;*
  - *Minimizing and mitigating impacts to the surrounding neighborhoods, including scale, height, and massing of buildings, buffers, and impacts to community quality of life such as litter, noise, trespass and nuisance behavior;*
  - *Demonstrating the ability of the roadway network to accommodate additional traffic that would be generated by the development and providing alternative means of transportation to reduce traffic impacts on surrounding neighborhoods;*
  - *Identifying improvements to the surrounding transportation network to address capacity issues if the current system is not capable of supporting additional traffic in a manner that is appropriate to the context of the neighborhood;*
  - *Identifying techniques that will be used to promote resource conservation and reuse (energy, water, stormwater, waste, etc.) and minimize impacts from climate change (preservation of tree cover, natural infiltration of stormwater, etc.);*
  - *Identifying practices that will be used to enhance connectivity, both for natural and developed areas;*
  - *Clustering of development to preserve open space; and*
  - *Identifying other sustainable design and green building practices as may be appropriate to the site and development. The Storrs Center Sustainability Design Guidelines provide a resource that could be used to identify additional practices.*

  These criteria were considered when the Commission approved the regulations establishing the SER-HO zoning district. (File PZC 1361). The district requirements ensure that potential impacts are focused on South Eagleville Road, which as an

arterial road has much higher traffic volumes. Furthermore, this area has existing water and sewer service, transit service from WRTD, and a walkway connection from Maple Road to Downtown Storrs that provides access to goods and services as well as recreational opportunities. Impacts on natural resources are addressed through compliance with Zoning and Inland Wetlands Regulations.

- ***Design Characteristics.*** *Infill and redevelopment is encouraged in the form of compact neighborhoods that include a mix of multi-family, two and three-family houses and clustered single-family houses that preserve the natural setting. A variety of residential types should be considered such as cottage clusters, garden apartments, mansion apartments (apartments in buildings that look like large houses), townhouses, and clustered farmhouse style settlements. Design objectives include creation of walkable and human-scaled environments and minimizing impacts on nearby lower-density neighborhoods through appropriate transitions.*
  The proposed property is a small infill/redevelopment site. The property abuts a larger multi-family development (Knollwood Apartments) and is currently developed with two residential structures. The regulations established for the district address scale of building as well as impacts to lower density neighborhoods through the establishment of larger setbacks when properties abut single-family homes or vacant property zoned for single-family uses. Due to the small size of the site and the location of wetlands on the property, it would be difficult to incorporate a variety of housing types while still achieving the higher density that the Compact Residential designation was intended to provide.

- ***Affordable and Workforce Housing.*** *The following goals also apply to the proposed rezoning:*
  - *Goal 7.1: Mansfield's housing options include housing affordable to low and moderate income individuals and families.*
  - *Goal 7.4: Mansfield's land use regulations support development of a wide range of housing options to meet the needs of residents at all ages of the life cycle, including singles, families, seniors and students.*

  Residential uses in the SER-HO zone must qualify as either a set-aside development or assisted housing pursuant to Section 8-30g, C.G.S. Accordingly, a minimum of 30% of residential units developed in this zone must be affordable to households at 80% of median income. Additionally, the proposed development includes many features that will provide housing that appeals to residents of all ages and household compositions, including:

  - A mixture of 1, 2 and 3 bedroom units, of which 24 are two bedrooms are larger, providing additional housing opportunities for families.
  - Units include both flats as well as two-story townhouses.
  - Units include space for both dining and living areas as well as what appear to be kitchens appropriately sized for the unit.
  - Many units include some type of private outdoor space such as patios and small fenced yard areas.
  - Many units include some interior storage space; the district regulations also provide for small accessory storage structures to be added in the future if desired.

- Bedrooms are separated from living areas either by location on a separate floor or through access from a hallway.
- Access to full bathrooms is provided without having to go through a kitchen or living area.

Section 8-2, C.G.S.

Section 8-2, C.G.S. establishes provisions for Zoning Regulations. This section specifically requires the following (emphasis added):

> "Such regulations shall also encourage the **development of housing opportunities, including opportunities for multifamily dwellings**, consistent with soil types, terrain and infrastructure capacity, for all residents of the municipality and the planning region in which the municipality is located, as designated by the Secretary of the Office of Policy and Management under section 16a-4a. Such regulations shall also **promote housing choice and economic diversity in housing, including housing for both low and moderate income households**, and shall encourage the development of housing which will meet the housing needs identified in the state's consolidated plan for housing and community development prepared pursuant to section 8-37t and in the housing component and the other components of the state plan of conservation and development prepared pursuant to section 16a-26."

The proposed map amendment will promote the development of housing opportunities and housing choice as further described previously in this report.

Purpose and Intent of Zoning Regulations

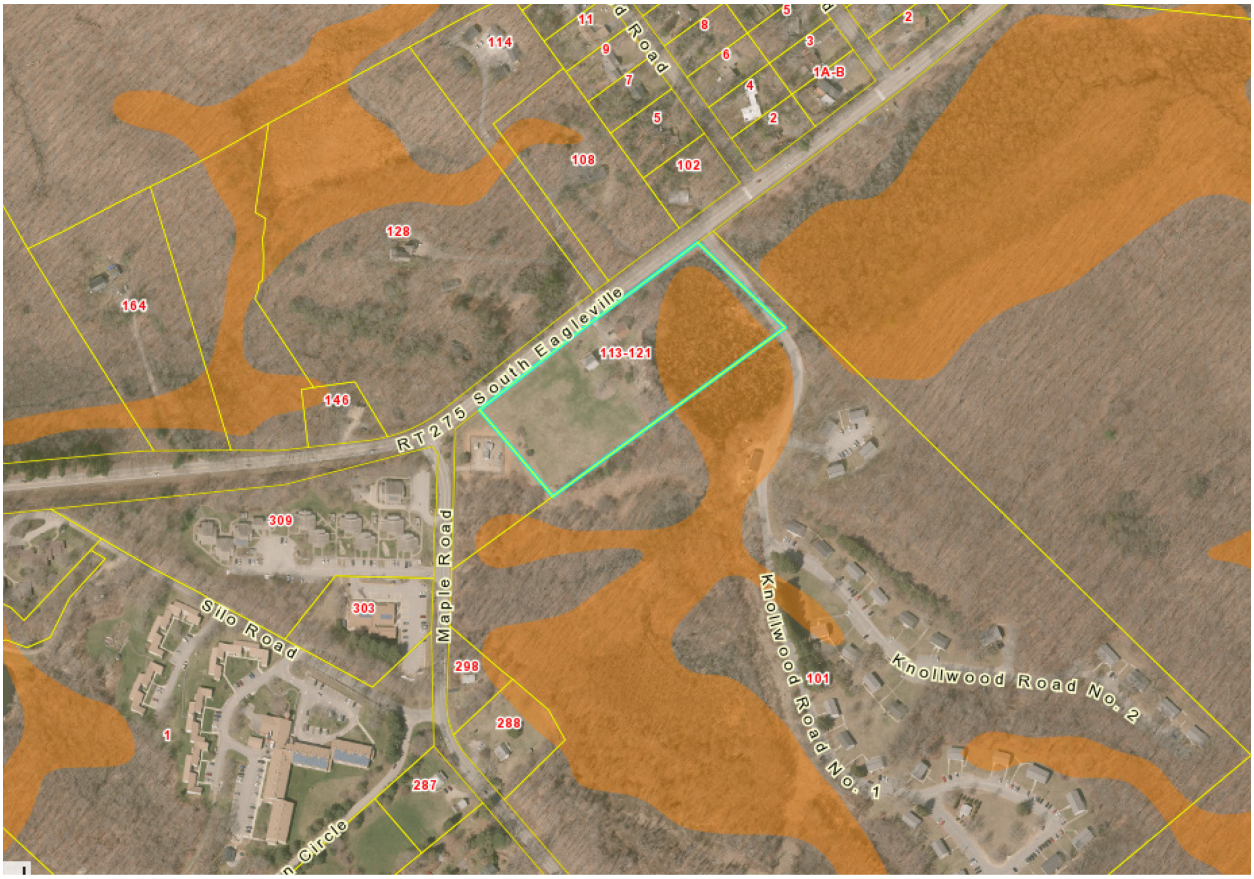
The proposed zoning map is consistent with the purpose and intent of the Zoning Regulations, particularly with regard to the establishment of zoning districts (emphasis added):

> "To divide the Town into various zones, restricting and regulating therein the location of construction, reconstruction, alteration and use of land, buildings, structures and associated improvements for residence, business and industrial and other uses, **with a view toward conserving the value of properties, encouraging a variety of housing and economic development opportunities, and encouraging compatible and appropriate uses of land** within the various zones and throughout the town;"

Characteristics of the Surrounding Area

- **North**. Properties to the north are primarily single-family homes located on the north side of South Eagleville Road, with the exception of Oakwood, a small multi-family residential development that is setback from the road. The driveway for the Oakwood development is located just to the east of the existing driveway to the property.
- **South:** The property to the south is developed with Knollwood Apartments.
- **East.** Immediately to the east of the subject property is the driveway to the Knollwood Apartment Development. Moss Sanctuary is located immediately east of that driveway.

- **West.** Immediately to the west of the subject property a natural gas facility. Additionally, Wright's Village and the Senior Center are located immediately across Maple Road from the natural gas facility. There are also two single-family homes on Maple Road that abut the Knollwood property.
- **Wetlands:** As shown on the aerial photograph below, the area of wetlands existing on the eastern portion of the property extends to the south into the Knollwood property.



SITE PLAN APPLICATION

Approval Criteria for Site Plan Applications

Article 5, Section A.5 establishes the following criteria for approval of site plan applications. Criteria are shown in *italics*, with staff analysis in regular text immediately following.

In reviewing and approving any proposed site plan application, the Planning and Zoning Commission shall determine that the public's health, welfare and safety have been protected and that the following criteria have been met:

a. *All required or necessary information has been provided by the applicant so that compliance with applicable regulations can be determined;*
The applicant has provided the information needed to evaluate the application, including but not limited to a site plan, stormwater management plan and associated drainage calculations, building elevations, floorplans and the affordable housing plan required by Section 8-30g, C.G.S. Original submission materials are available in the December 2, 2019 PZC meeting packet; revised plans will be provided in the packet for the public hearings on

March 2, 2020. Plans have been revised based on comments from staff and the consultant retained by the PZC; copies of those comments will also be included in the meeting packet.

b. *The proposal complies with all other applicable sections of the Zoning Regulations including but not limited to: parking and loading; landscaping and buffering; aquifer areas; prohibited uses, performance standards; architectural and design standards; height and area requirements; signs, bonding, filling, grading, excavation, removal, processing of soil, stone, sand and gravel, peat moss, and other similar materials regulations and any special provisions applying to the subject use;*

Staff has reviewed the plans for compliance with the Zoning Regulations and as further described in this memo, found them to be generally compliant. There are a few notes with regard to minor corrections that should be made to the plans. Additionally, as of the writing of this memo, a final review of the stormwater system had not been provided by CME.

Additionally, CME has noted in its review of the plans that proposed snow stockpile areas appear to conflict with proposed landscaping. This should be reviewed by the landscape architect and revised as appropriate.

c. *The application has considered all other applicable local, state and federal requirements, including subdivision approval and necessary permits from the Mansfield Inland Wetlands Agency, the Mansfield Water Pollution Control Authority, the Mansfield Fire Marshal, the Mansfield Historic District Commission and the state Departments of Health, Environmental Protection and Transportation. For applications involving concurrent Inland Wetland Agency (IWA) license applications, no decision shall be made until the IWA has submitted a report with its final decision;*

- **Inland Wetlands License.** A concurrent application was submitted to the Inland Wetlands Agency. No decision on the site plan application shall be made until the IWA has submitted a report with its final decision.

- **Mansfield Water Pollution Control Authority (WPCA).** Approval of a sewer permit from the WPCA will be needed before a zoning permit can be issued for the development. As of December 23, 2019, the WPCA has adequate capacity within the Sewer Service Agreement by and between the Town of Mansfield and the University of Connecticut for the proposed 42-unit multi-family development. There is no guarantee of capacity until the sewer permit is issued. The applicant has started the sewer permit application process.

- **CT Department of Transportation.** Encroachment and driveway permits will be needed from CTDOT prior to issuance of a zoning permit.

d. *The proposal has made safe and suitable provisions for water supply, waste disposal, flood control, fire and police protection, the protection of the natural environment, including air quality and surface and groundwater quality and the protection of existing aquifers and existing and potential public water supplies, cemeteries, historic structures and other features of historic value.*

For all properties within one of the ten (10) historic village areas identified in Article X, Section J, the special historic village area review criteria contained in Article X, Section J.2 also shall be complied with;

- **Potable Water.** The applicant has provided an April 3, 2019 letter from Connecticut Water Company indicating that domestic water and fire protection water service is available from the 8” main in South Eagleville Road. The letter notes that an engineered main extension (on-property) may be required. Furthermore, the letter indicates that should a Customer Agreement for service not be executed within one year of the letter, CWC reserves the right to reevaluate its ability to service the project. Approval of a Customer Service Agreement will be needed before a zoning permit can be issued.

  As the property will be served by CWC, it is subject to the provisions of Article 6, Section 4.b.u, which requires that no connection be authorized for new or expanded uses unless the type and intensity of use is consistent with the Planned Development designation established in the 2006 Plan of Conservation and Development or other criteria are met. The 2006 POCD identified the property as Medium to High-Density Residential, which is consistent with the proposed multi-family use.

  Furthermore, pursuant to the January 21, 2014 Water Supply Definitive Agreement and the subsequent a Memorandum of Agreement between the Town and Connecticut Water Company, main extensions and any connection to the CWC system that requires a change in zoning or approval by a local land use commission must be referred to the Water System Advisory Committee for review and comment. The Committee reviewed this application on January 8, 2020 and recommended approval of the requested connection.

- **Wastewater.** See comments related to the WPCA, above.

- **Solid Waste/Recycling.** The applicant has provided an enclosure sized to accommodate both solid waste and recycling containers based on the recommendations of the Town’s Recycling Coordinator.

- **Fire and Police Protection.** The Fire Marshal has not provided formal written comments as of the issuance of this report, both the Fire Marshal and Fire Chief have participated in staff reviews of plans and made recommendations regarding driveway width/circulation and hydrant location. It appears those recommendations have been met; however, that will need to be confirmed by the Fire Marshal.

- **Natural Resource Protection.** As the primary resource on the property is the wetland located in the eastern portion of the site, the report and decision of the IWA will determine whether there are any significant impacts to that resource.

- **Historic Structures and Features.** There are two small remnants of stone walls on the property in the area of disturbance that will be removed.

e. *Vehicular and pedestrian access to the property and egress from the property and internal vehicular and pedestrian traffic patterns are safe and suitable and have been designed to maximize safety and avoid hazards and congestion. Adequate provisions have been made to address accessibility problems of handicapped individuals. All curb cuts shall have adequate sightlines and adjacent streets shall have adequate capacity to safely accommodate the traffic flows associated with the proposed use(s). As deemed necessary, offsite road and drainage improvements may be required by the Commission;*

   Sidewalks, bikeways, trails and/or other improvements designed to encourage and enhance safe pedestrian and bicycle use shall be required, unless specifically waived by a three-quarter (3/4) vote of the entire Commission (7 votes), for all sites within or proximate to Plan of Conservation and Development designated "Planned Development Areas"; proximate to schools, playgrounds, parks and other public facilities; or proximate to existing or planned walkway, bicycle or trail routes. In evaluating any waiver request, the Commission shall consider the size and the location of the proposed development, its relationship to existing or planned development, school sites, playground areas and other public areas and the location and nature of existing or planned sidewalk, bikeway or trail improvements.

- **Safe Vehicular and Pedestrian Access.** The proposed site layout plan proposes a second curb cut along South Eagleville Road. While the original plan proposed a full-access driveway, the plan has since been revised based on the recommendations of staff and the Mansfield Traffic Authority to have a one-way circulation driveway, with the entrance at the western access point and the exit at the eastern access point. This recommendation was based on traffic speed data, sight-distance and proximity of the Maple Road intersection.

  Representatives of the applicant have received concerns from the community as expressed in a 2/27/2020 email regarding potential conflicts of the eastern driveway with existing driveways on the north side of the street as well as speed of traffic on both Maple Road and South Eagleville Road. These concerns have been provided to the Traffic Authority for their review. As South Eagleville Road is a state road, the ultimate decision with regard to whether to authorize a second curb cut lies with CTDOT.

  If the CTDOT does not approve a second access (either as a one-way or full access), revisions to the site plan would require additional PZC review as the current design does not provide for closing one of the driveways without impacting accessibility for large vehicles including fire trucks, other emergency vehicles and garbage trucks. As designed, with one curb-cut removed, there is not sufficient area for large vehicles to turn around within the development to exit. Backing up into South Eagleville Road would create significant safety problems due to the volume and speed of traffic in the area as well as potential impacts on accessibility for emergency vehicles.

- **Accessibility for Persons with Disabilities.** Layout and materials notes 10, 11, and 12 indicate that walkways will comply with CT Building Code requirements, including maximum slope and ramps.

- **Roadway Capacity and Anticipated Impacts.** The applicant provided a traffic statement dated 11/25/2020 which was reviewed by staff. The applicant is providing an updated traffic statement in response to those comments which will be addressed in an addendum to this report.

- **Sidewalks, Bikeways and Trails.** There is currently a sidewalk extending along the frontage of the subject property, which is used by residents of Wright's Village (housing for seniors and individuals with disabilities) and Juniper Hill, another senior housing development, to access services in Downtown Storrs. The applicant will need to take appropriate steps during construction to ensure that the walkway remains accessible and available to all users during construction, including those using mobility aids. Furthermore, the existing walkway will need to be repaired/replaced to its current condition if impacted by site work and/or associated utility construction.

f. Off-street parking and loading, storm drainage improvements and grading plans are adequate, having been designed to promote vehicular and pedestrian safety and to prevent flooding, storm drainage and sediment and erosion problems. All required easements have been obtained by the applicant;

- **Off-Street Parking and Loading.** A total of 87 spaces are proposed within the development, which meets the requirements established for the SER-HO district. While the cross-hatch for the accessible spaces is not located on the right side of the space pursuant to Article 10, Section D.11, the accessible spaces do comply with the Building Code in number and design. Given the legal standards that apply to 8-30g, this local regulation is not one that rises to the level of a public health or safety issue and therefore will not be applied to this project.

- **Grading.**
    - Approximately 6,868 cubic yards of fill will be brought to the site, and 591 cubic yards of cutting will occur, for a net change of 6,277 cubic yards. While the provisions of Article 10, Section H apply, the site's location on an arterial road minimize impacts of trucks delivering fill on residential neighborhoods. The overall grading and drainage of the site has been extensively reviewed by CME. As many of the submission requirements of Article 10, Section H.3 are intended to address ongoing excavation operations, staff recommends that the Commission waive these submission requirements and find that the information submitted with the site plan application is sufficient.
    - The applicant has provided an Erosion and Sedimentation Control Plan for the project. There are a few minor updates are needed to the notes, including requiring that any modifications to construction sequencing also be approved by the Town, adding a note that the person responsible for the plan will be identified prior to issuance of a Zoning Permit, and replacing all references to "hay bales" with "straw bales".

- **Drainage/Stormwater Management**
    - **Drainage Easement.** The applicant has provided an executed copy of a drainage easement from the abutting property owner (Knollwood Apartments) authorizing them to construct drainage improvements and a right to drain within a

designated area depicted on the site plan (to be further described in a legal description). The applicant is also authorized to use this area for construction and maintenance of buildings and improvements along the southerly boundary of the subject property. These rights are contingent upon the Planning and Zoning Commission confirming as part of its site plan approval that designated easement area can still be counted as open space as part of any development application for the abutting property.

Based on the nature and design of the proposed drainage improvements, staff believes that the area will retain its open space character and should be counted toward open space requirements in any future application from the abutting property. Furthermore, the proposed drainage location is preferable from a resource conservation approach as it is located further from the wetland than the alternative.

- **Stormwater Management Plan.** CME was retained by the Town to assist in review of the stormwater management plan for the development as the system must comply with both Article 6, Section B.4.t as well as the Town's MS-4 permit. As the MS-4 permit is required and issued by the State of Connecticut, compliance with the provisions of that permit cannot be waived based on the 8-30g status of the development. As of the issuance of this memo, CME was still in the process of reviewing the latest revisions to the stormwater plan. It is expected that CME will provide additional commentary prior to and during the public hearing.

g. *The proposal has adequately considered all potential nuisances such as noise and outdoor lighting. Except where specifically authorized by these Regulations, all lighting shall be the minimum necessary to address safety and security needs taking into account manufacturer's installation charts and spacing recommendations for the proposed lighting. All lighting fixtures shall be designed to prevent undesirable illumination or glare above the site or beyond the site's property lines. All lighting fixtures shall be shielded and aimed downward unless it can be demonstrated that alternative designs will not result in spill light (undesirable light that falls outside the area of intended illumination).*

- **Noise.** As a residential development, significant noise impacts are not anticipated. The property is subject to the Town's Noise ordinance, Chapter 134 of the Code of Ordinances.
- **Lighting.** The applicant has proposed use of shielded lighting to reduce light spill. Staff has recommended that warmer toned lighting be used to reduce impacts of blue light.

h. *Passive solar and energy conservation techniques have been considered in the design of structures, structure orientation, street and lot layout, placement of vegetation, use of natural and manmade topographical features and protection of solar access within a development;*

The plans identify potential locations for rooftop solar installations dependent on funding.

i. *The proposal has adequately considered construction traffic and potential onsite and offsite vehicular and pedestrian safety problems, potential neighborhood impact problems and potential road and property damage that could occur due to the nature and timing of proposed construction activity;*

Given the site's location on an arterial road, neighborhood impacts of construction traffic should be minimal. As noted previously, damage to the Town's existing walkway will need to be repaired and pedestrian access along that walkway will need to be maintained during construction.

j. *Unless specifically waived by the Commission due to site and environmental constraints or adverse impacts to stonewalls or other historic features, existing significant trees or other natural or manmade features, all new wired utility lines (telephone, electric, cable, etc.) shall be installed underground within suitable conduits. For significant land use projects, the Commission also may require existing overhead utility lines to be replaced with underground lines.*

The site plan identifies an overhead connection from an existing utility pole on the opposite side of South Eagleville Road to a new utility pole on the subject site. Individual service connections for new buildings will be installed underground; the existing building to remain will continue to be served by an overhead connection.

While a transition to underground utilities on the north side of South Eagleville Road along with an underground connection to the site would be preferred, such a connection could pose significant expense. Given the impact that cost would have on the affordability of the project, and the fact that an overhead connection does not pose a significant impact on public health or safety, staff recommends that the proposed solution be accepted based on the 8-30g status of the project.

k. *The basic design of the proposed uses, buildings or development; the relationship between the buildings and the land; the relationships between uses and between buildings or structures; and the overall physical appearance of the proposed use, building or development; comply with all applicable architectural and design standards of Article X, Section R, are in general harmony with the character of the surrounding neighborhood and will not serve to blight or detract from the value of abutting residences or other property.*

Staff provided several suggestions for the applicant's consideration in terms of the architectural and design standards of Article 10, Section R (See December 2019 staff comments for more information). The applicant has indicated that they will take these suggestions into consideration as design progresses. Given that such design considerations do not rise to the level of a significant public health or safety concern, staff believes this is a satisfactory response based on the 8-30g status of the project.

Affordability Plan

Pursuant to 8-30g, any application for a proposed development must include an Affordability Plan. The applicant has prepared a revised affordability plan based on comments provided by staff and CME, including an Affirmative Fair Housing Marketing Plan. According to the applicant, this portion of the Affordability Plan is the same used by the Mansfield Housing Authority and has been reviewed and approved by HUD.

CME has reviewed the revised affordability plan and concluded that the revisions sufficiently addressed both staff and CME comments. CME also recommends that the approval should note the specific entity to whom the annual report should be submitted and that the applicant should be in possession of the "housing software program" cited in the plan.

SUMMARY

As previously noted, the approval criteria established in the Zoning Regulations must be considered using the standard set forth in Section 8-30g with regard to whether the public health and safety impacts (if any) of the proposed development outweigh the community's need for affordable housing.

Due to a technical notice issue identified below as well as the minor revisions identified in this memo and by CME, staff recommends that the Commission hold the public hearing as planned on March 2, 2020 **and** keep the hearing open until March 16, 2020. This will address the notice issue identified below as well as provide the applicant an opportunity to make any plan revisions needed prior to the close of the public hearing.

NOTES

- **Zoning Map Amendment.** The analysis contained in this report is based on the application dated November 25, 2019 and received by the PZC on December 2, 2019, including:
    - Transmittal Letter from Shipman and Goodwin LLP
    - Application Form
    - Statement of Justification
    - Zone Change Map dated September 25, 2019 prepared by Lenard Engineering
    - A-2 Property/Boundary Survey dated June 27, 2016 prepared by Lenard Engineering
    - Metes and Bounds description of land to be rezoned
    - Phase I Environmental Site Assessment dated September 18, 2018 prepared by Lenard Engineering
    - Debris Pile Investigation dated July 5, 2019 prepared by Lenard Engineering
    - Windham Water Works Notification
    - DPH Watershed Notification
- **Site Plan.** The analysis contained in this report is based on the application dated November 25, 2019 and received by the PZC on December 2, 2019, including:
    - Site Plan Application Form
    - Site Plan Checklist-Original and Revised to 2/4/2020
    - Site Plan Set Prepared by BSC Dated 11/25/2019 and revised to 2/12/2020; Grading and Drainage sheet revised to 2/26/2020
    - Unit Floor Plans and Building Elevations Prepared by Dorgan Architecture and Planning dated 11/25/2019
    - Affordability Plan-Original and Revised to January 21, 2020
    - Stormwater Management Report-Original and Revised to February 2020
    - Hydrocad Report revised to February 27, 2020
    - Test Pit Locations
    - Geotechnical Report dated October 4, 2019
    - Traffic Report dated 11/25/2019

- Drainage Easement
- CWC Water Feasibility Letter dated April 3, 2019
- DPH Watershed Notification
- Notification to Windham Water Works
- Sewer Permit Application

- The proposed zoning map amendment was referred to the Town Clerk and Public Notice Registry on February 28, 2020. As 10 day notice is required for Town Clerk referrals and 7-day notice is required for the public notice registry, the public hearings for both applications will need to remain open until March 16, 2020.
- The following correspondence regarding the proposed amendments has been received:
  - February 27, 2020 email from Edith Allison, MNHDC
  - February 25, 2020 Applicant response to CME Comments (prepared by BSC)
  - February 19, 2020 Comments from CME
  - January 22, 2020 Traffic Authority Minutes
  - January 13, 2020 Email from Kathy Dorgan (extension to statutory deadlines)
  - January 8, 2020 Design Review Panel Minutes
  - Undated comments from Rudy Favretti, Design Review Panel member
  - February 12, 2020 Applicant response to CME Comments (prepared by BSC)
  - January 15, 2020 Applicant response to CME Comments (prepared by BSC)
  - January 8, 2020 CWC Water System Advisory Committee approval
  - Undated Memo from Kathy Dorgan in response to staff comments on affordability plan
  - Undated Applicant Response to Preliminary Staff Comments
  - December 24, 2019 Preliminary Staff Comments
  - December 23, 2019 Comments from CME
- Legal notice of the public hearing was published in The Chronicle on January 11 and January 16, 2020.
- Neighborhood Notification Forms
  - Zoning Map Amendment. Neighborhood notifications were sent to property owners within 500 feet of the subject property in accordance with Article 13, Section C of the Mansfield Zoning Regulations. Copies of the notice (mailed January 8, 2020) and certified mail receipts have been provided to the Planning Office.
  - Site Plan Application. Neighborhood notifications were sent to abutting property owners in accordance with Article 5, Section A.3.c on November 25. Copies of the notice and certified mail receipts have been provided to the Planning Office.

- The Public Hearings on these applications were opened on Tuesday, January 21, 2020 and continued to March 2, 2019. A written extension through April 10, 2020 has been granted by the applicant.
- A decision on the applications must be made by April 10, 2020 unless it is determined that longer statutory time frames apply.

MANSFIELD
CONNECTICUT

Town of Mansfield
Economic Development Commission

MEMO

To: Planning and Zoning Commission

CC: John Carrington, Interim Town Manager; Cynthia van Zelm, Executive Director, Mansfield Downtown Partnership, Inc.; Linda Painter, Director of Planning and Development; Mansfield Town Council

From: Steven Ferrigno, Chair

Date: February 20, 2020

Subject: Eagleville Green

The Mansfield Economic Development Commission (EDC) has reviewed the Mansfield Nonprofit Housing Development Corporation's application for the Eagleville Green mixed-family residential project and wanted to submit a letter in favor of the project. After carefully reviewing the application and site plan we feel this project would be a valuable addition to our town and support the goals of the EDC for the following reasons:

- The location of the project is in conformity with the area. As a higher-density project, it has minimal impact on existing neighborhoods and actually abuts another apartment complex as well as Mansfield senior housing and the Mansfield Senior Center which also has a higher density than many of our more rural neighborhoods.
- It is located near Downtown Storrs and is connected to Downtown Storrs via sidewalks and a bus stop. This should facilitate access without the need for every resident to use a car for transportation. Focusing development near developed areas such as our Downtown maximizes the benefits of a downtown without necessitating additional vehicular traffic.
- Eagleville Green adds diversity to our housing stock. One consistent issue we have seen with regard to our housing stock is there isn't enough diversity and that much of it is older or dated, or in need of renovation. This project provides diversity, not only with its mix of affordable and market-rate rents but also with its mix of unit sizes (one, two & three-bedroom units).
- It continues to add and diversify our Grand List which the EDC sees as a major priority. While the majority of the Grand List is made up of taxes on single family residences, this project (while still residential) would help to spread the burden across a different property type.

Thank you for the opportunity to express our continued support for smart development that accommodates a variety of uses and income levels, and contributes to the tax base of Mansfield. We hope you are as excited about this project and its benefits for our town as we are.

APPLICATION OF MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION FOR ZONING MAP AMENDMENT

November 25, 2019

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TABLE OF CONTENTS
November 25, 2019

1. Transmittal and Overview Letter from Shipman & Goodwin LLP
2. Application Form for Zoning Map Amendment
3. Statement of Justification
4. Zone Change Map (11 x 17), September 25, 2019, prepared by Lenard Engineering, Inc.
5. A-2 Property / Boundary Survey (11 x 17), June 27, 2016, prepared by Lenard Engineering, Inc.
6. Narrative Metes and Bounds Description of Land to be Rezoned
7. Phase I Environmental Site Assessment, dated September 2018, prepared by Lenard Engineering, Inc.
8. Debris Pile Investigation, dated July 5, 2019, prepared by Lenard Engineering, Inc.
9. Copy of Notification to Windham Water Works
10. Copy of Watershed or Aquifer Area Project Notification Form (Connecticut Department of Public Health)

SUBMITTED SEPARATELY

Rezoning Map (five full-size and fifteen 11x17 copies)

A-2 Survey (five full-size and fifteen 11x17 copies)

Application fee ($560)

NOTE: An electronic copy of the application materials will be sent to painterlm@mansfield.org.

SHIPMAN & GOODWIN LLP®
COUNSELORS AT LAW

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November 25, 2019

HAND DELIVERY

Mr. Paul Aho, Chair,
and Commission Members
Planning and Zoning Commission
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268

Ms. Linda M. Painter, AICP
Director
Planning and Development
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268

Re: Application of Mansfield Nonprofit Housing Development Corporation for Zoning Map Amendment

Dear Chair Aho, Commission Members, and Ms. Painter:

On behalf of our client Mansfield Nonprofit Housing Development Corporation, we are pleased to submit this application for a zoning map amendment to the Mansfield Zoning Regulations.

This package contains the following:

1. Transmittal and Overview Letter from Shipman & Goodwin LLP;
2. Application Form for Zoning Map Amendment;
3. Statement of Justification;
4. Zone Change Map (11 x 17), September 25, 2019, prepared by Lenard Engineering, Inc.;

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5. A-2 Property / Boundary Survey (11 x 17), June 27, 2016, prepared by Lenard Engineering, Inc.;

6. Narrative Metes and Bounds Description of Land to be Rezoned;

7. Phase I Environmental Site Assessment, dated September 2018, prepared by Lenard Engineering, Inc.;

8. Debris Pile Investigation, dated July 5, 2019, prepared by Lenard Engineering, Inc.;

9. Copy of Notification to Windham Water Works; and

10. Copy of Watershed or Aquifer Area Project Notification Form (Connecticut Department of Public Health).

Submitted separately are five full-size and fifteen 11x17 copies of the Rezoning Map and A-2 Survey, and the application fee in the amount of $560. An electronic copy of the application materials will be sent to painterlm@mansfield.org.

This application is for a zoning map amendment to rezone 113-121 South Eagleville Road from the Rural Agricultural Residence 90 Zone to the new South Eagleville Road Housing Opportunity Zone ("SER-HO"). Simultaneously herewith, the applicant is submitting a site plan application that conforms to the new SER-HO district. In connection with this application, the applicant is also filing with the Mansfield Inland Wetlands Commission an application for a regulated activity permit.

The Town of Mansfield, like many other municipalities, has an acute need for more housing that is available to moderate and low income households. The Town's own Plan of Conservation and Development recognized this substantial and continuing need in Goal 7.1, which is "Mansfield's housing options include housing affordable to low and moderate income individuals and families."

The applicant is the owner of the subject property. The property, 113-121 South Eagleville Road, is on the southerly side of South Eagleville Road (Route 275), near the intersections with Maple Road and Westwood Road. The property is 5.2 acres, and it will be served by public water and public sewer. It is not subject to any conservation or preservation restrictions.

This application is filed pursuant to, and is compliant with, Connecticut General Statutes § 8-30g, because any multi-family housing eligible under the proposed South Eagleville Road Housing Opportunity Zone will qualify as "assisted housing" or a "set aside development" under § 8-30g. **All published notices should refer to Connecticut General Statutes § 8-30g.**

If the Commission or staff would like additional copies or additional information, please let us know. We look forward to presenting this application to the Commission.

Thank you.

Very truly yours,

Timothy S. Hollister

TSH:ekf
Attachments

c: Mansfield Nonprofit Housing Development Corporation (w/ att.)
Mansfield Housing Authority (w/ att.)
Kluetsch Consulting LLC (w/ att.)
Dorgan Architecture & Planning (w/ att.)

PZC File Number: _____

Date Submitted: _____

APPLICATION FOR ZONING MAP AMENDMENT

Department of Planning and Development ▪ 4 South Eagleville Road ▪ Storrs-Mansfield, CT 06268 ▪ 860.429.3330

Project Information

The undersigned applicant hereby petitions the Mansfield Planning and Zoning Commission to change the zone classification of the hereinafter-described property:

FROM (Current Zoning District/s):		TO (Proposed Zoning District/s):	
Abbreviation	*Full District Name*	*Abbreviation*	*Full District Name*
RAR-90	Rural Agricultural Residence 90	SER-HO	South Eagleville Road Housing Opportunity Zone

Address/Location of Subject Property: 113-121 South Eagleville Rd, Mansfield, CT

Parcel I.D. Number (s) 16/57/5 **Property Size (Acres):** 5.2 acres

Acres of Adjacent Land under Same Ownership/Control of Applicant (if any): NA

Applicant and Owner Information

	Applicant	Property Owner of Record
Name:	Mansfield Nonprofit Housing Dev Corp	Same as applicant: full legal name is
Street Address:	309 Maple Road	The Mansfield Nonprofit Housing
City/Town:	Storrs	Development Corporation
State:	CT	
Zip Code:	06268	
Telephone:	(860) 933-3506	
Email:	wardgervino@gmail.com	

Applicant Interest in Property:

(●) Owner ( ) Optionee ( ) Lessee ( ) Other: _____

Signature of Owner:

The Mansfield Nonprofit Housing Development Corporation

By: _____
Kathleen Ward
President

PZC File Number: _____

Date Submitted: _____

Agent Information

Agents (if any) representing the applicant who may be directly contacted regarding this application.

Name:	Timothy Hollister, Shipman & Goodwin	Kathy Dorgan, Dorgan Arch. & Planning
Street Address:	One Constitution Plaza	10 Eastwood Road
City/Town:	Hartford	Storrs
State:	CT	CT
Zip Code:	06103	06267
Telephone:	860-251-5601	860-487-6740; 518-469-6464(c)
Email:	thollister@goodwin.com	dorgan@kdorgan.net
Role (Legal, Engineering, Surveying, Etc.)	Legal	Architecture and Planning

Submission Requirements

The following information is required for a complete application. Please check each box to confirm that the requirement has been met. All application materials shall be submitted in **digital form (pdf)** as well as **hard copy (original plus 2 copies unless otherwise specified).**

- **Completed Application Form.** This application form, completed and signed by the owner of the subject property and by the applicant.
- **Application Fee.** Application fee in the amount of **$560**. (Includes $60 required state land use fee).
- **Map of Subject Property.** Map of property to be rezoned prepared by a surveyor as per the requirements of Article 13, Section B.4. The map shall include areas within 500 feet of proposed rezoning, existing and proposed zone boundaries, existing streets, rights-of-way, easements, watercourses, wetlands, flood hazard areas, property lines, and names and addresses of neighboring property owners, including those across any street.
- **Legal Description.** A legally-defined boundary description of areas to be rezoned.
- **Statement of Justification.** Provide a Statement of Justification that:
  1. Addresses the approval considerations of Article 13, Section C of the Zoning Regulations;
  2. Substantiates the proposal's compatibility with Mansfield's Plan of Conservation and Development;
  3. Identifies the reasons for the proposed amendment (including any circumstances or changed conditions that justify the proposal and how the amendment would clarify or improve the Zoning Regulations); and
  4. Describes the effect the change would have on the health, safety, welfare and property values of Mansfield residents.
- **Reports or Other Information supporting the proposed rezoning.** See Article 13, Section B.8. List or explain below.

Phase I Environmental Assessment, dated September, 2018, by Lenard Engineering, Inc.
Debris Pile Investigation, dated July 5, 2019, by Lenard Engineering, Inc.

MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION
Application for Zoning Map Amendment
November 25, 2019

STATEMENT OF JUSTIFICATION

1. Address the Approval Considerations of Article XIII, Section D of the Zoning Regulations:

"[T]he applicant's proposal will promote the public's health, safety, property values and general welfare."

Accepted research in the field of affordable housing has demonstrated over and over that well-designed affordable housing does not have an adverse impact on the value of nearby properties, and in fact, allowing economic diversity in housing has a positive effect town wide, as this type of housing is available to such groups as municipal employees and first responders, whose presence is essential to maintaining the town as an attractive place to live.

(1) The proposal is complete and contains all required application information.

The application is complete and contains all required information.

(2) The proposal is consistent with the goals, policies and recommendation contained within the Mansfield Plan of Conservation and Development.

The proposed zone change serves several express goals of the town's Plan of Conservation and Development (POCD). A goal of the POCD is that "Mansfield's housing options include housing affordable to low and moderate income individuals and families" (Introduction). As part of developing the POCD, "residents expressed a desire for a wider variety of housing options that include both affordable and accessible units." Chapter 1. Chapter 7 states: "Contemporary affordable housing looks like other kinds of housing in a community. In Mansfield, any new affordable housing would be designed to be compatible in scale and design with other housing in town." That chapter also expressly identifies the need for affordable rental units. In addition, Goal 7.1 is that "Mansfield's housing options include housing affordable to low and moderate income individuals and families." Goal 7.4 of the POCD is: "Mansfield's land use regulations support development of a wide range of housing options to meet the needs of residents at all ages of the life cycle, including singles, families, seniors and students." Strategy for this Goal 7.4 is to "Update regulations to provide housing options for residents of all ages, incomes and physical abilities."

(3) The proposal is consistent with the expression of regulatory intent and purpose contained in the provisions of Article I of these regulations and Section 8-2 of the Connecticut General Statutes, as amended.

As stated above, the proposed affordable housing zone change will promote and protect the overall health, safety, convenience and welfare of town residents and the general public. It facilitates suitable provisions for use of public water and sewer and provides for access to public transportation, playgrounds, open space and other public amenities. As stated above, affordable housing developments do not have an adverse impact on the value of nearby properties. The proposed zone change assists in encouraging a variety of housing opportunities within the town.

The proposed affordable housing zone change is consistent with the following provisions in General Statutes § 8-2. It takes into consideration the town's Plan of Conservation and Development. It "encourage[s] the development of housing opportunities, including opportunities for multifamily dwellings." It "promote[s] housing choice and economic diversity in housing, including housing for both low and moderate income households."

(4) (refers to text amendment changes only)

(5) Any proposal to revise the Zoning Map has comprehensively considered: the size and physical characteristics of the subject area; the character and supply of land currently zoned in the subject classification; and the effect of the proposal on existing land uses in the surrounding area.

The size and physical characteristics of the subject areas are well-suited to the SER-HO Zone. The parcel to be rezoned is 5.2 acres located on South Eagleville Road (Route 275). A public bus stop and electric, gas, water and sewer are located in the public easement and/or roadway adjacent to the property.

No land is currently zoned SER-HO.

The proposed SER-HO Zone is in harmony with the existing land uses in the surrounding area:

- *To the east of the property is a driveway to the multifamily housing located to the south. Beyond this driveway is a wooded nature preserve with a pond that is open to the public for passive recreation.*
- *To the south of the property is existing multifamily housing.*
- *To the west of the property is a utility substation. Past the substation is Maple Road and beyond that is multifamily housing. Adjacent to this housing is the town operated senior center.*

- *To the north of the property is state highway 275 also known as South Eagleville Road. Across this street are single family homes that are set back from the highway.*

2. Substantiate the proposal's compatibility with Mansfield's Plan of Conservation and Development.

See section 1.(2) above.

3. Identify the reasons for the proposed amendment.

The proposed zone change would provide a location for the new affordable housing South Eagleville Road Housing Opportunity Zone (SER-HO), which is compliant with General Statutes § 8-30g because any multi-family housing eligible under the SER-HO Zone will qualify as "assisted housing" or a "set aside development" under § 8-30g.

4. Describe the effect the change would have on the health, safety, welfare and property values of Mansfield residents.

As stated above, accepted research in the field of affordable housing has demonstrated over and over that well-designed affordable housing does not have an adverse impact on the value of nearby properties, and in fact, allowing economic diversity in housing has a positive effect town wide, as this type of housing is available to such groups as municipal employees and first responders, whose presence is essential to maintaining the town as an attractive place to live. It facilitates suitable provisions for use of public water and sewer and provides for access to public transportation, playgrounds, open space and other public amenities. The proposed zone change assists in encouraging a variety of housing opportunities within the town.

4

PROPERTY OWNERS LIST
WITHIN 500' OF SUBJECT PROPERTY

Parcel ID: 16.32.10
HUSKY HOUSING LLC
402 BROWNS RD
STORRS CT 06268

Parcel ID: 16.32.11
HUEY BRYAN D & TINA A
9 WESTWOOD RD
STORRS CT 06268

Parcel ID: 16.32.3
LAMAR/FRANCIS IRREVOCABLE TRUST
SAKIYAMA HIROHIKO & PIKE ROLAND TRSTS
83 NASON HILL ROAD
SHERBORN MA 01770

Parcel ID: 16.32.4
KRIEDEL JAMES F &
KRIEDEL JAMES F JR & JASON F
146 SO EAGLEVILLE RD
STORRS CT 06268

Parcel ID: 16.32.5
RUECKI JAY G & BROWN JULIE M
BROWN JULIE M
128 SO EAGLEVILLE ROAD
STORRS CT 06268

Parcel ID: 16.32.6
CT LIBERTY GROUP LLC
C/O AXELA
61 INTERSTATE LANE 2ND FL
WATERBURY CT 06705

Parcel ID: 16.32.7
POSSELT HAROLD & EDITH
108 SO EAGLEVILLE RD
STORRS CT 06268

Parcel ID: 16.32.8
SUN WEIHONG
CHEN FANG
5 WESTWOOD RD
STORRS CT 06268

Parcel ID: 16.32.9
CHEN FANG
5 WESTWOOD RD
STORRS CT 06268

Parcel ID: 16.35.10
JARA BARNABY T & AGUSTA &
HOSMER SABRINA E & JARA NIELY S
103 MARION AVE
WEST HARTFORD CT 06110

Parcel ID: 16.35.11
HAIDOUS EMMANUEL
102 CEDAR SWAMP RD
STORRS CT 06268

Parcel ID: 16.35.12
BRODERICK NICHOLE A
3 EASTWOOD RD
MANSFIELD CT 06268

Parcel ID: 16.35.7
GILLHAM CAROL R SEARING &
GILLHAM ROBERT
4 GLEN BOULEVARD
GLEN ROCK NJ 07452

Parcel ID: 16.35.8
ZHANG LAN & LEI YU
46 ADELINE PL
MANSFIELD CENTER CT 06250

Parcel ID: 16.35.9
4 WESTWOOD ROAD
86 NORWOOD RD
WEST HARTFORD CT 06117

Parcel ID: 16.55.1
MANSFIELD HOUSING AUTHORITY
SENIOR HOUSING-WRIGHTS WAY
309 MAPLE RD
STORRS CT 06268

Parcel ID: 16.55.2
MANSFIELD TOWN OF
MANSFIELD SENIOR CENTER
4 S EAGLEVILLE RD
STORRS CT 06268

Parcel ID: 16.57.1
CT LIBERTY GROUP LLC
C/O AXELA
61 INTERSTATE LANE 2ND FL
WATERBURY CT 06705

Parcel ID: 16.57.2
GLADYS MORGAN LLC
56 BEACON HILL DR
STORRS MANSFIELD CT 06268

Parcel ID: 16.57.3
BRIGGS SARAH M & MARY E
C/O MARY BRIGGS
298 MAPLE RD
STORRS MANSFIELD CT 06268

Parcel ID: 16.57.4
CONNECTICUT NATURAL GAS
C/O GERARD MORIN MNGR TAX&AUDIT
ONE CITY CENTER 5TH FLR
PORTLAND ME 04101

Parcel ID: 16.57.5
MANSFIELD NON-PROFIT HOUSING DEVELOPMENT
309 MAPLE RD
STORRS CT 06268

Parcel ID: 16.57.6-OP
MANSFIELD TOWN OF
MOSS SANCTUARY
4 SO EAGLEVILLE RD
STORRS CT 06268

Parcel ID: 21.55.3
MANSFIELD RETIREMENT COMM INC
JUNIPER HILL VILLAGE C/O
1 SILO RD
STORRS, CT 06268

EXISTING ZONES

ZONE R-90

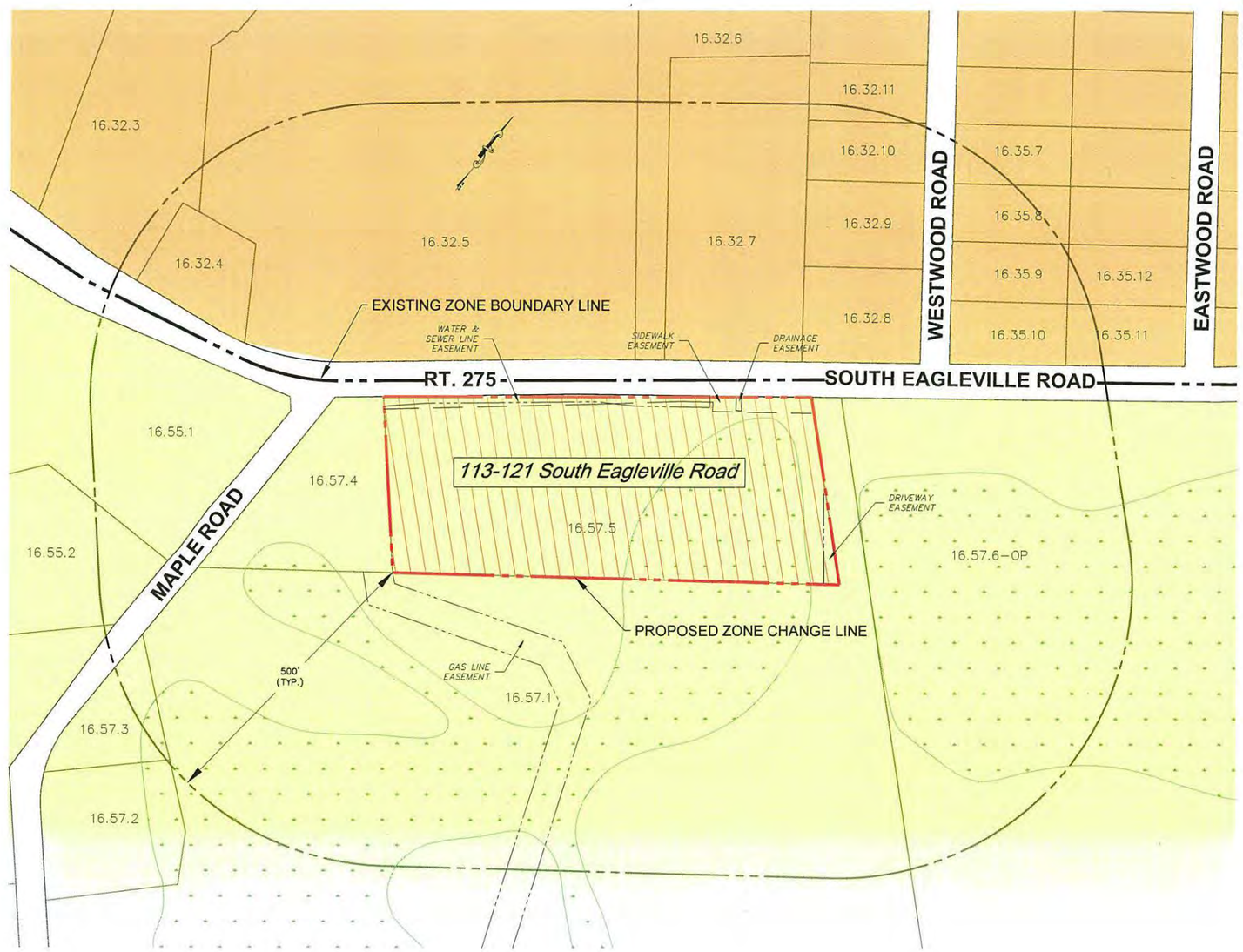
ZONE RAR-90

PROPOSED ZONE

ZONE SER-HO

EXISTING ZONE LINE
PROPOSED ZONE LINE
PROPERTY LINE
EASEMENT LINE
500' BUFFER LINE

WETLANDS



0 100 200 300 400
SCALE: 1" = 100'

LOCATION MAP
SCALE 1"=2000'

NOTES

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE STATE OF CONNECTICUT REGULATION OF DEPARTMENT OF CONSUMER PROTECTION CONCERNING SURVEY AND MAP STANDARDS SECTIONS 20-300b-1 THROUGH 20-300b-20 EFFECTIVE AS OF OCTOBER 26, 2018 AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS.
2. THE PLAN IS A COMPILATION PLAN WHICH IS INTENDED TO BE USED FOR A ZONE CHANGE APPLICATION. THIS PLAN HAS BEEN COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
3. REFERENCE MAP: PROPERTY BOUNDARY SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE ROAD STORRS, CONNECTICUT. DATE: JUNE 24, 2016 SCALE: 1"=40' CLASS A-2 AND CLASS T-2 ACCURACY LENARD ENGINEERING, INC. 2210 MAIN ST. GLASTONBURY, CONNECTICUT.
4. CURRENT ZONING CLASSIFICATIONS, WETLAND BOUNDARIES AND PROPERTY OWNERSHIP LIST WERE OBTAINED FROM THE TOWN OF MANSFIELD, CONNECTICUT WEB GIS MAPS AND ONLINE PROPERTY INFORMATION @ mainstreetmaps.com
5. THIS SURVEY CONFORMS TO CLASS D ACCURACY

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: ZC Map

Drawing date: Sept. 25, 2019
Drawing Scale: 1"=100'

Rev.	Date	Revision	By

ZONE CHANGE MAP

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.
113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

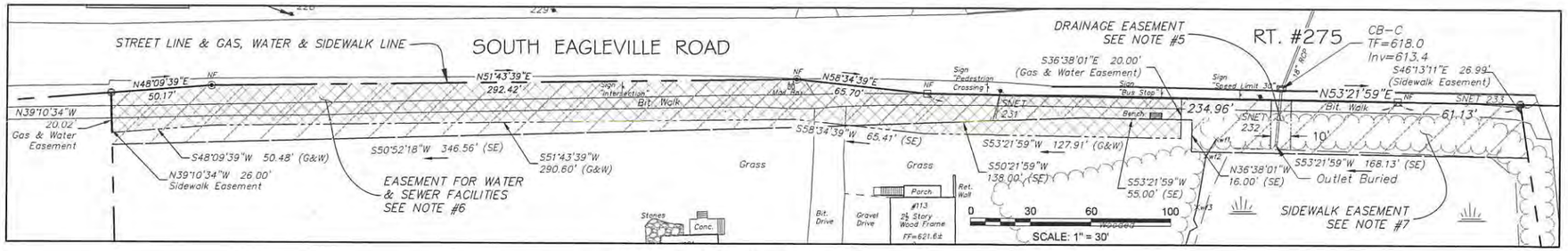
Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 McKeate Drive AUBURN, MA (508) 721-7600

Drawing #: 1 of 1

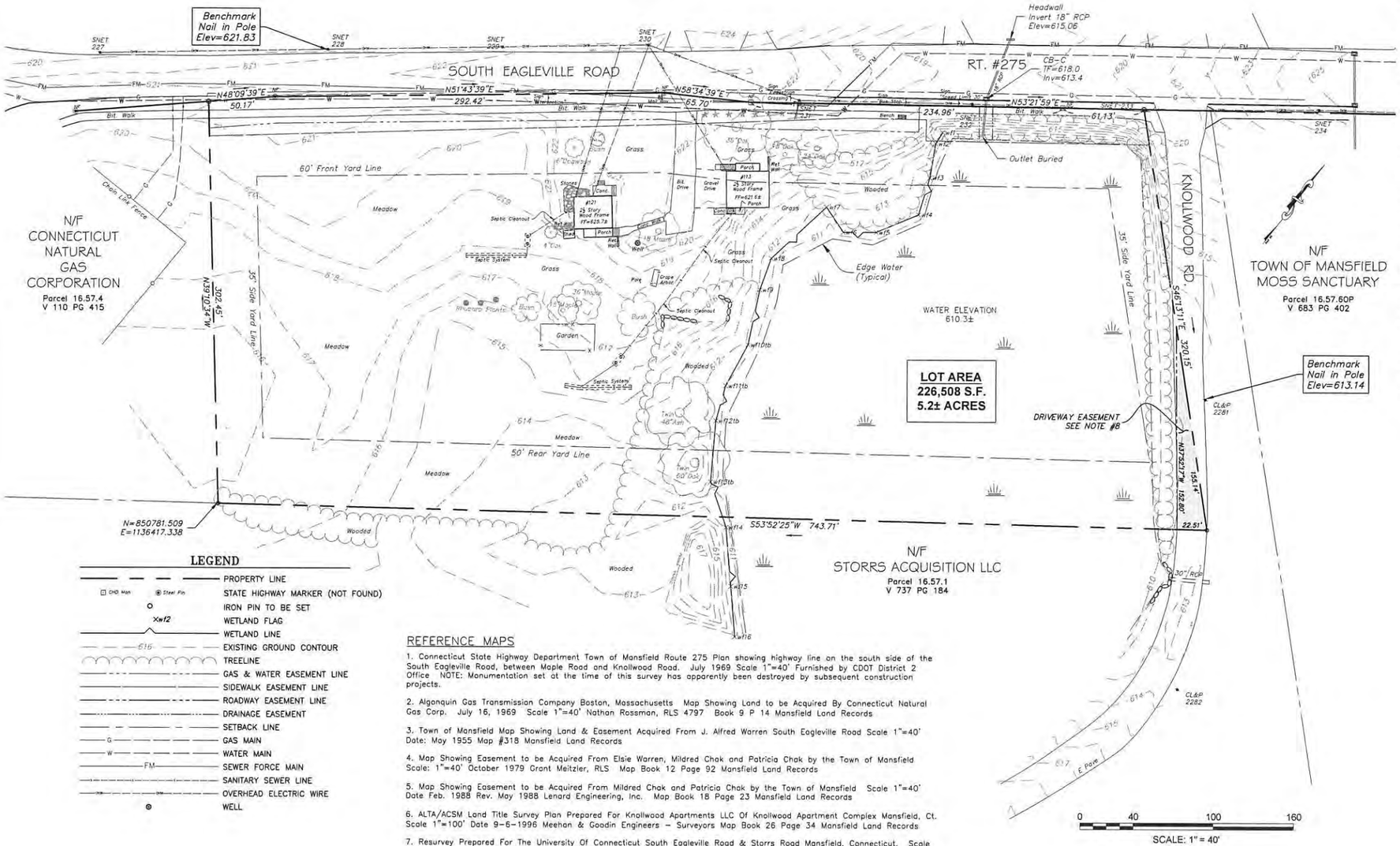
Job #: 19-393

K:\19-393 MNA South Eagleville\Production Drawings\ZC Map.dwg 9/26/2019 12:59 PM

5



DETAIL DEPICTING EASEMENTS
Scale 1"=30'



LEGEND

- PROPERTY LINE
- STATE HIGHWAY MARKER (NOT FOUND) (CHD Mon / Steel Pin)
- IRON PIN TO BE SET
- WETLAND FLAG (Xwf2)
- WETLAND LINE
- EXISTING GROUND CONTOUR (615)
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- GAS MAIN (G)
- WATER MAIN (W)
- SEWER FORCE MAIN (FM)
- SANITARY SEWER LINE
- OVERHEAD ELECTRIC WIRE
- WELL

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.

2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rossman, RLS 4797 Book 9 P 14 Mansfield Land Records

3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records

4. Map Showing Easement to be Acquired From Elsie Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 12 Page 92 Mansfield Land Records

5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records

6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-6-1996 Meehan & Goodin Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records

7. Resurvey Prepared For The University Of Connecticut South Eagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects .

8. Water And Sewer Services Mansfield Retirement Community, Mansfield Connecticut South Eagleville Road Sta. 11+00 to Sta. 25+70 sheets #2 & #3, Scale As Noted Date: Aug. 1979 Rev. As Built 10-22-80 Loureiro Engineering Associates.

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.

3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM. EXISTING GROUND CONTOURS ARE 1' INTERVAL.

4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS AREA=226,508 S.F. 5.2± ACRES

5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF. MAP #3 AREA=180± S.F.

6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 200 REF. MAP #4. AREA=10,696± S.F.

7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5. AREA=16,250± S.F.

8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 285 REF. MAP #6. AREA=1,655± S.F.

9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.

10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981

11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2006. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.

12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.

13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Basemap

Drawing Scale: 1"=40'
Drawing date: June 27, 2016

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 Molstate Drive AUBURN, MA (508) 721-7600

Drawing #: 1

Job #: 16-358

X:\16-353 MFA South Eagleville\Production Drawings\A-2 Survey.dwg 9/28/2016 1:12 PM

6

LEGAL DESCRIPTION

113 – 121 South Eagleville Road, Storrs

A certain piece or parcel of land situated in the Town of Mansfield, County of Tolland and State of Connecticut, and shown on a map or plan entitled, "PROPERTY/BOUNDARY SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE ROAD STORRS, CONNECTICUT Drawing date: June 27, 2016 Drawing Scale: 1" = 40'," prepared by Lenard Engineering, Inc., 2210 Main Street, Glastonbury, Connecticut. Said parcel is more particularly bounded and described as follows:

Beginning at a point on the easterly side of South Eagleville Road (Rt. #275), which point is the northeasterly corner of now or formerly Connecticut Natural Gas Corporation and the northwesterly corner of the property herein described,
said point being the POINT OF BEGINNING;

thence N 48° 09' 39" E, along South Eagleville Road a distance of 50.17 feet;

thence N 51° 43' 39" E., along South Eagleville Road a distance of 292.42 feet;

thence N 58° 34' 39" E, along South Eagleville Road a distance of 65.70 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 234.96 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 61.13 feet;

thence S 46° 13' 11" E, along land now or formerly Storrs Acquisition LLC
a distance of 320.15 feet;

thence S 53° 52' 25" W, along land now or formerly N/F Storrs Acquisition LLC
a distance of 743.71 feet;

thence N 39° 10' 34" W, along land now or formerly Connecticut Natural Gas Corporation a distance of 302.45 feet to the POINT OF BEGINNING.

7

Phase I Environmental Site Assessment

Mansfield Nonprofit Housing Development Corporation

113 & 121 South Eagleville Road
Mansfield, Connecticut

September 2018

Prepared for:

Mansfield Nonprofit Housing Development Corporation

LENARD ENGINEERING INC.
CIVIL, ENVIRONMENTAL AND HYDROGEOLOGICAL CONSULTANTS
www.lenard-eng.com

Mansfield Nonprofit Housing Development Corporation
113 & 121 South Eagleville Road
Mansfield, Connecticut

Phase I Environmental Site Assessment
September 2018

TABLE OF CONTENTS

1.0 PROPERTY DESCRIPTION 1
2.0 TERMS AND LIMITATION 2
2.1 SPECIAL TERMS, CONDITIONS AND LIMITATIONS 2
3.0 PHASE I ESA FINDINGS 3
4.0 PERSONNEL 6
5.0 SITE DESCRIPTION 7
5.1 LOCATION AND LEGAL DESCRIPTION 7
5.2 ADJACENT SITE USE 7
5.3 PAST AND PRESENT PROPERTY USE 7
5.4 PROPERTY INSPECTION 7
5.5 HISTORICAL USE INFORMATION 8
5.6 PREVIOUS ENVIRONMENTAL INVESTIGATIONS COMPLETED 10
6.0 POTENTIAL RECEPTORS & SITE GEOLOGY 11
6.1 GROUNDWATER & TOPOGRAPHY 11
6.2 WATER SUPPLY & SEWAGE DISPOSAL 11
6.3 SURFACE WATER 11
6.4 SURFICIAL GEOLOGY 11
6.5 BEDROCK GEOLOGY 11
7.0 ENVIRONMENTAL RECORDS REVIEW 12
7.1 FEDERAL AND STATE ENVIRONMENTAL RECORDS & DATABASES 12
7.2 MUNICIPAL ENVIRONMENTAL RECORDS 12
8.0 CONCLUSIONS 14
9.0 RECOMMENDATIONS 15

FIGURES

Figure 1 Property/ Boundary Survey
Figure 2 Site Location Plan

APPENDICES

A Site Photographs
B Historical Aerial Photos
C Mystic Air Quality Consultants Reports
D EDR Report and Mansfield Assessor's Records
E CT DEEP Guidance Document

Mansfield Nonprofit Housing Development Corporation
113 & 121 South Eagleville Road
Mansfield, Connecticut

Phase I Environmental Site Assessment
September 2018

1.0 PROPERTY DESCRIPTION

Lenard Engineering, Inc. (LEI) completed a Phase I Environmental Site Assessment (ESA) of the single parcel containing the two residential buildings located at 113 and 121 South Eagleville Road, Mansfield, Connecticut (the "Site"). The purpose of this Phase I ESA is to determine the environmental condition at the site. The Phase I ESA was completed by LEI in general conformance with ASTM Standard of Practice E-1527-13. An asbestos survey of the existing buildings was also performed by Mystic Air Quality Consultants, LLC; copies of the reports are included with this report as Attachment C.

The parcel is identified by the Mansfield Town Assessor's Office as M/B/L number as 16/57/5 and is currently owned by the Mansfield Non-Profit Housing Development Corporation. According to the site survey performed by LEI in 2016, the property consists of a 5.2 acre parcel. A copy of the Property/ Boundary Survey map is provided as Figure No. 1. As shown on the survey map, the two buildings are accessed from South Eagleville Road via a single bituminous asphalt driveway. According to the Assessor's records, the building with the address 113 South Eagleville Road (east of driveway) is 2,639 square feet and was reportedly constructed in 1930. The residential building with the address 121 South Eagleville Road (west of driveway) consists of a total gross area of 3,034 square feet and was constructed 1915. The property was purchased by the Mansfield Housing Authority on June 13, 2014 and the buildings serve as single-family rental units. According to the site contact, the building located at 121 South Eagleville Road is currently vacant.

The property is bounded to the north by South Eagleville Road, to the west by a parcel currently owned by The Connecticut Natural Gas Company (CNG), to the east by Knollwood Road, and to the south by the Knollwood Condominiums. Residential properties are located across South Eagleville road.

According to the site survey completed by LEI June 2016, the elevation of the site is between 610 and 622 feet above mean sea level. The topography slopes downward towards an unnamed wetland that covers the eastern portion of the Site. A significant portion of the central and western part of the site consists of a grass-covered field. The area appears as currently being maintained as a lawn but

according to historic aerial photos this area was used as agricultural fields. The wetland and the former agricultural field are separated by a lightly wooded transition zone.

Public utilities (water and sewer) are available to the area around the Site: however the buildings onsite are connected to a shared drinking water well and individual onsite septic systems. The groundwater classification at the Site is GA. The nearest surface water is the wetland located onsite. Based on the topography of the area, groundwater flow is assumed to be to east, towards the wetlands. The wetlands located on the site are part a series of interconnected wetlands that extend to the east and south.

The Sanborn Library was searched and historic fire insurance maps were not available for this area. Based on the records obtained from the Town of Mansfield Assessor's Office, the building at 121 South Eagleville Road, built in 1915, appears to be the initial development of this parcel. The Aerial photos available between 1934 and 2010 were reviewed: both buildings appear in all photographs with no other structures visible. The 1934 Aerial photograph shows both structures in their current locations. The significant portion of the site and the adjacent land to the west appears to be dedicated to agricultural. Aerial photographs of the Site are provided as Attachment B.

2.0 TERMS AND LIMITATION

Phase I ESA was performed in accordance with ASTM Standard Practice E1527-13. According to the ASTM standard, recognized environmental concerns (RECs), historic RECs, and / or material public health and safety threats are conditions in which the information collected suggests that:

1. There has been a release of a hazardous substance or a petroleum product into structures at the Site or to the soil, groundwater, and/or surface water;
2. Historic RECs are those conditions which in the past may have led to a release to the structures, soil, groundwater, or surface water of the Site;
3. A material threat is a REC in which an observable threat is present that would likely result in a release which, in the opinion of the environmental professional, would result in a public health or environmental threat.

2.1 Special Terms, Conditions and Limitations

This Phase I ESA was prepared for use by Mansfield Nonprofit Housing Development Corporation. The contents of the report may not be copied, provided or otherwise communicated to any other party without the prior consent of all parties.

The information contained in the Phase I ESA has been obtained in part from interviews with personnel familiar with the properties and from federal, state and local sources, and is assumed to be

complete and correct. The Site inspection was limited to those areas readily accessible and free of hazards. Those areas covered by structures, parked vehicles, or other obstructions were not inspected.

This Phase I report does not attempt to evaluate those conditions which are not within the scope of ASTM Standard of Practice E-1527-13 including but not limited to asbestos-containing material, radon, lead-based paint, regulated wetlands, state and federal regulatory compliance, cultural and historic resources, PCB containing building materials, health and safety violations, ecological resources, indoor air quality, and mold. A separate survey of asbestos and lead containing material contained within the residential buildings was completed by Mystic Air Quality Consultants, LLC and the results are provided as Appendix C.

Due to the subjective nature of professional interpretation, the information obtained during the course of this assessment may lead other parties to conclusions different from the conclusions presented in this report. No warranty, expressed or implied, is made regarding the opinions provided in the report.

3.0 PHASE I ESA FINDINGS

The primary goal of this Phase I EAS was to identify recognized environmental condition (REC) as defined by ASTM Standard of Practice E-1527-13. The following records were examined as part of this investigation:

- A review of Mansfield Town Assessors office and available historical aerial photographs indicate that this property was initial developed with the residential building located at 121 South Eagleville Road.
- A review of the Federal and State databases identified under ASTM Standard of Practice E-1527-13 was performed and the results are provided in the EDR report provided as Appendix D. The results show that the Site and the adjoining properties are not identified in any of the federal or state databases identified in the ASTM standard.
- A review of the files on record with the Town of Mansfield Health Department, Engineering Department, Building Department, and Fire Marshall was performed for the Site. The files on record include septic construction, easement-related records, and miscellaneous building permits. None of the documents identified in this reviewed indicate a REC is present at the Site.
- LEI personnel performed an inspection of the site on August 21, 2018. The following observations were made:
    - During the inspection two 5-gallon containers of asphalt pavement sealer were observed near the southern end of the driveway. The container appeared to be in good condition

and there was no evidence that a leak had occurred: however, the potential exists for an unintended release of this material to the environment.

- At least 2 debris piles were observed in the southern portion of the site. The material observed in these piles includes household debris (e.g. #10 metal food containers, pail, etc.), automotive parts, agricultural machinery, and the top to a 55-gallon drum.

Based upon the current or former site use and information from all sources, we conclude that two (2) recognized environmental concerns (REC) as defined under ASTM Standard of Practice E-1527-13 are present on the 113/ 121 South Eagleville parcel.

REC-1: Historic debris piles located in the southern portion of the site;

REC-2: Two 5-gallon container of asphalt sealer.

REC-1: Historic debris piles

The State of Connecticut defines a soil waste disposal area as any area used for the disposal of more than 10 cubic yards of solid waste. At the time of the site visit it was not possible to determine the full extent of debris piles due to vegetation and brush deposited on top of the debris pile. If it is determined that the debris piles onsite meet the definition of solid waste area, permits will be required before the piles can be disturbed in anyway. This includes the removal of vegetation, the consolidation or removal of solid waste, excavation, or any other type of disturbance. Exploratory investigations performed to characterize the types and extents of solid waste are not considered disruptions. Photographs of the debris piles observed during the site visit are included in Appendix A and additional information on solid waste disposal areas is contained in the CT DEEP guidance document provided as Appendix D.

Based upon LEI's understanding of the historic agricultural activities performed at the Site, LEI recommends an exploratory investigation of the historic debris piles (REC-1) be performed. The purpose of the exploratory investigation should be: 1) to estimate the volume solid waste disposed of at the Site; and 2) determine if hazardous material or petroleum products were disposed of in these areas.

We recommend the soil beneath the debris piles be characterized by collecting at least two composite soil samples (one from beneath each pile). The analysis of the soil samples should be based on the types of debris encountered in the piles. At a minimum the samples should be analyzed for semi volatile petroleum hydrocarbons, extractable total petroleum hydrocarbons, herbicides, pesticides, and polychlorinated biphenyl (PCBs).

REC-2: 5-gallon Containers of Asphalt Sealer

At the time of the site visit two 5-gallon containers of asphalt sealer were located at the southern edge of the driveway. There was no visual evidence that a release has occurred from this REC: the container appeared to be in adequate condition and no soil staining was observed around the base of the container was observed. The 5-gallon containers pose a material threat to a future release to the environment. A photograph of the containers is included in Appendix A.

LEI recommends the container and the surrounding soil be visually inspected for evidence of a release to the environment. The inspection of the container and the soil should be documented with photographs. Following the inspection, the containers should be disposed of at a permitted waste facility.

4.0 PERSONNEL

The Phase I ESA was completed by Daniel Brockmeyer, LEP of Lenard Engineering, Inc. (LEI), on September 18, 2018, with technical review provided by Paul Magyar, PE. The site contact for the report was Rebecca Fields (Mansfield Housing Authority).

Report Preparer: _____

Daniel Brockmeyer, LEP

Signature of Environmental Professional: _____

Daniel Brockmeyer, LEP

5.0 SITE DESCRIPTION

5.1 Location and Legal Description

The Site consists of a 5.2-acre parcel containing two residential building with street addresses 113 and 121 South Eagleville Road in Mansfield. Connecticut. The parcel is identified on the Town of Mansfield Assessor's records as 16/57/5 (Map/Block/Lot). The current owner of record of the parcels is the Mansfield Non-Profit Housing Development Corporation (Mansfield Housing Authority). Copies of the Tax Assessor's field card are included in Appendix D.

5.2 Adjacent Site Use

The property is bounded to the west by a parcel owned by Connecticut Natural Gas. Knollwood Road is located immediately to the east of the site. The Moss Sanctuary is located on the adjacent side of Knollwood Road and is owned by the Town of Mansfield. Knollwood Road leads to the Knollwood Apartments. located immediately to the south of the site. According to the web-page, the Knollwood Apartments consist of 34 buildings with 4 rental units per building. The Site is bound to the north by South Eagleville Road with residential properties located along the adjacent side of South Eagleville road.

5.3 Past and Present Property Use

The Sanborn Library was searched and historic fire insurance maps were not available for this area. Based on the records obtained from the Town of Mansfield Assessor's Office. the building at 121 South Eagleville Road, built in 1915. appears to be the initial development of this parcel. Aerial photos taken between 1934 and 2010 are available for this area. The 1934 aerial photograph shows both structures in their current locations. A significant portion of the Site and the adjacent land to the west appears to be dedicated to agricultural. Both buildings appear in this photo with no other structures visible. Aerial photographs show that portions of this property were used for agriculture through the 1970's and into the early 1980's. Aerial photographs of the Site are provided as Appendix B.

The property was purchased by the Mansfield Housing Nonprofit Development Corporation on June 13. 2014 and both buildings are single-family rental units. According to the site contact. the building located at 121 South Eagleville Road is currently vacant.

5.4 Property Inspection

Daniel Brockmeyer of LEI completed a visual inspection of the 113/121 South Eagleville Road property on August 21. 2018. Photographs of the property are included in Appendix A. and Figure 1 depicts the pertinent site features.

The 5.2-acre parcel contains a two residential buildings. According to the Mansfield Assessor's Office records, the building located at 121 South Eagleville Road was constructed in 1915 and has a gross area of 3,034 square feet. The heat source indicated on the Assessor's card is oil and a fill pipe and a vent pipe were observed in the rear of the building. The building with the address of 113 South Eagleville Road was reportedly constructed in 1930 and has a gross area of 2,639 square feet. The heat source indicated on the Assessor's card is gas however, an oil fill pipe and a vent pipe were observed in the rear of the building (see photograph). According to the Town's records, the site is served by a shared well and each building is served by its individual septic system. Public water and sewer is available to the area.

A shared driveway runs between the two buildings. The majority of the driveway is bituminous concrete and is in poor condition. Two 5-gallon containers of asphalt sealant were observed at the south end of the driveway. The container appeared to be enacted with no evidence of a release to the environment.

To the south and west of the building identified as 113 South Eagleville Road is a large field which covers approximately ½ of the parcel. At the time of the inspection the field was covered with grass less than 1 foot tall. No evidence of a REC was observed in this portion of the site.

A wetland is located to the east of the residential buildings and makes up approximately 1/3 of the parcel. The wetland was not accessible but a visual inspection of the area was performed from the edge of the wetland. Visibility into the wetland was good and no RECs were observed.

Between the wetlands and the grass field is a lightly wooded area which consist of trees and brush. Within this wooded area, towards the rear of the site, two historic debris piles were observed. Based on the vegetation around the debris piles and the condition of the items, the material observed has been onsite site for some time. Less than half of the piles were visible at the time of the inspection due to vegetation overgrowth and brush. The portion of the debris pile that was visible consisted almost entirely of metal items included household items, (e.g. tin cans, metal pail, and broken glass), automobile parts (hubcaps and wheels), agricultural equipment, and other miscellaneous metal items. The remains of a 55-gallon drum cover was observed within the larger debris pile. Drums were not observed during the inspection.

5.5 Historical Use Information

LEI reviewed historical sources including records maintained by the Town of Mansfield historical topographic maps, and aerial photographs. The Sanborn Fire Insurance Maps did not cover the Site

area. Copies of the aerial photographs are included in Appendix B and historic topographic maps are provided as part of the EDR report included as Appendix D.

Town of Mansfield Information

The Town of Mansfield Building, Engineering, and Public Health Departments were contacted as well as the Fire Marshal's Office. None of the information contained in any of their files was relevant to the Phase I ESA.

Topographic Maps

Topographic maps that cover the Site area from 1892 to 2012 were available for review. The topographic maps from 1892 and 1921 depict the Site as vacant wetlands. The 1943 and 1944 topographic maps are presented as a single map and the Site is not visible due to cropping of the individual maps. The maps from 1945 to 1983 depict structures on both parcels. The 2012 topographic map does not show the locations of any structures on the map.

Aerial Photograph Review

Aerial photographs from 2010, 1995, 1986, 1970, 1965, 1951, and 1934 were available for review. A description of the photographs is provided below:

2012 - 1970

The Site appears in a similar to today with evidence of agriculture in the 1986 and 1970 photographs.

1965

The property to the west of the Site currently owned by Connecticut Natural Gas is not developed in this picture and agricultural fields extend to Maple Road. Both residential buildings are visible with multiple vehicles are surrounding the buildings. Vehicles or possibly farm equipment are present to the southeast of the buildings.

1951

The property appears similar to the 1965 photograph.

1934

The property appears similar to the 1965 photograph with clear evidence of agricultural fields located along South Eagleville Road.

5.6 Previous Environmental Investigations Completed

August 24, 2018 Asbestos Survey performed by Mystic Air Quality Consultants, Inc.: This report summarizes the results of the asbestos survey of the buildings performed at 113 and 121 South Eagleville Road by Mystic Air Quality Consultants, Inc. on August 14, 2018.

6.0 POTENTIAL RECEPTORS & SITE GEOLOGY

6.1 Groundwater & Topography

According to the site survey completed by LEI June 2016, the elevation of the site is between 610 and 622 feet above mean sea level and the topography slopes downward towards an unnamed wetland to the east. The eastern portion of the property contains a portion of the wetland. A large area in the western portion of the parcel is grass-covered and appears to have formerly been an agricultural field. The wetland and the former agricultural field are separated by a lightly wooded transition zone.

The groundwater classification at the Site is GA. The nearest surface water is the wetland located onsite. Based on the topography of the area, groundwater flow is assumed to be to east, towards the wetlands. Based on the topography of the Site, the onsite wetlands appear to drain to the east, towards a series of larger inter-connected wetland located to the east of Knollwood Road.

6.2 Water Supply & Sewage Disposal

The Site is served by a shared well located between the residential buildings. The well head is shown on the Site Plan. Each residential building onsite is connected to its individual septic system. Public water and sewer is available in the area however according the EDR report a number of residential buildings use private drinking water wells. The nearest public wells serve the Knollwood Apartment complex, located to the south of the Site

6.3 Surface Water

A wetland located on the Site is part of a series of interconnected wetlands that extend to the south and east. Based on the topography of the region, it appears that the wetlands ultimately drain towards Tiff Pond located to the east of the site. Tiff pond and the associated wetlands surrounding it are AA-classified surface water body.

6.4 Surficial Geology

The CT DEEP's GIS data depicts the surficial material underlying the Site as sand and gravel, which is described a post-glacial swamp deposit consisting of coarse grained materials.

6.5 Bedrock Geology

The CT DEEP's GIS Data indicates that the bedrock underlying the Site parcels is the Hebron Gneiss, which is described as inter layered dark gray schist and gneiss.

7.0 ENVIRONMENTAL RECORDS REVIEW

An environmental records review was conducted for selected information from the United States Environmental Protection Agency (USEPA), the Connecticut Department of Energy & Environmental Protection (CT DEEP), and the Town of Mansfield. In addition, an Environmental Data Resources (EDR) Report was requested for the project area from EDR, Incorporated. A copy of the results of the EDR report is enclosed as Appendix D in this report. The following standard environmental record sources were reviewed with the minimum search distances from the subject site in accordance with ASTM Standard of Practice E-1527-13.

Federal NPL list (1 mile radius)
Federal CERCLA list (0.5 mile radius)
Federal RCRA Corrective Action Facilities List (1 mile radius)
Federal RCRA TSD Facilities List (0.5-mile radius)
Federal RCRA Generators List (Site & Adjoining Properties)
Federal Emergency Response Notification System (ERNS – Site only)
Federal Toxic Release Inventory System (TRIS – Site only)
Federal Facility Index System (FINDS – Site only)
Federal Hazardous Materials Incident Response System (HMIRS – Site only)
Federal National Compliance Database (NCDB – Site only)
CT DEEP Inventory of Hazardous Waste Sites (0.5 mile radius)
CT DEEP Landfill and/or Solid Waste Disposal Sites (0.5-mile radius)
CT DEEP Underground Storage Tank Database (Site & Adjoining Properties)
CT DEEP Leaking Underground Storage Tank (LUST) List (0.5-mile radius)
CT DEEP State Superfund Files (0.5-mile radius)
CT DEEP Water, PERD, Property Transfer, Waste & PCB Files (Site & Adjoining Properties)
CT DEEP Administrative Orders Database (Site & Adjoining Properties)
CT DEEP Oil & Chemical Spills -- 1970 to Present (Site & Adjoining Properties)
CT DEEP Manifests Database – 1980 to Present (Site only)
CT DEEP UST Petroleum Cleanup Fund Files (Site only)
Municipal Records (Site only)

7.1 Federal and State Environmental Records & Databases

The EPA National Priorities (Superfund) List (NPL), CERCLA List, RCRA Corrective Actions Facilities Database, RCRA Treatment Storage and Disposal Facilities (TSDF), EPA RCRA Hazardous Waste Generators List, ERNS, TRIS, FINDS, HMIRS, and NCDB were reviewed as part of the Phase I ESA. Neither the Site nor any of the adjacent properties were identified in any of the databases reviewed.

7.2 Municipal Environmental Records

The Town of Mansfield Building, Engineering, and Public Health Departments were contacted as well as the Fire Marshal's Office.

Mansfield Assessor's Office

According to the Town of Mansfield Assessor's office available on line. the Site consists of a 4.49-acre parcel containing two residential building with street addresses 113 and 121 South Eagleville Road in Mansfield. Connecticut. The Site survey performed in 2016 shows the area of the parcel to be 5.2 acres. The parcel is identified on the Town of Mansfield Assessor's records as 16/57/5 (Map/Block/Lot). The current owner of record of the parcels is the Mansfield Nonprofit Housing Development Corporation. Copies of the Tax Assessor's field card are included in Appendix D.

Mansfield Engineering Department

With the help of the Assistant Town Engineer. Derek Dilaj. LEI performed a review of the Engineering Department's records. The files only include easement-related records related to the water and sewer easement located along South Eagleville.

Mansfield Building Department

LEI performed a review of the records maintained by Town of Mansfield Building Department. Several building permits were on file for both build residential buildings. The permits were issued for roofing. plumbing. and electrical projects. None of the permits reviewed contained information relevant to this Phase I EAS.

Mansfield Public Health Department

LEI performed a review of the records maintained by the Town of Mansfield Public Health Department. The files consisted exclusively of documents on the construction of the septic systems serving the residential buildings onsite. None of the permits reviewed contained information relevant to this Phase I EAS.

Mansfield Fire Marshall

LEI performed a review of the Town of Mansfield Fire Marshalls records: there were no records on the Site.

8.0 CONCLUSIONS

LEI performed a Phase I Environmental Site Assessment of the property located at 113 / 121 South Eagleville Road. Mansfield. Connecticut. The Phase I ESA was performed in general conformance with the scope and limitations of ASTM Standard of Practice E-1527-13. Based on the information compiled for this report. LEI concludes the following concerning the property:

1. The Town of Mansfield Assessor's field card indicates that the Site containing two residential building with street addresses 113 and 121 South Eagleville Road in Mansfield. Connecticut. The parcel is identified as 16/57/5 (Map/Block/Lot) and the current owner of record of the parcels is the Mansfield Nonprofit Housing Development Corporation.
2. The most recent survey of the parcel shows the area of the parcel is 5.2 acres.
3. The historic aerial photos of the Site show that the property was used for agriculture until sometime in the 1970's or early 1980's.
4. Based upon the current or former site use and information from all sources. we conclude that two (2) recognized environmental concerns (RECs) are present on the 113 / 121 South Eagleville Road parcel. The RECs include:

   REC-1: Historic debris piles located in the southern portion of the site;

   REC-2: Two 5-gallon container of asphalt patch.
5. There were no significant data gaps identified during this Phase I ESA.

9.0 RECOMMENDATIONS

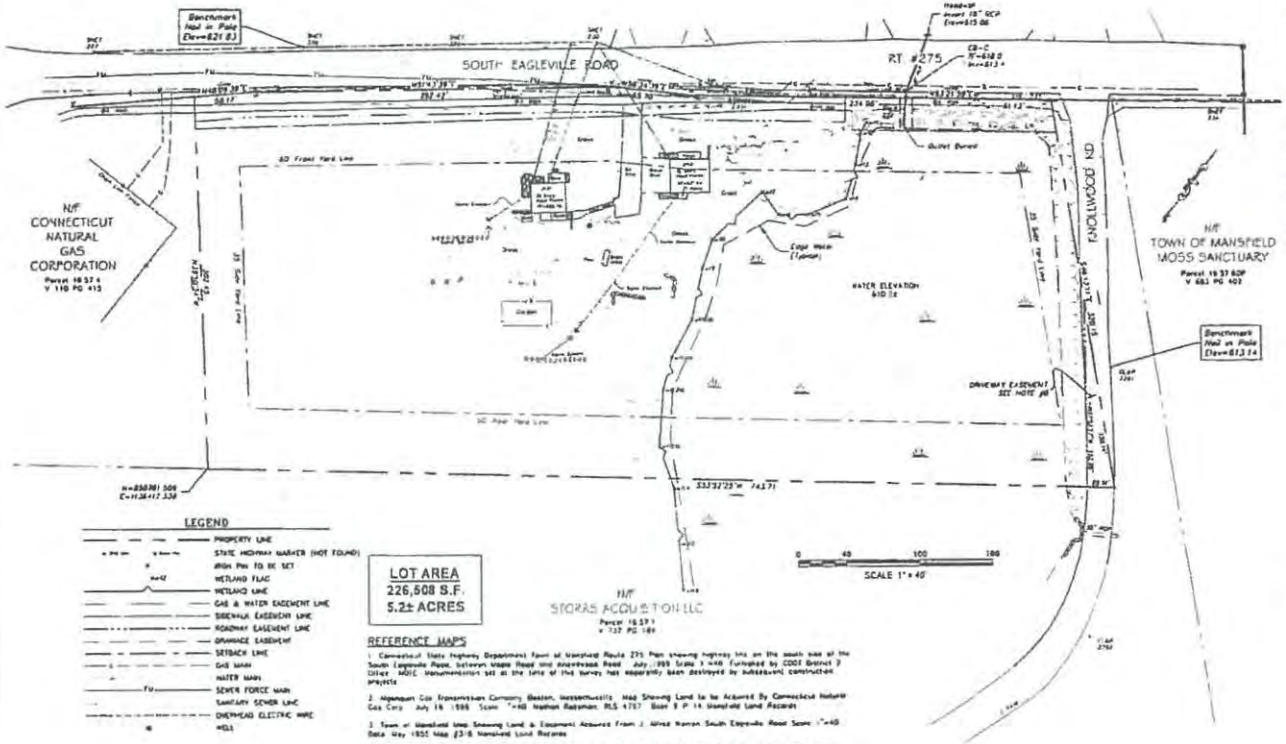
Based upon LEI's understanding of the historic agricultural activities performed at the Site, LEI recommends an exploratory investigation of the historic debris piles (REC-1) be performed. The purpose of this investigation should be to 1) to estimate the volume solid waste disposed of at the Site and 2) determine if hazardous material or petroleum products were disposed of in these areas. We recommend the soil beneath the debris piles be characterized by collecting at least two composite soil samples (one from beneath each pile). The analysis of the soil sample should be based on the types of debris encountered in the piles. At a minimum the samples should be analyzed for semi volatile petroleum hydrocarbons, extractable total petroleum hydrocarbons, herbicides, pesticides, and polychlorinated biphenyl (PCBs).

If it is determined that debris piles located onsite contain 10 cubic yards or more of solid waste it will be necessary to obtain permits prior for any disturbance of the material. The exploratory investigation discussed above is not considered a disturbance and no permit is required for this activity so long as debris and cover moved during the investigation is replaced.

LEI recommends the two 5-gallon containers and the surrounding soil (REC-2) be visually inspected for evidence of a release to the environment. The inspection of the container and the soil should be documented with photographs. Following the inspection the material should be disposed of at a permitted waste facility.

Figures

DETAIL DEPICTING EASEMENTS
Scale 1"=30'



LEGEND

- PROPERTY LINE
- STATE HIGHWAY MARKER (NOT FOUND)
- IRON PIN TO BE SET
- WETLAND FLAG
- WETLAND LINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- GAS MAIN
- WATER MAIN
- SEWER FORCE MAIN
- SANITARY SEWER LINE
- OVERHEAD ELECTRIC WIRE
- MGS

LOT AREA
226,508 S.F.
5.2± ACRES

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway lns on the south side of the South Eagleville Road, between Maple Road and Knollwood Road July 1999 Scale 1"=40 Furnished by CDOT District 3 Office MDIC Monumentation set at the time of the survey has apparently been destroyed by subsequent construction activity.
2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp July 18 1988 Scale 1"=40 Nathan Rasbman RLS 4757 Book 9 P 14 Mansfield Land Records
3. Town of Mansfield Map Showing Land & Easement Acquired from J. Alfred Hanson South Eagleville Road Scale 1"=40 Date May 1955 Map #3-6 Mansfield Land Records
4. Map Showing Easement to be Acquired From Elbe Hanson, Mildred Chen and Patricia Chen to the Town of Mansfield Scale 1"=40 October 1979 Grant Webster RLS Map Book 12 Page 93 Mansfield Land Records
5. Map Showing Easement to be Acquired From Mildred Chen and Patricia Chen to the Town of Mansfield Scale 1"=40 Date Feb 1988 Rev May 1988 Lenard Engineering, Inc Map Book 18 Page 23 Mansfield Land Records
6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield CT Scale 1"=100 Date 9-6-1999 Heckman & Casaban Engineers - Surveyors Map Book 26 Page 34 Mansfield Land Records
7. Resurvey Prepared For The University Of Connecticut Southeagleville Road & Storrs Road Mansfield, Connecticut Scale 1"=100 Date Oct. 2003 Rev. 6/01/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996
2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED
3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES ELEVATIONS ARE BASED ON NAVD 1988 DATUM
4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT 06268 PARCEL 18 37 5 DEED VOL 784 PG 333 MANSFIELD LAND RECORDS
5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF MAP #3
6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 178 PG 200 REF MAP #4
7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 235 REF MAP #5
8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 283 REF MAP #6
9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE ND ZONE (RAR-80) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT BUILT PRIOR TO PRESENT ZONING REGULATIONS
10. PROPERTY IS NOT LOCATED IN FLOOD ZONE - FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090138 0005 C EFFECTIVE JANUARY 2, 1981
11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY MM 1 COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2004. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016
12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION. CALL-BEFORE-YOU-DIG 1-800-922-4455.
13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY

PRELIMINARY FOR REVIEW

To the best of my knowledge and belief this map is substantially correct as noted hereon

KEVIN L. DUMAS #13281 DATE

The contractor is prohibited or stopped unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon

Designed By: KLD
Drawn By: KLD
Checked By: PW
Cad File: Boundary

Drawing Scale: 1" = 40'
Drawing Date: June 27, 2016
Revisions

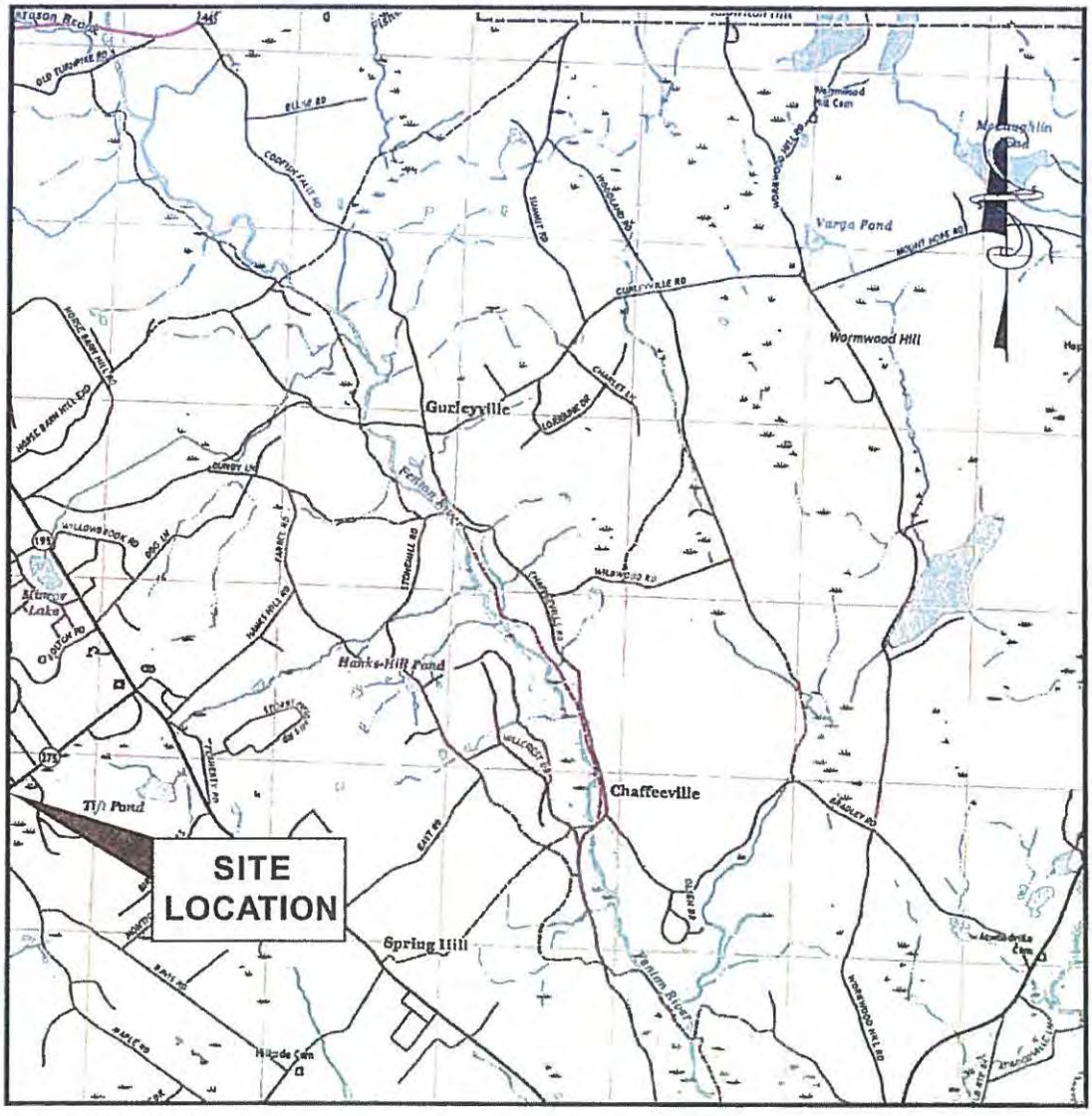
No.	Date	Description

PROPERTY/BOUNDARY SURVEY
PREPARED FOR
MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP
113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil Engineering and Land Development Consultants
14 Storrs Road
Mansfield, Ct.
(860) 429-6225

Drawing #
1

Job # 16-358



Source: USGS Quadrangle Map
Spring Hill, CT Revised 2018

Scale: 1" = 24,000'

Location Map

121 South Eagleville Road

Storrs-Mansfield, CT

Figure No. 2

Lenard Engineering, Inc.
Civil, Environmental & Hydrogeological Consultants

Appendix A

Site Photographs

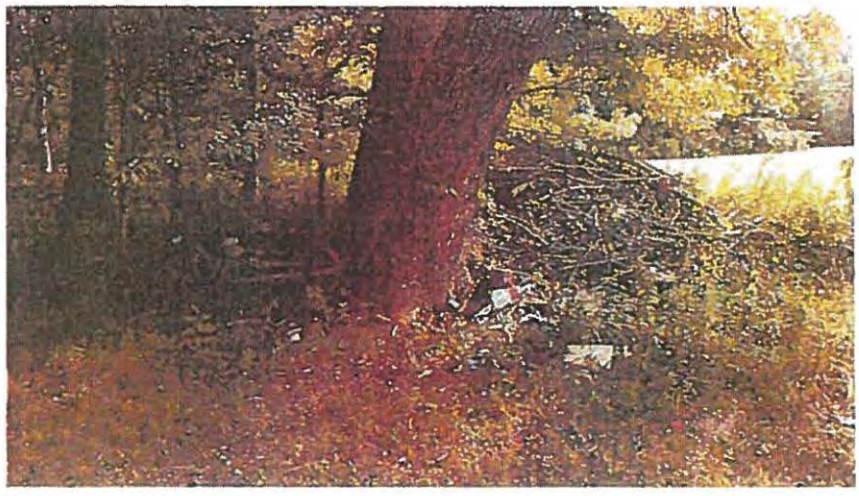
121 South Eagleville Rd: Front of building.

121 South Eagleville Rd: Rear of building.

113 South Eagleville Road: Front of building.

113 South Eagleville Road: Rear of building.

Historic agricultural field: Looking towards southern property boundary.



REC – 1: Debris pile located in southern portion of the parcel, between wetland and historic agricultural field. Base of "Twin 48" Ash" identified on site survey shown in photograph.

REC – 1: Debris pile located in southern portion of the parcel, between wetland and historic agricultural field. Base of *Twin 60" Oak* identified on site survey shown in photograph.

Miscellaneous debris located near the debris pile.

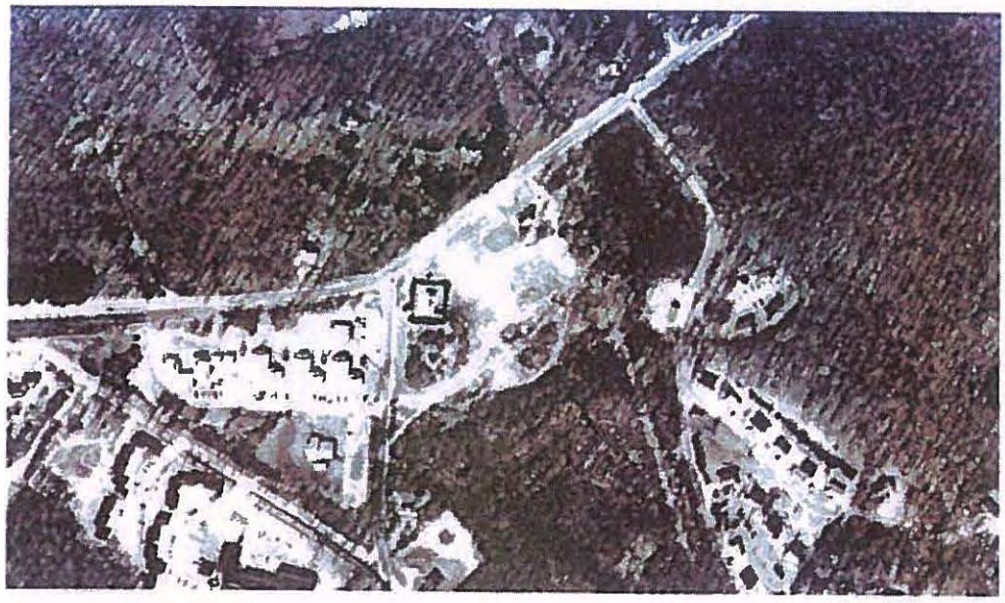
REC – 2: Two 5-gallon containers of asphalt patch near southern end of driveway.

Appendix B

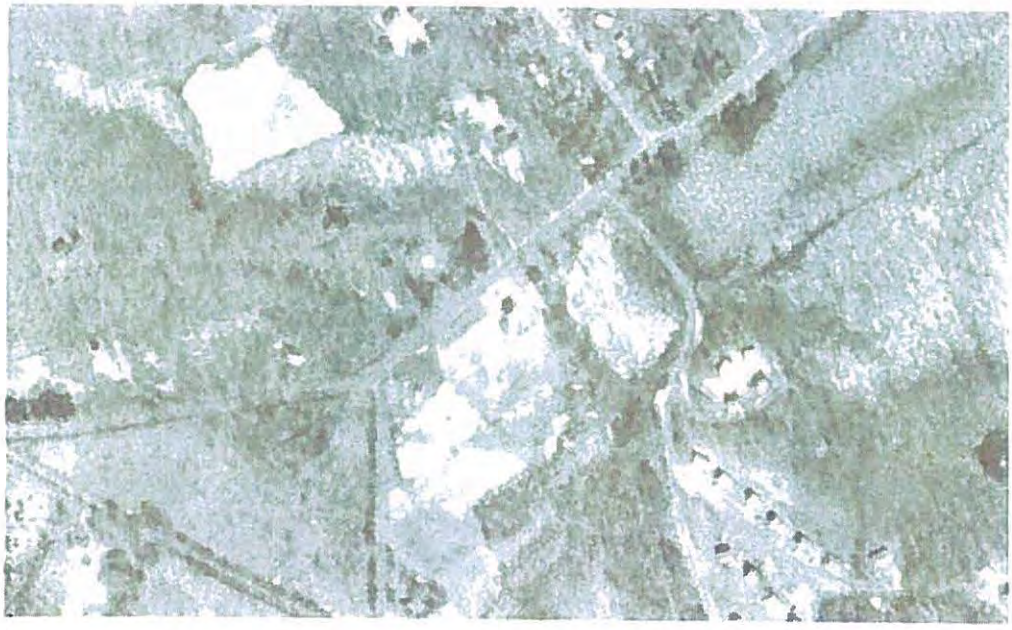
Historic Aerial Photographs

2010 Aerial Photograph

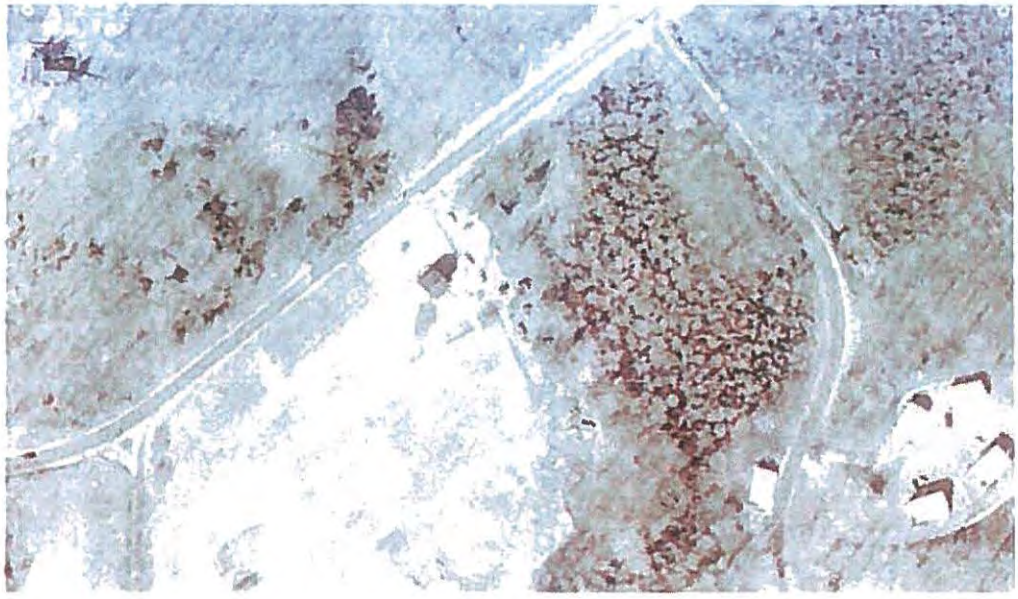
1995 Aerial Photograph



1986 Aerial Photograph



1970 Aerial photograph



1965 Aerial Photograph

1951 Aerial Photograph

1934 Aerial Photograph

Appendix C

Mystic Air Quality Consultants Report

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

August 24, 2018

Mr. Paul Magyar, P.E.
Lenard Engineering, Inc.
2210 Main Street
P.O. Box 1088
Glastonbury, CT 06033

Re: **Due Diligence Asbestos Survey & Roster of PACM Materials (8/14/18)**
113 South Eagleville Road; Storrs Mansfield, CT

Dear Mr. Magyar:

As requested, Mystic Air Quality Consultants, Inc. conducted a due diligence asbestos survey of accessible materials at the location noted above on August 14th, 2018. This survey was conducted by Greg Eident, a Connecticut State licensed asbestos inspector (license #000908), to determine the presence of asbestos-containing materials and to compile a list of accessible presumed asbestos containing materials (*Enclosure 3*). **Until proven to be asbestos containing or not, by way of additional sampling and subsequent lab work, these presumed asbestos containing materials can not be disturbed by any renovation or demolition activity.** The samples collected were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

Summary of the Asbestos Findings-

Upon testing by polarized light microscopy, the following samples were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
22	Flue Cement/Basement Flue	3 sq. ft.

Roster of Presumed Asbestos Containing Materials-

Material	Location	Estimated Affected Area
Adhesive Only	2nd Floor Kitchen –on wall panels behind oven & counter	50 sq. ft.
Adhesive Only	2nd Floor Bathroom –on fake ceramic wall panel tiles	80 sq. ft.
Felt/Vapor Barrier	Under Wood Floors –throughout (if present)	<3,000 sq. ft.
Felt/Vapor Barrier	Exterior –under siding (if present)	All
Caulking	Interior & Exterior –around windows and doors	All
Roof Shingles	Exterior Roof	<3,000 sq. ft.
Roof Felt/Vapor Barrier	Exterior Roof –under shingles	<3,000 sq. ft
Flashing	Exterior Roof –around penetrations & seams (if present)	All

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

Implications of the findings

As required by state and federal regulations prior to renovation or demolition, any asbestos-containing materials listed above that could be disturbed by a renovation, will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the Asbestos survey

This survey and report only deal with accessible areas of the building. Additionally, there may be other non-accessible materials above ceilings, behind walls, and below floors that become evident during your renovation activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

Please do not hesitate to contact us with questions relating to the sample results. We thank you for the opportunity to conduct this survey.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1- Asbestos Lab Results
Enclosure 2- Chain of Custody
Enclosure 3- Roster of Suspect Materials & PACM
Enclosure 4- Drawing of Property

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 18-08-02120

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 08/15/2018
Analyzed Date: 08/16/2018
Reported Date: 08/20/2018

Project/Test Address: 113 South Eagleville Rd.; Storrs Mansfield, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02120-001	1		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous
18-08-02120-002	2		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous
18-08-02120-003	3		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous
18-08-02120-004	4		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous
18-08-02120-005	5		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02120
Project/Test Address: 113 South Eagleville Rd.; Storrs
Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02120-006	6		White Powdery; Brown Fibrous; Inhomogeneous	NAD	34% Cellulose 66% Non-Fibrous
18-08-02120-007A	7	Linoleum	Tan Vinyl; Homogeneous	NAD	6% Fibrous Glass 94% Non-Fibrous
18-08-02120-007B	7	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-008A	8	Linoleum	Tan Vinyl; Homogeneous	NAD	6% Fibrous Glass 94% Non-Fibrous
18-08-02120-008B	8	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-009A	9	Linoleum	Tan Vinyl; Homogeneous	NAD	6% Fibrous Glass 94% Non-Fibrous
18-08-02120-009B	9	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-010A	10	Linoleum	White/Gold Vinyl; Black Tar like; Inhomogeneous	NAD	55% Cellulose 7% Hair 38% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02120
Project/Test Address: 113 South Eagleville Rd.; Storrs
Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02120-010B	10	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-011A	11	Linoleum	White/Gold Vinyl; Black Tar like; Inhomogeneous	NAD	55% Cellulose 7% Hair 38% Non-Fibrous
18-08-02120-011B	11	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-012A	12	Linoleum	White/Gold Vinyl; Black Tar like; Inhomogeneous	NAD	55% Cellulose 7% Hair 38% Non-Fibrous
18-08-02120-012B	12	Mastic	Clear Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-013A	13	Linoleum	White Vinyl; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-013B	13	Mastic	Tan Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-014A	14	Linoleum	White Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02120
Project/Test Address: 113 South Eagleville Rd.; Storrs
Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02120-014B	14	Mastic	Tan Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-015A	15	Linoleum	White Vinyl; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-015B	15	Mastic	Tan Adhesive; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-016	16		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-017	17		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-018	18		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-019	19		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-020	20		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02120-021	21		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02120
Project/Test Address: 113 South Eagleville Rd.; Storrs
Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02120-022	22		Tan Brittle; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
18-08-02120-023	23		Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous

QC Sample: 25-M22013-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Sami Hosn

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0 VELAP 460172. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM) Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7489 Whitepine Rd
Richmond, VA
23237

Asbestos Chain-of-Custody

18-08-02120

Due Date:
08/20/2018
(Monday)
AE

5

23 Pm

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: 113 South EAGLEVILLE ROAD City/State(required) STORRS MANSFIELD, CT

Collected by: G. GOENT Signature: Mystic Air Client: LENARD ENGINEERING

Turn around time: Standard X One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	1-3	8/14/18	X	POS. STOP	SHEETROCK WALL SYSTEM	X SEE ROSTER X	X BULKS X
2	4-6	↓	↓	↓	SHEETROCK CEILING SYSTEM	↓	↓
3	7-9	↓	↓	↓	LINOLEUM + ADHESIVE	↓	↓
4	10-12	↓	↓	↓	↓	↓	↓
5	13-15	↓	↓	↓	↓	↓	↓
6	16-18	↓	↓	↓	WINDOW GLAZING	↓	↓
7	19-21	↓	↓	↓	↓	↓	↓
8	22	↓	↓	↓	↓	↓	↓
9	23	↓	↓	↓	FLUE CEMENT	↓	↓
10							
11							
12							
13							
14							
15							

Released by: G. GOENT Signature: date: 8/14/18

Received by: Signature: date: 8/15/18 10:15

ENCLOSURE 2 PAGE 1 OF 1

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com mail@2mail.com 800 24[illegible]

* DUE DILIGENCE *

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: 113 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT

DATE: 8/14/18

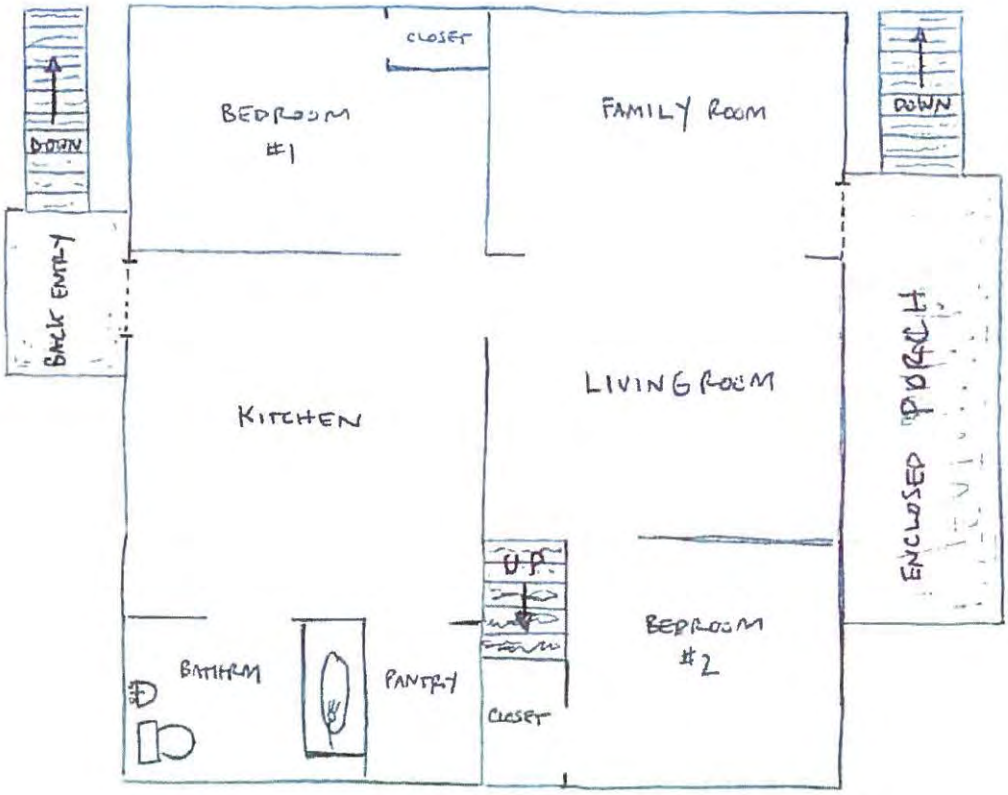
Demo _ Pre-Reno X Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
1-3	SHEETROCK WALL SYSTEM	<2,500ft²	DAMAGED	THROUGHOUT 2ND FLOOR
4-6	SHEETROCK CEILING SYSTEM	<1,250ft²		THROUGHOUT 2ND FLOOR
	ADHESIVE ONLY	50ft²/ALL		2ND FLOOR KITCHEN - BEHIND AND ON WALL PANELS BEHIND OVEN + COUNTER
	↓	80ft²/ALL		2ND FLOOR BATHROOM - BEHIND AND ON FALSE CERAMIC TILES WALL PANELS
7-9	LINOLEUM + ADHESIVE	120ft²/ALL		2ND FLOOR - BATHROOM + PANTRY FLOORS TOP LAYER
10-12	↓	40ft²/ALL		2ND FLOOR - PANTRY BOTTOM LAYER UNDER TOP LAYER
13-15	↓	80ft²/ALL		2ND FLOOR - BATHROOM BOTTOM LAYER UNDER TOP LAYER
	FELT	<3,000ft²		UNDER WOOD FLOORS THROUGHOUT (IF PRESENT)
16-18	WINDOW GLAZING	14 WINDOWS		EXTERIOR - 2ND FLOOR + ATTIC WINDOWS
19-21	↓	8 WINDOWS		EXTERIOR - 1ST FLOOR WINDOWS
22	↓	2 WINDOWS		EXTERIOR - BASEMENT WINDOWS
23	FLUE CEMENT	3ft²/ALL		BASEMENT - AROUND FLUE
	FELT	ALL		EXTERIOR UNDER SIDING (IF PRESENT)
	CAULKING	ALL		IF PRESENT OR FOUND BOTH IN THE EXTERIOR AND INTERIOR
	ROOFING SHINGLES	<3,000ft²		EXTERIOR ROOF
	VAPOR BARRIER	<3,000ft²		EXTERIOR - UNDER SHINGLE ROOFING (IF PRESENT)
	FLASHING	ALL		EXTERIOR - IF PRESENT ON ROOF

COMMENTS

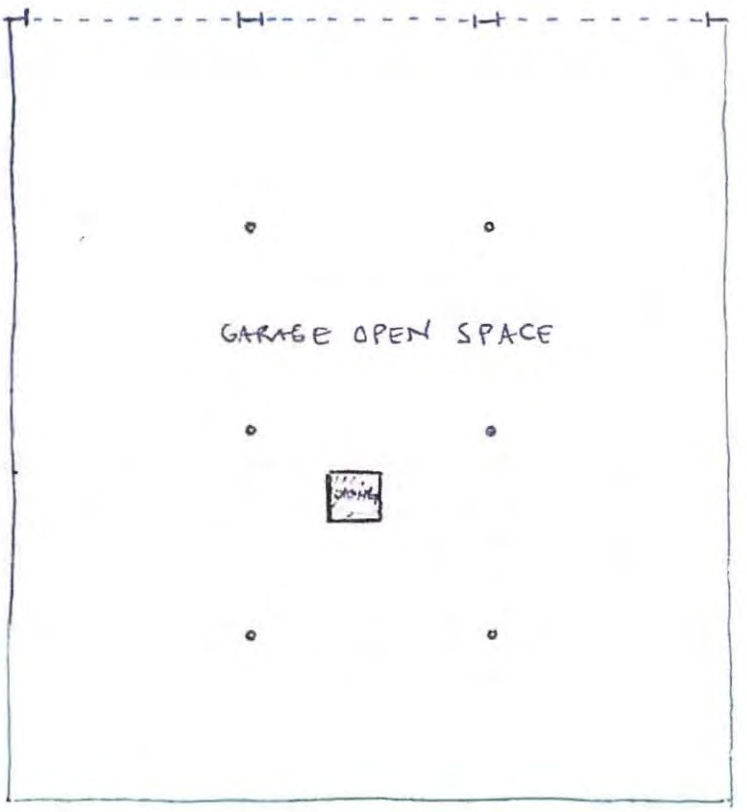
Inspector: G. EIDENT Page 1 of 1

ENCLOSURE 3 PAGE 1 OF 1



113 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT

2ND FLOOR



113 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT

1ST FLOOR

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

August 24, 2018

Mr. Paul Magyar, P.E.
Lenard Engineering, Inc.
2210 Main Street
P.O. Box 1088
Glastonbury, CT 06033

Re: Pre-Demolition Asbestos Survey and Lead TCLP Analysis (8/14/18)
121 Eagleville Road; Storrs Mansfield, CT

Dear Paul:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the locations noted above on August 14th, 2018. This survey was conducted by a State of Connecticut licensed asbestos inspector, Gregory Eident (license #000908) to determine the presence of asbestos-containing materials. The samples were analyzed at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings-

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
24-26	Canvas Wrap/Basement–ductwork	40 ln. ft./All
37-39	Transite/Exterior Siding	<5,000 sq. ft./All

Non-asbestos containing materials-

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings-

As required by state and federal regulations prior to demolition, all of the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Limitations of the survey-

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

Lead TCLP Analysis results-

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste. The result of this sample was below the EPA's TCLP standard of 5 mg/L for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company. We thank you for the opportunity to conduct this survey.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: TCLP Analysis & Chain of Custody
Enclosure 5: Reference Diagram

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 18-08-02174

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 08/15/2018
Analyzed Date: 08/16/2018
Reported Date: 08/20/2018

Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-001	1		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-002	2		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-003	3		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-004	4		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-005	5		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-006	6		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-007	7		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-008	8		Gray Granular; White Paint; Inhomogeneous	NAD	1% Hair 99% Non-Fibrous
18-08-02174-009	9		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
18-08-02174-010	10		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
18-08-02174-011	11		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
18-08-02174-012	12		Brown Fibrous; White Paint; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-013	13		Brown Fibrous; White Paint; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
18-08-02174-014	14		Brown Fibrous; White Paint; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
18-08-02174-015A	15	Linoleum	Beige Vinyl; Homogeneous	NAD	4% Fibrous Glass 96% Non-Fibrous
18-08-02174-015B	15	Mastic	Tan Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
18-08-02174-016A	16	Linoleum	Beige Vinyl; Homogeneous	NAD	4% Fibrous Glass 96% Non-Fibrous
18-08-02174-016B	16	Mastic	Tan Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
18-08-02174-017A	17	Linoleum	Beige Vinyl; Homogeneous	NAD	4% Fibrous Glass 96% Non-Fibrous
18-08-02174-017B	17	Mastic	Tan Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-018A	18	Linoleum I	Brown Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-018B	18	Mastic I	Tan Adhesive; Homogeneous	NAD	7% Cellulose 93% Non-Fibrous
18-08-02174-018C	18	Linoleum II	Blue Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-018D	18	Mastic II	Brown Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
18-08-02174-019A	19	Linoleum I	Brown Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-019B	19	Mastic I	Tan Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
18-08-02174-019C	19	Linoleum II	Blue Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-019D	19	Mastic II	Brown Adhesive; Homogeneous	NAD	6% Cellulose 94% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-020A	20	Linoleum I	Brown Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-020B	20	Mastic I	Tan Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
18-08-02174-020C	20	Linoleum II	Blue Vinyl; Black Fibrous; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
18-08-02174-020D	20	Mastic II	Brown Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
18-08-02174-021A	21	Linoleum	Tan Vinyl; Tan Fibrous; Inhomogeneous	NAD	35% Cellulose 5% Fibrous Glass 60% Non-Fibrous
18-08-02174-021B	21	Mastic	Tan Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
18-08-02174-022A	22	Linoleum	Tan Vinyl; Tan Fibrous; Inhomogeneous	NAD	35% Cellulose 5% Fibrous Glass 60% Non-Fibrous
18-08-02174-022B	22	Mastic	Tan Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-023A	23	Linoleum	Tan Vinyl; Tan Fibrous; Inhomogeneous	NAD	35% Cellulose 5% Fibrous Glass 60% Non-Fibrous
18-08-02174-023B	23	Mastic	Tan Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
18-08-02174-024	24		Tan Fibrous; Homogeneous	55% Chrysotile	37% Cellulose 8% Non-Fibrous
			Total Asbestos:	**55%**	
18-08-02174-025	25			Did Not Analyze (Positive Stop)	
18-08-02174-026	26			Did Not Analyze (Positive Stop)	
18-08-02174-027	27		Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
18-08-02174-028	28		Gray Powder; Homogeneous	NAD	19% Fibrous Glass 81% Non-Fibrous
18-08-02174-029	29		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02174-030	30		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-031	31		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02174-032	32		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02174-033	33		Tan Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
18-08-02174-034	34		Tan Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
18-08-02174-035	35		Tan Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
18-08-02174-036	36		Gray Brittle; Homogeneous	NAD	100% Non-Fibrous
18-08-02174-037	37		Gray Cementitious; Homogeneous	20% Chrysotile	80% Non-Fibrous
			Total Asbestos:	**20%**	
18-08-02174-038	38			Did Not Analyze (Positive Stop)	
18-08-02174-039	39			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-040	40		Black Fibrous; Homogeneous	NAD	95% Cellulose 5% Non-Fibrous
18-08-02174-041	41		Black Fibrous; Homogeneous	NAD	95% Cellulose 5% Non-Fibrous
18-08-02174-042	42		Black Fibrous; Homogeneous	NAD	95% Cellulose 5% Non-Fibrous
18-08-02174-043	43		Black Tar; Gray Granular; Inhomogeneous	NAD	14% Fibrous Glass 86% Non-Fibrous
18-08-02174-044	44		Black Tar; Gray Granular; Inhomogeneous	NAD	14% Fibrous Glass 86% Non-Fibrous
18-08-02174-045	45		Black Tar; Gray Granular; Inhomogeneous	NAD	14% Fibrous Glass 86% Non-Fibrous
18-08-02174-046	46		Black Tar; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
18-08-02174-047	47		Black Tar; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174
Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
18-08-02174-048	48		Black Tar; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
18-08-02174-049	49		Black Tar; Homogeneous	Trace <1% Chrysotile	23% Cellulose 77% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
18-08-02174-050	50		Black Tar; Homogeneous	Trace <1% Chrysotile	23% Cellulose 77% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
18-08-02174-051	51		Black Tar; Homogeneous	Trace <1% Chrysotile	23% Cellulose 77% Non-Fibrous
			Total Asbestos:	**Trace <1%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 18-08-02174

Project/Test Address: 121 Eagleville Road; Storrs Mansfield, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 25-M22013-4, 30-M22009-3

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0 VELAP 460172. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com 7469 Whitepine Rd
(800)347-4010 Richmond, VA
(804)275-4907 (fax) 23237

Asbestos Chain-of-Custody

18-08-02174

Due Date: 08/20/2018 (Monday)

AE

5 PLEX

CHS

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: 121 EAGLEVILLE ROAD City/State(required) STORRS MANSFIELD, CT

Collected by: G. EDENT Signature Mystic Air Client: LENARD ENGINEERING, INC.

Turn around time: Standard X One day (will call ahead)

No.	Client's Sample No.	Date Collected	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	1-5	8/14/18	X	POS. STOP	PLASTER WALL SYSTEM	X SEE ROSTER X	X BULKS X
2	6-8				PLASTER CEILING SYSTEM		
3	9-11				SHEETROCK CEILING SYSTEM		
4	12-14				CEILING PANELS		
5	15-17				LINOLEUM + ADHESIVE		
6	18-20				FLOOR TILE + MASTIC		
7	21-23				LINOLEUM + ADHESIVE		
8	24-26				CANVAS WRAP		
9	27				FLUE CEMENT		
10	28				TSI INSULATION		
11	29-31			POS. STOP	WINDOW GLAZING		
12	32						
13	33						
14	34-36			POS. STOP	CAULKING		
15	37-39				TRANSITE		

Released by: G. EDENT Signature: date: 8/14/18

Received by: S Wirolla Signature: date: 8/15/18 11:22 am

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Asbestos Chain-of-Custody

2174

– For Lab Use Only –

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: meqc2@aol.com Acct. Number: 07-2564

Project Name and Address: 121 EAGLEVILLE ROAD City/State(required) STORRS MANSFIELD, CT

Collected by: G. EDENT Signature Mystic Air Client: LENARD ENGINEERING, INC.

Turn around time: Standard X One-day ____ (will call ahead)

No.	Client's Sample No.	Date Collected	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	40-42	8/14/18	X	POS. STOP	FELT	X SEE ROSTER X	X BULKS X
2	43-45	↓	↓	↓	ROOFING SHINGLES	↓	↓
3	46-48	↓	↓	↓	VAPOR BARRIER	↓	↓
4	49-51	↓	↓	↓	ROOFING	↓	↓
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: G. EDENT Signature: date: 8/14/18

Received by: S. Nicolella Signature: S. Nicolella date: 8/15/18 11:22am

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: 121 EAGLEVILLE ROAD
STORRS MANSFIELD, CT

DATE: 8/14/18

X Demo __ Pre-Reno __ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
1-5	PLASTER WALL SYSTEM	<5,000ft²	DAMAGED	THROUGHOUT
6-8	PLASTER CEILING SYSTEM	<3,000ft²		THROUGHOUT (ALSO BEHIND OTHER CEILING SYSTEM)
9-11	SHEETROCK CEILING	<500ft²		1ST FLOOR LIVING AND FAMILY ROOM
12-14	CEILING PANELS	200ft²		1ST FLOOR KITCHEN CEILING
15-17	LINOLEUM + ADHESIVE	260ft²/ALL		1ST FLOOR KITCHEN + PANTRY TOP LAYER ON FLOOR
18-20	FLOOR TILE + MASTIC	260ft²/ALL		1ST FLOOR KITCHEN UNDER PLYBOARD AND PANTRY UNDER TOP LAYER OF LINOLEUM, BOTTOM LAYER - PINK + TEAL PATTERN
21-23	LINOLEUM + ADHESIVE	64ft²		2ND FLOOR BATHROOM
24-26	CANVAS WRAP	40LNFT/ALL		ON DUCTWORK AROUND TUBES AND AT JOINTS IN BASEMENT AND HOUSE
27	FLUE CEMENT	3ft²/ALL		BASEMENT AROUND FLUE (GREY BRITTLE)
28	TSI INSULATION	3ft²/ALL		BASEMENT AROUND FLUE (SOFT/FRIABLE)
29-31	WINDOW GLAZING	22 WINDOWS		EXTERIOR WINDOWS
32	↓	2 WINDOWS		EXTERIOR - 2 SMALL KITCHEN WINDOWS
33	↓	1 WINDOW		EXTERIOR - 1 SMALL WINDOW ON SIDED
34-36	CAULKING	ALL		EXTERIOR - AROUND WINDOWS, DOORS, AT PERIMETERS, ON TRANSITE
37-39	TRANSITE	<5,000ft²/ALL		EXTERIOR - SIDING
40-42	FELT	<5,000ft²/ALL		EXTERIOR - UNDER TRANSITE SIDING
43-45	ROOFING SHINGLES	<3,500ft²		EXTERIOR - PITCHED ROOFING ON HOUSE

COMMENTS

Inspector: G. EDENT Page 1 of 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: 121 EAGLEVILLE ROAD
STORRS MANSFIELD, CT

DATE: 8/14/18

X Demo __ Pre-Reno __ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
46-48	VAPOR BARRIER	<3,500 ft²	DAMAGED	EXTERIOR - UNDER ROOFING SHINGLES
49-51	ROOFING	100 ft²/ALL		EXTERIOR - ON SHED

COMMENTS.

Inspector: G EIDENT Page 2 of 2

EHS Laboratories

Environmental Hazards Services, L.L.C
7469 Whitepine Rd
Richmond, VA 23237
Telephone 800 347.4010

Lead TCLP Analysis Report

Report Number: 18-08-02183

Client Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 08/15/2018
Analyzed Date: 08/17/2018
Reported Date: 08/17/2018

Project/Test Address: 121 South Eagleville Road, Storrs Mansfield, CT

Client Number: 07-2564

Laboratory Results

Fax Number: 860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
18-08-02183-001	1	Bldg Debris	100	<0 50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0 50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714

Legend g = gram ppm = parts per million mg/L = milligrams per liter

18-08-02183

Due Date:
08/20/2018
(Monday)
AE
1 Pb TCLP

EHS Laboratories

Environmental Hazards Services, LLC
www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

Metals Chain-of-Custody

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: _____ Acct. Number: 07-2564

Project Name/Testing Address: 121 SOUTH EAGLEVILLE ROAD City/State(required) STORRS MANSFIELD, CT

Collected by: G. GOENT Certification Number: _____ Purchase Order Number: LENARD ENGINEERING

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

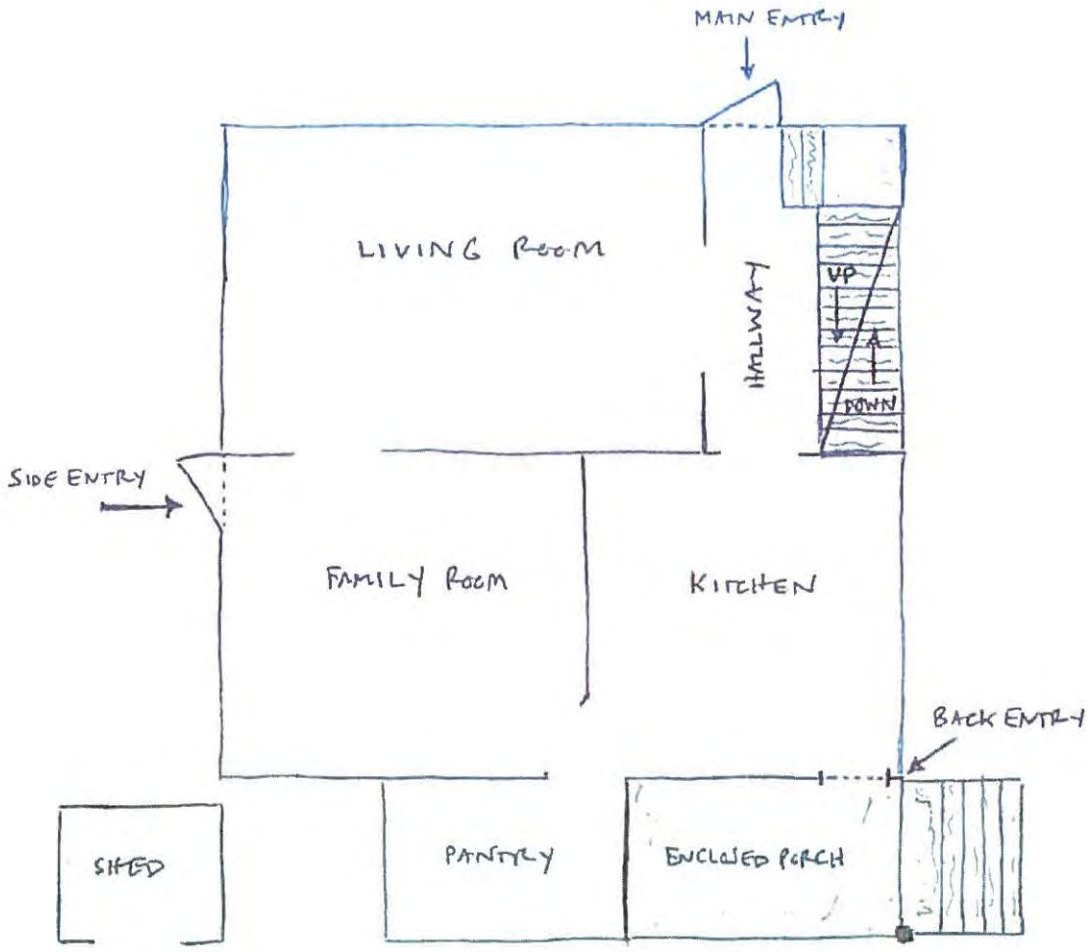
____ 1 - Day ____ 2 - Day X 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	H-1	8/14/18	X														
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: G. GOENT Signature: [signature] Date/Time: 8/14/18

Received by: S. Mccalla Signature: [signature] Date/Time: 8/15/18 11:28a

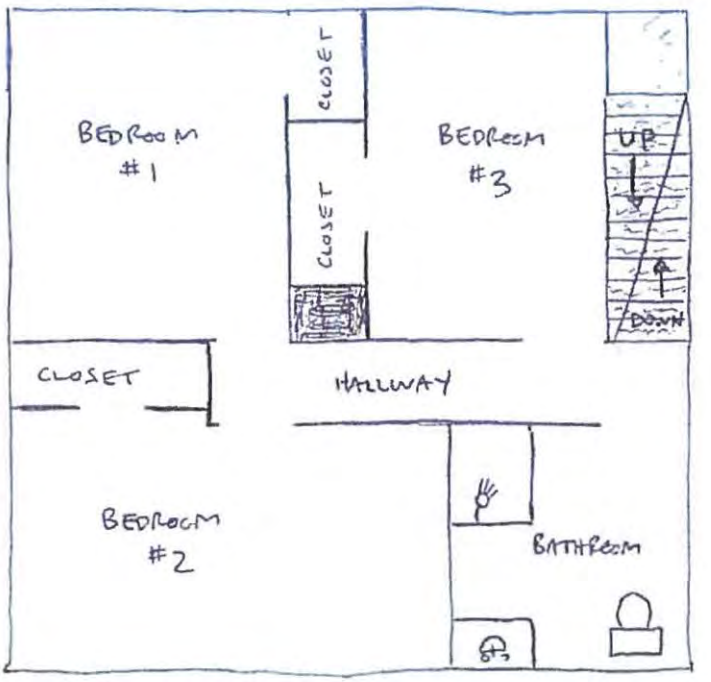
ENCLOSURE 4 PAGE 2 OF 2



121 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT

1ST FLOOR

ENCLOSURE 5 PAGE 1 OF 2



121 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT

2ND FLOOR

ENCLOSURE 5 PAGE 2 OF 2

Appendix D

EDR Report and Mansfield Assessor's Records

Property Location: 113-121 SO EAGLEVILLE RD | MAP ID: 16/ 57/ 5/ / | Bldg Name: | State Use: 904R

Vision ID: 1599 | Account # 16 57 5 | Bldg #: 1 of 2 | Sec #: 1 of 1 | Card 1 of 2 | Print Date: 06/02/2016 14:09

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
MANSFIELD NON-PROFIT HOUSING I	1 Level	1 Well	1 Paved	
309 MAPLE RD		2 Septic		
STORRS, CT 06268				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:
Census 8815
Devel. Lot#

GIS ID: 16.57.5 | ASSOC PID#

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
Ex R Land	11	76,400	53,500
Ex Res	13	187,500	131,270
Exempt OB	14	1,200	800
	Total	265,100	185,570

6078
MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
MANSFIELD NON-PROFIT HOUSING DEVELOPMEN	764/ 555	06/13/2014	U	I	235,000	16
CHAK PHILLIP &	311/ 458	09/20/1991	U	I		25
CHAK MILDRED B & PATRICIA A	160/ 185		U	I		

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	11	53,500	2014	1-1	53,500	2014	1-1	47,400
2015	13	131,270	2014	1-3	131,200	2014	1-3	51,900
2015	14	800	2014	1-4	800			
	Total:	185,570		Total:	185,500		Total:	99,300

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0001/A				

NOTES

#113 CAPE,YELLOW,CONC FDN
113-121 SO EAGLEVILLE 2 HSES ON 1 LOT

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	174,100
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	1,200
Appraised Land Value (Bldg)	67,700
Special Land Value	0
Total Appraised Parcel Value	265,100
Valuation Method:	O
Adjustment:	0
Net Total Appraised Parcel Value	265,100

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpose/Result
01/08/2016			MT	32	Review Post Reval
12/15/2014			BL	22	Notice Change
11/25/2009			AP	16	Appraiser Date
07/27/2009			IL	15	Collector Date

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST Idx	Adj.	Notes- Adj	Special Pricing Spec Use	Spec Calc	S Adj Fact	Adj Unit Price	Land Value
1	904R	Hsng Auth Res	RAR9(				2.00	AC	135,000.00	1.0000	5	1.0000	1.00	1090	0.90				.00	121,500.00	67,700

Total Card Land Units: 2.00 AC | Parcel Total Land Area: 4.49 AC | Total Land Value: 67,700

Property Location: 113-121 SO EAGLEVILLE RD | *MAP ID:* 16/ 57/ 5/ / | *Bldg Name:* | *State Use:* 904R

Vision ID: 1599 | *Account #* 16 57 5 | *Bldg #:* 1 of 2 | *Sec #:* 1 *of* 1 *Card* 1 *of* 2 | *Print Date:* 06/02/2016 14:09

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	04		Cape Cod
Model	01		Residential
Grade	07		B-
Story Height	1.5		
Occupancy	1		
Exterior Wall 1	25		Vinyl
Exterior Wall 2			
Roof Structure	03		Gable
Roof Cover	03		Asphalt Shingl
Interior Wall 1	05		Drywall
Interior Wall 2			
Interior Flr 1	14		Carpet
Interior Flr 2	11		Ceram Clay Til
Heat Fuel	03		Gas
Heat Type	04		Forced Air
AC Type	01		None
Total Bedrooms	02		2 Bedrooms
Total Bthrms	1		
Total Half Baths			
Extra Fixtures			
Total Rooms	5		
Bath Style	02		Average
Kitchen Style	02		Average
Finished Bsmt			
Extra Kitchen			
Fireplace Stack			
FP Opening(s)			
FBM Type			

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

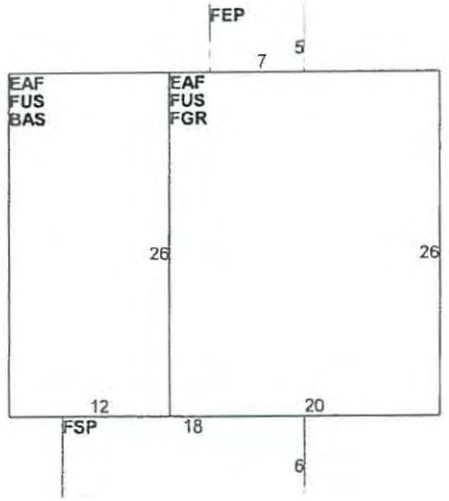
MIXED USE

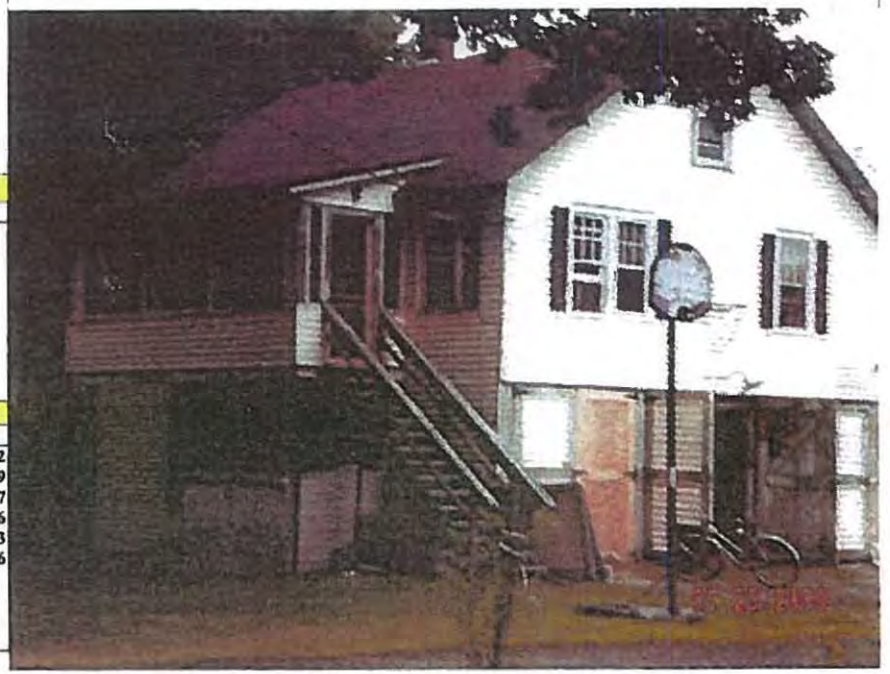
Code	Description	Percentage
904R	Hsng Auth Res	100

COST/MARKET VALUATION

Adj. Base Rate:	168.28
AYB	1930
Dep Code	F
Remodel Rating	
Year Remodeled	
Dep %	38
Functional Obsinc	
External Obsinc	
Cost Trend Factor	1
Condition	
% Complete	
Overall % Cond	62
Apprais Val	174,100
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

#113





OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	I/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
SHD1	Shed			L	96	12.00	1955	C		F	50	600
SHD1	Shed			L	96	12.00	1955	C		F	50	600

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	312	312		168.28	52,502
EAF	Expansion Attic Finished	291	832		58.86	48,969
FEP	Enclosed Porch	0	35		120.20	4,207
FGR	Garage	0	520		58.90	30,626
FSP	Screened Porch	0	108		42.07	4,543
FUS	Finished Upper Story	832	832		168.28	140,006
	Ttl. Gross Liv/Lease Area:	1,435	2,639			

Property Location: 113-121 SO EAGLEVILLE RD *MAP ID:* 16/ 57/ 5/ / *Bldg Name:* *State Use:* 904R

Vision ID: 1599 *Account #* 16 57 5 *Bldg #:* 2 of 2 *Sec #:* 1 of 1 *Card* 2 *of* 2 *Print Date:* 06/02/2016 14:09

CONSTRUCTION DETAIL

Element	Cd.	Ch	Description
Style	03		Colonial
Model	01		Residential
Grade	07		B-
Story Height	2		
Occupancy	1		
Exterior Wall 1	14		Wood Shingles
Exterior Wall 2			
Roof Structure	03		Gable
Roof Cover	03		Asphalt Shingl
Interior Wall 1	03		Plaster
Interior Wall 2			
Interior Flr 1	12		Hardwood
Interior Flr 2	06		Vnl Linolium
Heat Fuel	02		Oil
Heat Type	14		No-Duct
AC Type	01		None
Total Bedrooms	03		3 Bedrooms
Total Bthrms	1		
Total Half Baths			
Extra Fixtures			
Total Rooms	6		
Bath Style	02		Average
Kitchen Style	02		Average
Finished Bsmt			
Extra Kitchen			
Fireplace Stack			
FP Opening(s)			
FBM Type			

CONSTRUCTION DETAIL (CONTINUED)

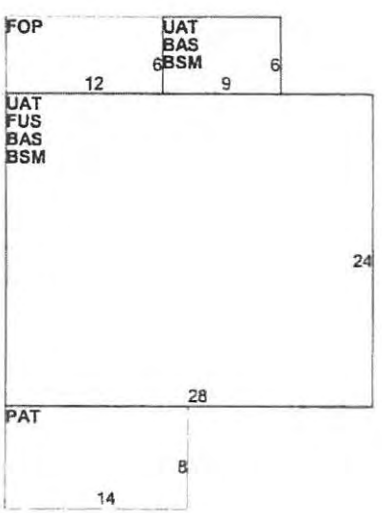
Element	Cd	Ch	Description

MIXED USE

Code	Description	Percentage
904R	Hsng Auth Res	100

COST/MARKET VALUATION

Adj. Base Rate:	171.92
AYB	1915
Dep Code	F
Remodel Rating	
Year Remodeled	
Dep %	38
Functional Obsline	
External Obsline	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	62
Apprais Val	174,900
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	726	726		171.92	124,812
BSM	Basement	0	726		34.34	24,928
FOP	Framed Open Porch	0	72		33.43	2,407
FUS	Finished Upper Story	672	672		171.92	115,528
PAT	Patio	0	112		16.88	1,891
UAT	Unfinished Attic	0	726		17.29	12,550
	Ttl. Gross Liv/Lease Area:	1,398	3,034			

Property Location: 113-121 SO EAGLEVILLE RD | MAP ID: 16/ 57/ 5/ / | Bldg Name: | State Use: 904R

Vision ID: 1599 | Account # 16 57 5 | Bldg #: 2 of 2 | Sec #: 1 of 1 | Card 2 of 2 | Print Date: 06/02/2016 14:09

CURRENT OWNER

MANSFIELD NON-PROFIT HOUSING I
309 MAPLE RD
STORRS, CT 06268
Additional Owners:

TOPO. / UTILITIES / STRT./ROAD / LOCATION

TOPO.	UTILITIES	STRT./ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Other ID:
Census 8815
Devel. Lot#

GIS ID: 16.57.5 | ASSOC PID#

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
Ex R Land	11	76,400	53,500
Ex Res	13	187,500	131,270
Exempt OB	14	1,200	800
Total		265,100	185,570

6078
MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	vi	SALE PRICE	V.C.
MANSFIELD NON-PROFIT HOUSING DEVELOPMEN	764/ 555	06/13/2014	U	I	235,000	16
CHAK PHILLIP &	311/ 458	09/20/1991	U	I		25
CHAK MILDRED B & PATRICIA A	160/ 185		U	I		

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr	Code	Assessed Value	Yr	Code	Assessed Value
2015	11	53,500	2014	1-1	53,500	2014	1-1	47,400
2015	13	131,270	2014	1-3	131,200	2014	1-3	51,900
2015	14	800	2014	1-4	800			
	Total:	185,570		Total:	185,500		Total:	99,300

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0001/A				

NOTES

#121 COLONIAL,6RMS,WHITE,STONE FDN
2015 GL-KEPT LAND VALUE SAME AS 2014.IT
HAD INCREASED WITH LUC CHG TO EXEMPT
M3 EXEMPT APPL SUBMITTED 11.02.2015

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	174,900
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	8,700
Special Land Value	0
Total Appraised Parcel Value	265,100
Valuation Method	O
Adjustment:	0
Net Total Appraised Parcel Value	265,100

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
01/08/2016			MT	32	Review Post Reval
12/15/2014			BL	22	Notice Change
11/25/2009			AP	16	Appraiser Date
07/27/2009			IL	15	Collector Date

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S A	Acre Disc	C Factor	ST Idx	Adj.	Notes- Adj	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj Fact	Adj Unit Price	Land Value
2	904R	Hsng Auth Res					2.49	AC	3,500.00	1.0000	0	1.0000	1.00		0.00				1.00	3,500.00	8,700

Total Card Land Units: 2.49 AC | Parcel Total Land Area: 4.49 AC | Total Land Value: 8,700

121 South Eagleville Road
121 South Eagleville Road
Storrs Mansfield, CT 06268

Inquiry Number: 5393627.3
August 15, 2018

Certified Sanborn® Map Report

EDR®

6 Armstrong Road 4th floor
Shelton CT 06484
Toll Free 800 352 0050
www.edrnet.com

Certified Sanborn® Map Report

08/15/18

Site Name:	Client Name:
121 South Eagleville Road	Lenard Engineering, Inc.
121 South Eagleville Road	2210 Main St.
Storrs Mansfield, CT 06268	Glastonbury, CT 06033
EDR Inquiry # 5393627.3	Contact: Tricia Canterbury

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated

Certified Sanborn Results:

Certification # A93E-4BB7-9E77

PO # NA

Project South Eagleville Road Project

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found

Sanborn® Library search results

Certification #: A93E-4BB7-9E77

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- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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121 South Eagleville Road
121 South Eagleville Road
Storrs Mansfield, CT 06268

Inquiry Number: 5393627.4
August 15, 2018

EDR Historical Topo Map Report
with QuadMatch™

6 Armstrong Road 4th floor
Shelton, CT 06484
Toll Free 800 352 0050
www.edrnet.com

EDR Historical Topo Map Report

08/15/18

Site Name:	Client Name:
121 South Eagleville Road	Lenard Engineering, Inc.
121 South Eagleville Road	2210 Main St.
Storrs Mansfield, CT 06268	Glastonbury, CT 06033
EDR Inquiry # 5393627.4	Contact: Tricia Canterbury

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Lenard Engineering, Inc were identified for the years listed below EDR s Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	41.796105 41° 47' 46" North
Project:	South Eagleville Road Project	**Longitude:**	-72.24947 -72° 14' 58" West
		UTM Zone:	Zone 18 North
		UTM X Meters:	728528.04
		UTM Y Meters:	4630795.77
		Elevation:	637.07' above sea level

Maps Provided:

2012	1915
1983	1892
1970	
1953	
1948	
1945	
1943, 1944	
1921	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Coventry

7.5-minute, 24000

Spring Hill

7.5-minute, 24000

1983 Source Sheets

Coventry

7.5-minute, 24000
Aerial Photo Revised 1980

Spring Hill

7.5-minute, 24000
Aerial Photo Revised 1980

1970 Source Sheets

South Coventry

7.5-minute, 24000
Aerial Photo Revised 1970

Spring Hill

7.5-minute, 24000
Aerial Photo Revised 1970

COVENTRY

7.5-minute, 24000
Photo Revised 1970

1953 Source Sheets

Spring Hill

7.5-minute, 24000

South Coventry

7.5-minute, 24000

COVENTRY

7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1948 Source Sheets

COVENTRY

7.5-minute, 25000

1945 Source Sheets

Spring Hill

7 5-minute, 31680

1943, 1944 Source Sheets

SPRING HILL

7 5-minute 31680

South Coventry

7 5-minute, 31680

1921 Source Sheets

Woodstock

15-minute, 62500

Tolland

15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1915 Source Sheets

WOODSTOCK

15-minute, 62500

TOLLAND

15-minute, 62500

1892 Source Sheets

Woodstock

15-minute, 62500

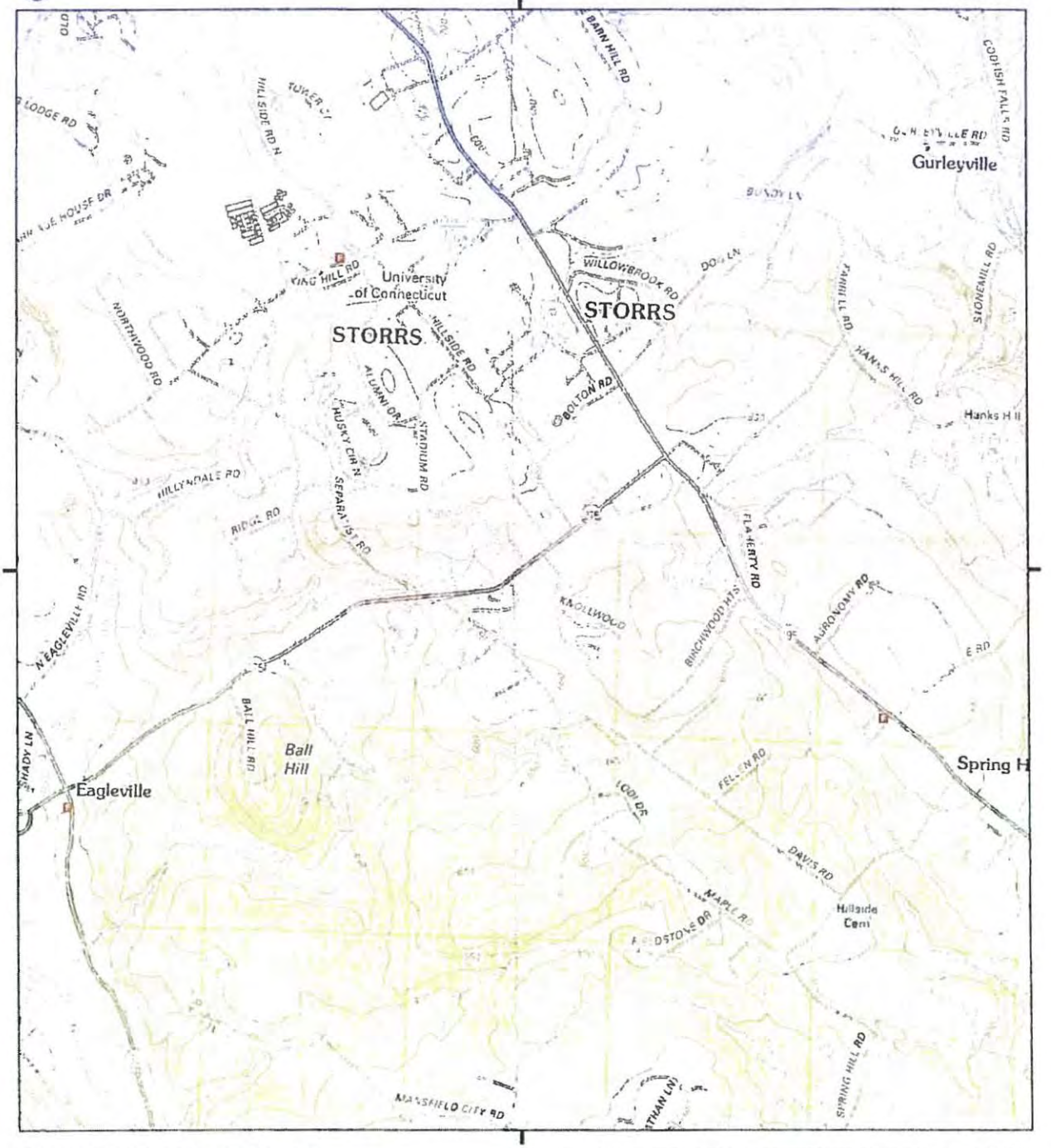
Tolland

15-minute, 62500

EDR

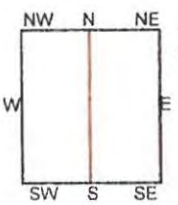
Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Spring Hill, 2012, 7.5-minute
W, Coventry, 2012, 7.5-minute

SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

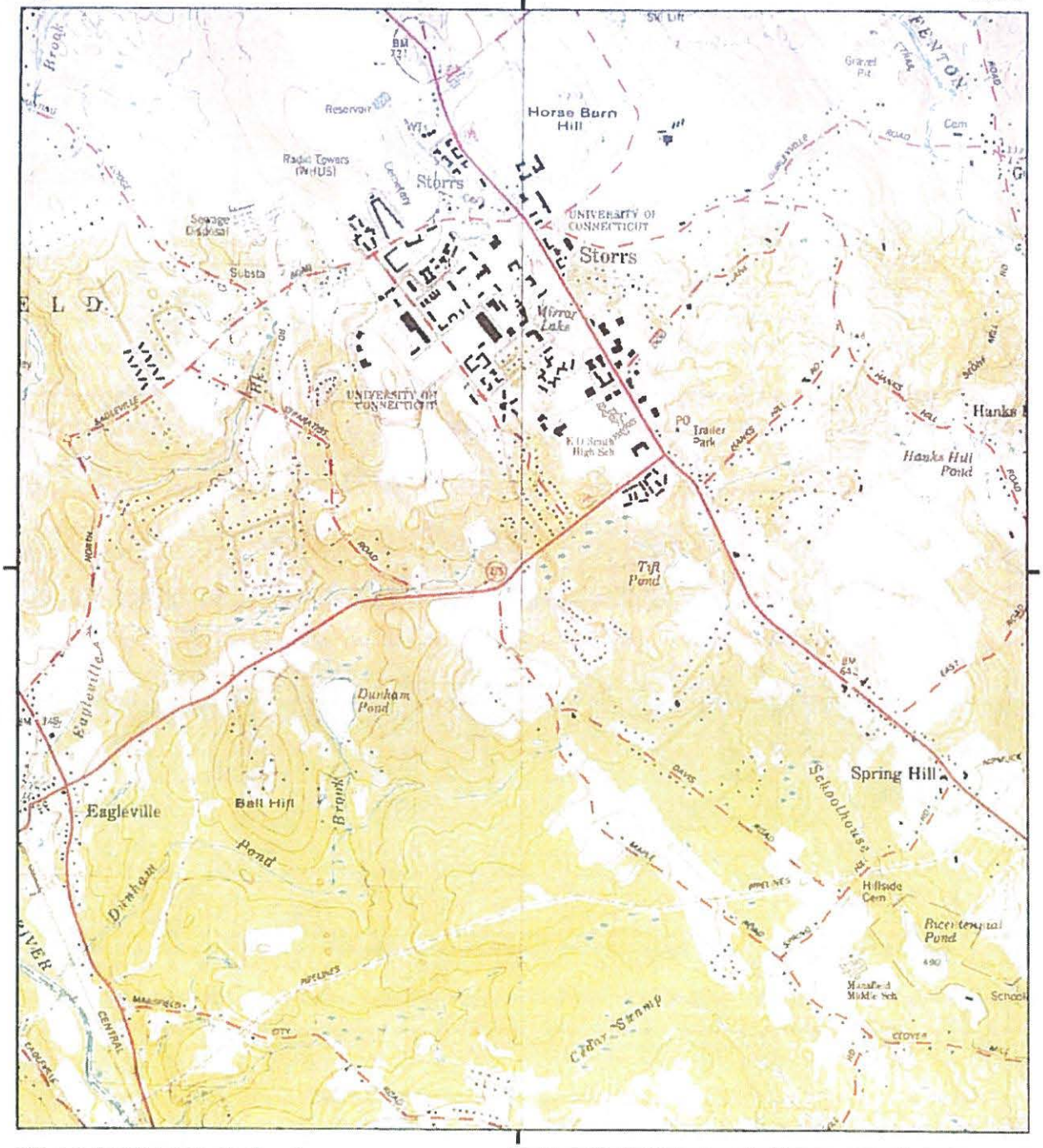
N

5393627 - 4 page 6

EDR

Historical Topo Map

1983



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Spring Hill, 1983, 7.5-minute
W, Coventry, 1983, 7.5-minute

SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

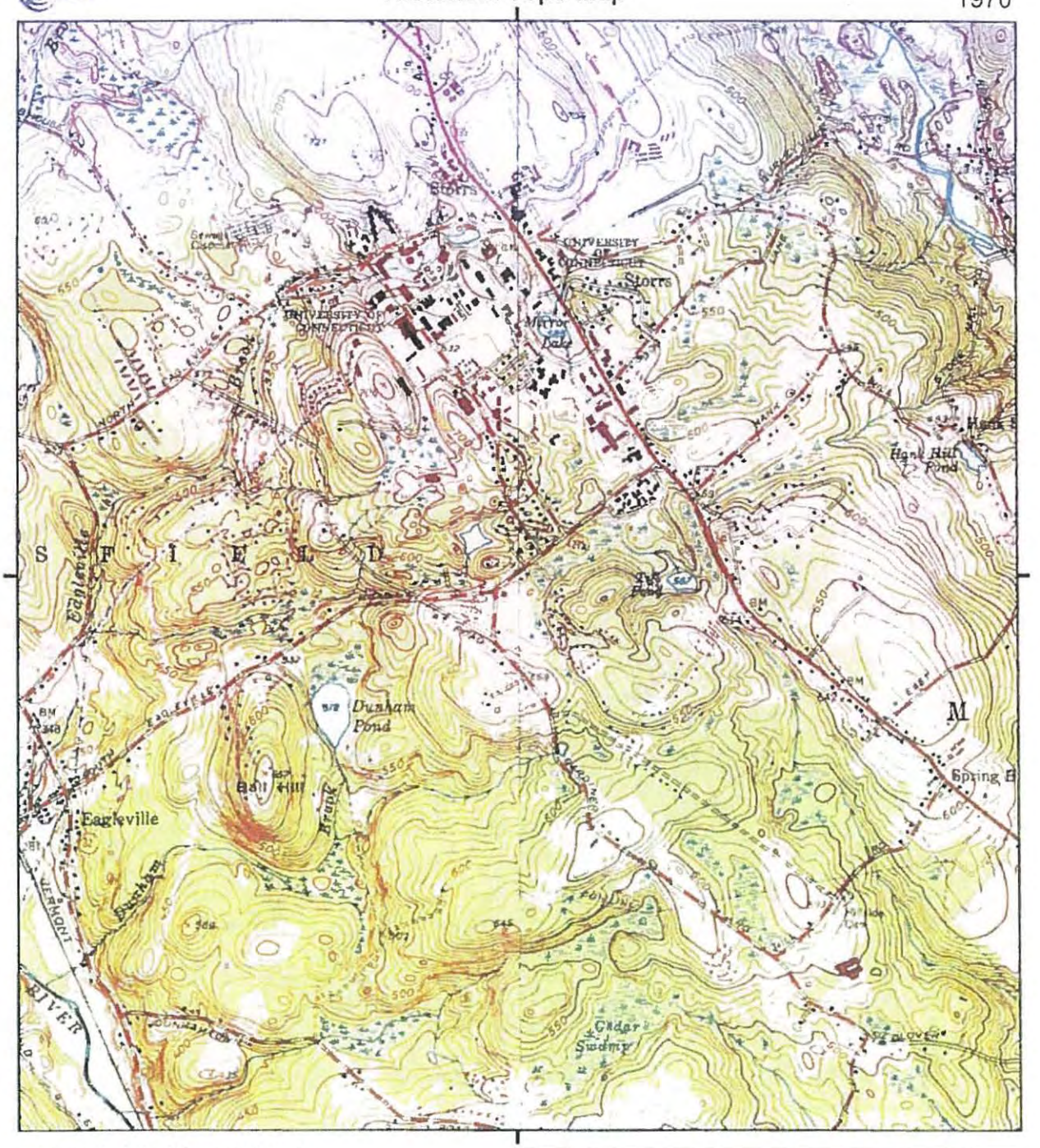
N

5393627 - 4 page 7

EDR

Historical Topo Map

1970



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Spring Hill, 1970, 7.5 minute
W, South Coventry, 1970, 7.5-minute
W, COVENTRY, 1970, 7.5-minute

SITE NAME 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

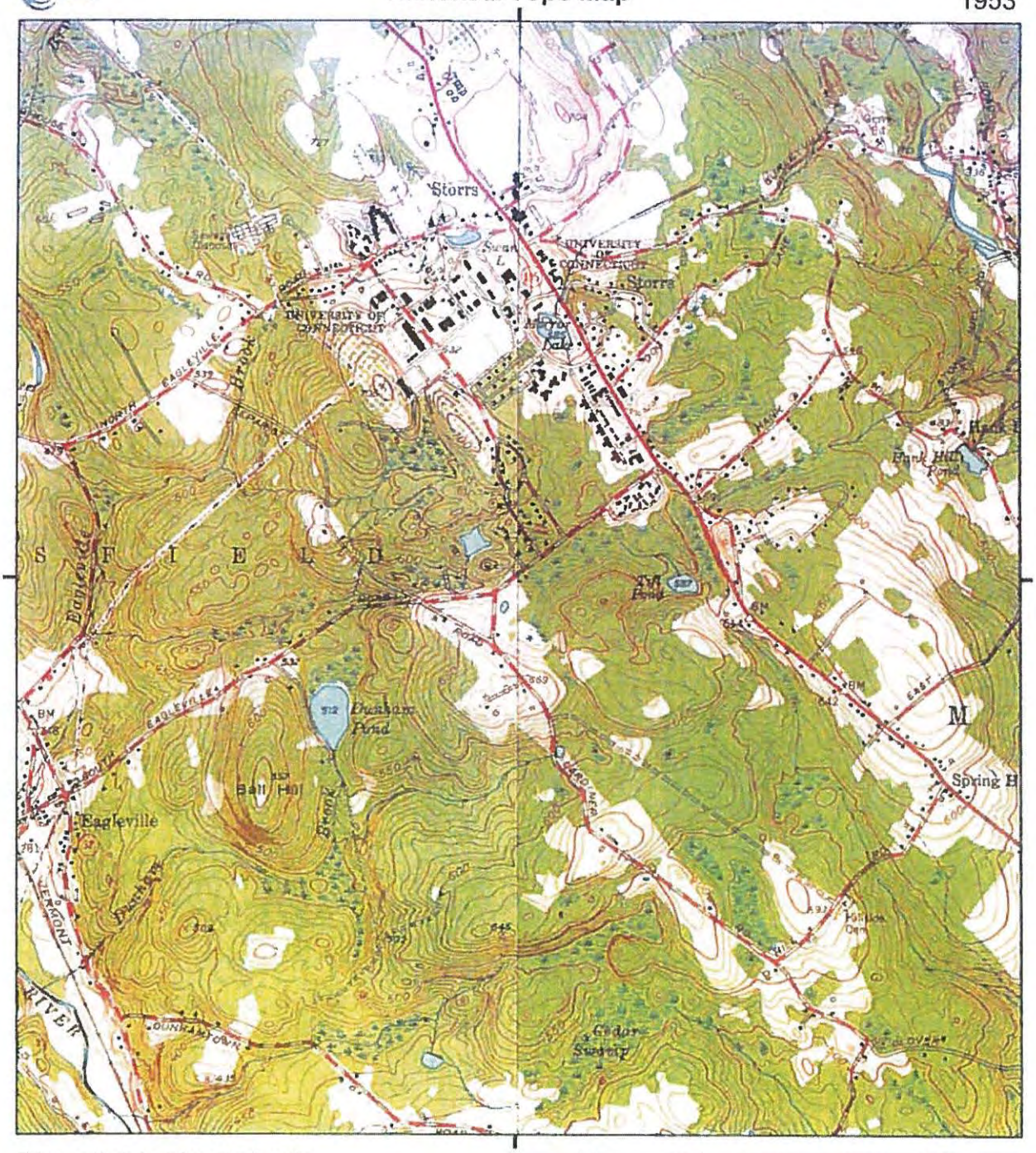
N

5393627 - 4 page 8

EDR

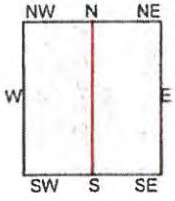
Historical Topo Map

1953



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Spring Hill, 1953, 7.5-minute
W, South Coventry, 1953, 7.5-minute
W, COVENTRY, 1953, 7.5-minute

SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

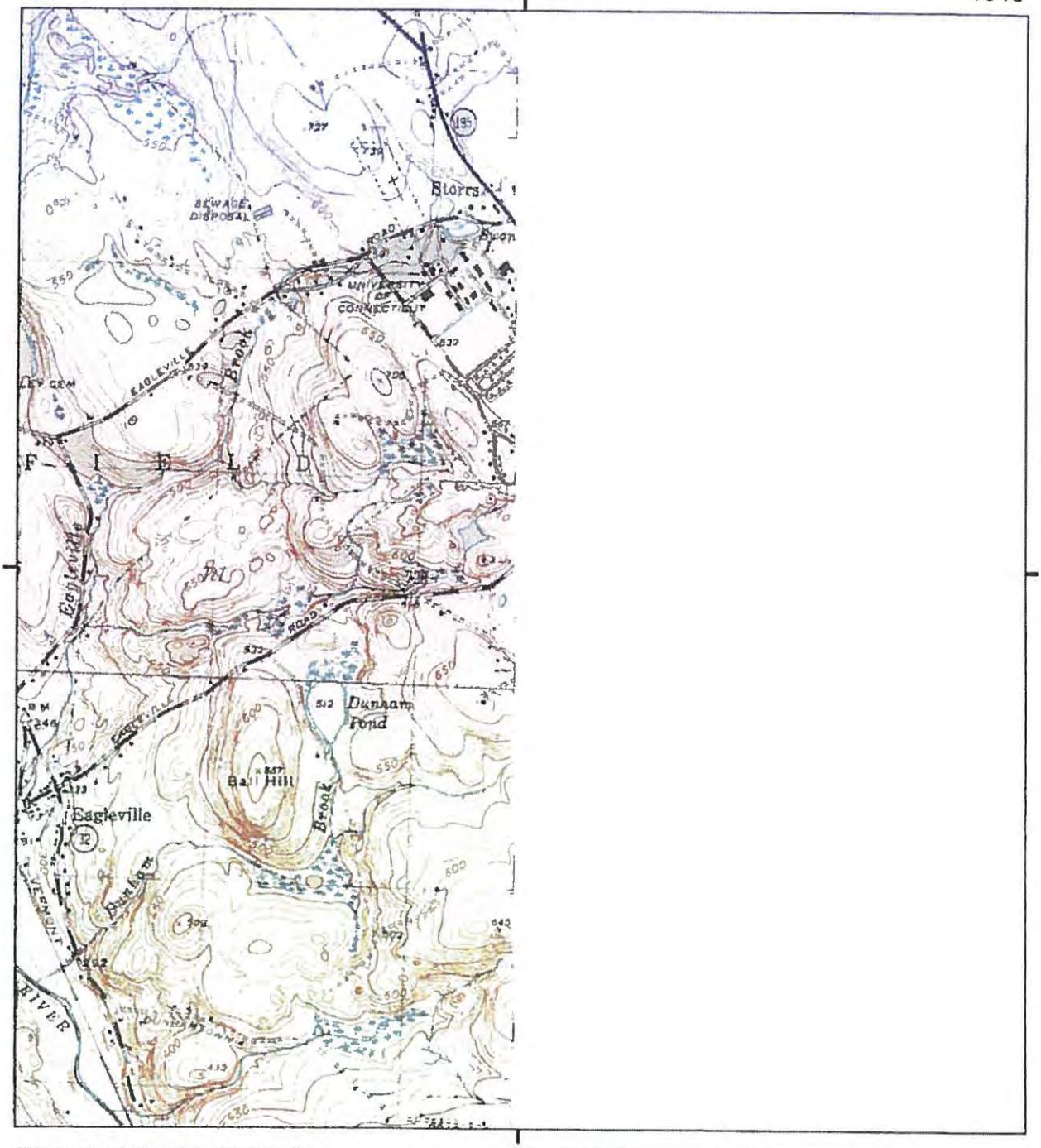
N

5393627 - 4 page 9

EDR

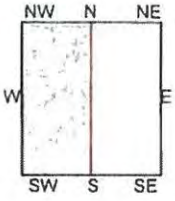
Historical Topo Map

1948



This report includes information from the following map sheet(s).

0 Miles 0 25 0 5 1 1 5



W, COVENTRY, 1948, 7 5-minute

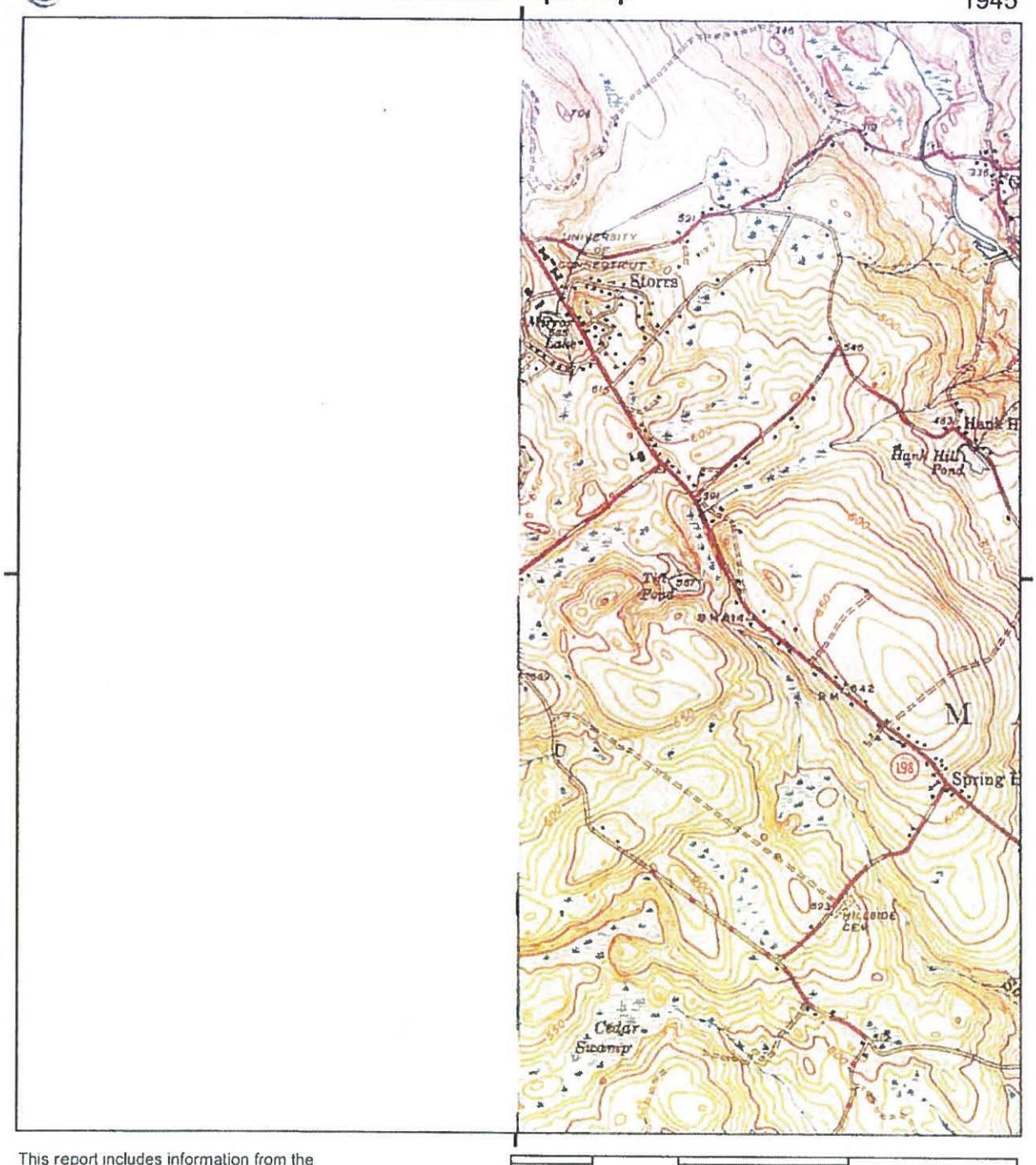
SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

N

EDR

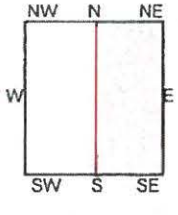
Historical Topo Map

1945



This report includes information from the following map sheet(s).

0 Miles 0 25 0 5 1 1 5



TP, Spring Hill, 1945, 7 5-minute

SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

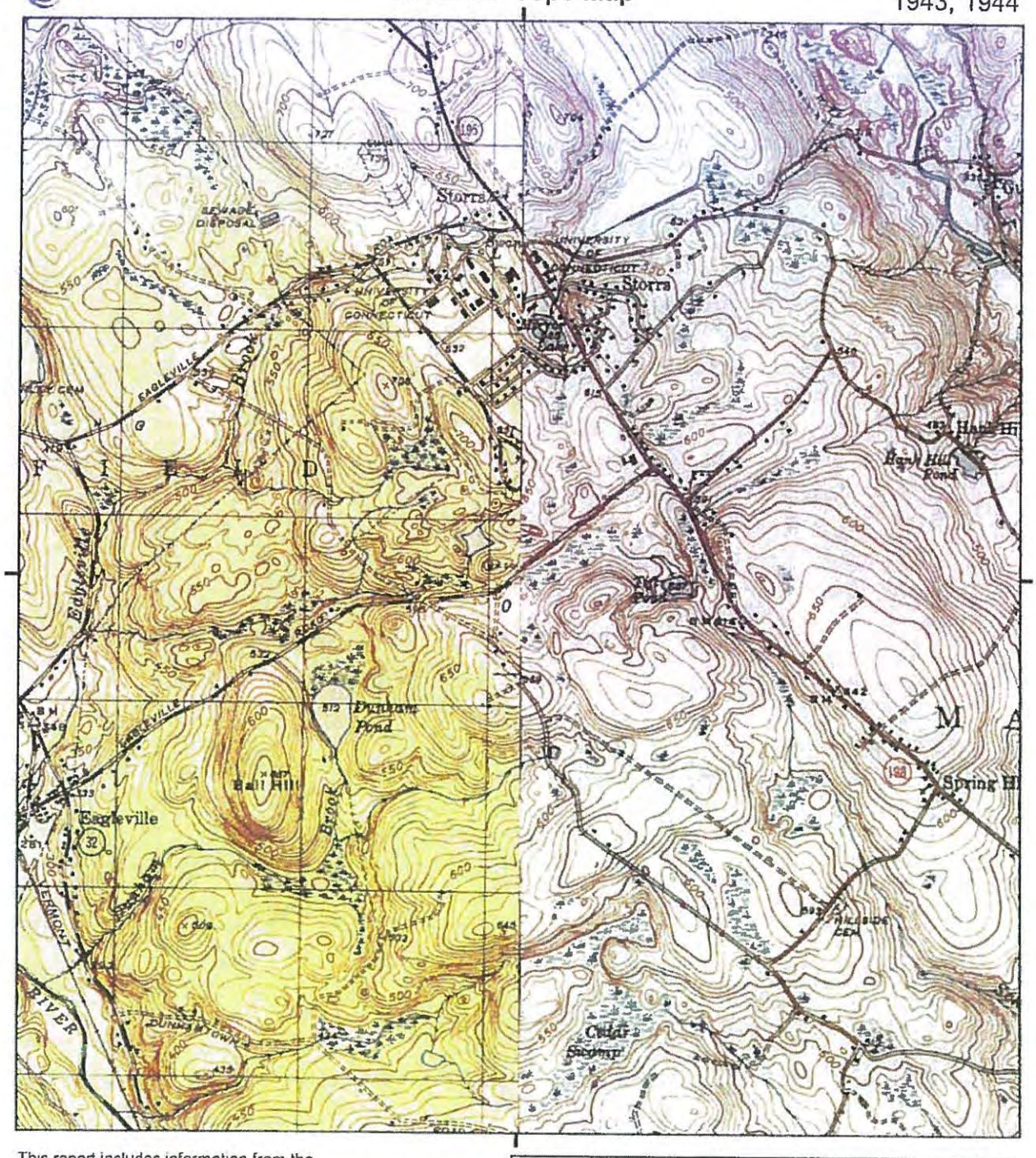
N

5393627 - 4 page 11

EDR

Historical Topo Map

1943, 1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, SPRING HILL, 1943, 7.5-minute
W, South Coventry, 1944, 7.5-minute

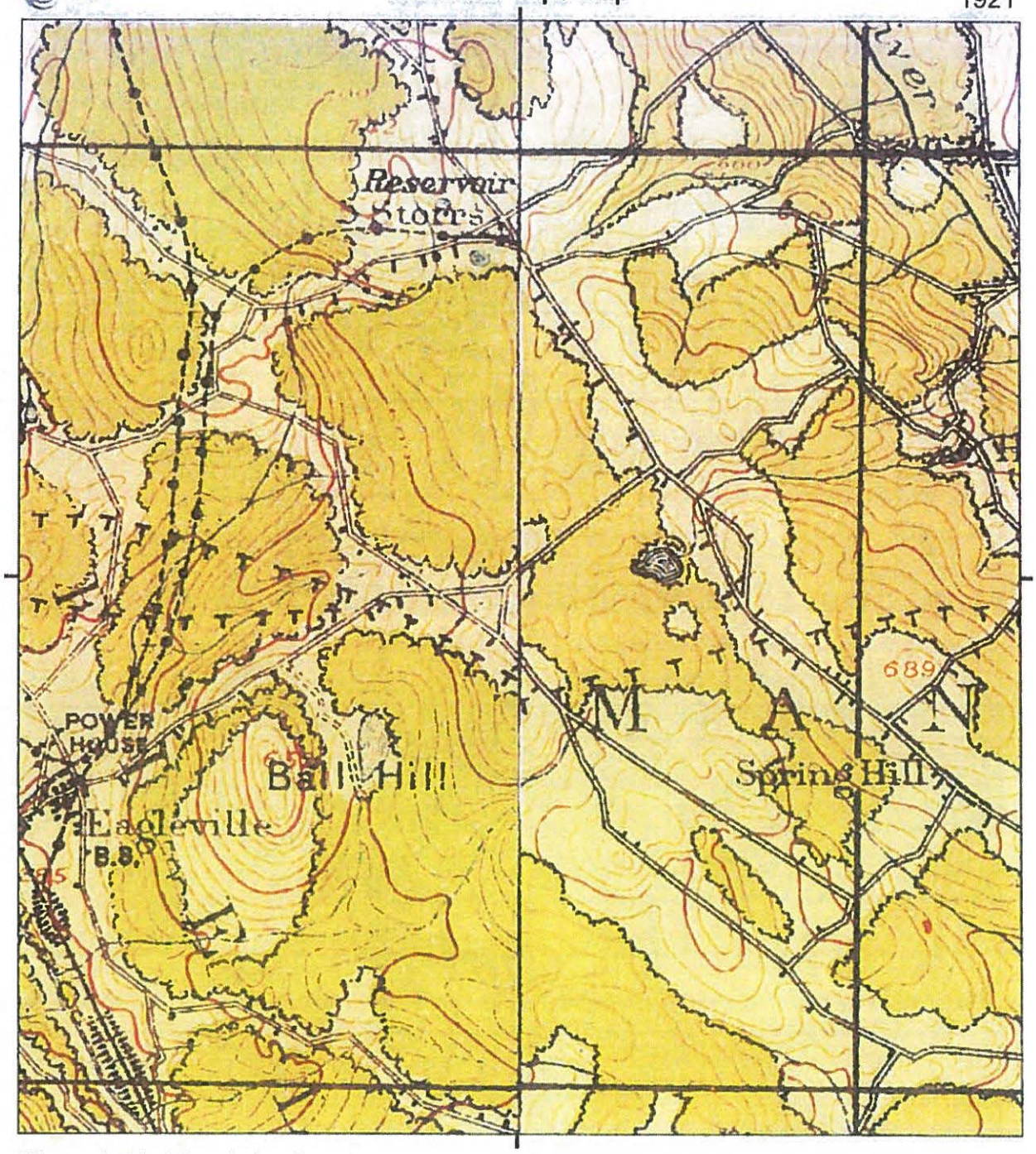
SITE NAME: 121 South Eagleville Road
ADDRESS 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

N

EDR

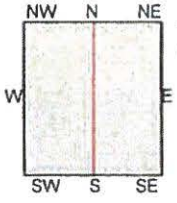
Historical Topo Map

1921



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Woodstock, 1921, 15-minute
NW, Tolland, 1921, 15-minute

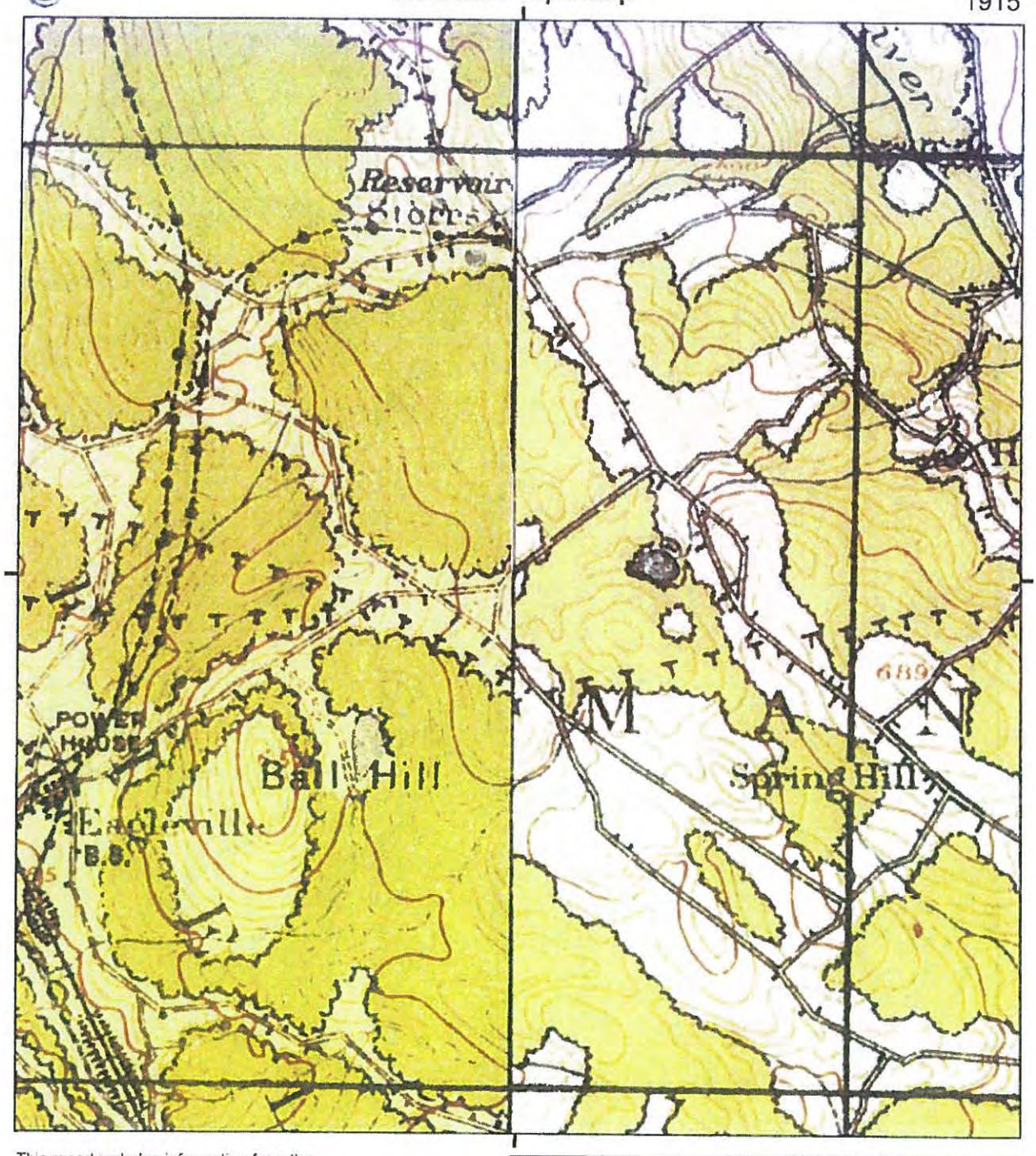
SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

N

EDR

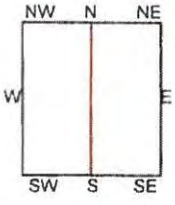
Historical Topo Map

1915



This report includes information from the following map sheet(s)

0 Miles 0.25 0.5 1 1.5



TP, WOODSTOCK, 1915, 15-minute
NW, TOLLAND, 1915, 15-minute

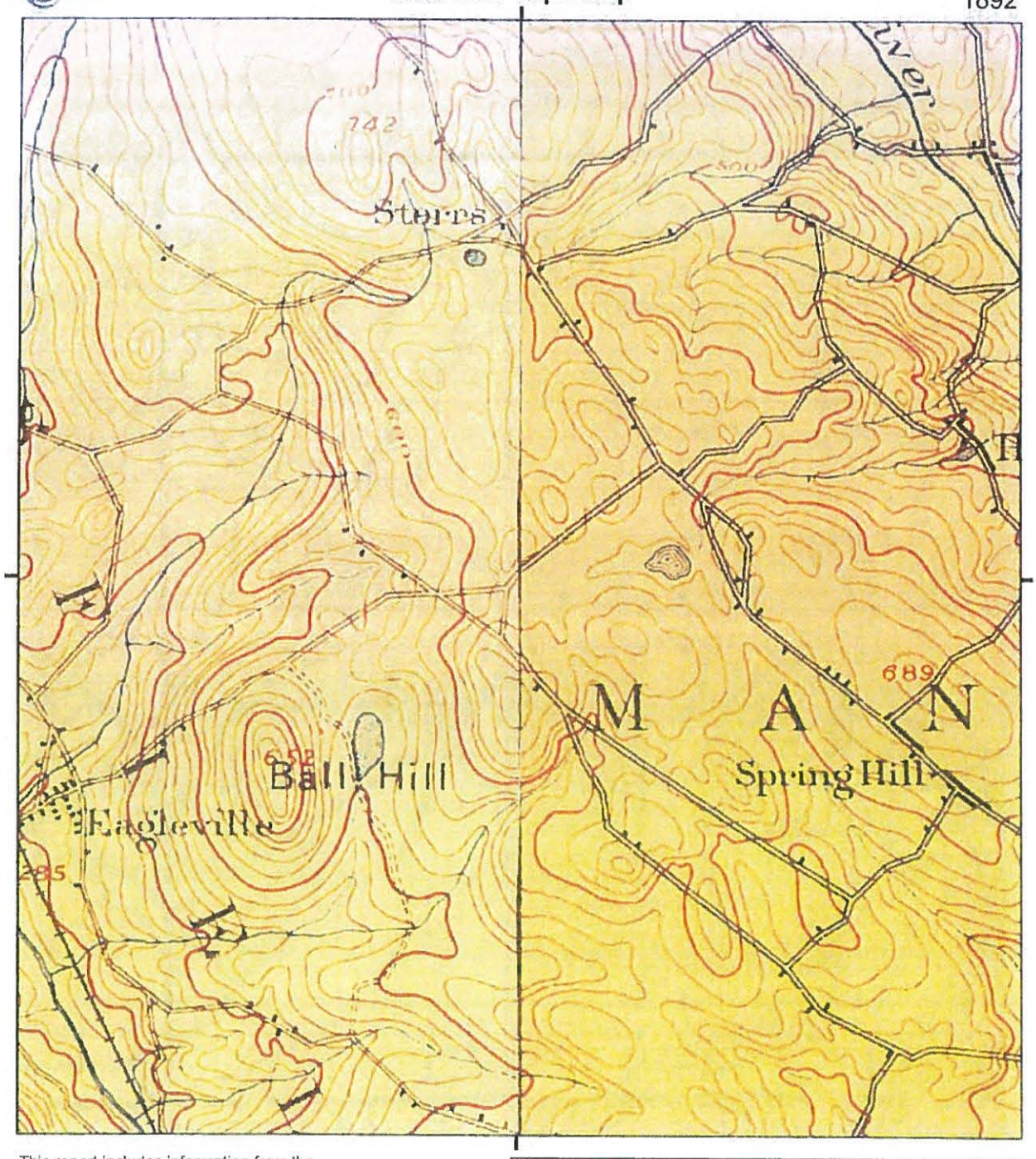
SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

N

EDR

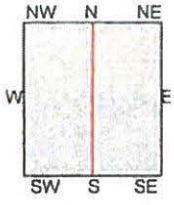
Historical Topo Map

1892



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Woodstock, 1892, 15-minute
NW, Tolland, 1892, 15-minute

SITE NAME: 121 South Eagleville Road
ADDRESS: 121 South Eagleville Road
Storrs Mansfield, CT 06268
CLIENT: Lenard Engineering, Inc.

N

121 South Eagleville Road
121 South Eagleville Road
Storrs Mansfield, CT 06268

Inquiry Number: 5393627.2s
August 15, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road 4th floor
Shelton, CT 06484
Toll Free 800 352 0050
www.edrnet.com

FORM LBC BCS

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	30
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-20
Physical Setting Source Map Findings	A-22
Physical Setting Source Records Searched	PSGR-1

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with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

121 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT 06268

COORDINATES

Latitude (North):	41.7961050 - 41' 47' 45.97"
Longitude (West):	72.2494700 - 72' 14' 58.09"
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	728534.3
UTM Y (Meters):	4630582.5
Elevation:	638 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5642455 SPRING HILL, CT
Version Date:	2012
West Map:	5642409 COVENTRY, CT
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140712
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address
121 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT 06268

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ALGONQUIN GAS TRANSM	322 MAPLE RD	CT MANIFEST	Lower	716, 0 136, SSW
A2	ALGONQUIN GAS TRANSM	322 MAPLE RD	NY MANIFEST	Lower	716, 0 136, SSW
3	RESIDENCE	8 WEST WOOD RD	CT LUST, CT CPCS	Higher	727, 0 138, NNE
4	UCONN EASTWOOD ROAD	EASTWOOD RD	CT UST	Higher	989, 0 187, NE
B5	UNIVERSITY OF CT	14 EASTWOOD RD	CT MANIFEST	Higher	1272, 0 241, NNE
B6	UNIVERSITY OF CONNEC	14 EASTWOOD DR	NY MANIFEST	Higher	1272, 0 241, NNE
7	COOPER PROPERTY	20 EASTWOOD RD	CT LUST, CT CPCS	Higher	1467, 0 278, North
8	JOHN MANNING	7 HILLSIDE CIRCLE	CT LUST, CT SPILLS, CT CPCS	Higher	1666, 0 316, North
C9	HAROLD SDRWENLE	6 HILLSIDE CIRCLE	CT CPCS	Higher	1837, 0.348, North
C10	HAROLD SDRWENLE	6 HILLSIDE CIRCLE	CT LUST, CT SPILLS	Higher	1853, 0 351, North

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

CT SHWS..... Inventory of Hazardous Disposal Sites
CT SDADB..... Site Discovery and Assessment Database

State and tribal landfill and/or solid waste disposal site lists

CT SWF/LF..... List of Landfills/Transfer Stations

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
CT AST..... Marine Terminals and Tank Information
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

CT ENG CONTROLS..... Engineering Controls Listing
CT AUL..... ELUR Sites

State and tribal voluntary cleanup sites

CT VCP..... Voluntary Remediation Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

CT BROWNFIELDS..... Brownfields Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

CT SWRCY..... Recycling Facilities
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

CT CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

Local Land Records

CT PROPERTY..... Property Transfer Filings
CT LIENS..... Environmental Liens Listing
LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CT SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
ABANDONED MINES..... Abandoned Mines
FINDS..... Facility Index System/Facility Registry System
UXO..... Unexploded Ordnance Sites
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
ECHO..... Enforcement & Compliance History Information
FUELS PROGRAM..... EPA Fuels Program Registered Listing
CT AIRS..... Permitted Air Sources Listing

EXECUTIVE SUMMARY

CT ASBESTOS..... Asbestos Notification Listing
CT DRYCLEANERS..... Drycleaner Facilities
CT ENF..... Enforcement Case Listing
CT Financial Assurance..... Financial Assurance Information Listing
CT LEAD..... Lead Inspection Database
CT LWDS..... Connecticut Leachate and Wastewater Discharge Sites
CT NPDES..... Wastewater Permit Listing
CT SEH..... List of Significant Environmental Hazards Report to DEEP

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

CT RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
CT RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

CT LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Protection's Leaking Underground Storage Tank List.

A review of the CT LUST list, as provided by EDR, and dated 04/23/2018 has revealed that there are 4 CT LUST sites within approximately 0 5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RESIDENCE	*8 WEST WOOD RD.*	*NNE 1/8 - 1/4 (0.138 mi.)*	*3*	*11*

Lust Status 4 LUST Id 30315				
COOPER PROPERTY Lust Status: 4 LUST Id 29371	*20 EASTWOOD RD.*	*N 1/4 - 1/2 (0.278 mi.)*	*7*	*19*
JOHN MANNING Lust Status: 4 LUST Id: 36885	*7 HILLSIDE CIRCLE*	*N 1/4 - 1/2 (0.316 mi.)*	*8*	*22*
HAROLD SDRWENLE Lust Status 4 LUST Id 29692	*6 HILLSIDE CIRCLE*	*N 1/4 - 1/2 (0.351 mi.)*	*C10*	*26*

State and tribal registered storage tank lists

CT UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's "Town Inventory" UST Listing.

A review of the CT UST list, as provided by EDR, and dated 02/27/2018 has revealed that there is 1 CT UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UCONN EASTWOOD ROAD Facility Id 78-12390 Tank Status: Currently In Use	EASTWOOD RD	NE 1/8 - 1/4 (0 187 mi)	4	14

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

CT CPCS: A list of Contaminated or Potentially Contaminated Sites within Connecticut. This list represents the "Hazardous Waste Facilities," as defined in Section 22a-134f of the Connecticut General Statutes (CGS). The list contains the following types of sites: Sites listed on the Inventory of Hazardous Waste Disposal Sites; Sites subject to the Property Transfer Act, Sites at which underground storage tanks are known to have leaked; Sites at which hazardous waste subject to the RCRA; Sites that are included in EPA's (CERCLIS); Sites that are the subject of an order issued by the Commissioner of DEP that requires investigation and remediation of a potential or known source of pollution; and Sites that have entered into one of the Department's Voluntary Remediation Programs.

A review of the CT CPCS list, as provided by EDR, and dated 06/26/2018 has revealed that there are 4 CT CPCS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RESIDENCE Lust Status: LUST Completed (DEP's significant hazard definition)	*8 WEST WOOD RD.*	*NNE 1/8 - 1/4 (0.138 mi.)*	*3*	*11*
COOPER PROPERTY	*20 EASTWOOD RD.*	*N 1/4 - 1/2 (0.278 mi)*	*7*	*19*

Lust Status: LUST Completed (DEP's significant hazard definition)				
JOHN MANNING	*7 HILLSIDE CIRCLE*	*N 1/4 - 1/2 (0.316 mi.)*	*8*	*22*
Lust Status: LUST Completed (DEP's significant hazard definition)				
HAROLD SDRWENLE	6 HILLSIDE CIRCLE	N 1/4 - 1/2 (0 348 mi)	C9	26
Lust Status: LUST Completed (DEP s significant hazard definition)				

CT MANIFEST: Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

A review of the CT MANIFEST list, as provided by EDR, and dated 01/03/2018 has revealed that there are 2 CT MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNIVERSITY OF CT EPA Id: CTP000025851	14 EASTWOOD RD	NNE 1/8 - 1/4 (0.241 mi.)	B5	16

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALGONQUIN GAS TRANSM EPA Id: CTP000022024	322 MAPLE RD	SSW 1/8 - 1/4 (0 136 mi)	A1	8

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list, as provided by EDR, and dated 04/30/2018 has revealed that there are 2 NY MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNIVERSITY OF CONNEC EPA ID: CTP000025851	14 EASTWOOD DR	NNE 1/8 - 1/4 (0 241 mi)	B6	18

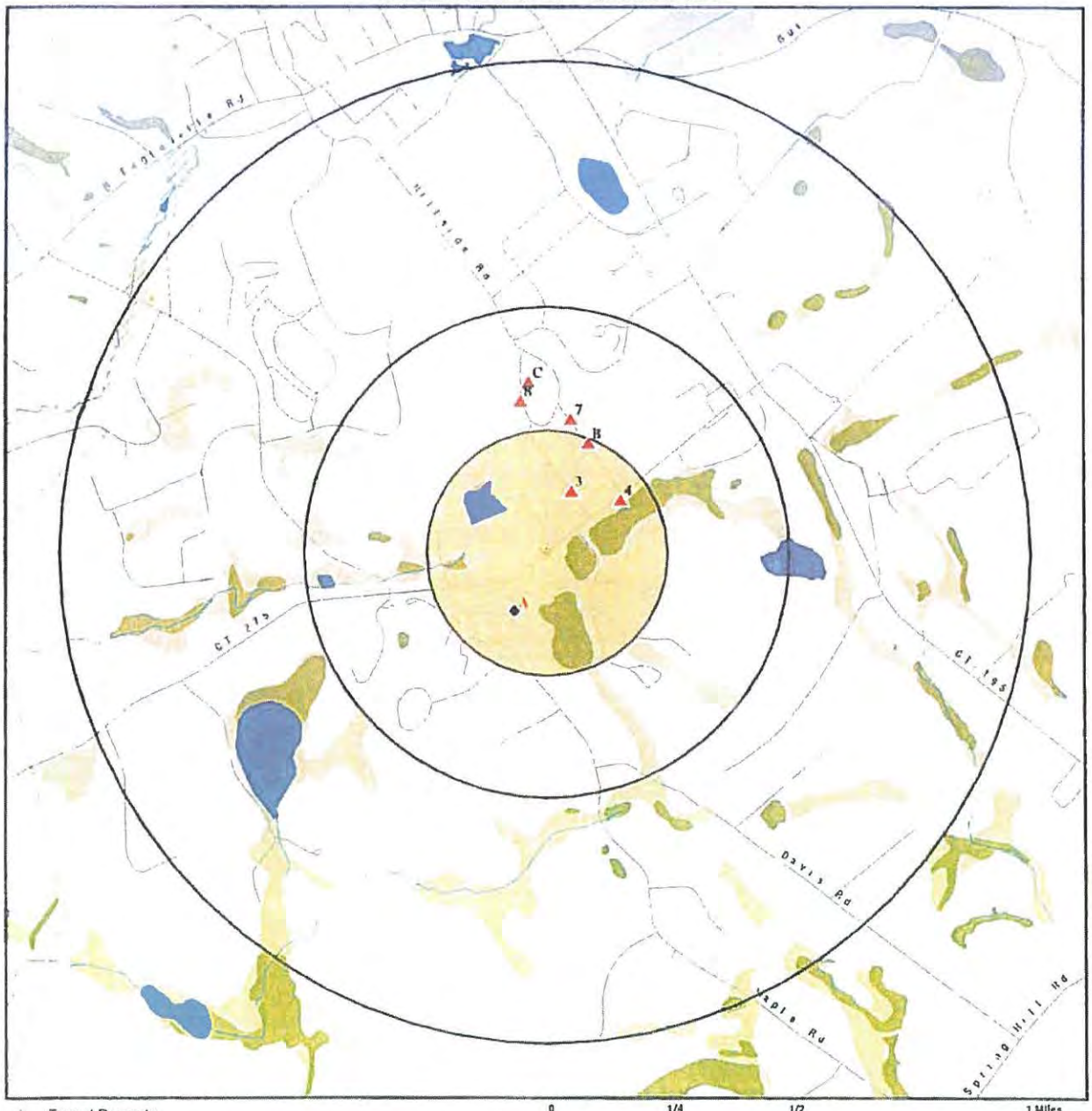
Lower Elevation	Address	Direction / Distance	Map ID	Page
ALGONQUIN GAS TRANSM EPA ID: CTP000022024	322 MAPLE RD	SSW 1/8 - 1/4 (0 136 mi)	A2	9

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped Count 1 records

Site Name	Database(s)
UCONN NORTH EAGLEVILLE ROAD AREA	CT NPDES

OVERVIEW MAP - 5393627.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 121 South Eagleville Road ADDRESS: 121 South Eagleville Road Storrs Mansfield CT 06268 LAT/LONG: 41.796105 / 72.24947	CLIENT: Lenard Engineering, Inc. CONTACT: Tricia Canterbury INQUIRY #: 5393627.2s DATE: August 15, 2018 4:11 pm

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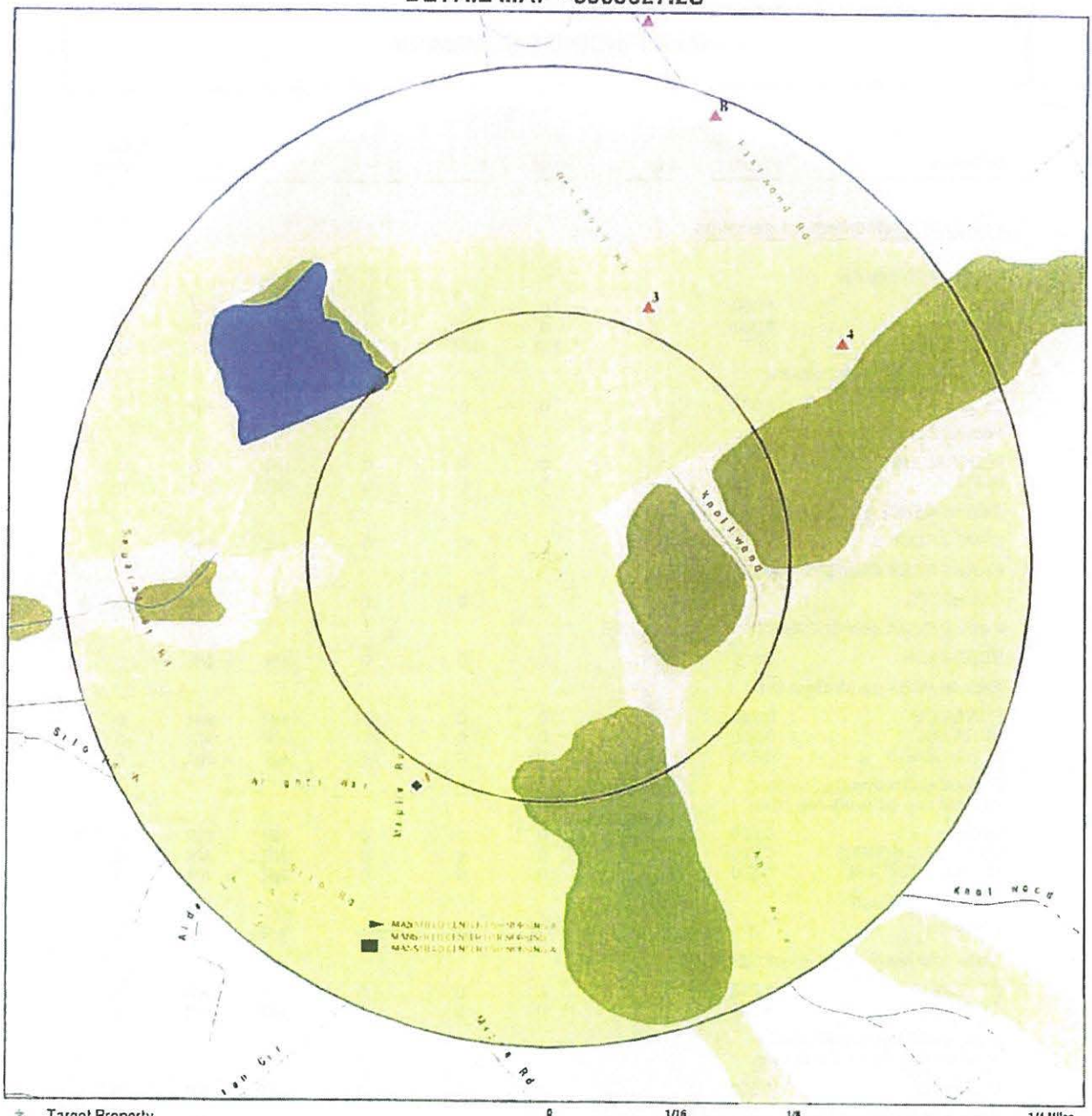
DETAIL MAP - 5393627.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 121 South Eagleville Road ADDRESS: 121 South Eagleville Road Storrs Mansfield CT 06268 LAT/LONG: 41.796105 / 72.24947	CLIENT: Lenard Engineering, Inc. CONTACT: Tricia Canterbury INQUIRY #: 5393627.2s DATE: August 15, 2018 4:12 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
CT SHWS	1.000		0	0	0	0	NR	0
CT SDADB	0.500		0	0	0	NR	NR	0
State and tribal landfill and/or solid waste disposal site lists								
CT SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
CT LUST	0.500		0	1	3	NR	NR	4
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CT UST	0.250		0	1	NR	NR	NR	1
CT AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
CT ENG CONTROLS	0.500		0	0	0	NR	NR	0
CT AUL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
CT VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
CT BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
CT SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CT CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
CT PROPERTY	TP		NR	NR	NR	NR	NR	0
CT LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CT SPILLS	TP		NR	NR	NR	NR	NR	0
CT SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CT AIRS	TP		NR	NR	NR	NR	NR	0
CT ASBESTOS	TP		NR	NR	NR	NR	NR	0
CT CPCS	0.500		0	1	3	NR	NR	4
CT DRYCLEANERS	0.250		0	0	NR	NR	NR	0
CT ENF	TP		NR	NR	NR	NR	NR	0
CT Financial Assurance	TP		NR	NR	NR	NR	NR	0
CT LEAD	TP		NR	NR	NR	NR	NR	0
CT LWDS	0.250		0	0	NR	NR	NR	0
CT MANIFEST	0.250		0	2	NR	NR	NR	2
NY MANIFEST	0.250		0	2	NR	NR	NR	2
CT NPDES	TP		NR	NR	NR	NR	NR	0
CT SEH	0.500		0	0	0	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
CT RGA HWS	TP		NR	NR	NR	NR	NR	0
CT RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	7	6	0	0	13

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 SSW 1/8-1/4 0.136 mi. 716 ft. — **ALGONQUIN GAS TRANSMISSION CO M&R 76**, **322 MAPLE RD**, **MANSFIELD, CT 06250** — **CT MANIFEST** — **S109749635**, **N/A**

Site 1 of 2 in cluster A

Relative: Lower
Actual: 621 ft.

CT MANIFEST:

EPA ID:	CTP000022024
Years:	1998

Details:

Year:	1998
EPA ID:	CTP000022024
Manifest Id:	CTF0578729
TSDF EPA ID:	CTD000604488
TSDF Name	CLEAN HARBORS OF CONNECTICUT INC
TSDF Address:	51 BRODERICK RD
TSDF City,State,Zip:	BRISTOL, CT 06010
TSDF Country:	USA
TSDF Telephone:	Not reported
Transport Date:	Not reported
Transporter EPA ID:	MAD039322250
Transporter Name:	CLEAN HARBORS ENVIRONMENTAL SVS
Transporter Address:	Not reported
Transporter City,State,Zip:	CT
Transporter Country:	USA
Transporter Phone:	Not reported
Trans 2 Date:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name.	Not reported
Trans 2 Address:	Not reported
Transporter 2 City,State,Zip	CT
Trans 2 Country	USA
Trans 2 Phone:	Not reported
Generator Mailing Address:	322 MAPLE RD
Generator City,State,Zip:	MANSFIELD, CT 06250
Generator Mailing Country	Not reported
Generator Phone:	Not reported
Special Handling:	Not reported
Discrepancies:	N
Date Shipped	12/08/1998
Date Received	12/09/1998
Last modified date:	Not reported
Last modified by:	Not reported
Comments	Not reported
Waste Occurence:	1
US Dot Description	env Hazardous substance liquid nos
Number of Containers:	001
Container Type	TT
Quantity:	400
Weight/Volume:	G
Batch Number	2411, 2411, 2411
EPA Waste Codes	D004
Copies	1, 6, 7
Alt Fac EPA:	Not reported
Alt Fac Name	Not reported
Alt Fac Street Address	Not reported
Alt Fac Town	Not reported
Alt Fac State	Not reported
Alt Fac Zip:	Not reported

ALGONQUIN GAS TRANSMISSION CO M&R 76 (Continued) **S109749635**

All Fac Date:	Not reported
Unique Key:	CTF05787291

Details as of 2013:

Year:	1998
EPAID:	CTP000022024
TSDF Telephone:	Not reported
Transporter Country:	USA
Transporter Telephone:	Not reported
Transporter 2 Telephone:	Not reported
Generator Mailing Country	USA
Telephone	Not reported
Special Handling:	Not reported
Last Modified Date.	04/26/2004
Last Modified By:	IG

Waste as of 2013:

Year.	1998
Manifest ID:	CTF0578729
Waste Occurrence.	1
UNNA:	3082
Hazard Class:	9
US Dot Description	env Hazardous substance liquid nos
Number of Containers	001
Container Type:	TT
Quantity:	400
Weight/Volume:	G
Additional Description	Not reported
Handling Code:	Not reported
Last Modified Date:	2004-04-26 00 00.00
Last Modified By	IG

Waste Code as of 2013:

Year.	1998
Manifest ID	CTF0578729
Waste Occurrence	1
EPA Waste Code:	D004
Recycled Waste?.	False
Last Modified Date:	2004-04-26 00.00 00
Last Modified By:	IG

A2 **ALGONQUIN GAS TRANSMISSION CO-M&R 76** **NY MANIFEST** **1009220444**
SSW **322 MAPLE RD** **N/A**
1/8-1/4 **MANSFIELD CENTRE, CT 06250**
0.136 mi.
716 ft. **Site 2 of 2 in cluster A**

Relative: NY MANIFEST
Lower

Country:	USA
EPA ID	CTP000022024
Facility Status:	Not reported
Location Address 1.	322 MAPLE RD
Code:	BP
Location Address 2:	Not reported
Total Tanks	Not reported

Actual:
621 ft.

ALGONQUIN GAS TRANSMISSION CO-M&R 76 (Continued) 1009220444

Location City:	MANSFIELD CENTRE
Location State	CT
Location Zip:	06250
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	CTP000022024
Mailing Name	ALGONQUIN GAS TRANSMISSION CO-M&R 76
Mailing Contact	STEPHEN M LEARY
Mailing Address 1:	544 WESTHEIMER-SUITE 711
Mailing Address 2:	Not reported
Mailing City:	HOUSTON
Mailing State	TX
Mailing Zip:	77056
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2032352827

NY MANIFEST:

Document ID:	NYG0671769
Manifest Status:	Not reported
seq:	01
Year:	1999
Trans1 State ID:	0239472ME
Trans2 State ID:	Not reported
Generator Ship Date:	09/01/1999
Trans1 Recv Date:	09/01/1999
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/02/1999
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	CTP000022024
Trans1 EPA ID:	CTD983896341
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD049836679
TSDF ID 2	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code	Not reported
Waste Code	B007 - OTHER MISCELLANEOUS PCB WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	04763
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001

ALGONQUIN GAS TRANSMISSION CO-M&R 76 (Continued) **1009220444**

Container Type:	CM - Metal boxes, cases roll-offs
Handling Method	L Landfill
Specific Gravity:	01 00

Click this hyperlink while viewing on your computer to access additional NY_MANIFEST: detail in the EDR Site Report

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3 NNE 1/8-1/4 0.138 mi. 727 ft. — **RESIDENCE, 8 WEST WOOD RD., MANSFIELD, CT 06268** — **CT LUST S105457141**, **CT CPCS N/A**

Relative: Higher
Actual: 658 ft.

LUST:

LUST Id:	2244
UST Facility Id	Not reported
LUST Case Id.	30315
Lust Status.	Lust Completed
Processing Status:	Not reported
EPA Reportable:	0
Motor Fuel	No
Diesel:	No
Gasoline:	No
Other:	No
Other Release:	Not reported
No Release	No
Leak:	No
Tank:	No
Piping:	No
Overfill:	No
Removal:	No
Incident Date.	05/03/1994
Entry Date:	Not reported
Site Case Id:	Not reported
UST Site Id	Not reported
Cost Recovery Spill Case #	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id	Not reported
UST Event Id:	2243
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact.	Not reported
2nd Contact EMail	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2	Not reported
2nd Contact City 2	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number	Not reported
2nd Contact Type	Not reported
Facility City Num	78
Site Contact	Not reported
Site Contact Address	Not reported

RESIDENCE (Continued) **S105457141**

Site Contact Add 2	Not reported
Site Contact City 2	Not reported
Site Contact Phone	Not reported
Site Contact Fax	Not reported
Site Contact Type	Not reported
Department Contact 1	Not reported
Department Contact 2	Not reported
Referral Source	Not reported
Offsite Source	0
Date Referred	Not reported
Emergency	No
Private Heating Fuel	Yes
Commercial Heating Fuel	No
Commercial HF < 2100 Gal	No
Commercial HF > 2100 Gal	No
Commercial HF - Size Unk.	No
No LUST Site	No
Cost Recvry Prgm Candidate	No
OCSRD Complete	No
Follow Up Flag	No
Alternate Water Supply	No
Relocation	No
Responsible Party	No
Responsible EMail	Not reported
Resp Party Name	Not reported
Resp Party Address	Not reported
Resp Party City,St,Zip	Not reported
Resp Party Town Number	UNKNOWN
Resp Party Phone	Not reported
Resp Party Fax	Not reported
Resp Party Name 2	Not reported
Resp Party Address 2	Not reported
Resp Party Phone 2	Not reported
Investigator Id	21
Follow Update	Not reported
Area Lextent	Not reported
Annual Precipitation	Not reported
Affected Population	Not reported
Population Setting	Not reported
Ground Water Direction	Not reported
Ground Water Gradient	Not reported
Hydro Basin	Not reported
Drastic	Not reported
Geo Setting	Not reported
Ground Water Classification	Not reported
Receptor	Not reported
Ground Water Flow Direction	Not reported
Ground Water Depth	Not reported
Areas Of Concern	Not reported
Free Product Inches	Not reported
Fund Date	Not reported
Fund Planned	No
Fund Obligated	No
Fund Outlayed	No
Fund Judgment	No
Fund Recovered	No
Cellar Borings	No

RESIDENCE (Continued) S105457141

Install Micro Wells	No
Ground Water Sample:	No
Soil Sample:	No
Soil Gas:	No
Site Inspect.	No
Soil Excavate:	No
Geo Probe	No
Survey:	No
Potable Well Sample:	No
Sample MWS:	No
Ground Water Gauging	No
Soil Venting:	No
Active	No
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order.	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions	No
Release Invest Rpt:	No
DEP App Letter 1:	No
Correct Action Plan:	No
DEP App Letter 2:	No
Rem Sys Install:	No
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt	No
Qrtly Gwater Mon Rpts:	No
Closure Req Rpt:	No
DEP Closure Letter:	No
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments	Not reported
Location Desc:	Not reported
NOV Comments	Not reported
Release Desc	Not reported
Running Comments:	Not reported
Work Performed:	Not reported

CPCS:

Site Type:	LUST
Lust Status code:	4
Lust Status	Lust Completed (DEP's significant hazard definition)
PTP Form.	Not reported
Program:	Not reported
Comments	Not reported

RESIDENCE (Continued) **S105457141**

Site Type Definition Leaking Underground Storage Tanks Completed

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4
NE
1/8-1/4
0.187 mi.
989 ft.

UCONN EASTWOOD ROAD PUMP STATION
EASTWOOD RD
STORRS MANSFIELD, CT 06269

CT UST **U004140657**
N/A

Relative:
Higher

Actual:
644 ft.

UST:

Facility ID:	78-12390
Facility Address 2:	Not reported
Substance:	Diesel
Last Use Date:	Not reported
Tank ID:	A1
Closure Status:	Not reported
Compartment ID:	Not reported
Tank Status:	Currently In Use
Secondary Material:	Double Walled
Tank Material:	Fiberglass Reinforced Plastic
Capacity:	600
Install Date:	09/01/1995
Overfill Installed:	Audible Alarm
Pipe Material:	Other (Specify)
Pipe Mode Description:	Containment Sumps @ Tanks,Double Walled,Metallic fittings isolated from soil and water
Spill Installed:	Spill Bucket
Latitude:	41.797709
Longitude:	-72.246539
Tank Latitude:	41.797709
Tank Longitude:	-72.246539

Contact:

Facility ID:	78-12390
Owner Name:	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2:	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext:	Not reported
Owner City/State/Zip:	STORRS, CT 062693055
Affiliation Type:	Billing Contact
Contact Name:	Jason Coite
Contact Title:	Not reported
Contact Email:	jason.coite@uconn.edu

Facility ID:	78-12390
Owner Name:	Katie Milardo
Owner Address:	31 Ledoyt Rd
Owner Address 2:	Not reported
Owner Phone:	(860) 486-3476
Owner Phone Ext:	Not reported
Owner City/State/Zip:	Storrs, CT
Affiliation Type:	Class A Operator
Contact Name:	
Contact Title:	Not reported
Contact Email:	katie.milardo@uconn.edu

Facility ID:	78-12390
Owner Name:	Katie Milardo
Owner Address:	31 Ledoyt Rd

UCONN EASTWOOD ROAD PUMP STATION (Continued) U004140657

Owner Address 2	Not reported
Owner Phone:	(860) 486-3476
Owner Phone Ext	Not reported
Owner City/State/Zip	Storrs, CT
Affiliation Type:	Class B Operator
Contact Name.	
Contact Title:	Not reported
Contact Email	katie milardo@uconn.edu
Facility ID:	78-12390
Owner Name	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2:	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext.	Not reported
Owner City/State/Zip:	STORRS, CT 062693055
Affiliation Type:	Off Site Records
Contact Name:	Jason Colte
Contact Title:	Not reported
Contact Email.	jason colte@uconn edu
Facility ID:	78-12390
Owner Name:	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2:	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext:	Not reported
Owner City/State/Zip.	STORRS, CT 062693055
Affiliation Type:	Operator
Contact Name:	Jason Colte
Contact Title:	Not reported
Contact Email:	jason colte@uconn.edu
Facility ID	78-12390
Owner Name:	UNIVERSITY OF CONNECTICUT
Owner Address	31 LEDOYT RD
Owner Address 2	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext:	Not reported
Owner City/State/Zip	STORRS, CT 062693055
Affiliation Type:	Owner
Contact Name	Jason Colte
Contact Title	Not reported
Contact Email	jason colte@uconn edu
Facility ID	78-12390
Owner Name.	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2.	UNIT 3055
Owner Phone	(860) 486-9305
Owner Phone Ext	Not reported
Owner City/State/Zip	STORRS, CT 062693055
Affiliation Type	Primary Contact
Contact Name:	Jason Colte
Contact Title:	Not reported
Contact Email	jason colte@uconn edu

UCONN EASTWOOD ROAD PUMP STATION (Continued) **U004140657**

Facility ID:	78-12390
Owner Name:	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2:	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext:	Not reported
Owner City/State/Zip:	STORRS, CT 062693055
Affiliation Type:	Property Owner
Contact Name:	Jason Coite
Contact Title:	Not reported
Contact Email:	jason.coite@uconn.edu

Facility ID:	78-12390
Owner Name:	UNIVERSITY OF CONNECTICUT
Owner Address:	31 LEDOYT RD
Owner Address 2:	UNIT 3055
Owner Phone:	(860) 486-9305
Owner Phone Ext:	Not reported
Owner City/State/Zip:	STORRS, CT 062693055
Affiliation Type:	Registrant
Contact Name:	Jason Coite
Contact Title:	Not reported
Contact Email:	jason.coite@uconn.edu

B5 **UNIVERSITY OF CT** **CT MANIFEST** **S109752143**
NNE **14 EASTWOOD RD** **N/A**
1/8-1/4 **STORRS, CT 06268**
0.241 mi.
1272 ft. **Site 1 of 2 in cluster B**

Relative:
Higher

Actual:
655 ft.

CT MANIFEST:

EPA ID:	CTP000025851
Years:	2001

Details:

Year:	2001
EPA ID:	CTP000025851
Manifest Id:	NYG3070287
TSDF EPA ID:	NYD049836679
TSDF Name:	C W M CHEMICAL SERVICES LLC
TSDF Address:	1550 BALMER RD
TSDF City,State,Zip:	MODEL CITY, NY 14107
TSDF Country:	USA
TSDF Telephone:	Not reported
Transport Date:	Not reported
Transporter EPA ID:	CTD983896341
Transporter Name:	WASTE MGT NEW ENGLAND ENV TRANSP INC
Transporter Address:	Not reported
Transporter City,State,Zip:	CT
Transporter Country:	USA
Transporter Phone:	Not reported
Trans 2 Date:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
Trans 2 Address:	Not reported
Transporter 2 City,State,Zip:	CT
Trans 2 Country:	USA

UNIVERSITY OF CT (Continued) S109752143

Trans 2 Phone:	Not reported
Generator Mailing Address:	14 EASTWOOD RD
Generator City,State,Zip:	STORRS, CT 06268
Generator Mailing Country:	Not reported
Generator Phone:	Not reported
Special Handling:	Not reported
Discrepancies:	N
Date Shipped:	08/02/2001
Date Received:	08/07/2001
Last modified date:	Not reported
Last modified by:	Not reported
Comments:	Not reported
Waste Occurence:	1
US Dot Description:	ENVIRONMENTALLY HAZ SUBSTANCES,SOLID
Number of Containers:	002
Container Type:	CF
Quantity:	500
Weight/Volume:	P
Batch Number:	4644, 4644
EPA Waste Codes:	D008
Copies:	2, 7
Alt Fac EPA:	Not reported
Alt Fac Name:	Not reported
Alt Fac Street Address:	Not reported
Alt Fac Town:	Not reported
Alt Fac State:	Not reported
Alt Fac Zip:	Not reported
Alt Fac Date:	Not reported
Unique Key:	NYG30702871

Details as of 2013

Year:	2001
EPAID:	CTP000025851
TSDF Telephone:	Not reported
Transporter Country:	USA
Transporter Telephone:	Not reported
Transporter 2 Telephone:	Not reported
Generator Mailing Country:	USA
Telephone:	Not reported
Special Handling:	Not reported
Last Modified Date:	04/27/2004
Last Modified By:	IG

Waste as of 2013:

Year:	2001
Manifest ID:	NYG3070287
Waste Occurrence:	1
UNNA:	3077
Hazard Class:	9
US Dot Description:	ENVIRONMENTALLY HAZ SUBSTANCES,SOLID
Number of Containers:	002
Container Type:	CF
Quantity:	500
Weight/Volume:	P
Additional Description:	Not reported
Handling Code:	Not reported

UNIVERSITY OF CT (Continued) S109752143

Last Modified Date	2004-04-27 00 00 00
Last Modified By:	IG

Waste Code as of 2013

Year:	2001
Manifest ID:	NYG3070287
Waste Occurrence:	1
EPA Waste Code:	D008
Recycled Waste?:	False
Last Modified Date:	2004-04-27 00 00 00
Last Modified By:	IG

B6 NNE 1/8-1/4 0.241 mi. 1272 ft. — **UNIVERSITY OF CONNECTICUT**, **14 EASTWOOD DR**, **STORRS, CT 06268** — **NY MANIFEST** — **1009220594**, **N/A**

Site 2 of 2 in cluster B

Relative: Higher
Actual: 655 ft.

NY MANIFEST:

Country:	USA
EPA ID:	CTP000025851
Facility Status:	Not reported
Location Address 1:	14 EASTWOOD DR
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	STORRS
Location State:	CT
Location Zip:	06268
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	CTP000025851
Mailing Name:	UNIVERSITY OF CONNECTICUT
Mailing Contact:	DENIS SHANNON
Mailing Address 1:	3102 HORSEBARN HILL RD
Mailing Address 2:	Not reported
Mailing City:	STORRS MANSFIELD
Mailing State:	CT
Mailing Zip:	06269
Mailing Zip 4:	4097
Mailing Country:	USA
Mailing Phone:	8608877913

NY MANIFEST:

Document ID	NYG3070287
Manifest Status:	Not reported
seq:	01
Year:	2001
Trans1 State ID	J40175CT
Trans2 State ID	Not reported
Generator Ship Date	08/02/2001
Trans1 Recv Date:	08/02/2001
Trans2 Recv Date:	Not reported
TSD Site Recv Date	08/07/2001
Part A Recv Date:	Not reported

UNIVERSITY OF CONNECTICUT (Continued) 1009220594

Part B Recv Date:	Not reported
Generator EPA ID	CTP000025851
Trans1 EPA ID	CTD983896341
Trans2 EPA ID	Not reported
TSDF ID 1	NYD049836679
TSDF ID 2:	Not reported
Manifest Tracking Number	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator.	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator.	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number.	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D008 - LEAD 5 0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00500
Units:	P - Pounds
Number of Containers	002
Container Type:	CF - Fiber or plastic boxes, cartons
Handling Method:	L Landfill.
Specific Gravity:	00 07

Click this hyperlink while viewing on your computer to access additional NY_MANIFEST: detail in the EDR Site Report

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7
North
1/4-1/2
0.278 mi.
1467 ft.

COOPER PROPERTY
20 EASTWOOD RD.
MANSFIELD, CT 06268

CT LUST S105456634
CT CPCS N/A

Relative:
Higher

Actual:
668 ft.

LUST:

LUST Id:	1262
UST Facility Id	Not reported
LUST Case Id	29371
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	0
Motor Fuel:	No
Diesel	No
Gasoline:	No
Other:	No
Other Release	Not reported
No Release:	No
Leak	No
Tank:	No
Piping	No
Overfill:	No

COOPER PROPERTY (Continued) S105456634

Removal	No
Incident Date:	12/02/1993
Entry Date:	Not reported
Site Case Id:	Not reported
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	1261
Contact Info:	Not reported
Contact EMail	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	78
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source	Not reported
Offsite Source:	0
Date Referred:	Not reported
Emergency:	No
Private Heating Fuel:	Yes
Commercial Heating Fuel:	No
Commercial HF < 2100 Gal:	No
Commercial HF > 2100 Gal.:	No
Commercial HF - Size Unk:	No
No LUST Site:	No
Cost Recvry Prgm Candidate:	No
OCSRD Complete:	No
Follow Up Flag:	No
Alternate Water Supply:	No
Relocation	No
Responsible Party:	No
Responsible EMail:	Not reported
Resp Party Name	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip	Not reported
Resp Party Town Number	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax	Not reported

COOPER PROPERTY (Continued) S105456634

Resp Party Name 2	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2.	Not reported
Investigator Id:	20
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction.	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification.	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	No
Install Micro Wells:	No
Ground Water Sample:	No
Soil Sample.	No
Soil Gas:	No
Site Inspect:	No
Soil Excavate	No
Geo Probe:	No
Survey	No
Potable Well Sample.	No
Sample MWS	No
Ground Water Gauging:	No
Soil Venting:	No
Active.	No
NOV Action:	None
NOV Issued	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed	Not reported
NOV Disc Date	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions	No
Release Invest Rpt:	No
DEP App Letter 1:	No
Correct Action Plan	No
DEP App Letter 2	No
Rem Sys Install	No
Rem Sys Install Date	Not reported

COOPER PROPERTY (Continued) — **S105456634**

Closure Date:	Not reported
Rem Sys Monitoring Rpt.	No
Qrtly Gwater Mon Rpts.	No
Closure Req Rpt:	No
DEP Closure Letter.	No
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp.	Not reported
Date Stamp	Not reported
Correspondence	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments	Not reported
Work Performed:	Not reported

CPCS:

Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	Not reported
Site Type Definition:	Leaking Underground Storage Tanks Completed

---

8
North
1/4-1/2
0.316 mi.
1666 ft.

JOHN MANNING
7 HILLSIDE CIRCLE
MANSFIELD, CT 6250

CT LUST — **S105444761**
CT SPILLS — **N/A**
CT CPCS

Relative:
Higher

Actual:
693 ft.

LUST:

LUST Id.	8859
UST Facility Id:	Not reported
LUST Case Id.	36885
Lust Status:	Lust Completed
Processing Status.	Not reported
EPA Reportable:	0
Motor Fuel	No
Diesel:	No
Gasoline:	No
Other:	Yes
Other Release	kerosene
No Release	No
Leak:	No
Tank:	No
Piping	No
Overfill.	No
Removal:	No
Incident Date:	09/02/1999
Entry Date.	Not reported
Site Case Id:	9905907
UST Site Id	Not reported

JOHN MANNING (Continued) S105444761

Cost Recovery Spill Case #	Not reported
Old SITS Number	Not reported
Case Log Id	Not reported
Monthly Report Id	0
UST Owner Id	Not reported
LUST Owner Id	Not reported
UST Event Id	9040
Contact Info	Not reported
Contact EMail	Not reported
Site Contact City,St,Zip	UNKNOWN
2nd Contact	Not reported
2nd Contact EMail	Not reported
2nd Contact Address	Not reported
2nd Contact City,St,Zip	UNKNOWN
2nd Contact Address 2	Not reported
2nd Contact City 2	Not reported
2nd Contact Phone Number	Not reported
2nd Contact Fax Number	Not reported
2nd Contact Type	Not reported
Facility City Num	78
Site Contact	Not reported
Site Contact Address	Not reported
Site Contact Add 2	Not reported
Site Contact City 2	Not reported
Site Contact Phone	Not reported
Site Contact Fax	Not reported
Site Contact Type	Not reported
Department Contact 1	Not reported
Department Contact 2	Not reported
Referral Source	Not reported
Offsite Source	0
Date Referred	Not reported
Emergency	No
Private Heating Fuel	Yes
Commercial Heating Fuel	No
Commercial HF < 2100 Gal	No
Commercial HF > 2100 Gal	No
Commercial HF - Size Unk	No
No LUST Site:	No
Cost Recvry Prgm Candidate	No
OCSRD Complete	Yes
Follow Up Flag	No
Alternate Water Supply	No
Relocation:	No
Responsible Party	No
Responsible EMail	Not reported
Resp Party Name	Not reported
Resp Party Address	Not reported
Resp Party City,St Zip	Not reported
Resp Party Town Number	UNKNOWN
Resp Party Phone	Not reported
Resp Party Fax	Not reported
Resp Party Name 2	Not reported
Resp Party Address 2	Not reported
Resp Party Phone 2	Not reported
Investigator Id	35
Follow Update	Not reported

JOHN MANNING (Continued) **S105444761**

Area Lextent	Not reported
Annual Precipitation	Not reported
Affected Population	Not reported
Population Setting	Not reported
Ground Water Direction	Not reported
Ground Water Gradient	Not reported
Hydro Basin	Not reported
Drastic	Not reported
Geo Setting	Not reported
Ground Water Classification	Not reported
Receptor:	Not reported
Ground Water Flow Direction	Not reported
Ground Water Depth	Not reported
Areas Of Concern:	Not reported
Free Product Inches	Not reported
Fund Date	Not reported
Fund Planned	No
Fund Obligated	No
Fund Outlayed	No
Fund Judgment	No
Fund Recovered	No
Cellar Borings	No
Install Micro Wells	No
Ground Water Sample	No
Soil Sample	No
Soil Gas	No
Site Inspect	No
Soil Excavate	No
Geo Probe	No
Survey	No
Potable Well Sample	No
Sample MWS	No
Ground Water Gauging	No
Soil Venting	No
Active	No
NOV Action:	None
NOV Issued	Not reported
NOV Due	Not reported
NOV Received	Not reported
NOV Closed	Not reported
NOV Disc Date	Not reported
NOV Issued Date	Not reported
NOV Compliance Sched	Not reported
NOV Admin Order	Not reported
NOV Referred To Ag	Not reported
Stop All NOV Actions	No
Release Invest Rpt	No
DEP App Letter 1	No
Correct Action Plan	No
DEP App Letter 2	No
Rem Sys Install	No
Rem Sys Install Date	Not reported
Closure Date	Not reported
Rem Sys Monitoring Rpt	No
Qrtly Gwater Mon Rpts	No
Closure Req Rpt	No
DEP Closure Letter	No

JOHN MANNING (Continued) S105444761

Referred To	Not reported
No Wells	Not reported
Lph Wells	Not reported
User Stamp	Not reported
Date Stamp	Not reported
Correspondence	Not reported
Environmental Impact	Not reported
FollowUp	Not reported
GW Comments	Not reported
Location Desc	Not reported
NOV Comments	Not reported
Release Desc	Not reported
Running Comments	m, FUEL OIL & KEROSENE, PRIVATE, A 550 FUEL OIL & A 275 KEROSENE TANK, EACH WAS AN UST WITH 2 HOLES 935 WILL CALL SHIRE BACK TODAY
Work Performed	Not reported

SPILLS:

Year of Database	1999
Case Number:	9905907
Who Took Spill	931
Assigned To:	0
Report Date:	09/02/1999
Report Time:	11:15:00
Date Release	08/31/1999
Time Responded	Not reported
Reported By	LOI WEISE
Phone:	860 6426618
Representing	SHIRE CORP.
Terminated	YES
Recovd (Total)	0
Total (Water):	0
Facility Status	Closed
Continuous Spill	False
Released Substance	#2 FUEL OIL & KEROSENE
Qty	0 (Gallons)
Emergency Measure:	A 550 FUEL OIL & A 275 KEROSENE TANK, EACH WAS AN UST WITH 2 HOLES 935 WILL CALL SHIRE BACK TODAY
Water Body	NA
Discharger:	JOHN MANNING
Telephone	860 4299552
Responsible Party	YES
RP Address 1	SAME
RP City,St,Zip	CT
Historic	False
Waterbody	False
Time Stamp	1999-11-26 10 29 30
Sr Inspector:	Coss, Brian
At Inspctor.	**NO RESPONSE
User Stamp	Not reported
Comments	Not reported
Action	Removed Tank
Other Action	Not reported
Agency ID:	Local Fire Marshal
Other Agency	Not reported
DEP Bureau	Not reported
DEP Agency:	Not reported
Agency ID	Other

JOHN MANNING (Continued) S105444761

Other Agency: NOEL WAITE ON SCENE
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SOIL
Class ID: Private
Other Class: Not reported
Release Type: petroleum
Other Release: Not reported

CPCS:
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: M, Fuel Oil & Kerosene, Private, A 550 Fuel Oil & A 275 Kerosene Tank, Each Was An Ust With 2 Holes 935 Will Call Shire Back Today
Site Type Definition: Leaking Underground Storage Tanks Completed

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C9 **HAROLD SDRWENLE** **CT CPCS** **S105456789**
North **6 HILLSIDE CIRCLE** **N/A**
1/4-1/2 **MANSFIELD, CT 06268**
0.348 mi.
1837 ft. **Site 1 of 2 in cluster C**

Relative: **Higher**
Actual: **691 ft.**

CPCS:
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: Not reported
Site Type Definition: Leaking Underground Storage Tanks Completed

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C10 **HAROLD SDRWENLE** **CT LUST** **S108789761**
North **6 HILLSIDE CIRCLE** **CT SPILLS** **N/A**
1/4-1/2 **MANSFIELD, CT 6250**
0.351 mi.
1853 ft. **Site 2 of 2 in cluster C**

Relative: **Higher**
Actual: **685 ft.**

LUST:
LUST Id: 1583
UST Facility Id: Not reported
LUST Case Id: 29692
Lust Status: Lust Completed
Processing Status: Not reported
EPA Reportable: 0
Motor Fuel: No
Diesel: No
Gasoline: No
Other: No
Other Release: Not reported
No Release: No

HAROLD SDRWENLE (Continued) S108789761

Leak	No
Tank	No
Piping	No
Overfill	No
Removal	No
Incident Date	05/09/1996
Entry Date	Not reported
Site Case Id.	Not reported
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number.	Not reported
Case Log Id:	Not reported
Monthly Report Id	0
UST Owner Id	Not reported
LUST Owner Id:	Not reported
UST Event Id:	1582
Contact Info	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip	UNKNOWN
2nd Contact	Not reported
2nd Contact EMail	Not reported
2nd Contact Address	Not reported
2nd Contact City,St,Zip.	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2	Not reported
2nd Contact Phone Number.	Not reported
2nd Contact Fax Number	Not reported
2nd Contact Type.	Not reported
Facility City Num	78
Site Contact	Not reported
Site Contact Address	Not reported
Site Contact Add 2	Not reported
Site Contact City 2	Not reported
Site Contact Phone:	Not reported
Site Contact Fax	Not reported
Site Contact Type	Not reported
Department Contact 1	Not reported
Department Contact 2	Not reported
Referral Source	Not reported
Offsite Source	0
Date Referred	Not reported
Emergency	No
Private Heating Fuel	Yes
Commercial Heating Fuel	Yes
Commercial HF < 2100 Gal	Yes
Commercial HF > 2100 Gal.	No
Commercial HF - Size Unk.	No
No LUST Site:	No
Cost Recvry Prgm Candidate	No
OCSRD Complete	No
Follow Up Flag	No
Alternate Water Supply	No
Relocation	No
Responsible Party	No
Responsible EMail	Not reported
Resp Party Name	Not reported
Resp Party Address	Not reported

HAROLD SDRWENLE (Continued) **S108789761**

Resp Party City,St Zip	Not reported
Resp Party Town Number	UNKNOWN
Resp Party Phone	Not reported
Resp Party Fax	Not reported
Resp Party Name 2	Not reported
Resp Party Address 2	Not reported
Resp Party Phone 2	Not reported
Investigator Id	20
Follow Update	Not reported
Area Lextent	Not reported
Annual Precipitation	Not reported
Affected Population	Not reported
Population Setting	Not reported
Ground Water Direction	Not reported
Ground Water Gradient	Not reported
Hydro Basin	Not reported
Drastic	Not reported
Geo Setting	Not reported
Ground Water Classification	Not reported
Receptor	Not reported
Ground Water Flow Direction	Not reported
Ground Water Depth	Not reported
Areas Of Concern	Not reported
Free Product Inches	Not reported
Fund Date	Not reported
Fund Planned	No
Fund Obligated	No
Fund Outlayed	No
Fund Judgment	No
Fund Recovered	No
Cellar Borings	No
Install Micro Wells	No
Ground Water Sample	No
Soil Sample	No
Soil Gas	No
Site Inspect	No
Soil Excavate	No
Geo Probe	No
Survey	No
Potable Well Sample	No
Sample MWS	No
Ground Water Gauging	No
Soil Venting	No
Active	No
NOV Action	None
NOV Issued	Not reported
NOV Due	Not reported
NOV Received	Not reported
NOV Closed	Not reported
NOV Disc Date	Not reported
NOV Issued Date	Not reported
NOV Compliance Sched	Not reported
NOV Admin Order	Not reported
NOV Referred To Ag	Not reported
Stop All NOV Actions	No
Release Invest Rpt	No
DEP App Letter 1	No

HAROLD SDRWENLE (Continued) S108789761

Correct Action Plan	No
DEP App Letter 2	No
Rem Sys Install	No
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt	No
Qrtly Gwater Mon Rpts:	No
Closure Req Rpt:	No
DEP Closure Letter	No
Referred To:	Not reported
No Wells	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	Not reported
Work Performed	Not reported

SPILLS:

Year of Database:	96
Case Number.	2240
Who Took Spill:	ALEXANDER
Assigned To:	Not reported
Report Date	05/09/1996
Report Time.	9
Date Release:	Not reported
Time Responded.	Not reported
Reported By:	JOHN JACKMAN
Phone:	Not reported
Representing:	FIRE DEPT
Terminated.	Y
Recovd (Total):	Not reported
Total (Water):	Not reported
Facility Status:	Not reported
Continuous Spill	Not reported
Released Substance:	Not reported
Qty	20 (Gallons)
Emergency Measure:	Not reported
Water Body	Not reported
Discharger	Not reported
Telephone	Not reported
Responsible Party	Not reported
RP Address 1	Not reported
RP City,St,Zip:	Not reported
Historic:	Not reported
Waterbody	Not reported
Time Stamp:	Not reported
Sr Inspector:	Not reported
At Inspctor	Not reported
User Stamp:	Not reported
Comments:	Not reported

Count 1 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
STORRS	S118687816	UCONN NORTH EAGLEVILLE ROAD AREA	RT 195 NORTH EAGLEVILLE ROAD I	06269	CT NPDES

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund) The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program NPL sites may encompass relatively large areas As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices

Date of Government Version: 05/13/2018	Source: EPA
Date Data Arrived at EDR: 05/30/2018	Telephone: N/A
Date Made Active in Reports: 06/22/2018	Last EDR Contact: 08/09/2018
Number of Days to Update: 23	Next Scheduled EDR Contact: 10/15/2018
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1 Telephone 617-918-1143	EPA Region 6 Telephone: 214-655-6659
EPA Region 3 Telephone 215-814-5418	EPA Region 7 Telephone: 913-551-7247
EPA Region 4 Telephone 404-562-8033	EPA Region 8 Telephone: 303-312-6774
EPA Region 5 Telephone 312-886-6686	EPA Region 9 Telephone: 415-947-4246
EPA Region 10 Telephone 206-553-8665	

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing

Date of Government Version: 05/13/2018	Source: EPA
Date Data Arrived at EDR: 05/30/2018	Telephone: N/A
Date Made Active in Reports: 06/22/2018	Last EDR Contact: 08/09/2018
Number of Days to Update: 23	Next Scheduled EDR Contact: 10/15/2018
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability USEPA compiles a listing of filed notices of Superfund Liens

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425 (e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-SQG RCRA - Small Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 The database includes selective information on sites which generate, transport store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month

Date of Government Version 03/01/2018
Date Data Arrived at EDR 03/28/2018
Date Made Active in Reports 06/22/2018
Number of Days to Update 86

Source Environmental Protection Agency
Telephone (888) 372-7341
Last EDR Contact 06/28/2018
Next Scheduled EDR Contact 10/08/2018
Data Release Frequency Quarterly

RCRA-CESQG RCRA - Conditionally Exempt Small Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month

Date of Government Version 03/01/2018
Date Data Arrived at EDR 03/28/2018
Date Made Active in Reports 06/22/2018
Number of Days to Update 86

Source Environmental Protection Agency
Telephone (888) 372-7341
Last EDR Contact 06/28/2018
Next Scheduled EDR Contact 10/08/2018
Data Release Frequency Quarterly

Federal institutional controls / engineering controls registries

LUCIS Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version 05/14/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source Department of the Navy
Telephone 843-820-7326
Last EDR Contact 07/16/2018
Next Scheduled EDR Contact 11/26/2018
Data Release Frequency Varies

US ENG CONTROLS Engineering Controls Sites List
A listing of sites with engineering controls in place Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health

Date of Government Version 02/13/2018
Date Data Arrived at EDR 02/27/2018
Date Made Active in Reports 05/11/2018
Number of Days to Update 73

Source Environmental Protection Agency
Telephone 703-603-0695
Last EDR Contact 05/29/2018
Next Scheduled EDR Contact 09/10/2018
Data Release Frequency Varies

US INST CONTROL Sites with Institutional Controls
A listing of sites with institutional controls in place Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site Deed restrictions are generally required as part of the institutional controls

Date of Government Version 02/13/2018
Date Data Arrived at EDR 02/27/2018
Date Made Active in Reports 05/11/2018
Number of Days to Update 73

Source Environmental Protection Agency
Telephone 703-603-0695
Last EDR Contact 05/29/2018
Next Scheduled EDR Contact 09/10/2018
Data Release Frequency Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS Emergency Response Notification System
Emergency Response Notification System ERNS records and stores information on reported releases of oil and hazardous substances

Date of Government Version 03/19/2018
Date Data Arrived at EDR 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact 06/27/2018
Next Scheduled EDR Contact 10/08/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

SHWS: Inventory of Hazardous Disposal Sites
State Hazardous Waste Sites State hazardous waste site records are the states' equivalent to CERCLIS These sites may or may not already be listed on the federal CERCLIS list Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties Available information varies by state

Date of Government Version: 04/23/2010
Date Data Arrived at EDR 04/23/2010
Date Made Active in Reports 05/25/2010
Number of Days to Update 32

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact 06/27/2018
Next Scheduled EDR Contact 10/15/2018
Data Release Frequency: No Update Planned

SDADB Site Discovery and Assessment Database
All sites reported to Permitting, Enforcement, and Remediation Division where it is suspected that hazardous waste may have been disposed or sites that are eligible for listing on the State Inventory of Hazardous Waste Disposal Sites

Date of Government Version: 04/23/2010
Date Data Arrived at EDR 04/23/2010
Date Made Active in Reports 05/25/2010
Number of Days to Update 32

Source Department of Energy & Environmental Protection
Telephone. 860-424-3705
Last EDR Contact 06/27/2018
Next Scheduled EDR Contact 10/27/2018
Data Release Frequency No Update Planned

State and tribal landfill and/or solid waste disposal site lists

SWF/LF List of Landfills/Transfer Stations
Solid Waste Facilities/Landfill Sites SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state Depending on the state these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites

Date of Government Version 03/29/2018
Date Data Arrived at EDR 07/25/2018
Date Made Active in Reports 07/31/2018
Number of Days to Update 6

Source Department of Energy & Environmental Protection
Telephone 860-424-3366
Last EDR Contact 07/25/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Annually

State and tribal leaking storage tank lists

LUST Leaking Underground Storage Tank List
Leaking Underground Storage Tank Incident Reports LUST records contain an inventory of reported leaking underground storage tank incidents Not all states maintain these records and the information stored varies by state

Date of Government Version 04/23/2018
Date Data Arrived at EDR 05/04/2018
Date Made Active in Reports 05/21/2018
Number of Days to Update 17

Source Department of Energy & Environmental Protection
Telephone 860-424-3376
Last EDR Contact 07/02/2018
Next Scheduled EDR Contact 10/15/2018
Data Release Frequency Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R7 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas and Nebraska

Date of Government Version 04/24/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source EPA Region 7
Telephone 913-551-7003
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R8 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming

Date of Government Version 04/25/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source EPA Region 8
Telephone 303-312-6271
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R9 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version 04/10/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source: Environmental Protection Agency
Telephone 415-972-3372
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R10 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington

Date of Government Version 04/12/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source EPA Region 10
Telephone 206-553-2857
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R4 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina

Date of Government Version 05/08/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source: EPA Region 4
Telephone 404-562-8677
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R1 Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land

Date of Government Version 04/13/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source: EPA Region 1
Telephone 617-918-1313
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

INDIAN LUST R5 Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin

Date of Government Version 04/12/2018
Date Data Arrived at EDR 05/18/2018
Date Made Active in Reports 07/20/2018
Number of Days to Update 63

Source EPA, Region 5
Telephone 312-886-7439
Last EDR Contact 07/27/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6 Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

State and tribal registered storage tank lists

FEMA UST Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Varies

UST Underground Storage Tank Data
Registered Underground Storage Tanks UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program Available information varies by state program.

Date of Government Version: 02/27/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 25

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3376
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

AST Marine Terminals and Tank Information
A listing of bulk petroleum facilities that receive petroleum by a vessel

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 07/05/2017
Date Made Active in Reports: 08/30/2017
Number of Days to Update: 56

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3233
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

INDIAN UST R5 Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations)

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

INDIAN UST R6 Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes)

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R7 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations)

Date of Government Version: 04/24/2018	Source: EPA Region 7
Date Data Arrived at EDR: 05/18/2018	Telephone: 913-551-7003
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

INDIAN UST R8 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations)

Date of Government Version: 04/25/2018	Source: EPA Region 8
Date Data Arrived at EDR: 05/18/2018	Telephone: 303-312-6137
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

INDIAN UST R9 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations)

Date of Government Version: 04/10/2018	Source: EPA Region 9
Date Data Arrived at EDR: 05/18/2018	Telephone: 415-972-3368
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

INDIAN UST R1 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018	Source: EPA Region 1
Date Data Arrived at EDR: 05/18/2018	Telephone: 617-918-1313
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

INDIAN UST R4 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018	Source: EPA Region 4
Date Data Arrived at EDR: 05/18/2018	Telephone: 404-562-9424
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

INDIAN UST R10 Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations)

Date of Government Version: 04/12/2018	Source: EPA Region 10
Date Data Arrived at EDR: 05/18/2018	Telephone: 206-553-2857
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 07/27/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/05/2018
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal institutional control / engineering control registries

ENG CONTROLS. Engineering Controls Listing

An Engineered Control is a permanent physical structure designed to safely isolate pollutants which would otherwise not comply with the self-implementing remedial options allowed in the Connecticut Remediation Standard Regulations (RSRs). The ECGD includes a description of what is eligible to be considered as an Engineered Control under section 22a-133k-2(f)(2) of the RSRs, a description of the information necessary for the preparation of complete and approvable applications, a step-by-step outline of the review and approval process, and supplemental resources provided in the appendices.

Date of Government Version: 03/05/2013
Date Data Arrived at EDR: 05/07/2013
Date Made Active in Reports: 06/19/2013
Number of Days to Update: 43

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3000
Last EDR Contact: 06/07/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

AUL: ELUR Sites

Environmental Land Use Restriction sites

Date of Government Version: 05/04/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 06/20/2018
Number of Days to Update: 33

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3912
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Remediation Sites

Sites involved in the Voluntary Remediation Program

Date of Government Version: 05/04/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 38

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 02/20/2047
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Inventory

CBRA has identified over 200 brownfield sites eligible for redevelopment. In most cases these are prime properties for commercial or industrial use. CBRA's grants, assistance and financing lower the financial risks and eliminate the legal, regulatory and environmental risks of redevelopment.

Date of Government Version 03/25/2016
Date Data Arrived at EDR 03/29/2016
Date Made Active in Reports 05/18/2016
Number of Days to Update 50

Source Connecticut Brownfields Redevelopment Authority
Telephone 860-258-7833
Last EDR Contact 06/27/2018
Next Scheduled EDR Contact 10/01/2018
Data Release Frequency Varies

BROWNFIELDS 2 Brownfields Inventory

A brownfield site is generally defined as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminanta?|"

Date of Government Version 08/03/2017
Date Data Arrived at EDR 09/20/2017
Date Made Active in Reports 09/26/2017
Number of Days to Update 6

Source Department of Energy & Environmental Protection
Telephone 860-424-3705
Last EDR Contact 06/22/2018
Next Scheduled EDR Contact 10/01/2018
Data Release Frequency Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY Recycling Facilities

A listing of recycling facilities

Date of Government Version 06/08/2018
Date Data Arrived at EDR 06/22/2018
Date Made Active in Reports 08/01/2018
Number of Days to Update 40

Source Department of Energy & Environmental Protection
Telephone 860-424-3223
Last EDR Contact 06/06/2018
Next Scheduled EDR Contact 09/24/2018
Data Release Frequency Varies

INDIAN ODI Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land

Date of Government Version 12/31/1998
Date Data Arrived at EDR 12/03/2007
Date Made Active in Reports 01/24/2008
Number of Days to Update 52

Source Environmental Protection Agency
Telephone 703-308-8245
Last EDR Contact 07/30/2018
Next Scheduled EDR Contact 11/12/2018
Data Release Frequency Varies

ODI Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Senvces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab locations included in the Spills database.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/04/2018
Date Made Active in Reports: 05/21/2018
Number of Days to Update: 17

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3361
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

Local Land Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CT PROPERTY: Property Transfer Filings
A listing of sites that meet the definition of a hazardous waste establishment. They can be generators, dry cleaners, furniture strippers, etc. These sites have been sold to another owner.

Date of Government Version: 05/04/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 38

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Semi-Annually

LIENS: Environmental Liens Listing
A listing of environmental liens placed by the Cost Recovery Program.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/13/2017
Number of Days to Update: 26

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3120
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

SPILLS: Oil & Chemical Spill Database
Oil and Chemical Spill Data.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/04/2018
Date Made Active in Reports: 05/21/2018
Number of Days to Update: 17

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3024
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste

Date of Government Version: 03/01/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/28/2018	Telephone: (888) 372-7341
Date Made Active in Reports: 06/22/2018	Last EDR Contact: 06/28/2018
Number of Days to Update: 86	Next Scheduled EDR Contact: 10/08/2018
	Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions

Date of Government Version: 01/31/2015	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 07/08/2015	Telephone: 202-528-4285
Date Made Active in Reports: 10/13/2015	Last EDR Contact: 05/25/2018
Number of Days to Update: 97	Next Scheduled EDR Contact: 09/03/2018
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 07/11/2018
Number of Days to Update: 62	Next Scheduled EDR Contact: 10/22/2018
	Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 07/13/2018
Number of Days to Update: 339	Next Scheduled EDR Contact: 10/22/2018
	Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/15/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/27/2018
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US FIN ASSUR Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/03/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/10/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/25/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g. the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/20/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PADS PCB Activity Database System
PCB Activity Database PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities

Date of Government Version 06/01/2017
Date Data Arrived at EDR 06/09/2017
Date Made Active in Reports 10/13/2017
Number of Days to Update 126

Source EPA
Telephone 202-566-0500
Last EDR Contact 07/13/2018
Next Scheduled EDR Contact 10/22/2018
Data Release Frequency Annually

ICIS Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version 11/18/2016
Date Data Arrived at EDR 11/23/2016
Date Made Active in Reports 02/10/2017
Number of Days to Update 79

Source Environmental Protection Agency
Telephone 202-564-2501
Last EDR Contact 07/09/2018
Next Scheduled EDR Contact 10/22/2018
Data Release Frequency Quarterly

FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act) To maintain currency, EDR contacts the Agency on a quarterly basis

Date of Government Version 04/09/2009
Date Data Arrived at EDR 04/16/2009
Date Made Active in Reports 05/11/2009
Number of Days to Update 25

Source EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone 202-566-1667
Last EDR Contact 08/18/2017
Next Scheduled EDR Contact 12/04/2017
Data Release Frequency Quarterly

FTTS INSP FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR 04/16/2009
Date Made Active in Reports 05/11/2009
Number of Days to Update 25

Source EPA
Telephone 202-566-1667
Last EDR Contact 08/18/2017
Next Scheduled EDR Contact 12/04/2017
Data Release Frequency Quarterly

MLTS Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements To maintain currency, EDR contacts the Agency on a quarterly basis

Date of Government Version: 08/30/2016
Date Data Arrived at EDR 09/08/2016
Date Made Active in Reports 10/21/2016
Number of Days to Update 43

Source Nuclear Regulatory Commission
Telephone 301-415-7169
Last EDR Contact 07/23/2018
Next Scheduled EDR Contact 11/05/2018
Data Release Frequency Quarterly

COAL ASH DOE Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds

Date of Government Version 12/31/2005
Date Data Arrived at EDR 08/07/2009
Date Made Active in Reports 10/22/2009
Number of Days to Update 76

Source Department of Energy
Telephone 202-586-8719
Last EDR Contact 06/07/2018
Next Scheduled EDR Contact 09/17/2018
Data Release Frequency Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/04/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U S Environmental Protection Agency (EPA) regulations for radiation and radioactivity

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 04/05/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/05/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters

Date of Government Version: 03/31/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 74

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/09/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low, however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust.

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US MINES 3 Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS

Date of Government Version 04/14/2011
Date Data Arrived at EDR 06/08/2011
Date Made Active in Reports 09/13/2011
Number of Days to Update 97

Source USGS
Telephone 703-648-7709
Last EDR Contact 05/30/2018
Next Scheduled EDR Contact 09/10/2018
Data Release Frequency Varies

ABANDONED MINES Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems The inventory is based upon field surveys by State, Tribal, and OSMRE program officials It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed

Date of Government Version 03/08/2018
Date Data Arrived at EDR 03/13/2018
Date Made Active in Reports 06/08/2018
Number of Days to Update 87

Source Department of Interior
Telephone 202-208-2609
Last EDR Contact 06/20/2018
Next Scheduled EDR Contact 09/24/2018
Data Release Frequency Quarterly

FINDS Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail EDR includes the following FINDS databases in this report PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System)

Date of Government Version 02/21/2018
Date Data Arrived at EDR 02/23/2018
Date Made Active in Reports 03/23/2018
Number of Days to Update 28

Source EPA
Telephone (617) 918-1111
Last EDR Contact 06/06/2018
Next Scheduled EDR Contact 09/17/2018
Data Release Frequency Quarterly

ECHO Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide

Date of Government Version 02/25/2018
Date Data Arrived at EDR 03/17/2018
Date Made Active in Reports 06/08/2018
Number of Days to Update 83

Source Environmental Protection Agency
Telephone 202-564-2280
Last EDR Contact 06/06/2018
Next Scheduled EDR Contact 09/17/2018
Data Release Frequency Quarterly

DOCKET HWC Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities

Date of Government Version 01/04/2018
Date Data Arrived at EDR 01/19/2018
Date Made Active in Reports 04/13/2018
Number of Days to Update 84

Source Environmental Protection Agency
Telephone 202-564-0527
Last EDR Contact 06/01/2018
Next Scheduled EDR Contact 09/10/2018
Data Release Frequency Varies

UXO Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

AIRS: Permitted Air Sources Listing
A listing of permitted air sources in Connecticut.

Date of Government Version: 02/02/2018
Date Data Arrived at EDR: 04/20/2018
Date Made Active in Reports: 05/18/2018
Number of Days to Update: 28

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3026
Last EDR Contact: 07/17/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Varies

ASBESTOS: Asbestos Notification Listing
A listing of asbestos notification site locations.

Date of Government Version: 05/01/2018
Date Data Arrived at EDR: 05/04/2018
Date Made Active in Reports: 05/18/2018
Number of Days to Update: 14

Source: Department of Public Health
Telephone: 860-509-7371
Last EDR Contact: 07/24/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Varies

CPCS: Contaminated or Potentially Contaminated Sites
A list of Contaminated or Potentially Contaminated Sites within Connecticut. This list represents the "Hazardous Waste Facilities," as defined in Section 22a-134f of the Connecticut General Statutes (CGS). The list contains the following types of sites: Sites listed on the Inventory of Hazardous Waste Disposal Sites; Sites subject to the Property Transfer Act; Sites at which underground storage tanks are known to have leaked, Sites at which hazardous waste subject to the RCRA; Sites that are included in EPA's (CERCLIS); Sites that are the subject of an order issued by the Commissioner of DEP that requires investigation and remediation of a potential or known source of pollution; and Sites that have entered into one of the Department's Voluntary Remediation Programs.

Date of Government Version: 06/26/2018
Date Data Arrived at EDR: 07/03/2018
Date Made Active in Reports: 07/31/2018
Number of Days to Update: 28

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3766
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/19/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Drycleaner Facilities
A listing of drycleaner facility locations.

Date of Government Version: 07/18/2008
Date Data Arrived at EDR: 08/08/2008
Date Made Active in Reports: 08/27/2008
Number of Days to Update: 19

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3026
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

ENFORCEMENT: Enforcement Case Listing
The types of enforcement actions included are administrative consent orders, final unilateral orders and final dispositions of civil cases through the Attorney General's Office.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 05/21/2018
Number of Days to Update: 10

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3265
Last EDR Contact: 07/11/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

A listing containing RCRA financial assurance information submitted on behalf of the CT DEP's Program Analysis Group of the Waste Engineering and Enforcement Division.

Date of Government Version: 06/14/2018
Date Data Arrived at EDR: 06/22/2018
Date Made Active in Reports: 07/31/2018
Number of Days to Update: 39

Source: Department of Energy & Environmental Protection
Telephone: 860-418-5930
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/14/2018
Date Data Arrived at EDR: 06/22/2018
Date Made Active in Reports: 07/31/2018
Number of Days to Update: 39

Source: Department of Energy & Environmental Protection
Telephone: 860-418-5930
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

LEAD: Lead Inspection Database

The Lead Poisoning Prevention and Control Program lead inspection database.

Date of Government Version: 03/26/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 860-509-7299
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

LWDS: Connecticut Leachate and Wastewater Discharge Sites

The Leachate and Waste Water Discharge Inventory Data Layer (LWDS) includes point locations digitized from Leachate and Wastewater Discharge Source maps compiled by the Connecticut DEP. These maps locate surface and groundwater discharges that (1) have received a waste water discharge permit from the state or (2) are historic and now defunct waste sites or (3) are locations of accidental spills, leaks, or discharges of a variety of liquid or solid wastes.

Date of Government Version: 07/17/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 10/30/2009
Number of Days to Update: 9

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/09/2018
Next Scheduled EDR Contact: 11/26/2018
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPDES Wastewater Permit Listing
A listing of permits issued by the DEP.

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 07/18/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 14

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3832
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

SEH List of Significant Environmental Hazards Report to DEEP
The Significant Environmental Hazard Statute is intended to identify and abate short-term risks associated with specific environmental conditions identified in the statute. After abatement of short-term risks (meaning abatement of the significant environmental hazard condition), there may still be potential long-term risks associated with the release. However, a significant environmental hazard can be considered abated under the statute even though potential long-term risks may not have been addressed.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 8

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3766
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Energy & Environmental Protection formerly know as the DEP which changes in July 2011 in Connecticut.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Energy & Environmental Protection formerly know as the DEP which changes in July 2011 in Connecticut.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2018
Next Scheduled EDR Contact: 10/22/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/01/2018
Next Scheduled EDR Contact: 11/12/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PA MANIFEST: Manifest Information
Hazardous waste manifest information

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/12/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/21/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information

Date of Government Version: 05/16/2018
Date Data Arrived at EDR: 05/23/2018
Date Made Active in Reports: 07/03/2018
Number of Days to Update: 41

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 07/16/2018
Next Scheduled EDR Contact: 10/29/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers and nursing homes - where individuals who are sensitive receptors are likely to be located

AHA Hospitals
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States

Daycare Centers: Licensed Child Care Facilities
Source: Department of Public Health
Telephone: 860-509-8045

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service

State Wetlands Data: Tidal Wetlands
Source: Department of Energy & Environmental Protection
Telephone: 860-424-4054

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

121 SOUTH EAGLEVILLE ROAD
121 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD, CT 06268

TARGET PROPERTY COORDINATES

Latitude (North):	41 796105 - 41' 47' 45 98"
Longitude (West):	72 24947 - 72' 14' 58 09"
Universal Tranverse Mercator.	Zone 18
UTM X (Meters):	728534.3
UTM Y (Meters):	4630582.5
Elevation:	638 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5642455 SPRING HILL, CT
Version Date:	2012
West Map:	5642409 COVENTRY, CT
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

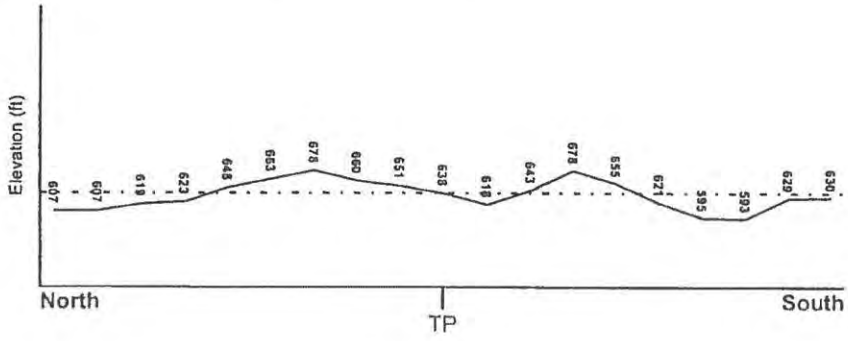
TOPOGRAPHIC INFORMATION

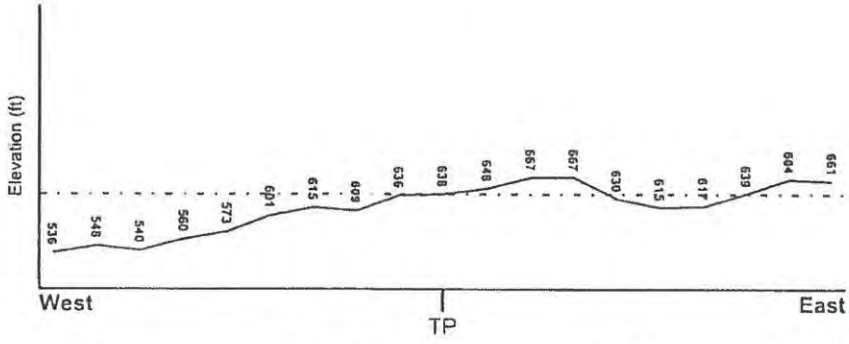
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 638 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
0901280005C	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
0901280010C	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SPRING HILL	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All the information and opinions presented are those of the cited EPA reports. [illegible] compiled under the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

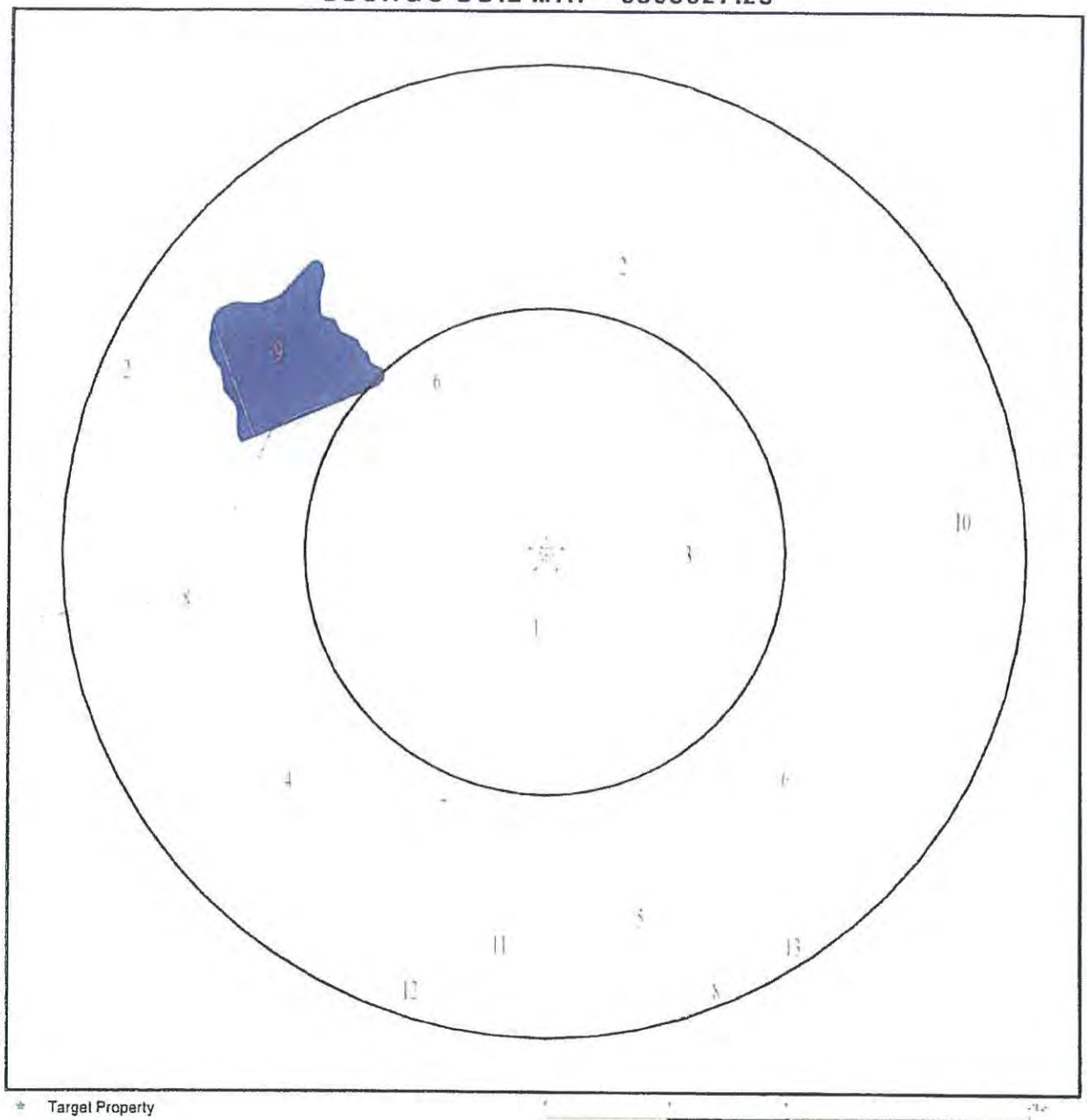
Era:	Paleozoic
System:	Devonian
Series:	Devonian
Code:	De *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Eugeosynclinal Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994)

SSURGO SOIL MAP - 5393627.2s



Target Property
SSURGO Soil
Water

SITE NAME: 121 South Eagleville Road ADDRESS: 121 South Eagleville Road Storrs Mansfield CT 06268 LAT/LONG: 41.796105 / 72.24947	CLIENT: Lenard Engineering, Inc. CONTACT: Tricia Canterbury INQUIRY #: 5393627.2s DATE: August 15, 2018 4:13 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Agawam

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines Silty Sand.	Max: 703 Min: 141	Max: 6.5 Min: 4.5
2	7 inches	14 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200) Silty Soils	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 141	Max: 6.5 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	14 inches	24 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 141	Max: 6.5 Min: 4.5
4	24 inches	59 inches	stratified very gravelly coarse sand to fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 141	Max: 6.5 Min: 4.5

Soil Map ID: 2

Soil Component Name:	Charlton
Soil Surface Texture:	fine sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status: Partially hydric	
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min.:	> 74 inches
Depth to Watertable Min.:	> 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	3 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
2	3 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
3	7 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
4	18 inches	27 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
5	27 inches	64 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5

Soil Map ID: 3

Soil Component Name	Catden
Soil Surface Texture:	muck
Hydrologic Group	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Very poorly drained
Hydric Status: All hydric	
Corrosion Potential - Uncoated Steel:	High
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	muck	A-8	Highly organic soils, Peat	Max: 42 Min 4	Max: Min:
2	1 inches	17 inches	muck	A-8	Highly organic soils, Peat	Max. 42 Min 4	Max: Min.
3	17 inches	47 inches	muck	A-8	Highly organic soils, Peat	Max: 42 Min: 4	Max Min:
4	47 inches	48 inches	muck	A-8	Highly organic soils, Peat	Max: 42 Min 4	Max: Min:
5	48 inches	61 inches	muck	A-8	Highly organic soils, Peat	Max: 42 Min 4	Max: Min:

Soil Map ID: 4

Soil Component Name: Udorthents

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures

Soil Drainage Class: Well drained

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	loam	Silt Clay Materials (more than 35 pct passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0 01	Max 7.8 Min: 4 5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	5 inches	21 inches	gravelly loam	Silt-Clay Materials (more than 35 pct passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5
3	21 inches	79 inches	very gravelly sandy loam	Silt-Clay Materials (more than 35 pct passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5

Soil Map ID: 5

Soil Component Name: Timakwa

Soil Surface Texture: muck

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	10 inches	muck	A-8	COARSE-GRAINED SOILS, Sands Clean Sands, Poorly graded sand COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	10 inches	20 inches	muck	A-8	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1
3	20 inches	24 inches	muck	A-8	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1
4	24 inches	37 inches	muck	A-8	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1
5	37 inches	47 inches	very gravelly loamy coarse sand	A-8	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1
6	47 inches	59 inches	gravelly loamy very fine sand	A-8	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 7.3 Min: 5.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 6

Soil Component Name: Canton

Soil Surface Texture. moderately decomposed plant material

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	moderately decomposed plant material	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
2	1 inches	3 inches	gravelly fine sandy loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
3	3 inches	14 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
4	14 inches	24 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
5	24 inches	29 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
6	29 inches	60 inches	very gravelly loamy sand	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 7

Soil Component Name: Sudbury

Soil Surface Texture: moderately decomposed plant material

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 69 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	1 inches	moderately decomposed plant material	A-8	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 703 Min: 42	Max: 6 5 Min: 4 5
2	1 inches	5 inches	sandy loam	A-8	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 703 Min: 42	Max: 6 5 Min: 4 5
3	5 inches	16 inches	gravelly sandy loam	A-8	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 703 Min: 42	Max: 6 5 Min: 4 5
4	16 inches	25 inches	sandy loam	A-8	COARSE-GRAINED SOILS, Gravels Gravels with fines, Silty Gravel	Max: 703 Min: 42	Max: 6 5 Min: 4 5
5	25 inches	59 inches	stratified gravel to sand	A-8	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 703 Min: 42	Max: 6 5 Min: 4 5

Soil Map ID: 8

Soil Component Name: Ridgebury

Soil Surface Texture: slightly decomposed plant material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	slightly decomposed plant material	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
2	1 inches	5 inches	fine sandy loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
3	5 inches	14 inches	fine sandy loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
4	14 inches	20 inches	fine sandy loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
5	20 inches	59 inches	sandy loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5

Soil Map ID: 9

Soil Component Name: Water

Soil Surface Texture: slightly decomposed plant material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available

Soil Map ID: 10

Soil Component Name: Canton

Soil Surface Texture: moderately decomposed plant material

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	1 inches	moderately decomposed plant material	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5
2	1 inches	3 inches	gravelly fine sandy loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5
3	3 inches	14 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5
4	14 inches	24 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
5	24 inches	29 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5
6	29 inches	60 inches	very gravelly loamy sand	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 141 Min: 42	Max: 6 Min: 3.5

Soil Map ID: 11

Soil Component Name: Woodbridge

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
2	7 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	18 inches	25 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
4	25 inches	29 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5
5	29 inches	42 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max. 1.4 Min: 0.01	Max: 6 Min: 4.5
6	42 inches	64 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand	Max: 1.4 Min: 0.01	Max: 6 Min: 4.5

Soil Map ID: 12

Soil Component Name:	Paxton
Soil Surface Texture:	fine sandy loam
Hydrologic Group:	Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
Soil Drainage Class:	Well drained
Hydric Status: Partially hydric	
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 61 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt	Max: 1.41 Min: 0.01	Max: 6 Min 4.5
2	7 inches	14 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt	Max: 1.41 Min: 0.01	Max: 6 Min 4.5
3	14 inches	25 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt	Max: 1.41 Min: 0.01	Max: 6 Min 4.5
4	25 inches	64 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 1.41 Min: 0.01	Max: 6 Min 4.5

Soil Map ID: 13

Soil Component Name:	Canton
Soil Surface Texture:	moderately decomposed plant material
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status: Partially hydric	
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min.:	> 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	moderately decomposed plant material	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min 42	Max: 6 Min. 3.5
2	1 inches	3 inches	gravelly fine sandy loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max 141 Min: 42	Max: 6 Min: 3.5
3	3 inches	14 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
4	14 inches	24 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min 42	Max: 6 Min: 3.5
5	24 inches	29 inches	gravelly loam	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5
6	29 inches	60 inches	very gravelly loamy sand	A-8	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.5

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
5	USGS40000228742	1/2 - 1 Mile NE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

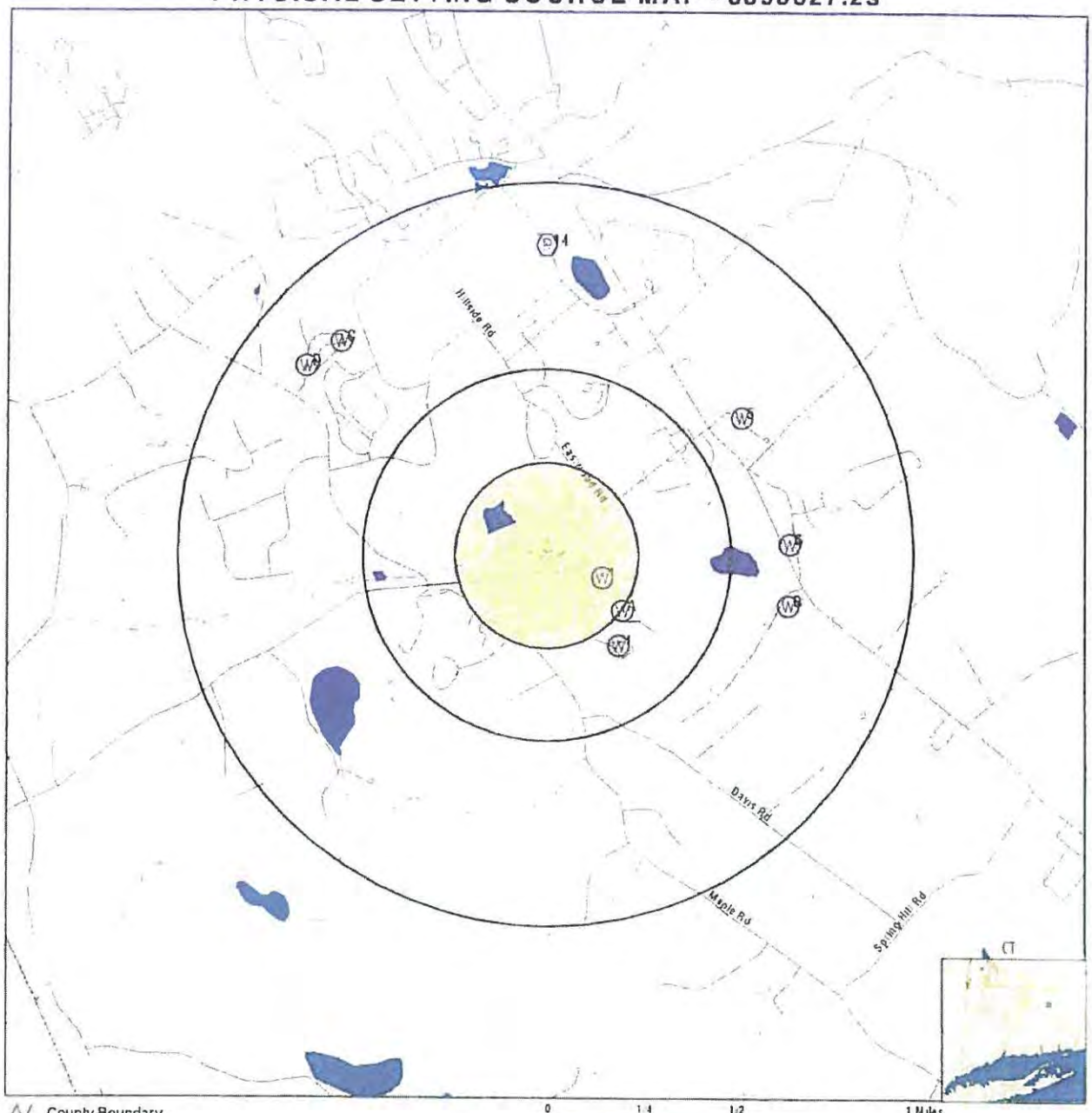
MAP ID	WELL ID	LOCATION FROM TP
14	CT0781212	1/2 - 1 Mile North

Note: PWS System location is not always the same as well location

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CTC000000000267	1/8 - 1/4 Mile ESE
A2	CTC000000000271	1/4 - 1/2 Mile SE
A3	CTC000000001631	1/4 - 1/2 Mile ESE
4	CTC000000000272	1/4 - 1/2 Mile SE
6	CTNC00000000478	1/2 - 1 Mile East
B7	CTC000000000270	1/2 - 1 Mile East
B8	CTC000000000269	1/2 - 1 Mile ESE
B9	CTC000000000268	1/2 - 1 Mile ESE
C10	CTC000000000227	1/2 - 1 Mile NW
C11	CTC000000000226	1/2 - 1 Mile NW
D12	CTC000000000228	1/2 - 1 Mile NW
D13	CTC000000000229	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 5393627.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data

EPA Designated Sole Src. Aq.

SITE NAME: 121 South Eagleville Road ADDRESS: 121 South Eagleville Road Storrs Mansfield CT 06268 LAT/LONG: 41.796105 / 72.24947	CLIENT: Lenard Engineering, Inc. CONTACT: Tricia Canterbury INQUIRY #: 5393627.2s DATE: August 15, 2018 4:13 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
1 ESE 1/8 - 1/4 Mile Higher	CT WELLS	CTC000000000267

Well id	285	Gismethod	GPS - EPA
Gisdate	1993	X	737161
Y	350855	Well	Well 1
System id	78005	Uname	KNOLLWOOD ACRES APARTMENTS
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	188
Rckdpth ft	0	Diam in	6
Casdiam in	6	Pmpcap gpm	15
Syield mgd	01999	Text id	285
Site id	CTC000000000267		

A2 SE 1/4 - 1/2 Mile Higher	CT WELLS	CTC000000000271

Well id	289	Gismethod	GPS - EPA
Gisdate	1993	X	737412
Y	350355	Well	Well 3
System id	78005	Uname	KNOLLWOOD ACRES APARTMENTS
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	300
Rckdpth ft	0	Diam in	6
Casdiam in	6	Pmpcap gpm	7
Syield mgd	008	Text id	289
Site id	CTC000000000271		

A3 ESE 1/4 - 1/2 Mile Higher	CT WELLS	CTC000000001631

Well id	1773	Gismethod	Screen Digitize
Gisdate	1998	X	737488
Y	350424	Well	Well 4
System id	78005	Uname	KNOLLWOOD ACRES APARTMENTS
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	700
Rckdpth ft	0	Diam in	6
Casdiam in	6	Pmpcap gpm	4 5
Syield mgd	006	Text id	1773
Site id	CTC000000001631		

4 SE 1/4 - 1/2 Mile Higher	CT WELLS	CTC000000000272

Well id	290	Gismethod	Screen Digitize
Gisdate	1998	X	737399
Y	349890	Well	Well 2
System id	78005	Uname	KNOLLWOOD ACRES APARTMENTS

Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	155
Rckdpth ft	0	Diam in	6
Casdiam in	6	Pmpcap gpm	30
Syield mgd	032	Text id	290
Site id	CTC000000000272		

5
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40000228742**

Organization ID	USGS-CT		
Organization Name	USGS Connecticut Water Science Center		
Monitor Location	CT-MS 30	Type	Well
Description	Not Reported	HUC	01100002
Drainage Area	Not Reported	Drainage Area Units	Not Reported
Contrib Drainage Area	Not Reported	Contrib Drainage Area Units	Not Reported
Aquifer	New England crystalline-rock aquifers		
Formation Type	Non-Carbonate Crystalline Bedrock		
Aquifer Type	Not Reported	Construction Date	Not Reported
Well Depth	173	Well Depth Units	ft
Well Hole Depth	Not Reported	Well Hole Depth Units	Not Reported

---

6
East
1/2 - 1 Mile
Lower

CT WELLS **CTNC00000000478**

Well id	876	Gismethod	Screen Digitize
Gisdate	1998	X	739843
Y	351354	Well	Well
System id	780892	System	Liberty Bank Plaza
Systype	TNC	Status	Active
Type	Drilled	Aquifer	Bedrock
Depth ft	600	Rckdpth ft	27
Diam in	6	Casdiam in	6
Pmpcap gpm	0	Syield mgd	0
Newsystem	CT0780184	Site id	CTNC00000000478

B7
East
1/2 - 1 Mile
Lower

CT WELLS **CTC000000000270**

Well id	288	Gismethod	Screen Digitize
Gisdate	2000	X	739815
Y	350510	Well	Well 3
System id	78012	Uname	ECRWC BIRCHWOOD HEIGHTS DIVISION
Status	Inactive	Type	Drilled
Aquifer	Bedrock	Depth ft	400
Rckdpth ft	0	Diam in	6
Casdiam in	0	Pmpcap gpm	1
Syield mgd	0	Text id	288
Site id	CTC000000000270		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
B8 **ESE** **1/2 - 1 Mile** **Lower**	**CT WELLS**	**CTC000000000269**

Well id	287	Gismethod	Screen Digitize
Gisdate	2000	X	739810
Y	350474	Well	Well 2
System id	78012	Uname	ECRWC, BIRCHWOOD HEIGHTS DIVISION
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	314
Rckdpth ft	0	Diam in	6
Casdiam in	0	Pmpcap gpm	2
Syield mgd	0	Text id	287
Site id	CTC000000000269		

B9 **ESE** **1/2 - 1 Mile** **Lower**	**CT WELLS**	**CTC000000000268**

Well id	286	Gismethod	Screen Digitize
Gisdate	2000	X	739847
Y	350459	Well	Well 1
System id	78012	Uname	ECRWC, BIRCHWOOD HEIGHTS DIVISION
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	305
Rckdpth ft	0	Diam in	6
Casdiam in	0	Pmpcap gpm	2
Syield mgd	0	Text id	286
Site id	CTC000000000268		

C10 **NW** **1/2 - 1 Mile** **Lower**	**CT WELLS**	**CTC000000000227**

Well id	243	Gismethod	Screen Digitize
Gisdate	1999	X	733414
Y	354189	Well	Well 3
System id	78006	Uname	ORCHARD ACRES ASSOCIATION
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	500
Rckdpth ft	0	Diam in	0
Casdiam in	0	Pmpcap gpm	5
Syield mgd	00499	Text id	243
Site id	CTC000000000227		

C11 **NW** **1/2 - 1 Mile** **Lower**	**CT WELLS**	**CTC000000000226**

Well id	242	Gismethod	Screen Digitize
Gisdate	1999	X	733348
Y	354125	Well	Well 4
System id	78006	Uname	ORCHARD ACRES ASSOCIATION

Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	290
Rckdpth ft	30	Diam in	6
Casdiam in	0	Pmpcap gpm	3
Syield mgd	0	Text id	242
Site id	CTC000000000226		

D12
NW
1/2 - 1 Mile
Lower

CT WELLS **CTC000000000228**

Well id	244	Gismethod	Screen Digitize
Gisdate	1999	X	732878
Y	353784	Well	Well 1
System id	78006	Uname	ORCHARD ACRES ASSOCIATION
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	500
Rckdpth ft	0	Diam in	0
Casdiam in	0	Pmpcap gpm	5
Syield mgd	.00499	Text id	244
Site id	CTC000000000228		

D13
NW
1/2 - 1 Mile
Lower

CT WELLS **CTC000000000229**

Well id	245	Gismethod	GPS - EPA
Gisdate	1993	X	732902
Y	353837	Well	Well 2
System id	78006	Uname	ORCHARD ACRES ASSOCIATION
Status	Active	Type	Drilled
Aquifer	Bedrock	Depth ft	600
Rckdpth ft	0	Diam in	0
Casdiam in	0	Pmpcap gpm	7
Syield mgd	.008	Text id	245
Site id	CTC000000000229		

14
North
1/2 - 1 Mile
Lower

FRDS PWS **CT0781212**

Epa region	01	State	CT
Pwsid	CT0781212	Pwsname	GOODWIN ELEMENTARY SCHOOL
Cityserved	Not Reported	Stateserved	CT
Zipserved	Not Reported	Fipscounty	09013
Status	Active	Retpopsrvd	340
Pwssvcconn	1	Psource longname	Groundwater
Pwstype	NTNCWS	Owner	Local_Govt
Contact	CORSON, ALLEN	Contactorgname	CORSON, ALLEN
Contactphone	860-429 3322	Contactaddress1	4 S EAGLEVILLE ROAD
Contactaddress2	Not Reported	Contactcity	MANSFIELD
Contactstate	CT	Contactzip	06268
Pwsactivitycode	A		
PWS ID	CT0781212	PWS type	Not Reported
PWS name	Not Reported	PWS address	Not Reported

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS name:	GOODWIN ELEMENTARY SCHOOL
PWS type code:	NTNC	Retail population served:	340
Contact:	CORSON, ALLEN	Contact address:	4 S EAGLEVILLE ROAD
Contact address:	MANSFIELD	Contact city:	CT
Contact state:	06	Contact zip:	860-429-33
Contact telephone:	Not Reported		

PWS ID	CT0781212	Activity status	Active
Date system activated	Not Reported	Date system deactivated:	Not Reported
Retail population:	00000027	System name	EASTCONN AFTER SCHOOL PROGRAM
System address	Not Reported	System address:	205 SPRING HILL RD
System city	STORRS	System state:	CT
System zip:	06268		

County FIPS:	Not Reported	City served:	013

Population served:	Under 101 Persons	Treatment:	Untreated

Latitude:	414829	Longitude	0721500

Violation id:	47104	Orig code:	S
State:	CT	Violation Year:	2003
Contamination code	5000	Contamination Name:	Lead and Copper Rule
Violation code:	53	Violation name:	Water Quality Parameter M/R
Rule code:	350	Rule name:	LCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	01/01/2003
Cmp edt:	12/31/2003		

Violation id:	47604	Orig code:	S
State:	CT	Violation Year:	2001
Contamination code	5000	Contamination Name:	Lead and Copper Rule
Violation code:	57	Violation name:	OCCT/SOWT Study/Recommendation
Rule code:	350	Rule name:	LCR
Violation measur:	Not Reported	Unit of measure	Not Reported
State mcl:	Not Reported	Cmp bdt.	01/01/2001
Cmp edt:	Not Reported		

Violation id:	47706	Orig code:	S
State:	CT	Violation Year:	2004
Contamination code:	5000	Contamination Name:	Lead and Copper Rule
Violation code:	65	Violation name:	Public Education
Rule code:	350	Rule name:	LCR
Violation measur:	Not Reported	Unit of measure	Not Reported
State mcl	Not Reported	Cmp bdt:	03/01/2004
Cmp edt:	Not Reported		

Violation id	47908	Orig code:	S
State:	CT	Violation Year:	2008
Contamination code	2005	Contamination Name	Endrin
Violation code	03	Violation name:	Monitoring, Regular
Rule code:	320	Rule name:	SOC
Violation measur	Not Reported	Unit of measure	Not Reported
State mcl.	Not Reported	Cmp bdt:	04/01/2008
Cmp edt	06/30/2008		

System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	53
Contaminant	5000	Compliance Begin:	1/1/2003 0 00 00
Compliance End	12/31/2003 0 00 00	Violation ID	47204
Enforcement Date	4/19/2004 0 00 00	Enforcement Action	SIA

System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	53
Contaminant	5000	Compliance Begin	1/1/2003 0 00 00
Compliance End	12/31/2003 0 00 00	Violation ID	47204
Enforcement Date	4/19/2004 0 00 00	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	53
Contaminant	5000	Compliance Begin	1/1/2003 0 00 00
Compliance End	12/31/2003 0 00 00	Violation ID	47204
Enforcement Date	4/19/2004 0 00 00	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	53
Contaminant	5000	Compliance Begin	1/1/2003 0 00 00
Compliance End	12/31/2003 0 00 00	Violation ID	47204
Enforcement Date	4/19/2004 0 00 00	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	57
Contaminant	5000	Compliance Begin	1/1/2001 0 00 00
Compliance End	12/31/2025 0 00 00	Violation ID	47604
Enforcement Date	7/27/2004 0 00 00	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	57
Contaminant	5000	Compliance Begin	1/1/2001 0 00 00
Compliance End	12/31/2025 0 00 00	Violation ID	47604
Enforcement Date	7/27/2004 0 00 00	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	65
Contaminant	5000	Compliance Begin	3/1/2004 0 00 00
Compliance End	12/31/2025 0 00 00	Violation ID	47706
Enforcement Date	4/12/2007 0 00 00	Enforcement Action	Not Reported
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	65
Contaminant	5000	Compliance Begin	3/1/2004 0 00 00
Compliance End	12/31/2025 0 00 00	Violation ID	47706
Enforcement Date	No Enf Action as of	Enforcement Action	10/17/2006 0 00 00
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2210	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800001V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2210	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800001V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2210	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800001V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2214	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800002V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2214	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800002V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2214	Compliance Begin	1995-01-01

Compliance End	1997-12-31	Violation ID	9800002V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2216	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800003V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2216	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800003V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2216	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800003V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2380	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800004V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2380	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800004V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2380	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800004V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2408	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800005V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2408	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800005V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2408	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800005V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2410	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800006V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2410	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800006V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2410	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800006V
Enforcement Date	1998-02-05	Enforcement Action	SOX

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System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2412	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800007V
Enforcement Date:	1998-01-30	Enforcement Action:	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2412	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID.	9800007V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2412	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800007V
Enforcement Date:	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2413	Compliance Begin	1995-01-01
Compliance End:	1997-12-31	Violation ID:	9800008V
Enforcement Date:	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant.	2413	Compliance Begin:	1995-01-01
Compliance End:	1997-12-31	Violation ID:	9800008V
Enforcement Date:	1998-01-30	Enforcement Action:	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2413	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800008V
Enforcement Date:	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2414	Compliance Begin.	1995-01-01
Compliance End	1997-12-31	Violation ID	9800009V
Enforcement Date:	1998-01-30	Enforcement Action:	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type.	03
Contaminant:	2414	Compliance Begin	1995-01-01
Compliance End:	1997-12-31	Violation ID.	9800009V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2414	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800009V
Enforcement Date	1998-02-05	Enforcement Action:	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant.	2416	Compliance Begin:	1995-01-01
Compliance End	1997-12-31	Violation ID	9800010V
Enforcement Date:	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2416	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800010V
Enforcement Date.	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2416	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800010V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2941	Compliance Begin:	1995-01-01

Compliance End	1997-12-31	Violation ID	9800011V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2941	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800011V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2941	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800011V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2942	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800012V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2942	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800012V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2942	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800012V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2943	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800013V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2943	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800013V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2943	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800013V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2944	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800014V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2944	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800014V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2944	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800014V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2962	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800015V
Enforcement Date	1998-01-30	Enforcement Action	SIA

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System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2962	Compliance Begin:	1995-01-01
Compliance End:	1997-12-31	Violation ID:	9800015V
Enforcement Date:	1998-01-30	Enforcement Action	SIE
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2962	Compliance Begin:	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800015V
Enforcement Date:	1998-02-05	Enforcement Action:	SOX
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type.	03
Contaminant	2964	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800016V
Enforcement Date:	1998-01-30	Enforcement Action	SIA
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2964	Compliance Begin	1995-01-01
Compliance End:	1997-12-31	Violation ID	9800016V
Enforcement Date	1998-01-30	Enforcement Action:	SIE
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2964	Compliance Begin:	1995-01-01
Compliance End:	1997-12-31	Violation ID:	9800016V
Enforcement Date:	1998-02-05	Enforcement Action	SOX
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2965	Compliance Begin:	1995-01-01
Compliance End:	1997-12-31	Violation ID:	9800017V
Enforcement Date	1998-01-30	Enforcement Action:	SIA
System Name.	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2965	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800017V
Enforcement Date:	1998-01-30	Enforcement Action:	SIE
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2965	Compliance Begin:	1995-01-01
Compliance End:	1997-12-31	Violation ID.	9800017V
Enforcement Date.	1998-02-05	Enforcement Action	SOX
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2966	Compliance Begin	1995-01-01
Compliance End.	1997-12-31	Violation ID	9800018V
Enforcement Date	1998-01-30	Enforcement Action:	SIA
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant.	2966	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800018V
Enforcement Date:	1998-01-30	Enforcement Action	SIE
System Name:	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant:	2966	Compliance Begin:	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800018V
Enforcement Date	1998-02-05	Enforcement Action:	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2967	Compliance Begin	1995-01-01
Compliance End:	1997-12-31	Violation ID	9800019V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name.	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2967	Compliance Begin:	1995-01-01

Compliance End	1997-12-31	Violation ID	9800019V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2967	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800019V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2968	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800020V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2968	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800020V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2968	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800020V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2969	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800021V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2969	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800021V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2969	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800021V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2976	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800022V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2976	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800022V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2976	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800022V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2977	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800023V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2977	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800023V
Enforcement Date	1998-01-30	Enforcement Action	SIE

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System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2977	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800023V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2978	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800024V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2978	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800024V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2978	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800024V
Enforcement Date	1998-02-05	Enforcement Action:	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2979	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800025V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2979	Compliance Begin:	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800025V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type:	03
Contaminant	2979	Compliance Begin	1995-01-01
Compliance End:	1997-12-31	Violation ID	9800025V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2980	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800026V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2980	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800026V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2980	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800026V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2981	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID:	9800027V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2981	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800027V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2981	Compliance Begin	1995-01-01

Compliance End	1997-12-31	Violation ID	9800027V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2982	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800028V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2982	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800028V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2982	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800028V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2983	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800029V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2983	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800029V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2983	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800029V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2984	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800030V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2984	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800030V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2984	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800030V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2985	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800031V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2985	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800031V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2985	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800031V
Enforcement Date	1998-02-05	Enforcement Action	SOX

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2986	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800032V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2986	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800032V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2986	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800032V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2987	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800033V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2987	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800033V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2987	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800033V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2988	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800034V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2988	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800034V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2988	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800034V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2989	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800035V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2989	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800035V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2989	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800035V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2990	Compliance Begin	1995-01-01

Compliance End	1997-12-31	Violation ID	9800036V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2990	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800036V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2990	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800036V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2991	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800037V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2991	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800037V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2991	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800037V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2992	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800038V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2992	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800038V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2992	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800038V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2993	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800039V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2993	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800039V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2993	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800039V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2995	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800040V
Enforcement Date	1998-01-30	Enforcement Action	SIA

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2995	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800040V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2995	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800040V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2996	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800041V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2996	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800041V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2996	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800041V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2997	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800042V
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2997	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800042V
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2997	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800042V
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2378	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800467
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2378	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800467
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2378	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800467
Enforcement Date	1998-02-05	Enforcement Action	SOX
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2955	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800468
Enforcement Date	1998-01-30	Enforcement Action	SIA
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2955	Compliance Begin	1995-01-01

Compliance End	1997-12-31	Violation ID	9800468
Enforcement Date	1998-01-30	Enforcement Action	SIE
System Name	GOODWIN ELEMENTARY SCHOOL	Violation Type	03
Contaminant	2955	Compliance Begin	1995-01-01
Compliance End	1997-12-31	Violation ID	9800468
Enforcement Date	1998-02-05	Enforcement Action	SOX
Violation ID	47104	Orig Code	S
Enforcemnt FY	2004	Enforcement Action	04/19/2004
Enforcement Detail	St Public Notif requested	Enforcement Category	Informal
Violation ID	47104	Orig Code	S
Enforcemnt FY	2007	Enforcement Action	09/10/2007
Enforcement Detail	St Compliance achieved	Enforcement Category	Resolving
Violation ID	47104	Orig Code	S
Enforcemnt FY	2004	Enforcement Action	04/19/2004
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Informal		
Violation ID	47604	Orig Code	S
Enforcemnt FY	2004	Enforcement Action	07/27/2004
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Informal		
Violation ID	47604	Orig Code	S
Enforcemnt FY	2004	Enforcement Action	08/11/2004
Enforcement Detail	St Compliance achieved	Enforcement Category	Resolving
Violation ID	47706	Orig Code	S
Enforcemnt FY	2004	Enforcement Action	05/24/2004
Enforcement Detail	St Compliance achieved	Enforcement Category	Resolving
Violation ID	47908	Orig Code	S
Enforcemnt FY	2008	Enforcement Action	07/31/2008
Enforcement Detail	St Compliance achieved	Enforcement Category	Resolving
Violation ID	47908	Orig Code	S
Enforcemnt FY	2008	Enforcement Action	08/13/2008
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Informal		
Violation ID	Not Reported	Orig Code	S
Enforcemnt FY	2012	Enforcement Action	02/24/2012
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Not Reported		
Violation ID	Not Reported	Orig Code	S
Enforcemnt FY	2007	Enforcement Action	10/16/2006
Enforcement Detail	St Public Notif requested	Enforcement Category	Not Reported
Violation ID	Not Reported	Orig Code	S
Enforcemnt FY	2011	Enforcement Action	02/01/2011
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Not Reported		
Violation ID	Not Reported	Orig Code	S
Enforcemnt FY	2011	Enforcement Action	03/09/2011
Enforcement Detail	St Public Notif received	Enforcement Category	Not Reported
Violation ID	Not Reported	Orig Code	S

Enforcemnt FY	2012	Enforcement Action	02/24/2012
Enforcement Detail	St Violation/Reminder Notice		
Enforcement Category	Not Reported		
Violation ID	Not Reported	Orig Code	S
Enforcemnt FY	2012	Enforcement Action	03/20/2012
Enforcement Detail	St Public Notif received	Enforcement Category	Not Reported
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47204
Contaminant	LEAD & COPPER RULE		
Violation type	Initial Water Quality Parameter WQP M&R		
Compliance start date	1/1/2003 0:00:00	Compliance end date	12/31/2003 0 00 00
Enforcement date	4/19/2004 0.00:00	Enforcement action	State Violation/Reminder Notice
Violation measurement	Not Reported		
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47204
Contaminant	LEAD & COPPER RULE		
Violation type	Initial Water Quality Parameter WQP M&R		
Compliance start date	1/1/2003 0 00:00	Compliance end date	12/31/2003 0 00 00
Enforcement date	4/19/2004 0 00:00	Enforcement action	State Public Notif Requested
Violation measurement	Not Reported		
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47604
Contaminant	LEAD & COPPER RULE	Violation type	OCCT Study Recommendation
Compliance start date	1/1/2001 0 00:00	Compliance end date	12/31/2025 0.00 00
Enforcement date	7/27/2004 0.00.00	Enforcement action	State Violation/Reminder Notice
Violation measurement	Not Reported		
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47706
Contaminant	LEAD & COPPER RULE	Violation type	Public Education
Compliance start date	3/1/2004 0 00 00	Compliance end date	12/31/2025 0:00 00
Enforcement date	No Enf Action as of	Enforcement action	7/8/2009 0 00 00
Violation measurement	Not Reported		
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47908
Contaminant	ENDRIN	Violation type	3
Compliance start date	4/1/2008 0:00:00	Compliance end date	6/30/2008 0 00 00
Enforcement date	7/31/2008 0 00.00	Enforcement action	State Compliance Achieved
Violation measurement	Not Reported		
PWS name	GOODWIN ELEMENTARY SCHOOL	Population served	340
PWS type code	NTNC	Violation ID	47908
Contaminant	ENDRIN	Violation type	3
Compliance start date	4/1/2008 0 00:00	Compliance end date	6/30/2008 0 00 00
Enforcement date	8/13/2008 0 00.00	Enforcement action	State Violation/Reminder Notice
Violation measurement	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CT Radon

Radon Test Results

City	# Sites	< 4 Pci/L	4 < 10 Pci/L	10 < 20 Pci/L	20 < 50 Pci/L	50 < 100 Pci/L	> 100 Pci/L
Stafford Springs	2	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Storrs	4	3 (75)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)
Tolland	15	10 (66 7)	4 (26 7)	1 (6 6)	0 (0)	0 (0)	0 (0)
Vernon	29	24 (82 7)	4 (13 8)	1 (3.5)	0 (0)	0 (0)	0 (0)
West Willington	1	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Willington	1	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Manchester	34	24 (70 6)	10 (29.4)	0 (0)	0 (0)	0 (0)	0 (0)
Amston	10	5 (50)	4 (40)	1 (10)	0 (0)	0 (0)	0 (0)
Andover	97	74 (76 3)	15 (15 5)	6 (6.2)	1 (1)	0 (0)	0 (0)
Bolton	10	7(70)	2 (20)	1 (10)	0 (0)	0 (0)	0 (0)
Columbia	11	8 (72 7)	3 (27 3)	0 (0)	0 (0)	0 (0)	0 (0)
Coventry	16	13 (81 25)	1 (6.25)	2 (12 5)	0 (0)	0 (0)	0 (0)
Ellington	19	15 (78.9)	2 (10.5)	2 (10 5)	0 (0)	0 (0)	0 (0)
Mansfield	100	87 (87)	13 (13)	0 (0)	0 (0)	0 (0)	0 (0)
Somers	2	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Federal EPA Radon Zone for TOLLAND County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 06268

Number of sites tested: 7

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2 657 pCi/L	71%	29%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service

State Wetlands Data: Tidal Wetlands
Source: Department of Energy & Environmental Protection
Telephone: 860-424-4054

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994)

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Connecticut Leachate and Wastewater Discharge Sites
Source: Department of Environmental Protection
The Leachate and Waste Water Discharge Inventory Data Layer (LWDS) includes point locations digitized from Leachate and Wastewater Discharge Source maps compiled by the Connecticut DEP. These maps locate surface and groundwater discharges that (1) have received a waste water discharge permit from the state or (2) are historic and now defunct waste sites or (3) are locations of accidental spills, leaks, or discharges of a variety of liquid or solid wastes.

EPA-Approved Sole Source Aquifers in Connecticut
Source: EPA
Sole source aquifers are defined as an aquifer designated as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for the area and for which there are no reasonable alternative sources should the aquifer become contaminated.

Community and Non-Community Water System Wells
Source: Department of Public Health, Water Supplies Section
Telephone: 860-509-7333
Active, emergency and inactive wells used for potable purposes that are owned and operated by active community and non-community water systems in Connecticut.

OTHER STATE DATABASE INFORMATION

RADON

State Database: CT Radon
Source: Department of Public Health
Telephone: 860-509-7367
Radon Statistical Summary

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U S with the potential for elevated indoor radon levels

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR s Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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Appendix E

CT DEEP Guidance Document

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Materials Management and Compliance Assurance
Engineering & Enforcement Division
79 Elm Street, Hartford CT 06106-5127
TEL. 860-424-3023 TOLL-FREE: 1-888-424-4193
www.ct.gov/dep

Environmental Program Guidance Document

Guidance for Disruption Activities, Closure Activities, and/or Post-Closure Use at Solid Waste Disposal Areas

Purpose

This guidance document is designed to answer general questions and provide basic information for use when the Commissioner determines that a disruption authorization is required, or a closure/post-closure-use plan must be submitted. The information provided below addresses the requirements applicable to activities associated with the excavation, disruption, or removal of deposited material (including cover material) at an active, inactive, or closed solid waste disposal area. It is the responsibility of the individual or individuals engaged in these activities to comply with all applicable laws and regulations and obtain all applicable approvals, including any necessary permits or permit modifications.

What is a solid waste disposal area?

Pursuant to Section 22a-207 of the Connecticut General Statutes (CGS), "solid waste disposal area" is defined as "any location, including a landfill or other land disposal site, used for the disposal of **more than ten cubic yards of solid waste**. For the purposes of this subdivision, 'disposal' means placement of material at a location with the intent to leave it at such location indefinitely, or to fail to remove material from a location within forty-five days." Disposal does not necessarily mean that the solid waste has been buried on site; it also includes surficial dumping of solid waste. This definition is not limited to facilities that have received solid waste permits pursuant to CGS Section 22a-208a but applies to any area that meets the above referenced definition, even if it pre-dates the existence of the Department's permit program (i.e., no grandfather clause).

DISRUPTION: refer to Section 22a-209-7(u) of the Regulations of Connecticut State Agencies (RCSA)

What constitutes disruption of a solid waste disposal area?

Disruption is considered as any disturbance (e.g., excavation, boring, re-grading, consolidation of waste, routine maintenance of environmental controls, etc.) or removal of deposited material, including the removal of cover material at an active, inactive or closed solid waste disposal area. Consolidation of waste(s) (i.e., any activity that combines waste types of similar nature for on-site disposal) is a form of disruption Exploratory investigations (e.g., test pits, bore holes, etc.) that are being conducted at a solid waste disposal area to obtain additional information on the types of waste, the vertical or horizontal limits of the waste and other such information are not considered a disruption.

What is a disruption authorization?

A disruption authorization is written approval from the Commissioner that allows the excavation, disruption or removal of deposited material at a solid waste disposal area. As stated above, this is not limited to sites permitted by the Department to receive solid waste but can include many different situations, such as historical landfills that pre-date the Department's solid waste management regulations, farm dumps, areas at industrial sites used for the disposal of manufacturing wastes, areas used for the disposal of landclearing debris (i.e., brush, stumps, etc.), areas used for the disposal of construction and demolition wastes, etc.

What is the process for obtaining a disruption authorization?

RCSA Section 22a-209-7(u) outlines the requirements for the excavation, disruption, or removal of deposited material at an active, inactive or closed solid waste disposal area. An *Authorization Application for Disruption of a Solid Waste Disposal Area* form describing the proposed activities must be submitted to the Department for review and written approval. The information provided with the application must include a full description of the excavation process including, but not limited to: operational plans detailing the area involved; depth of excavation; final grades; volume of material to be excavated or disrupted; where material will be placed or disposed; construction schedule; as well as measures taken to protect the public health and the environment (i.e., a site-specific health and safety plan, a personnel health monitoring plan, dust control measures, and an erosion and sedimentation control plan).

When is a disruption authorization not required?

As stated previously, an exploratory investigation being conducted to obtain information on a disposal area is not considered a disruption, therefore a disruption authorization is not required. This is contingent on the requirement that any materials excavated during the investigation are replaced and the immediate area restored promptly after completing such activities. Typically, a disruption authorization would not be required at a permitted solid waste disposal area undergoing routine maintenance activities (e.g., installation of additional gas recovery system components, restoring eroded cover materials and vegetation, etc.) unless warranted by the magnitude of the situation, which is assessed on a case-by-case basis. Disruption authorizations are not required when the material being managed is limited to clean fill and/or soil.

CLOSURE: refer to RCSA Section 22a-209-13

What constitutes closure of a solid waste disposal area?

Closure is considered as the establishment of final grades (top and sideslopes) and installation of final cover material, including vegetative cover, on a solid waste disposal area. RCSA Section 22a-209-13 outlines the requirements for closing solid waste disposal areas. The Department requires that the facility owner or permittee submit a closure plan for the Commissioner's review and written approval. At some historic sites (pre-dating solid waste management regulations), the Department has not required any additional grading or cover material especially if the site is well stabilized and there are no erosion problems. These projects are reviewed on a case-by-case basis and, at a minimum, would require the submittal of an as-built drawing (certified by a Professional Engineer licensed to practice in Connecticut) and the recording of a detailed description of the solid waste disposal area on the local municipal land records.

What information is included in a closure plan?

A closure plan should include, but is not limited to the following: detailed engineering drawings depicting final contours; technical specifications on final cover materials; erosion and sedimentation controls; decomposition gas controls (as necessary); post-closure water quality monitoring and maintenance; site specific health and safety plan; proposed use of the site after closure; etc. There is also a fee assessed for closure plan review and approval. A fee is assessed for the review and approval of a closure plan for an active site that has been permitted pursuant to CGS Section 22a-208a. After the closure is completed, a complete set of as-built drawings must be submitted to the Commissioner. Additionally, a detailed description of the disposal area is required to be filed on the local municipal land records and a copy of that information must be submitted to the Commissioner.

When would a closure plan and a disruption authorization both be required?

When extensive relocation of waste is necessary to complete closure of the solid waste disposal area prior to capping, both an authorization for the disruption activity and a closure plan for capping are necessary.

POST-CLOSURE USE: refer to RCSA Section 22a-209-13(d)

What is post-closure use?

Post-closure use is considered as any activity at a closed solid waste disposal area. Post-closure use requires approval of the Commissioner prior to the redevelopment or re-use to ensure that the use is protective of human health and the environment. Unless properly managed, post-closure uses have the potential to create environmental or human health concerns through exposure to wastes, decomposition gases, leachate, and erosion of the disposal area's cap. For the purposes of this section, closed does not necessarily mean that the Department has issued a closure approval; it could be a site that is historic (i.e., that pre-dates the Department's solid waste management regulations) and has been inactive.

What is the process for obtaining post-closure use approval?

Department regulations require that a plan for post-closure use be submitted to the Commissioner for review and written approval as part of a closure plan or whenever a change in an approved post-closure use is sought. The plan must identify the proposed redevelopment or post-closure uses and what controls will be used to minimize exposures during redevelopment to protect human health and the environment. Regulations applicable to closure of solid waste disposal areas also apply to post-closure activities, such as grading, disruption, final cover and seeding, management of decomposition gases, etc.

This document is designed to answer general questions and provide basic information. You should refer to the appropriate statutes and regulations for the specific language. It is your responsibility to comply with all applicable laws. The information contained in this guidance document is intended only to acquaint you with certain aspects of the solid waste program. For further information, please contact the Waste Engineering and Enforcement Division at 860-424-3366

The Department of Environmental Protection is an affirmative action/equal opportunity employer, providing programs and services in a fair and impartial manner. In conformance with the Americans with Disabilities Act, DEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities needing auxiliary aids, services, or information by voice or TTY/TDD, should call 860-424-3000.

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8

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Civil, Environmental and Hydrogeological Consultants

July 5, 2019

Rebecca M. Fields
Executive Director
Mansfield Housing Authority
309 Maple Road, Storrs, CT 06268

RE: 113 & 121 South Eagleville Road, Mansfield, Connecticut: Debris Pile Investigation

Dear Ms. Fields:

The Debris Pile Investigation follows the Phase I Environmental Site Assessment (ESA) of the parcel containing the two residential buildings located at 113 and 121 South Eagleville Road, Mansfield, Connecticut (the "Site"). The Phase I ESA was completed by Lenard Engineering, Inc. in September 2018. Based upon the current and former site use and information from all sources reviewed, we concluded that two (2) Recognized Environmental Concerns (REC) as defined under ASTM Standard of Practice E-1527-13 are present on the Site: a historic debris pile located in the southern portion of the site (REC-1); and two 5-gallon container of asphalt sealer (REC-2) located towards the rear (south) of the driveway. The container of asphalt sealer appears to be intact and requires no further investigation.

Lenard Engineering, Inc. was retained by the Mansfield Housing Authority on May 17, 2019 to conduct an environmental investigation of the debris pile. The purpose of the Debris Pile Investigation was to:

1) Determine if the debris pile identified on site meets the definition of "solid waste disposal area" under the Section 22a-207 of the Connecticut General Statues (CGS); and

2) Characterize the soil beneath the debris pile to determine if hazardous material or petroleum products are present.

An Equal Opportunity Employer

Solid Waste Disposal Area Determination

The State of Connecticut defines a "solid waste disposal area" as any area used for the disposal of more than 10 cubic yards of solid waste (CGS Section 22a-207). Permits are required prior to any disturbance of a debris pile meeting this definition. On May 28, 2019, LEI was onsite to estimate the volume of the debris pile identified onsite. The debris pile onsite consists of two discrete locations identified as "Waste Pile A" and "Waste Pile B" on the figure in Attachment 1. Several miscellaneous large items (kitchen sink, bedframe, etc.) were observed between these two locations.

Based on the measurements taken the estimated volume of Waste Pile A is approximately 105 cubic feet and the volume of Waste Pile B is approximately 40 cubic feet. The miscellaneous large items between the two piles represent less than 15 cubic feet in volume total. Therefore, a conservative estimate of the volume of the undisturbed debris pile onsite is less than 7 cubic yards. The debris pile identified onsite does not meet the definition of "solid waste disposal area" under CGS Section 22a-207.

Characterization of Soil Beneath Waste Pile

Two soil samples were collected from beneath the waste pile during the site visit conducted on May 28, 2019. One sample was collected from beneath Waste Pile A (Sample ID: DP-A) and one sample from beneath Waste Pile B (Sample ID: DP-B). The approximate location of the samples is shown on the figure in Attachment 1 and photographs are provided. Leaf debris and decomposed organic matter was removed from the sample location prior to sample collection. The samples were collected from approximately two to six inches below grade. The samples were collected in accordance with the appropriate sampling a preservation method described in the analytical method and in compliance with Connecticut DEEP guidance documents. The samples were analyzed by York Analytical Laboratories for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), extractable total petroleum hydrocarbons (ETPH), herbicides, pesticides,

polychlorinated biphenyl (PCBs) and RCRA metals. A laboratory report of the results is included in Attachment 2.

The sample collected beneath Waste Pile A (DP-A) contained elevated concentrations of multiple semi-volatiles, ETPH, mercury and total lead. The semi-volatiles detected and the ETPH

chromatograph are consistent with heavier petroleum hydrocarbons typical of used motor oil. The total lead concentration detected in this sample was 2230 mg/kg. This value exceeds the EPA rule of 20 and therefore was analyzed for leachable lead by the synthetic leachate method TCLP. Leachable lead was detected in this sample at 1.60 mg/L (less than the Toxicity Characteristic level for lead of 5 mg/L).

Semi-volatiles were not detected in the sample collected from beneath Waste Pile B and ETPH was present just above the method detection limits. Mercury was present at a concentration of 0.149 mg/kg. Total lead was also detected in the sample DP-B but at a much lower concentration (426 mg/kg). Leachable lead was analyzed in this sample and was detected at a concentration of 0.842 mg/L.

According to Connecticut's "Contained-In" policy, environmental media excavated that contains hazardous waste must be treated as such disposed. Hazardous waste levels for individual constituent are based on the Toxicity Characteristic levels publish in the Table 1 in 40 CFR Part 261.24. If no value is present in Table 1 then the value is set at 100 times the applicable criteria set forth in the RSRs. Based on the concentrations detected in samples DP-A and DP-B, if the soil were to be excavated from the site it would NOT meet the definition of a Hazardous Waste under the Contained-In policy.

Based on the concentrations of semi-volatile, mercury, and lead present in samples DP-A and DP-B the environmental media would meet the definition of "Connecticut Regulated Waste" if it were excavated and must be disposed of accordingly. Environmental media containing this level of contamination is routinely accepted by permitted solid waste facilities located within the State.

Recommendations

LEI recommends that the debris above grade identified in Waste Pile A and Waste Pile B be handled in accordance with Connecticut Solid Waste Management Plan (e.g. metals and some plastics recycled, non-recycle items managed as house-hold waste or hazardous household waste). Any items

imbedded in the soil should be left in place and will be removed at a later point and managed with the soil excavated from the site.

The environmental media beneath the debris pile should be excavated and disposed of as "Connecticut Regulated Waste" at a permitted solid waste facility. The volume of the contaminated soil is unknown; however, it is reasonable to expect that the limit of pollution in the soil closely follows the limits of the debris observed onsite. Excavation limit samples should be collected from the bottom of the excavation following the removal of the environmental media and from immediately outside of the excavation limits to demonstrate that the contaminated material has been removed from the site.

Should you have any questions please do not hesitate to call at (860) 659-3100.

Sincerely,
Lenard Engineering, Inc.

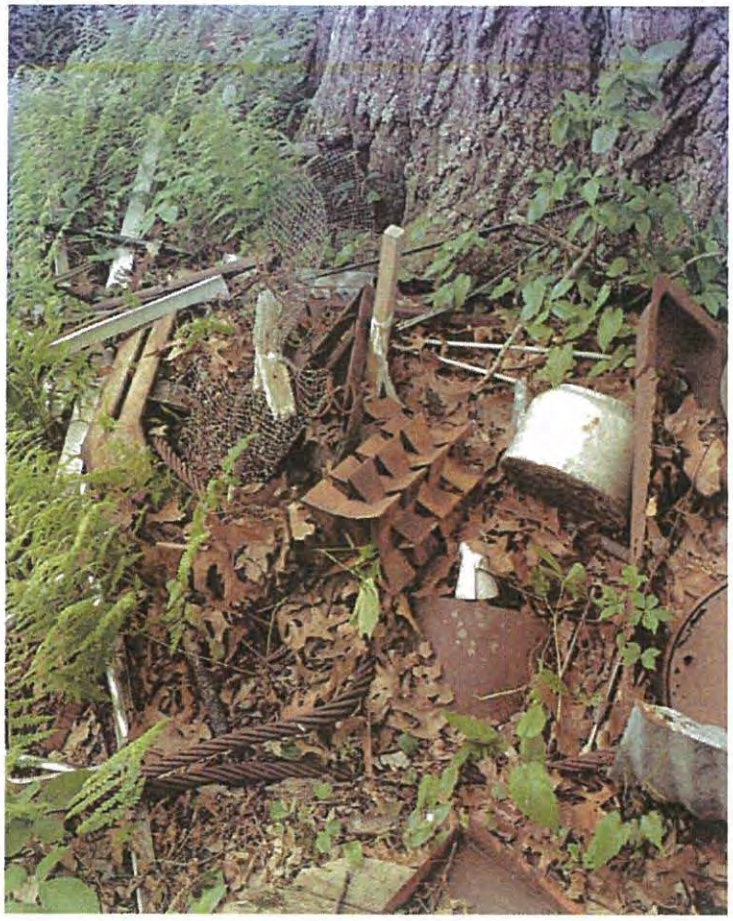
Daniel Brockmeyer, LEP
Senior Hydrogeologist

Paul Magyar, PE
Project Manager

Attachments

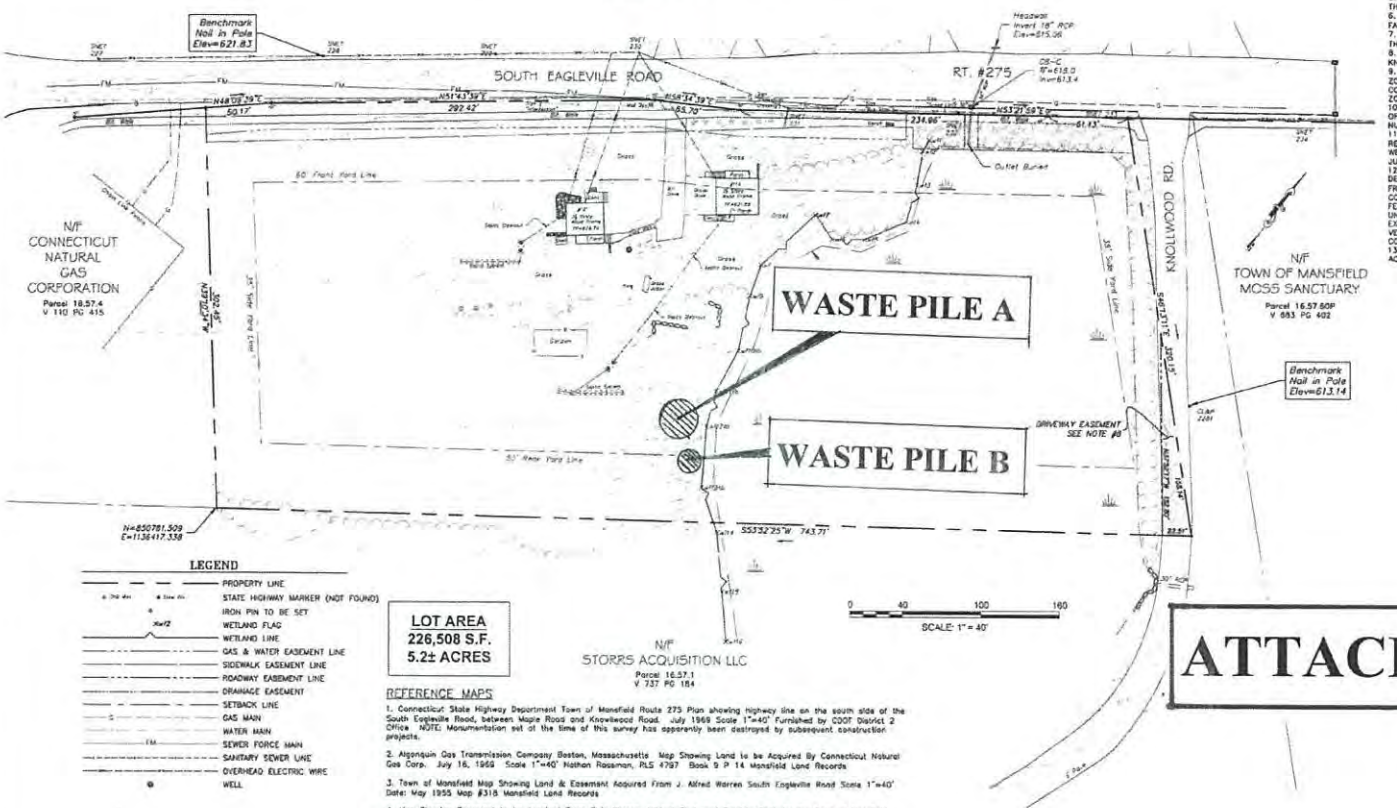
Photograph 1: Waste Pile A – Northern portion.
Wooden stake in center shows location of sample DP-A.

Photograph 2: Waste Pile A Southern portion.



Photograph 3: Waste Pile B.
Wooden stake in center shows location of sample DP-B.

DETAIL DEPICTING EASEMENTS
Scale 1"=30'



LEGEND

- PROPERTY LINE
- STATE HIGHWAY MARKER (NOT FOUND)
- IRON PIN TO BE SET
- WETLAND FLAG
- WETLAND LINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- GAS MAIN
- WATER MAIN
- SEWER FORCE MAIN
- SANITARY SEWER LINE
- OVERHEAD ELECTRIC WIRE
- WELL

LOT AREA
226,508 S.F.
5.2± ACRES

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.
2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rasaman, PLS 4797 Book 9 P 14 Mansfield Land Records
3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records
4. Map Showing Easement to be Acquired From Dale Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 13 Page 92 Mansfield Land Records
5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records
6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-8-1996 Meehan & Gnodde Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records
7. Resurvey Prepared For The University Of Connecticut Southeagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.
2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.
3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM.
4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 305 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS
5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 93 PG 71 REF. MAP #3
6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 203 REF. MAP #4.
7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5.
8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 375 PG 285 REF. MAP #6.
9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.
10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981
11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCENTISE/PROFESSIONAL WETLAND SCIENTIST #2066. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.
12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.
13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DeROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

ATTACHMENT 1

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Roseman

Drawing Scale: 1"=40'
Drawing date: June 27, 2016

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY
PREPARED FOR
MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.
113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil Environmental and Hydrological Consultants
2210 Main Street, GLASTONBURY, CT. (860) 633-1102
140 Walker Street, WINSTED, CT. (860) 379-9689
18 Mechanic Drive, AUBURN, MA. (508) 721-1800

Drawing #: 1
Job #: 16-358

Technical Report

prepared for:

ATTACHMENT 2

Lenard Engineering
P.O. Box 1088
Glastonbury CT, 06033-6088
Attention: Mark Temple

Report Date: 06/26/2019
Client Project ID: 18-361.1
York Project (SDG) No.: 19E1238

Revision No. 1.0

Report Date: 06/26/2019
Client Project ID: 18-361.1
York Project (SDG) No.: 19E1238

Lenard Engineering
P.O. Box 1088
Glastonbury CT, 06033-6088
Attention: Mark Temple

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on May 29, 2019 and listed below. The project was identified as your project: **18-361.1.**

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19E1238-01	DP-A	Soil	05/28/2019	05/29/2019
19E1238-02	DP-B	Soil	05/28/2019	05/29/2019

General Notes for York Project (SDG) No.: 19E1238

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Benjamin Gulizia
Laboratory Director

Date: 06/26/2019

Sample Information

Client Sample ID: DP-A

York Sample ID: 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
87-61-6	1,2,3-Trichlorobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
96-18-4	1,2,3-Trichloropropane	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
120-82-1	1,2,4-Trichlorobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
95-63-6	1,2,4-Trimethylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
95-50-1	1,2-Dichlorobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
108-67-8	1,3,5-Trimethylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
541-73-1	1,3-Dichlorobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
106-46-7	1,4-Dichlorobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
78-93-3	2-Butanone	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
95-49-8	2-Chlorotoluene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
591-78-6	2-Hexanone	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
106-43-4	4-Chlorotoluene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
67-64-1	**Acetone**	**130**	ICV-E20, SCAL-E 15	ug/kg dry	17	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
107-13-1	Acrylonitrile	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
71-43-2	Benzene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
108-86-1	Bromobenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
74-97-5	Bromochloromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-27-4	Bromodichloromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-25-2	Bromoform	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
74-83-9	Bromomethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS

Sample Information

Client Sample ID: DP-A

York Sample ID: 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-15-0	Carbon disulfide	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
56-23-5	Carbon tetrachloride	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
108-90-7	Chlorobenzene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-00-3	Chloroethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
67-66-3	Chloroform	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
74-87-3	Chloromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
124-48-1	Dibromochloromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
74-95-3	Dibromomethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
100-41-4	Ethyl Benzene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
87-68-3	Hexachlorobutadiene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
98-82-8	Isopropylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
80-62-6	Methyl Methacrylate	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-09-2	Methylene chloride	ND		ug/kg dry	17	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
91-20-3	Naphthalene	ND	IS-LO	ug/kg dry	17	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
104-51-8	n-Butylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
103-65-1	n-Propylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
95-47-6	o-Xylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	17	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
99-87-6	p-Isopropyltoluene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
135-98-8	sec-Butylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
100-42-5	Styrene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
98-06-6	tert-Butylbenzene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
127-18-4	Tetrachloroethylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
109-99-9	Tetrahydrofuran	ND		ug/kg dry	17	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
108-88-3	Toluene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
110-57-6	trans-1,4-dichloro-2-butene	ND	IS-LO	ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
79-01-6	Trichloroethylene	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS
75-01-4	Vinyl Chloride	ND		ug/kg dry	8.3	1	EPA 8260C	06/04/2019 07:30	06/04/2019 18:39	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.0 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*124 %*	*70-130*

Sample Information

Client Sample ID: DP-A

York Sample ID: 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*127 %*	IS-LO		*70-130*					

Semi-Volatiles, CT RCP PAH List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
83-32-9	Acenaphthene	ND		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
208-96-8	**Acenaphthylene**	**953**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
120-12-7	**Anthracene**	**1650**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
56-55-3	**Benzo(a)anthracene**	**3370**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
50-32-8	**Benzo(a)pyrene**	**2670**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
205-99-2	**Benzo(b)fluoranthene**	**2720**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
191-24-2	**Benzo(g,h,i)perylene**	**1370**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
207-08-9	**Benzo(k)fluoranthene**	**2370**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
218-01-9	**Chrysene**	**3480**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
206-44-0	**Fluoranthene**	**18400**		ug/kg dry	4120	10	EPA 8270D	06/04/2019 08:10	06/10/2019 12:18	SR
86-73-7	**Fluorene**	**1360**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
193-39-5	**Indeno(1,2,3-cd)pyrene**	**1380**		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
91-20-3	Naphthalene	ND		ug/kg dry	823	2	EPA 8270D	06/04/2019 08:10	06/07/2019 10:41	KH
85-01-8	**Phenanthrene**	**15800**		ug/kg dry	4120	10	EPA 8270D	06/04/2019 08:10	06/10/2019 12:18	SR
129-00-0	**Pyrene**	**11000**		ug/kg dry	4120	10	EPA 8270D	06/04/2019 08:10	06/10/2019 12:18	SR

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*67.4 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*52.9 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*57.2 %*	*30-130*

Pesticides, CT RCP Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
72-55-9	4,4'-DDE	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
50-29-3	4,4'-DDT	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
15972-60-8	Alachlor	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
309-00-2	Aldrin	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
319-84-6	alpha-BHC	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
319-85-7	beta-BHC	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM

Sample Information

Client Sample ID: DP-A

York Sample ID: 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Pesticides, CT RCP Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
57-74-9	Chlordane, total	ND		ug/kg dry	82.3	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
319-86-8	delta-BHC	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
60-57-1	Dieldrin	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
959-98-8	Endosulfan I	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
33213-65-9	Endosulfan II	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
72-20-8	Endrin	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
7421-93-4	Endrin aldehyde	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
53494-70-5	Endrin ketone	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
76-44-8	Heptachlor	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
72-43-5	Methoxychlor	ND		ug/kg dry	4.12	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM
8001-35-2	Toxaphene	ND		ug/kg dry	206	5	EPA 8081B	05/31/2019 08:27	06/05/2019 23:02	CM

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*107 %*	*30-140*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*48.5 %*	*30-140*

Polychlorinated Biphenyls (Soxhlet Extraction)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW846-3540C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR
1336-36-3	Total PCBs	ND		mg/kg dry	0.0412	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:19	SR

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*91.5 %*	*30-140*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*118 %*	*30-140*

Sample Information

Client Sample ID: DP-A

York Sample ID: 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Herbicides, CT RCP

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B/8151A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		ug/kg dry	33.0	1	EPA 8151A	06/04/2019 08:28	06/07/2019 01:59	SR
93-72-1	2,4,5-TP (Silvex)	ND		ug/kg dry	33.0	1	EPA 8151A	06/04/2019 08:28	06/07/2019 01:59	SR
94-75-7	2,4-D	ND		ug/kg dry	33.0	1	EPA 8151A	06/04/2019 08:28	06/07/2019 01:59	SR
75-99-0	Dalapon	ND		ug/kg dry	33.0	1	EPA 8151A	06/04/2019 08:28	06/07/2019 01:59	SR
1918-00-9	Dicamba	ND		ug/kg dry	33.0	1	EPA 8151A	06/04/2019 08:28	06/07/2019 01:59	SR

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (D*	*42.0 %*	*30-150*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3545A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	**ETPH (Extractable Total Petroleum Hydrocarbons)**	**154**		mg/kg dry	65.5	1	CT DEP ETPH	06/04/2019 14:44	06/05/2019 00:30	CM

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*86.7 %*	*50-150*

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	**Lead**	**1.60**		mg/L	0.125	1	EPA 6010D/1311	06/20/2019 12:47	06/25/2019 11:46	KML

Metals, RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/kg dry	2.48	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7440-39-3	**Barium**	**136**		mg/kg dry	4.14	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7440-43-9	**Cadmium**	**9.83**		mg/kg dry	0.496	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7440-47-3	**Chromium**	**25.5**		mg/kg dry	0.827	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7439-92-1	**Lead**	**2230**		mg/kg dry	0.827	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7782-49-2	Selenium	ND		mg/kg dry	4.14	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML
7440-22-4	Silver	ND		mg/kg dry	0.827	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:17	KML

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: DP-A | **York Sample ID:** 19E1238-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	0.286		mg/kg dry	0.0496	1	EPA 7473	06/03/2019 13:41	06/03/2019 18:22	SY

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	60.4		%	0.100	1	SM 2540G	05/30/2019 09:15	05/30/2019 15:14	JTV

TCLP Extraction for METALS EPA 1311

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	06/19/2019 14:39	06/20/2019 10:34	TAJ

Sample Information

Client Sample ID: DP-B | **York Sample ID:** 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
87-61-6	1,2,3-Trichlorobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
96-18-4	1,2,3-Trichloropropane	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
120-82-1	1,2,4-Trichlorobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS

Sample Information

Client Sample ID: DP-B

York Sample ID: 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
95-50-1	1,2-Dichlorobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
108-67-8	1,3,5-Trimethylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
541-73-1	1,3-Dichlorobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
106-46-7	1,4-Dichlorobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
78-93-3	2-Butanone	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
95-49-8	2-Chlorotoluene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
591-78-6	2-Hexanone	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
106-43-4	4-Chlorotoluene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
67-64-1	Acetone	85	ICV-E20, SCAL-E 15	ug/kg dry	18	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
107-13-1	Acrylonitrile	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
71-43-2	Benzene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
108-86-1	Bromobenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
74-97-5	Bromochloromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-27-4	Bromodichloromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-25-2	Bromoform	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
74-83-9	Bromomethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-15-0	Carbon disulfide	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
56-23-5	Carbon tetrachloride	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
108-90-7	Chlorobenzene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-00-3	Chloroethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
67-66-3	Chloroform	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
74-87-3	Chloromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
124-48-1	Dibromochloromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
74-95-3	Dibromomethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
100-41-4	Ethyl Benzene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
87-68-3	Hexachlorobutadiene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS

Sample Information

Client Sample ID: DP-B

York Sample ID: 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Volatile Organics, CT RCP List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
98-82-8	Isopropylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
80-62-6	Methyl Methacrylate	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-09-2	Methylene chloride	ND		ug/kg dry	18	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
91-20-3	Naphthalene	ND	IS-LO	ug/kg dry	18	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
104-51-8	n-Butylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
103-65-1	n-Propylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
95-47-6	o-Xylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	18	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
99-87-6	p-Isopropyltoluene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
135-98-8	sec-Butylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
100-42-5	Styrene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
98-06-6	tert-Butylbenzene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
127-18-4	Tetrachloroethylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
109-99-9	Tetrahydrofuran	ND		ug/kg dry	18	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
108-88-3	Toluene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
110-57-6	trans-1,4-dichloro-2-butene	ND	IS-LO	ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
79-01-6	Trichloroethylene	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS
75-01-4	Vinyl Chloride	ND		ug/kg dry	9.2	1	EPA 8260C	06/04/2019 07:30	06/04/2019 19:06	RDS

	Surrogate Recoveries	Result		Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.0 %*		*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*117 %*		*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*114 %*	IS-LO	*70-130*

Sample Information

Client Sample ID: DP-B

York Sample ID: 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Semi-Volatiles, CT RCP PAH List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
83-32-9	Acenaphthene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
208-96-8	Acenaphthylene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
120-12-7	Anthracene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
218-01-9	Chrysene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
206-44-0	Fluoranthene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
86-73-7	Fluorene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
91-20-3	Naphthalene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
85-01-8	Phenanthrene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH
129-00-0	Pyrene	ND		ug/kg dry	914	2	EPA 8270D	06/04/2019 14:52	06/07/2019 11:10	KH

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*83.2 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*59.7 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*52.6 %*	*30-130*

Pesticides, CT RCP Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
72-55-9	4,4'-DDE	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
50-29-3	4,4'-DDT	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
15972-60-8	Alachlor	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
309-00-2	Aldrin	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
319-84-6	alpha-BHC	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
319-85-7	beta-BHC	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
57-74-9	Chlordane, total	ND		ug/kg dry	90.5	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
319-86-8	delta-BHC	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
60-57-1	Dieldrin	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
959-98-8	Endosulfan I	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM

Sample Information

Client Sample ID: DP-B

York Sample ID: 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Pesticides, CT RCP Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
33213-65-9	Endosulfan II	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
72-20-8	Endrin	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
7421-93-4	Endrin aldehyde	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
53494-70-5	Endrin ketone	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
76-44-8	Heptachlor	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
72-43-5	Methoxychlor	ND		ug/kg dry	4.52	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM
8001-35-2	Toxaphene	ND		ug/kg dry	226	5	EPA 8081B	05/31/2019 08:27	06/05/2019 20:01	CM

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*81.8 %*	*30-140*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*85.8 %*	*30-140*

Polychlorinated Biphenyls (Soxhlet Extraction)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3540C

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR
1336-36-3	Total PCBs	ND		mg/kg dry	0.0459	1	EPA 8082A	06/05/2019 17:58	06/06/2019 13:33	SR

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*94.5 %*	*30-140*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*119 %*	*30-140*

Sample Information

Client Sample ID: DP-B | **York Sample ID:** 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Herbicides, CT RCP

Log-in Notes: Sample Notes:

Sample Prepared by Method: EPA 3550B/8151A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		ug/kg dry	36.8	1	EPA 8151A	06/04/2019 08:28	06/07/2019 02:12	SR
93-72-1	2,4,5-TP (Silvex)	ND		ug/kg dry	36.8	1	EPA 8151A	06/04/2019 08:28	06/07/2019 02:12	SR
94-75-7	2,4-D	ND		ug/kg dry	36.8	1	EPA 8151A	06/04/2019 08:28	06/07/2019 02:12	SR
75-99-0	Dalapon	ND		ug/kg dry	36.8	1	EPA 8151A	06/04/2019 08:28	06/07/2019 02:12	SR
1918-00-9	Dicamba	ND		ug/kg dry	36.8	1	EPA 8151A	06/04/2019 08:28	06/07/2019 02:12	SR

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (D*	*38.4 %*	*30-150*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: Sample Notes:

Sample Prepared by Method: EPA 3545A

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	**ETPH (Extractable Total Petroleum Hydrocarbons)**	**73.0**		mg/kg dry	72.4	1	CT DEP ETPH	06/04/2019 14:44	06/05/2019 01:08	CM

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*70.6 %*	*50-150*

Lead TCLP by EPA 6010

Log-in Notes: Sample Notes:

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	**Lead**	**0.842**		mg/L	0.125	1	EPA 6010D/1311	06/20/2019 12:47	06/25/2019 11:48	KML

Metals, RCRA

Log-in Notes: Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**5.00**		mg/kg dry	2.77	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7440-39-3	**Barium**	**170**		mg/kg dry	4.61	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7440-43-9	**Cadmium**	**1.43**		mg/kg dry	0.554	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7440-47-3	**Chromium**	**31.7**		mg/kg dry	0.923	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7439-92-1	**Lead**	**426**		mg/kg dry	0.923	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7782-49-2	Selenium	ND		mg/kg dry	4.61	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML
7440-22-4	Silver	ND		mg/kg dry	0.923	1	EPA 6010D	06/03/2019 11:06	06/03/2019 16:19	KML

Mercury by 7473

Log-in Notes: Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: DP-B

York Sample ID: 19E1238-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19E1238	18-361.1	Soil	May 28, 2019 12:00 am	05/29/2019

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	0.149		mg/kg dry	0.0554	1	EPA 7473	06/03/2019 13:41	06/03/2019 18:31	SY

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	54.2		%	0.100	1	SM 2540G	05/30/2019 09:15	05/30/2019 15:14	JTV

TCLP Extraction for METALS EPA 1311

Log-in Notes:

Sample Notes: EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	06/19/2019 14:39	06/20/2019 10:34	TAJ

REASONABLE CONFIDENCE PROTOCOL

LABORATORY ANALYSIS QA/QC CERTIFICATION FORM

Laboratory Name:	York Analytical Laboratories, Inc.	*Client:*	Lenard Engineering
Project Location:	18-361.1	*Lab Project No.:*	**19E1238**
Laboratory Sample ID(s):	19E1238-01 - 19E1238-02	*Sampling Date(s):*	05/28/2019

RCP Methods Used: See Narrative and Method Reference Section of this Technical Report

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP RCPs)?	YES
1A	Were the method specified preservation and holding time requirements met?	YES
1B	VPH and EPH Methods only: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	NR
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were samples received at an appropriate temperature (<6°C)?	YES
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	NO
5A	Were reporting limits specified or referenced on the chain-of-custody?	YES
5B	Were these reporting limits met?	YES
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	NO
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	NO

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to questions #1, #1A, or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence".
This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Position: Laboratory Director

Printed Name: Benjamin Gulizia Date: 06/26/2019

Case Narrative

Client: Lenard Engineering
Client Project ID: 18-361.1
Prepared for: Mark Temple

Introduction

This Case Narrative applies only to the samples submitted to our laboratory on **05/29/2019 16:26** as detailed on the chain-of-custody form.

Laboratory ID	Sample Name	Matrix
19E1238-01	DP-A	Soil
19E1238-02	DP-B	Soil

The 2 sample(s) were received intact in a custody-sealed cooler unless otherwise noted. Upon receipt, cooler temperature(s) was determined using a NIST traceable digital infrared thermometer. The cooler temperature was acceptable (≤ 6°C) and documented as:

Cooler	Temp C°
Default Cooler	**3.6**

Chain-of-custody was maintained from receipt through analysis in the laboratory.

Methodology

Preparation and analysis were conducted according to the SW-846 methods, as detailed in the sample information table, and the requirements of the State of Connecticut Reasonable Confidence Protocols (RCP).

For initial calibrations (ICAL), initial calibration verifications (ICV) and continuing calibration verifications (CCV) for organics determined by GC/MS methods (TO15 volatiles, 8260 volatiles and 8270 semi-volatiles) all method criteria and laboratory SOP criteria were met unless otherwise noted below. Any compounds in the ICAL, ICV or CCV exceeding RCP specified limits are available upon request. This data is not used for Data Quality Assessment or Data Usability Evaluation (assignment of compound bias) which are determined from other lines of evidence. Therefore the data is not detailed in this narrative.

These terms may be used interchangeably. Both are measures of the accuracy of an analysis by measurement of a known material from a source other than that used for calibration. By definition, a **Standard Reference Material (SRM)** is a material containing known levels of analytes used to evaluate the performance of the analytical system with respect to a defined set of acceptance criteria. It is processed exactly as a sample. An **LCS (Laboratory Control Sample)** is second-source standard containing known levels of analyte(s), treated exactly as a sample, run with each analytical batch. Both are metrics used to establish accuracy of the preparation/analysis methods.

Volatile Organics - Total (RCP List)

No problems were encountered with analysis of the samples, other than detailed below. Analysis acceptance criteria were achieved and the reporting requirements as detailed in the RCP protocols for volatiles by method 8260 dated July, 2006, Version 3.0, pages 8 through 11 are included herein.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blanks.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS/LCS Dup set was run as batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate or Sample Duplicate
No site specific MS/MSD was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Internal Standards/Surrogates

Internal Standards Issues
The internal standard compound 1,2-Dichlorobenzene-d4 recovered outside the method acceptance limits in the samples. This is likely due to a sample matrix effect. The Internal Standard compounds are flagged "IS-01" and the affiliated compounds are flagged "IS-LO" accordingly and results are biased low

Surrogate Issues
No problems were encountered.

Semi-Volatile Organics – Total (PAH List)

No problems were encountered with analysis of the samples other than as described below. Analysis acceptance criteria were achieved and the reporting requirements as detailed in the RCP protocols for semi-volatiles by method 8270 dated July, 2006, Version 3.0. are included herein.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate or Sample Duplicate
No site specific MS/MSD was run for this work order.

Sample Issues

Dilutions
Sample "DP-A" required dilution due to the levels of target compounds encountered. Some analyte reporting limits are elevated in the samples as a result.

A procedural 2x dilution was performed on sample "DP-B" in accordance with laboratory SOP.

Internal Standards/Surrogates

Internal Standards Issues
No problems were encountered.

Surrogate Issues
No problems were encountered.

Pesticides – Total (RCP List)

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS was run as batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD analysis was run for this work order.

Sample Issues

Dilutions
A procedural 5x dilution was performed on all samples in accordance with laboratory SOP.

Internal Standards and/or Surrogates

Surrogate Issues
No problems were encountered.

PCBs – Total (RCP List)

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS/LCS Dup set was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD analysis was performed.

Sample Issues

Dilutions
No sample dilutions were required.

Internal Standards and/or Surrogates

Surrogate Issues
No problems were encountered.

Herbicides – Total (RCP List)

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD analysis was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Internal Standards and/or Surrogates

Surrogate Issues

No problems were encountered.

ETPH - Total

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD analysis was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Internal Standards and/or Surrogates

Surrogate Issues
No problems were encountered.

Metals – Total (RCRA List, excluding Mercury)

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An SRM was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Metals – TCLP (Lead Only)

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target compounds were detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An LCS was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Mercury – Total

No problems were encountered during analysis of the samples, other than detailed below.

Batch QC

Method Blank
No target analyte was detected at or above the RL in the method blank.

Laboratory Control Sample (LCS) or Standard Reference Material (SRM)
An SRM was run as a batch QC for this project. Please refer to the Quality Control Data attached to this report for bias information.

Matrix Spike, Matrix Spike Duplicate and/or Sample Duplicate
No site specific MS/MSD was run for this work order.

Sample Issues

Dilutions
No sample dilutions were required.

Analytical Batch Summary

Batch ID: BE9176S **Preparation Method:** % Solids Prep **Prepared By:** JTV

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	05/30/19
19E1238-02	DP-B	05/30/19

Batch ID: BF90029 **Preparation Method:** EPA 3050B **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/03/19
19E1238-02	DP-B	06/03/19
BF90029-BLK1	Blank	06/03/19
BF90029-SRM1	Reference	06/03/19

Batch ID: BF90038 **Preparation Method:** EPA 7473 soil **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/03/19
19E1238-02	DP-B	06/03/19
BF90038-BLK1	Blank	06/03/19
BF90038-SRM1	Reference	06/03/19

Batch ID: BF90094 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/04/19
19E1238-02	DP-B	06/04/19
BF90094-BLK1	Blank	06/04/19
BF90094-BLK2	Blank	06/04/19
BF90094-BS1	LCS	06/04/19
BF90094-BSD1	LCS Dup	06/04/19

Batch ID: BF90101 **Preparation Method:** EPA 3550C **Prepared By:** LM

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/04/19
19E1238-01RE1	DP-A	06/04/19

Batch ID: BF90131 **Preparation Method:** EPA 3550C **Prepared By:** MAT

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	05/31/19
19E1238-02	DP-B	05/31/19
BF90131-BLK1	Blank	06/04/19
BF90131-BS1	LCS	06/04/19

Batch ID: BF90132 **Preparation Method:** EPA 3545A **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/04/19
19E1238-02	DP-B	06/04/19
BF90132-BLK1	Blank	06/04/19
BF90132-BS1	LCS	06/04/19

Batch ID: BF90137 **Preparation Method:** EPA 3550C **Prepared By:** MAT

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-02	DP-B	06/04/19
BF90137-BLK1	Blank	06/04/19
BF90137-BS1	LCS	06/04/19

Batch ID: BF90258 **Preparation Method:** EPA SW846-3540C **Prepared By:** SGM

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/05/19
19E1238-02	DP-B	06/05/19
BF90258-BLK1	Blank	06/05/19
BF90258-BS1	LCS	06/05/19
BF90258-BSD1	LCS Dup	06/05/19

Batch ID: BF90321 **Preparation Method:** EPA 3550B/8151A **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/04/19
19E1238-02	DP-B	06/04/19
BF90321-BLK1	Blank	06/06/19
BF90321-BS1	LCS	06/06/19

Batch ID: BF91038 **Preparation Method:** EPA SW 846-1311 TCLP ext. for meta **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/19/19
19E1238-02	DP-B	06/19/19
BF91038-BLK1	Blank	06/19/19

Batch ID: BF91113 **Preparation Method:** EPA 3015A/1311 **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19E1238-01	DP-A	06/20/19
19E1238-02	DP-B	06/20/19
BF91113-BLK1	Blank	06/20/19
BF91113-BS1	LCS	06/20/19

BF91113-LBK1 Leach Fluid Blank 06/20/19

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
Blank (BF90094-BLK1)								Prepared & Analyzed: 06/04/2019			
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg wet								
1,1,1-Trichloroethane	ND	5.0	"								
1,1,2,2-Tetrachloroethane	ND	5.0	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"								
1,1,2-Trichloroethane	ND	5.0	"								
1,1-Dichloroethane	ND	5.0	"								
1,1-Dichloroethylene	ND	5.0	"								
1,1-Dichloropropylene	ND	5.0	"								
1,2,3-Trichlorobenzene	ND	5.0	"								
1,2,3-Trichloropropane	ND	5.0	"								
1,2,4-Trichlorobenzene	ND	5.0	"								
1,2,4-Trimethylbenzene	ND	5.0	"								
1,2-Dibromo-3-chloropropane	ND	5.0	"								
1,2-Dibromoethane	ND	5.0	"								
1,2-Dichlorobenzene	ND	5.0	"								
1,2-Dichloroethane	ND	5.0	"								
1,2-Dichloropropane	ND	5.0	"								
1,3,5-Trimethylbenzene	ND	5.0	"								
1,3-Dichlorobenzene	ND	5.0	"								
1,3-Dichloropropane	ND	5.0	"								
1,4-Dichlorobenzene	ND	5.0	"								
2,2-Dichloropropane	ND	5.0	"								
2-Butanone	ND	5.0	"								
2-Chlorotoluene	ND	5.0	"								
2-Hexanone	ND	5.0	"								
4-Chlorotoluene	ND	5.0	"								
4-Methyl-2-pentanone	ND	5.0	"								
Acetone	ND	10	"								
Acrylonitrile	ND	5.0	"								
Benzene	ND	5.0	"								
Bromobenzene	ND	5.0	"								
Bromochloromethane	ND	5.0	"								
Bromodichloromethane	ND	5.0	"								
Bromoform	ND	5.0	"								
Bromomethane	ND	5.0	"								
Carbon disulfide	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroethane	ND	5.0	"								
Chloroform	ND	5.0	"								
Chloromethane	ND	5.0	"								
cis-1,2-Dichloroethylene	ND	5.0	"								
cis-1,3-Dichloropropylene	ND	5.0	"								
Dibromochloromethane	ND	5.0	"								
Dibromomethane	ND	5.0	"								
Dichlorodifluoromethane	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Hexachlorobutadiene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl Methacrylate	ND	5.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
Blank (BF90094-BLK1)								Prepared & Analyzed: 06/04/2019			
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/kg wet								
Methylene chloride	ND	10	"								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
Styrene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Tetrahydrofuran	ND	10	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
trans-1,4-dichloro-2-butene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*45.2*		*ug/L*	*50.0*		*90.4*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.4*		"	*50.0*		*98.8*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*45.4*		"	*50.0*		*90.8*	*70-130*				
Blank (BF90094-BLK2)								Prepared & Analyzed: 06/04/2019			
1,1,1,2-Tetrachloroethane	ND	500	ug/kg wet								
1,1,1-Trichloroethane	ND	500	"								
1,1,2,2-Tetrachloroethane	ND	500	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	500	"								
1,1,2-Trichloroethane	ND	500	"								
1,1-Dichloroethane	ND	500	"								
1,1-Dichloroethylene	ND	500	"								
1,1-Dichloropropylene	ND	500	"								
1,2,3-Trichlorobenzene	ND	500	"								
1,2,3-Trichloropropane	ND	500	"								
1,2,4-Trichlorobenzene	ND	500	"								
1,2,4-Trimethylbenzene	ND	500	"								
1,2-Dibromo-3-chloropropane	ND	500	"								
1,2-Dibromoethane	ND	500	"								
1,2-Dichlorobenzene	ND	500	"								
1,2-Dichloroethane	ND	500	"								
1,2-Dichloropropane	ND	500	"								
1,3,5-Trimethylbenzene	ND	500	"								
1,3-Dichlorobenzene	ND	500	"								
1,3-Dichloropropane	ND	500	"								
1,4-Dichlorobenzene	ND	500	"								
2,2-Dichloropropane	ND	500	"								
2-Butanone	ND	500	"								
2-Chlorotoluene	ND	500	"								
2-Hexanone	ND	500	"								
4-Chlorotoluene	ND	500	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
Blank (BF90094-BLK2)							Prepared & Analyzed: 06/04/2019				
4-Methyl-2-pentanone	ND	500	ug/kg wet								
Acetone	ND	1000	"								
Acrylonitrile	ND	500	"								
Benzene	ND	500	"								
Bromobenzene	ND	500	"								
Bromochloromethane	ND	500	"								
Bromodichloromethane	ND	500	"								
Bromoform	ND	500	"								
Bromomethane	ND	500	"								
Carbon disulfide	ND	500	"								
Carbon tetrachloride	ND	500	"								
Chlorobenzene	ND	500	"								
Chloroethane	ND	500	"								
Chloroform	ND	500	"								
Chloromethane	ND	500	"								
cis-1,2-Dichloroethylene	ND	500	"								
cis-1,3-Dichloropropylene	ND	500	"								
Dibromochloromethane	ND	500	"								
Dibromomethane	ND	500	"								
Dichlorodifluoromethane	ND	500	"								
Ethyl Benzene	ND	500	"								
Hexachlorobutadiene	ND	500	"								
Isopropylbenzene	ND	500	"								
Methyl Methacrylate	ND	500	"								
Methyl tert-butyl ether (MTBE)	ND	500	"								
Methylene chloride	ND	1000	"								
Naphthalene	ND	1000	"								
n-Butylbenzene	ND	500	"								
n-Propylbenzene	ND	500	"								
o-Xylene	ND	500	"								
p- & m- Xylenes	ND	1000	"								
p-Isopropyltoluene	ND	500	"								
sec-Butylbenzene	ND	500	"								
Styrene	ND	500	"								
tert-Butylbenzene	ND	500	"								
Tetrachloroethylene	ND	500	"								
Tetrahydrofuran	ND	1000	"								
Toluene	ND	500	"								
trans-1,2-Dichloroethylene	ND	500	"								
trans-1,3-Dichloropropylene	ND	500	"								
trans-1,4-dichloro-2-butene	ND	500	"								
Trichloroethylene	ND	500	"								
Trichlorofluoromethane	ND	500	"								
Vinyl Chloride	ND	500	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*45.3*		*ug/L*	*50.0*		*90.7*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.0*		*"*	*50.0*		*97.9*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*46.2*		*"*	*50.0*		*92.3*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
LCS (BF90094-BS1)							Prepared & Analyzed: 06/04/2019				
1,1,1,2-Tetrachloroethane	50.3		ug/L	50.0		101	70-130				
1,1,1-Trichloroethane	47.3		"	50.0		94.5	70-130				
1,1,2,2-Tetrachloroethane	49.5		"	50.0		99.0	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	52.5		"	50.0		105	70-130				
1,1,2-Trichloroethane	49.8		"	50.0		99.5	70-130				
1,1-Dichloroethane	49.0		"	50.0		98.0	70-130				
1,1-Dichloroethylene	45.7		"	50.0		91.4	70-130				
1,1-Dichloropropylene	49.8		"	50.0		99.7	70-130				
1,2,3-Trichlorobenzene	50.8		"	50.0		102	70-130				
1,2,3-Trichloropropane	48.9		"	50.0		97.7	70-130				
1,2,4-Trichlorobenzene	50.4		"	50.0		101	70-130				
1,2,4-Trimethylbenzene	48.3		"	50.0		96.5	70-130				
1,2-Dibromo-3-chloropropane	41.2		"	50.0		82.3	70-130				
1,2-Dibromoethane	52.4		"	50.0		105	70-130				
1,2-Dichlorobenzene	51.0		"	50.0		102	70-130				
1,2-Dichloroethane	45.9		"	50.0		91.8	70-130				
1,2-Dichloropropane	46.8		"	50.0		93.5	70-130				
1,3,5-Trimethylbenzene	48.7		"	50.0		97.5	70-130				
1,3-Dichlorobenzene	50.0		"	50.0		100	70-130				
1,3-Dichloropropane	49.7		"	50.0		99.4	70-130				
1,4-Dichlorobenzene	50.5		"	50.0		101	70-130				
2,2-Dichloropropane	46.1		"	50.0		92.1	70-130				
2-Butanone	51.2		"	50.0		102	70-130				
2-Chlorotoluene	45.4		"	50.0		90.9	70-130				
2-Hexanone	40.1		"	50.0		80.3	70-130				
4-Chlorotoluene	46.4		"	50.0		92.8	70-130				
4-Methyl-2-pentanone	41.3		"	50.0		82.6	70-130				
Acetone	43.7		"	50.0		87.4	70-130				
Acrylonitrile	48.5		"	50.0		97.0	70-130				
Benzene	53.4		"	50.0		107	70-130				
Bromobenzene	45.6		"	50.0		91.1	70-130				
Bromochloromethane	44.0		"	50.0		88.0	70-130				
Bromodichloromethane	45.7		"	50.0		91.4	70-130				
Bromoform	46.3		"	50.0		92.6	70-130				
Bromomethane	45.0		"	50.0		89.9	70-130				
Carbon disulfide	50.1		"	50.0		100	70-130				
Carbon tetrachloride	48.1		"	50.0		96.3	70-130				
Chlorobenzene	51.0		"	50.0		102	70-130				
Chloroethane	42.5		"	50.0		85.0	70-130				
Chloroform	49.7		"	50.0		99.3	70-130				
Chloromethane	35.7		"	50.0		71.5	70-130				
cis-1,2-Dichloroethylene	47.6		"	50.0		95.1	70-130				
cis-1,3-Dichloropropylene	46.4		"	50.0		92.8	70-130				
Dibromochloromethane	48.3		"	50.0		96.6	70-130				
Dibromomethane	49.6		"	50.0		99.1	70-130				
Dichlorodifluoromethane	35.7		"	50.0		71.3	70-130				
Ethyl Benzene	50.0		"	50.0		100	70-130				
Hexachlorobutadiene	54.1		"	50.0		108	70-130				
Isopropylbenzene	48.0		"	50.0		96.0	70-130				
Methyl Methacrylate	49.1		"	50.0		98.2	70-130				
Methyl tert-butyl ether (MTBE)	50.2		"	50.0		100	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
LCS (BF90094-BS1)							Prepared & Analyzed: 06/04/2019				
Methylene chloride	45.9		ug/L	50.0		91.7	70-130				
Naphthalene	49.4		"	50.0		98.7	70-130				
n-Butylbenzene	45.3		"	50.0		90.7	70-130				
n-Propylbenzene	47.9		"	50.0		95.8	70-130				
o-Xylene	49.7		"	50.0		99.4	70-130				
p- & m- Xylenes	98.9		"	100		98.9	70-130				
p-Isopropyltoluene	49.8		"	50.0		99.7	70-130				
sec-Butylbenzene	51.1		"	50.0		102	70-130				
Styrene	50.6		"	50.0		101	70-130				
tert-Butylbenzene	43.7		"	50.0		87.4	70-130				
Tetrachloroethylene	53.2		"	50.0		106	70-130				
Tetrahydrofuran	45.4		"	50.0		90.7	70-130				
Toluene	51.4		"	50.0		103	70-130				
trans-1,2-Dichloroethylene	47.0		"	50.0		94.1	70-130				
trans-1,3-Dichloropropylene	43.8		"	50.0		87.7	70-130				
trans-1,4-dichloro-2-butene	47.1		"	50.0		94.2	70-130				
Trichloroethylene	50.1		"	50.0		100	70-130				
Trichlorofluoromethane	46.6		"	50.0		93.3	70-130				
Vinyl Chloride	40.0		"	50.0		79.9	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*45.3*		"	*50.0*		*90.6*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.3*		"	*50.0*		*98.6*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*46.3*		"	*50.0*		*92.5*	*70-130*				
LCS Dup (BF90094-BSD1)							Prepared & Analyzed: 06/04/2019				
1,1,1,2-Tetrachloroethane	49.3		ug/L	50.0		98.6	70-130		1.99	30	
1,1,1-Trichloroethane	47.8		"	50.0		95.6	70-130		1.09	30	
1,1,2,2-Tetrachloroethane	47.5		"	50.0		95.1	70-130		4.08	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	53.0		"	50.0		106	70-130		0.891	30	
1,1,2-Trichloroethane	49.1		"	50.0		98.2	70-130		1.36	30	
1,1-Dichloroethane	48.9		"	50.0		97.8	70-130		0.184	30	
1,1-Dichloroethylene	45.5		"	50.0		91.0	70-130		0.460	30	
1,1-Dichloropropylene	49.5		"	50.0		99.0	70-130		0.644	30	
1,2,3-Trichlorobenzene	51.0		"	50.0		102	70-130		0.295	30	
1,2,3-Trichloropropane	47.5		"	50.0		95.0	70-130		2.82	30	
1,2,4-Trichlorobenzene	50.5		"	50.0		101	70-130		0.277	30	
1,2,4-Trimethylbenzene	48.2		"	50.0		96.4	70-130		0.187	30	
1,2-Dibromo-3-chloropropane	39.0		"	50.0		78.0	70-130		5.31	30	
1,2-Dibromoethane	50.1		"	50.0		100	70-130		4.51	30	
1,2-Dichlorobenzene	50.6		"	50.0		101	70-130		0.806	30	
1,2-Dichloroethane	44.7		"	50.0		89.5	70-130		2.56	30	
1,2-Dichloropropane	45.6		"	50.0		91.1	70-130		2.58	30	
1,3,5-Trimethylbenzene	48.3		"	50.0		96.7	70-130		0.824	30	
1,3-Dichlorobenzene	49.7		"	50.0		99.3	70-130		0.702	30	
1,3-Dichloropropane	48.0		"	50.0		96.1	70-130		3.38	30	
1,4-Dichlorobenzene	49.8		"	50.0		99.5	70-130		1.48	30	
2,2-Dichloropropane	46.0		"	50.0		92.0	70-130		0.174	30	
2-Butanone	49.8		"	50.0		99.5	70-130		2.91	30	
2-Chlorotoluene	45.9		"	50.0		91.8	70-130		0.963	30	
2-Hexanone	38.5		"	50.0		76.9	70-130		4.22	30	
4-Chlorotoluene	46.1		"	50.0		92.2	70-130		0.670	30	
4-Methyl-2-pentanone	38.9		"	50.0		77.8	70-130		6.06	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90094 - EPA 5035A											
LCS Dup (BF90094-BSD1)							Prepared & Analyzed: 06/04/2019				
Acetone	41.4		ug/L	50.0		82.8	70-130		5.31	30	
Acrylonitrile	47.4		"	50.0		94.8	70-130		2.21	30	
Benzene	53.6		"	50.0		107	70-130		0.280	30	
Bromobenzene	45.1		"	50.0		90.2	70-130		0.993	30	
Bromochloromethane	43.4		"	50.0		86.9	70-130		1.28	30	
Bromodichloromethane	44.9		"	50.0		89.8	70-130		1.81	30	
Bromoform	45.2		"	50.0		90.3	70-130		2.49	30	
Bromomethane	44.7		"	50.0		89.4	70-130		0.558	30	
Carbon disulfide	50.0		"	50.0		100	70-130		0.180	30	
Carbon tetrachloride	48.1		"	50.0		96.2	70-130		0.125	30	
Chlorobenzene	50.6		"	50.0		101	70-130		0.787	30	
Chloroethane	41.0		"	50.0		82.0	70-130		3.55	30	
Chloroform	50.1		"	50.0		100	70-130		0.802	30	
Chloromethane	34.7		"	50.0		69.5	70-130	Low Bias	2.81	30	
cis-1,2-Dichloroethylene	47.3		"	50.0		94.6	70-130		0.569	30	
cis-1,3-Dichloropropylene	45.8		"	50.0		91.6	70-130		1.32	30	
Dibromochloromethane	47.0		"	50.0		94.0	70-130		2.73	30	
Dibromomethane	47.6		"	50.0		95.2	70-130		3.97	30	
Dichlorodifluoromethane	35.6		"	50.0		71.2	70-130		0.196	30	
Ethyl Benzene	49.5		"	50.0		99.1	70-130		0.884	30	
Hexachlorobutadiene	54.8		"	50.0		110	70-130		1.32	30	
Isopropylbenzene	48.0		"	50.0		95.9	70-130		0.104	30	
Methyl Methacrylate	47.2		"	50.0		94.3	70-130		4.05	30	
Methyl tert-butyl ether (MTBE)	48.7		"	50.0		97.3	70-130		3.02	30	
Methylene chloride	44.9		"	50.0		89.9	70-130		2.03	30	
Naphthalene	48.5		"	50.0		97.0	70-130		1.76	30	
n-Butylbenzene	49.4		"	50.0		98.8	70-130		8.57	30	
n-Propylbenzene	47.5		"	50.0		95.1	70-130		0.775	30	
o-Xylene	49.3		"	50.0		98.6	70-130		0.768	30	
p- & m- Xylenes	98.2		"	100		98.2	70-130		0.741	30	
p-Isopropyltoluene	50.1		"	50.0		100	70-130		0.560	30	
sec-Butylbenzene	51.0		"	50.0		102	70-130		0.196	30	
Styrene	50.3		"	50.0		101	70-130		0.654	30	
tert-Butylbenzene	43.4		"	50.0		86.8	70-130		0.620	30	
Tetrachloroethylene	52.9		"	50.0		106	70-130		0.415	30	
Tetrahydrofuran	42.3		"	50.0		84.6	70-130		6.91	30	
Toluene	50.8		"	50.0		102	70-130		1.29	30	
trans-1,2-Dichloroethylene	47.4		"	50.0		94.8	70-130		0.763	30	
trans-1,3-Dichloropropylene	42.5		"	50.0		85.1	70-130		3.03	30	
trans-1,4-dichloro-2-butene	45.1		"	50.0		90.2	70-130		4.36	30	
Trichloroethylene	49.5		"	50.0		99.1	70-130		1.18	30	
Trichlorofluoromethane	45.8		"	50.0		91.7	70-130		1.77	30	
Vinyl Chloride	39.3		"	50.0		78.6	70-130		1.61	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*45.1*		"	*50.0*		*90.2*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.2*		"	*50.0*		*98.4*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*46.2*		"	*50.0*		*92.4*	*70-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90137 - EPA 3550C											
Blank (BF90137-BLK1)							Prepared: 06/04/2019 Analyzed: 06/05/2019				
2-Methylnaphthalene	ND	167	ug/kg wet								
Acenaphthene	ND	167	"								
Acenaphthylene	ND	167	"								
Anthracene	ND	167	"								
Benzo(a)anthracene	ND	167	"								
Benzo(a)pyrene	ND	167	"								
Benzo(b)fluoranthene	ND	167	"								
Benzo(g,h,i)perylene	ND	167	"								
Benzo(k)fluoranthene	ND	167	"								
Chrysene	ND	167	"								
Dibenzo(a,h)anthracene	ND	167	"								
Fluoranthene	ND	167	"								
Fluorene	ND	167	"								
Indeno(1,2,3-cd)pyrene	ND	167	"								
Naphthalene	ND	167	"								
Phenanthrene	ND	167	"								
Pyrene	ND	167	"								
Surrogate: SURR: Nitrobenzene-d5	*527*		"	*833*		*63.2*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*461*		"	*833*		*55.3*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*453*		"	*833*		*54.3*	*30-130*				
LCS (BF90137-BS1)							Prepared: 06/04/2019 Analyzed: 06/05/2019				
2-Methylnaphthalene	545	167	ug/kg wet	833		65.4	40-140				
Acenaphthene	483	167	"	833		58.0	40-140				
Acenaphthylene	498	167	"	833		59.8	40-140				
Anthracene	523	167	"	833		62.8	40-140				
Benzo(a)anthracene	530	167	"	833		63.6	40-140				
Benzo(a)pyrene	569	167	"	833		68.3	40-140				
Benzo(b)fluoranthene	561	167	"	833		67.3	40-140				
Benzo(g,h,i)perylene	539	167	"	833		64.7	40-140				
Benzo(k)fluoranthene	485	167	"	833		58.2	40-140				
Chrysene	481	167	"	833		57.7	40-140				
Dibenzo(a,h)anthracene	550	167	"	833		66.0	40-140				
Fluoranthene	550	167	"	833		66.0	40-140				
Fluorene	522	167	"	833		62.6	40-140				
Indeno(1,2,3-cd)pyrene	592	167	"	833		71.0	40-140				
Naphthalene	521	167	"	833		62.6	40-140				
Phenanthrene	511	167	"	833		61.4	40-140				
Pyrene	491	167	"	833		58.9	40-140				
Surrogate: SURR: Nitrobenzene-d5	*566*		"	*833*		*67.9*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*480*		"	*833*		*57.6*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*485*		"	*833*		*58.2*	*30-130*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90131 - EPA 3550C											
Blank (BF90131-BLK1)								Prepared: 06/04/2019 Analyzed: 06/05/2019			
4,4'-DDD	ND	0.333	ug/kg wet								
4,4'-DDE	ND	0.333	"								
4,4'-DDT	ND	0.333	"								
Alachlor	ND	0.333	"								
Aldrin	ND	0.333	"								
alpha-BHC	ND	0.333	"								
beta-BHC	ND	0.333	"								
Chlordane, total	ND	6.67	"								
delta-BHC	ND	0.333	"								
Dieldrin	ND	0.333	"								
Endosulfan I	ND	0.333	"								
Endosulfan II	ND	0.333	"								
Endosulfan sulfate	ND	0.333	"								
Endrin	ND	0.333	"								
Endrin aldehyde	ND	0.333	"								
Endrin ketone	ND	0.333	"								
gamma-BHC (Lindane)	ND	0.333	"								
Heptachlor	ND	0.333	"								
Heptachlor epoxide	ND	0.333	"								
Methoxychlor	ND	0.333	"								
Toxaphene	ND	16.7	"								
Surrogate: Decachlorobiphenyl	*75.2*		"	*66.7*		*113*	*30-140*				
Surrogate: Tetrachloro-m-xylene	*74.1*		"	*66.7*		*111*	*30-140*				
LCS (BF90131-BS1)								Prepared: 06/04/2019 Analyzed: 06/05/2019			
4,4'-DDD	41.3	0.333	ug/kg wet	33.3		124	40-140				
4,4'-DDE	35.0	0.333	"	33.3		105	40-140				
4,4'-DDT	26.1	0.333	"	33.3		78.3	40-140				
Alachlor	35.3	0.333	"	33.3		106	40-140				
Aldrin	34.8	0.333	"	33.3		104	40-140				
alpha-BHC	40.0	0.333	"	33.3		120	40-140				
beta-BHC	36.9	0.333	"	33.3		111	40-140				
delta-BHC	38.6	0.333	"	33.3		116	40-140				
Dieldrin	31.8	0.333	"	33.3		95.4	40-140				
Endosulfan I	37.8	0.333	"	33.3		113	40-140				
Endosulfan II	36.2	0.333	"	33.3		109	40-140				
Endosulfan sulfate	40.7	0.333	"	33.3		122	40-140				
Endrin	42.2	0.333	"	33.3		127	40-140				
Endrin aldehyde	32.9	0.333	"	33.3		98.7	40-140				
Endrin ketone	39.1	0.333	"	33.3		117	40-140				
gamma-BHC (Lindane)	37.8	0.333	"	33.3		113	40-140				
Heptachlor	33.0	0.333	"	33.3		99.0	40-140				
Heptachlor epoxide	31.9	0.333	"	33.3		95.8	40-140				
Methoxychlor	29.5	0.333	"	33.3		88.6	40-140				
Surrogate: Decachlorobiphenyl	*81.1*		"	*66.7*		*122*	*30-140*				
Surrogate: Tetrachloro-m-xylene	*71.0*		"	*66.7*		*106*	*30-140*				

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90258 - EPA SW846-3540C											
Blank (BF90258-BLK1)								Prepared: 06/05/2019 Analyzed: 06/06/2019			
Aroclor 1016	ND	0.0249	mg/kg wet								
Aroclor 1221	ND	0.0249	"								
Aroclor 1232	ND	0.0249	"								
Aroclor 1242	ND	0.0249	"								
Aroclor 1248	ND	0.0249	"								
Aroclor 1254	ND	0.0249	"								
Aroclor 1260	ND	0.0249	"								
Aroclor 1262	ND	0.0249	"								
Aroclor 1268	ND	0.0249	"								
Total PCBs	ND	0.0249	"								
Surrogate: Tetrachloro-m-xylene	*0.123*		"	*0.0995*		*124*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.141*		"	*0.0995*		*142*	*30-140*				
LCS (BF90258-BS1)								Prepared: 06/05/2019 Analyzed: 06/06/2019			
Aroclor 1016	0.554	0.0249	mg/kg wet	0.498		111	40-130				
Aroclor 1260	0.563	0.0249	"	0.498		113	40-130				
Surrogate: Tetrachloro-m-xylene	*0.120*		"	*0.0995*		*120*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.139*		"	*0.0995*		*140*	*30-140*				
LCS Dup (BF90258-BSD1)								Prepared: 06/05/2019 Analyzed: 06/06/2019			
Aroclor 1016	0.530	0.0249	mg/kg wet	0.498		107	40-130		4.37	25	
Aroclor 1260	0.617	0.0249	"	0.498		124	40-130		9.15	25	
Surrogate: Tetrachloro-m-xylene	*0.119*		"	*0.0995*		*120*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.139*		"	*0.0995*		*140*	*30-140*				

Chlorinated Herbicides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90321 - EPA 3550B/8151A											
Blank (BF90321-BLK1)								Prepared & Analyzed: 06/06/2019			
2,4,5-T	ND	19.9	ug/kg wet								
2,4,5-TP (Silvex)	ND	19.9	"								
2,4-D	ND	19.9	"								
Dalapon	ND	19.9	"								
Dicamba	ND	19.9	"								
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*351*		"	*498*		*70.4*	*30-150*				
LCS (BF90321-BS1)								Prepared: 06/06/2019 Analyzed: 06/07/2019			
2,4,5-T	67.7	19.9	ug/kg wet	159		42.5	40-140				
2,4,5-TP (Silvex)	63.7	19.9	"	159		40.0	40-140				
2,4-D	75.7	19.9	"	159		47.5	40-140				
Dalapon	ND	19.9	"	159			40-140	Low Bias			
Dicamba	81.7	19.9	"	159		51.3	40-140				
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*277*		"	*498*		*55.6*	*30-150*				

Gas Chromatography/Flame Ionization Detector - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90132 - EPA 3545A											
Blank (BF90132-BLK1)							Prepared & Analyzed: 06/04/2019				
ETPH (Extractable Total Petroleum Hydrocarbons)	ND	39.6	mg/kg wet								
Surrogate: 1-Chlorooctadecane	*5.64*		"	*9.90*		*56.9*	*50-150*				
LCS (BF90132-BS1)							Prepared & Analyzed: 06/04/2019				
ETPH (Extractable Total Petroleum Hydrocarbons)	45.3	39.6	mg/kg wet	74.3		61.0	60-120				
Surrogate: 1-Chlorooctadecane	*7.41*		"	*9.90*		*74.8*	*50-150*				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90029 - EPA 3050B											
Blank (BF90029-BLK1)								Prepared & Analyzed: 06/03/2019			
Arsenic	ND	1.50	mg/kg wet								
Barium	ND	2.50	"								
Cadmium	ND	0.300	"								
Chromium	ND	0.500	"								
Lead	ND	0.500	"								
Selenium	ND	2.50	"								
Silver	ND	0.500	"								
Reference (BF90029-SRM1)								Prepared & Analyzed: 06/03/2019			
Arsenic	224	1.50	mg/kg wet	202		111	69.8-130.2				
Barium	290	2.50	"	270		108	75.2-125.2				
Cadmium	152	0.300	"	141		108	74.5-124.8				
Chromium	178	0.500	"	167		107	70.1-129.9				
Lead	80.8	0.500	"	73.8		110	68.4-131.6				
Selenium	30.5	2.50	"	49.9		61.1	58.1-141.7				
Silver	76.2	0.500	"	71.1		107	70.7-129.3				
Batch BF91113 - EPA 3015A/1311											
Blank (BF91113-BLK1)								Prepared & Analyzed: 06/20/2019			
Lead	ND	0.00556	mg/L								
LCS (BF91113-BS1)								Prepared & Analyzed: 06/20/2019			
Lead	0.515		ug/mL	0.500		103	80-120				
Leach Fluid Blank (BF91113-LBK1)								Prepared & Analyzed: 06/20/2019			
Lead	ND	0.125	mg/L								

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF90038 - EPA 7473 soil											
Blank (BF90038-BLK1)								Prepared & Analyzed: 06/03/2019			
Mercury	ND	0.0300	mg/kg wet								
Reference (BF90038-SRM1)								Prepared & Analyzed: 06/03/2019			
Mercury	4.3015		mg/kg	3.71		116	65-135				

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BF91038 - EPA SW 846-1311 TCLP ext. for metals											
Blank (BF91038-BLK1)									Prepared: 06/19/2019 Analyzed: 06/20/2019		
TCLP Extraction	Completed	1.00	N/A								

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19E1238-01	DP-A	40mL Vial with Stir Bar-Cool 4° C
19E1238-02	DP-B	40mL Vial with Stir Bar-Cool 4° C

Sample and Data Qualifiers Relating to This Work Order

SCAL-E15	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average RfRSD>15%).
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
M-CRL	The RL check for this element recovered outside of control limits.
IS-LO	The internal std associated with this target compound did not meet acceptance criteria (area <50% CCV) at the stated dilution due to matrix effects. Sample was rerun to confirm matrix effects.
ICV-E20	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 20% of expected value).
EXT-Temp	Extraction temperture slightly exceeded acceptance range.
EXT-COMP	Completed
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Revision Description: RCP revised to include TCLP Lead analysis.

Lenard Engineering, Inc.
2210 Main Street
Glastonbury, CT 06033
Phone (860) 659-3100
Fax (860) 659-3103

Chain of Custody Record

Date: 5 28 2019
Client: Mansfield Housing Authority
Lab: York Analytical

19E1238

Project Number	Project Name	Project Location
18-361.1	113 -121 North Eagleville Rd	Mansfield, CT

Send Report to:	Invoice to:
Mark Temple	Mark Temple at Lenard Engineering, Inc

Item No.	Sample No. LEI	Source Code	Qty	Ship Type	Size	Prep.	Analysis Required	Comments
1	DP-A	Soil	4	V	vial	meth. I	VOCs (8260)	
2	DP-A	Soil	2	G	4 oz	I	PAHs (8270), TPH, pesticides, herbicides, RCRA 8 metals, PCBs (soxhlet)	
3	DP-B	Soil	4	V	vial	meth. I	VOCs (8260)	
4	DP-B	Soil	2	G	4 oz	I	PAHs (8270), TPH, pesticides, herbicides, RCRA 8 metals, PCBs (soxhlet)	

Item No.	Signature & Affiliation: Relinquished By	Signature & Affiliation: Accepted By	Date	Time
	[illegible]	[illegible] Grade	5/23/19	1500
	[illegible]	[illegible]	5/24/19	1048
	[illegible]	[illegible] 5-24-19 3.6c	5/24/19	1626

Container: Ship Type	Code	Preservative: Ship Type	Code
Amber	A	Iced	I
Glass	B	Filtered	N
Bacteria Jar	C	Nitric Acid	H
Cube	G	Hydrochloric Acid	SI
Glass	P	Sodium Hydroxide	
Plastic	V	Sulphuric Acid	

Other:
CT RCP required

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060419\GC83565.D Vial: 11
Acq On : 5 Jun 2019 12:30 am Operator: CM
Sample : 19E1238-01 Inst : HP FID 3
Misc : QBTPH3-060419A Multiplr: 1.00
IntFile : RTEINT.P
Quant Time: Jun 5 7:35 2019 Quant Results File: E8011019A.RES

Quant Method : C:\HPCHEM\1\METHODS\E8011019A.M (RTE Integrator)
Title : CT ETPH 9/14/16
Last Update : Fri Jan 18 13:06:17 2019
Response via : Initial Calibration
DataAcq Meth : ETPH-A.M

Volume Inj. : 1 uL
Signal Phase : Rtx-5
Signal Info : .32

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S SURROGATE	16.19f	254876	86.660 ug/mLm
Target Compounds			
1) H ETPH	10.00	4004653	941.835 ug/mL

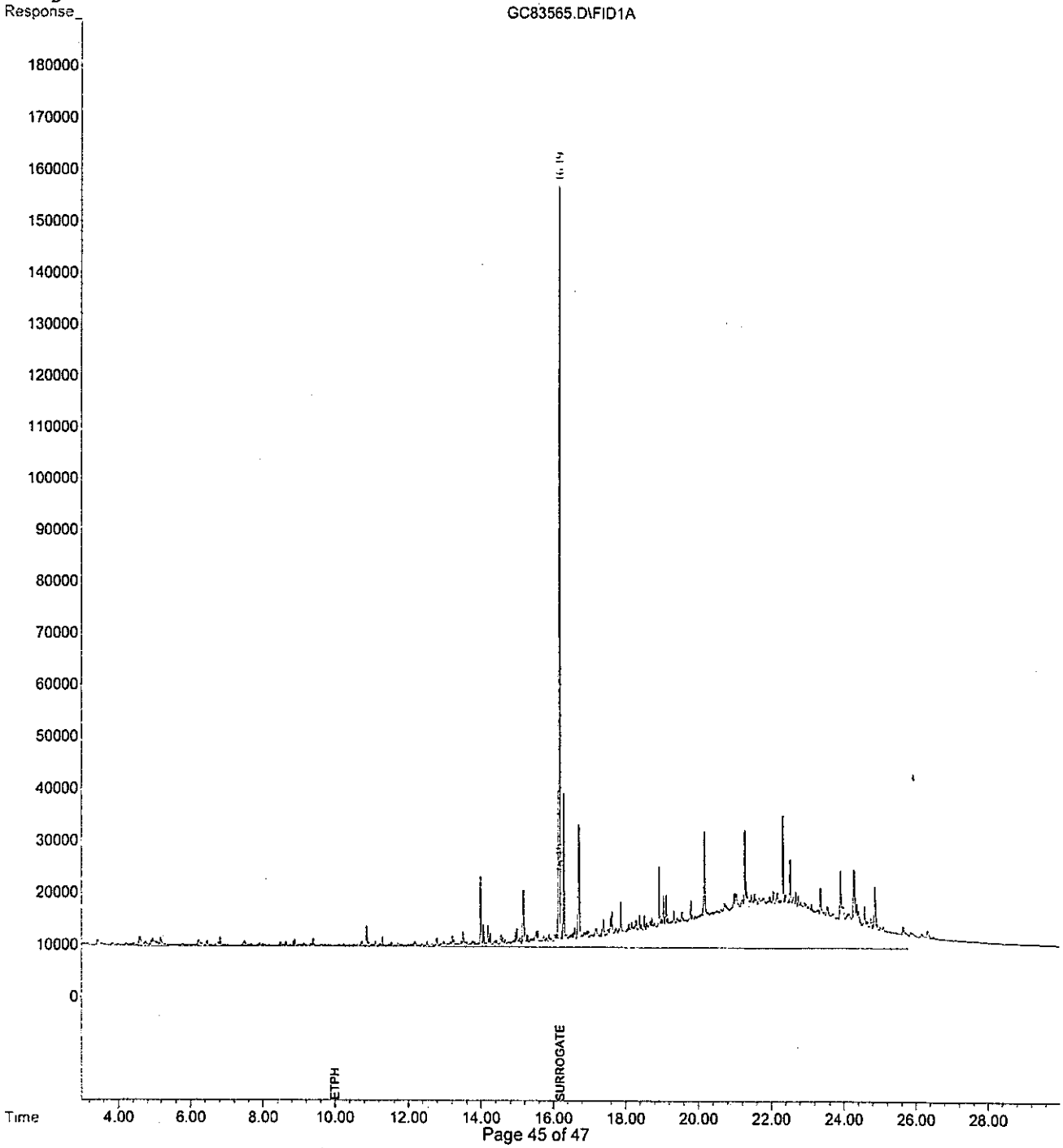
(f)=RT Delta > 1/2 Window (m)=manual int.
GC83565.D E8011019A.M Wed Jun 05 07:36:01 2019

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060419\GC83565.D Vial: 11
Acq On : 5 Jun 2019 12:30 am Operator: CM
Sample : 19E1238-01 Inst : HP FID 3
Misc : QBTPH3-060419A Multiplr: 1.00
IntFile : RTEINT.P
Quant Time: Jun 5 7:35 2019 Quant Results File: E8011019A.RES

Quant Method : C:\HPCHEM\1\METHODS\E8011019A.M (RTE Integrator)
Title : CT ETPH 9/14/16
Last Update : Fri Jan 18 13:06:17 2019
Response via : Multiple Level Calibration
DataAcq Meth : ETPH-A.M

Volume Inj. : 1 uL
Signal Phase : Rtx-5
Signal Info : .32



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060419\GC83566.D Vial: 12
Acq On : 5 Jun 2019 1:08 am Operator: CM
Sample : 19E1238-02 Inst : HP FID 3
Misc : QBTPH3-060419A Multiplr: 1.00
IntFile : RTEINT.P
Quant Time: Jun 5 7:36 2019 Quant Results File: E8011019A.RES

Quant Method : C:\HPCHEM\1\METHODS\E8011019A.M (RTE Integrator)
Title : CT ETPH 9/14/16
Last Update : Fri Jan 18 13:06:17 2019
Response via : Initial Calibration
DataAcq Meth : ETPH-A.M

Volume Inj. : 1 uL
Signal Phase : Rtx-5
Signal Info : .32

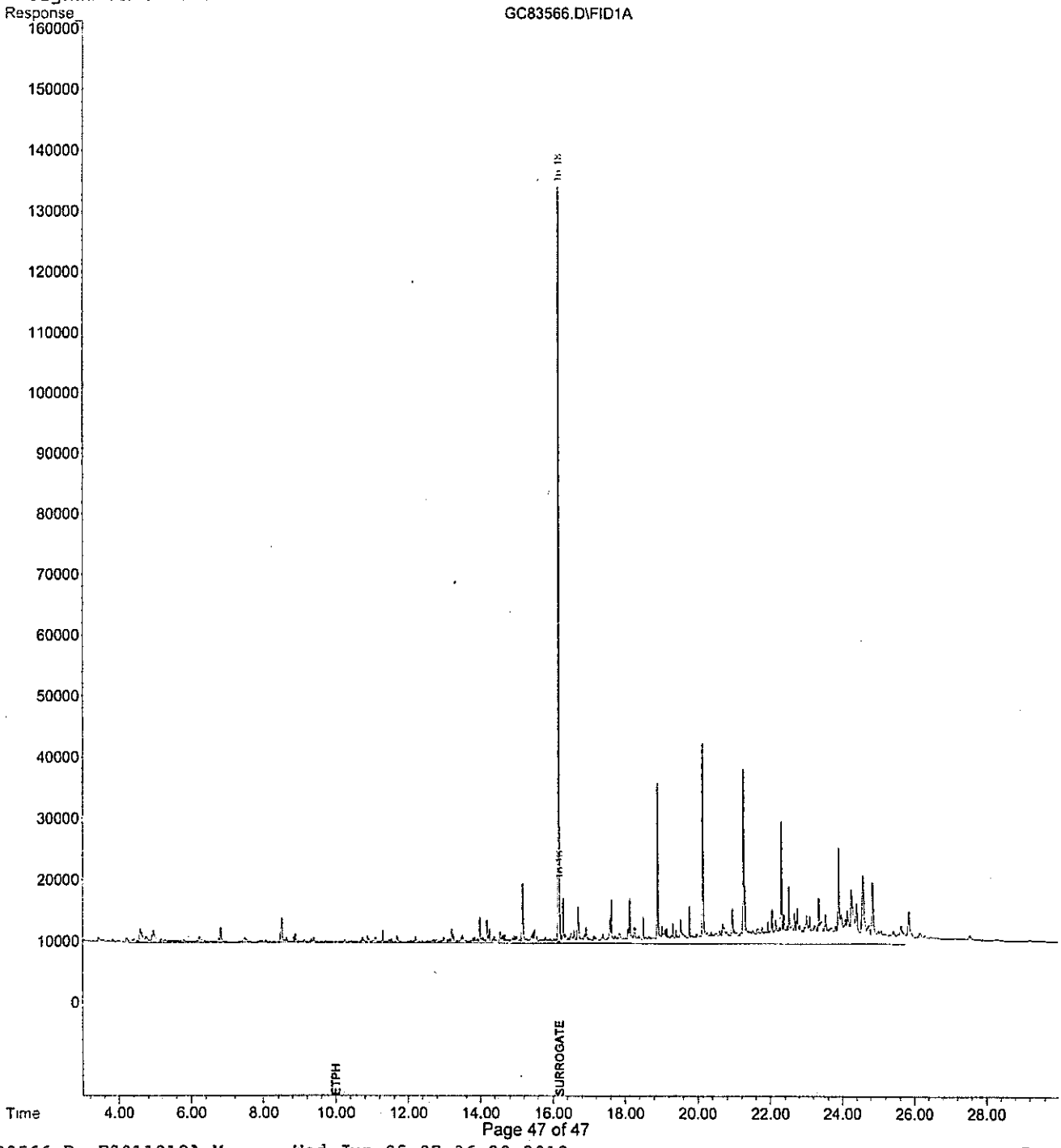
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S SURROGATE	16.18f	207772	70.645 ug/mLm
Target Compounds			
1) H ETPH	10.00	1715793	403.529 ug/mL

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\060419\GC83566.D Vial: 12
Acq On : 5 Jun 2019 1:08 am Operator: CM
Sample : 19E1238-02 Inst : HP FID 3
Misc : QBTPH3-060419A Multiplr: 1.00
IntFile : RTEINT.P
Quant Time: Jun 5 7:36 2019 Quant Results File: E8011019A.RES

Quant Method : C:\HPCHEM\1\METHODS\E8011019A.M (RTE Integrator)
Title : CT ETPH 9/14/16
Last Update : Fri Jan 18 13:06:17 2019
Response via : Multiple Level Calibration
DataAcq Meth : ETPH-A.M

Volume Inj. : 1 uL
Signal Phase : Rtx-5
Signal Info : .32



9

Town File Number: WEB-42708917

NOTIFICATION TO WINDHAM WATER WORKS

For Mansfield Projects within the Willimantic Reservoir Watershed

Sections 8-3i and 22a-42f of the State Statutes require applicants to provide to all water companies written notice of an application, petition, request or plan if the proposed project is located within the watershed of their public drinking supply. **The applicant must mail such notice within seven (7) days of the date of the application, by certified mail, return receipt requested.** To meet this requirement, this form shall be used by applicants in Mansfield for projects within the Willimantic Reservoir Watershed. To determine if a project is within the reservoir watershed, please consult map(s) on file in the Planning Office. **Failure of an applicant to comply with this statutory requirement may be grounds for a claim of procedural error ad a successful legal challenge of the decision rendered on the application.**

Application Submitted to:
(Check one or more)

- [x] Inland Wetlands Agency
- [x] Planning and Zoning Commission
- [ ] Zoning Board of Appeals

Type of Application:

- [x] Zone Change
- [ ] Subdivision
- [ ] Variance
- [ ] Special Exception/Permit
- [x] Inland Wetland/Watercourses License
- [ ] Other (Describe)

Applicant Mansfield Non-Profit Housing Dev Corp (please **PRINT**) Signature

Street Address 309 Maple Road Telephone (860) 487-0693

Town Storrs, CT Zip code 06268

Project Street Location/Nearest Utility Pole 113-121 S. Eagleville Rd, Storrs, CT

Contact Person Rebecca Fields Telephone (860) 487-0693 x5

Brief description of application (For example: 10 lot subdivision of single family homes with on-site septic systems and wells)

New housing development that includes 42 units within 7 new buildings and the renovation of one existing building. New access drives and off-street parking to support the units. Connections to public water and sewer facilities.

Public Hearing Date: _____ (If Applicable) Commission/Agency Meeting Date(s) 12/3/2019

Enclose a copy of the application submitted to the Town and a full set of project plans. Mail this completed form by certified mail, return receipt requested, to:

Windham Water Works-Superintendent
174 Storrs Road
Mansfield Center, CT 06250

10

Watershed or Aquifer Area Project Notification Form

REQUIREMENT:

Within seven days of filing, all applicants before a municipal Zoning Commission, Planning and Zoning Commission, Zoning Board of Appeals or Inland Wetlands Commission for any project located within a public water supply aquifer or watershed area are reguired by Public Act No. 06-53 of the CT General Statutes to notify The Commissioner of Public Health and the project area Water Company of the proposed project by providing the following information.

To determine if your project falls within a public water supply aquifer or watershed area visit the appropriate town hall and look at their *Public Drinking Water Source Protection Areas* map. If your project falls completely within or contain any part of a public water supply aquifer or watershed you are required to complete the following information.

Note: You will need information obtained from the *Public Drinking Water Source Protection Areas* map located in the appropriate town hall to complete this form.

Step 1: Have you already notified the CT Department of Public Health (CTDPH) of this project?

☑ No, Go to Step 2

☐ Yes, I have notified DPH under a different project name - Complete steps 4-6

☐ Yes, same name different year - Notification Year ____ Complete steps 4-6

Step 2:

1. Name of public water supply aquifer your project lies within: N/A
2. Name of the public water supply watershed your project lies within: Windham Water Works
3. Public Water Supply Identification number (PWSID) for the water utility: CT 1630011

Step 3: For 1-5 Check all that apply

1. My project is proposing:

☐ Industrial use; ☐ Commercial use; ☐ Agricultural use; ☑ Residential use;

☐ Recreational use; ☐ Transportation improvements; ☐ Institutional (school, hospital, nursing home, etc.);

☐ Quarry/Mining; ☑ Zone Change, Please Describe: Rural Ag Res to Affordable Housing

☐ Other, Please describe: ____

2. The total acreage of my project is:

☑ Less than or equal to 5 acres ☐ Greater than 5 acres

3. My project site contains, abuts or is within 50 feet of a:

☑ Wetland; ☐ Stream; ☐ River; ☐ Pond or Lake

4. Existing use of my project site is:

☐ Grassland/meadow; ☐ Forested; ☐ Agricultural; ☐ Transportation; ☐ Institutional (school, hospital, nursing home, etc.); ☑ Residential; ☐ Commercial; ☐ Industrial; ☐ Recreational; ☐ Quarry/Mining

☐ Other Please Describe:

5. My project will utilize:

☐ septic system; ☑ existing public sewer; ☐ new public sewer; ☐ agricultural waste facility;

☐ existing private well; ☐ new private well; ☑ existing public water supply;

☐ new public water supply, if new have you applied for a certificate of public convenience and necessity from DPH? ☐ Yes ☐ No

6. My project will contain this percentage of built up area (buildings, parking, road/driveway, pool): ☐ Less than or equal to 20% ☑ Greater than 20% to 50% ☐ Greater than 50%

Step: 4 Applicants Contact Information:

Name: Mansfield Nonprofit Housing Dev Corp

E-mail address: wardgervino@gmail.com

Telephone: (860) 933-3506

Fax number:

Step 5: Please provide the following if available:

Project name: South Eagleville Rd Housing Opportunity Zone

Project site address: 113-121 South Eagleville Road

Town: Mansfield

Project site nearest intersection: Maple Road at South Eagleville Road

Project site latitude and longitude: 41.795850,-72.249747

E-mail completed form to dph.swpmail@ct.gov

NOTICE OF PUBLIC HEARING

January 8, 2020

Dear Property Owner:

In accordance with the Mansfield Zoning Regulations, you are hereby notified that the Town of Mansfield Planning and Zoning Commission will conduct a public hearing on Tuesday, January 21, 2020, at 6:30 p.m. in the Council Chamber, Audrey P. Beck Building (Mansfield Town Hall), 4 South Eagleville Road, Storrs-Mansfield, Connecticut 06268, to hear and consider the application of Mansfield Nonprofit Housing Development Corporation for zoning map amendment to rezone 113-121 South Eagleville Road from the Rural Agricultural Residence 90 Zone to the new South Eagleville Road Housing Opportunity Zone. At this hearing, public comment and written comment may be received on the proposed application. The application and subject plans are on file for review in the Mansfield Planning Office, 4 South Eagleville Road, Audrey P. Beck Building, Storrs-Mansfield, Connecticut 06268. Questions for the applicant can be directed to the undersigned at MAndrews@goodwin.com. A copy of the Statement of Justification, map showing the subject zone change area, and Sections D (Approval Considerations) and E (Adoption/Protests) of Section XIII of the Mansfield Zoning Regulations are attached.

You are not required to respond to this letter or to attend the hearing; this letter is for your information. Thank you.

Very truly yours,

Mary Jo Blain Andrews

Mary Jo Blain Andrews
Attorney for the Applicant

MJA:enc
Attachments

8263316v1

MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION
Application for Zoning Map Amendment
November 25, 2019

STATEMENT OF JUSTIFICATION

1. Address the Approval Considerations of Article XIII, Section D of the Zoning Regulations:

"[T]he applicant's proposal will promote the public's health, safety, property values and general welfare."

Accepted research in the field of affordable housing has demonstrated over and over that well-designed affordable housing does not have an adverse impact on the value of nearby properties, and in fact, allowing economic diversity in housing has a positive effect town wide, as this type of housing is available to such groups as municipal employees and first responders, whose presence is essential to maintaining the town as an attractive place to live.

(1) The proposal is complete and contains all required application information.

The application is complete and contains all required information.

(2) The proposal is consistent with the goals, policies and recommendation contained within the Mansfield Plan of Conservation and Development.

The proposed zone change serves several express goals of the town's Plan of Conservation and Development (POCD). A goal of the POCD is that "Mansfield's housing options include housing affordable to low and moderate income individuals and families" (Introduction). As part of developing the POCD, "residents expressed a desire for a wider variety of housing options that include both affordable and accessible units." Chapter 1. Chapter 7 states: "Contemporary affordable housing looks like other kinds of housing in a community. In Mansfield, any new affordable housing would be designed to be compatible in scale and design with other housing in town." That chapter also expressly identifies the need for affordable rental units. In addition, Goal 7.1 is that "Mansfield's housing options include housing affordable to low and moderate income individuals and families." Goal 7.4 of the POCD is: "Mansfield's land use regulations support development of a wide range of housing options to meet the needs of residents at all ages of the life cycle, including singles, families, seniors and students." Strategy for this Goal 7.4 is to "Update regulations to provide housing options for residents of all ages, incomes and physical abilities."

(3) The proposal is consistent with the expression of regulatory intent and purpose contained in the provisions of Article I of these regulations and Section 8-2 of the Connecticut General Statutes, as amended.

As stated above, the proposed affordable housing zone change will promote and protect the overall health, safety, convenience and welfare of town residents and the general public. It facilitates suitable provisions for use of public water and sewer and provides for access to public transportation, playgrounds, open space and other public amenities. As stated above, affordable housing developments do not have an adverse impact on the value of nearby properties. The proposed zone change assists in encouraging a variety of housing opportunities within the town.

The proposed affordable housing zone change is consistent with the following provisions in General Statutes § 8-2. It takes into consideration the town's Plan of Conservation and Development. It "encourage[s] the development of housing opportunities, including opportunities for multifamily dwellings." It "promote[s] housing choice and economic diversity in housing, including housing for both low and moderate income households."

(4) (refers to text amendment changes only)

(5) Any proposal to revise the Zoning Map has comprehensively considered: the size and physical characteristics of the subject area; the character and supply of land currently zoned in the subject classification; and the effect of the proposal on existing land uses in the surrounding area.

The size and physical characteristics of the subject areas are well-suited to the SER-HO Zone. The parcel to be rezoned is 5.2 acres located on South Eagleville Road (Route 275). A public bus stop and electric, gas, water and sewer are located in the public easement and/or roadway adjacent to the property.

No land is currently zoned SER-HO.

The proposed SER-HO Zone is in harmony with the existing land uses in the surrounding area:

- *To the east of the property is a driveway to the multifamily housing located to the south. Beyond this driveway is a wooded nature preserve with a pond that is open to the public for passive recreation.*
- *To the south of the property is existing multifamily housing.*
- *To the west of the property is a utility substation. Past the substation is Maple Road and beyond that is multifamily housing. Adjacent to this housing is the town operated senior center.*

- *To the north of the property is state highway 275 also known as South Eagleville Road. Across this street are single family homes that are set back from the highway.*

2. **Substantiate the proposal's compatibility with Mansfield's Plan of Conservation and Development.**

See section 1.(2) above.

3. **Identify the reasons for the proposed amendment.**

The proposed zone change would provide a location for the new affordable housing South Eagleville Road Housing Opportunity Zone (SER-HO), which is compliant with General Statutes § 8-30g because any multi-family housing eligible under the SER-HO Zone will qualify as "assisted housing" or a "set aside development" under § 8-30g.

4. **Describe the effect the change would have on the health, safety, welfare and property values of Mansfield residents.**

As stated above, accepted research in the field of affordable housing has demonstrated over and over that well-designed affordable housing does not have an adverse impact on the value of nearby properties, and in fact, allowing economic diversity in housing has a positive effect town wide, as this type of housing is available to such groups as municipal employees and first responders, whose presence is essential to maintaining the town as an attractive place to live. It facilitates suitable provisions for use of public water and sewer and provides for access to public transportation, playgrounds, open space and other public amenities. The proposed zone change assists in encouraging a variety of housing opportunities within the town.

CHRONICLE MEDIA LLC
P. O. BOX 229
WILLIMANTIC CT 06226
(860)423-8466
Fax (860)423-7641

ORDER CONFIRMATION

Salesperson: Laurie Moulthrope Printed at 01/10/20 12:11 by lmoul-cm

---

Acct #: 3141 Ad #: 173397 Status: New

MANSFIELD PZC/IWA
ATTN: EMMY GALBRAITH
4 SOUTH EAGLEVILLE RD.
STORRS CT 06268

Start: 01/11/2020 Stop: 01/16/2020
Times Ord: 2 Times Run: ***
LEG 2.00 X 4.61 Words: 157
Total LEG 9.22
Class: 0005 LEGAL NOTICES
Rate: LEG Cost: 483.12
Affidavits: 1

Contact: EMMY GALBRAITH
Phone: (860)429-3330
Fax#: (860)429-6863
Email: GalbraithEA@mansfieldct.org
Agency:

Ad Descrpt: LEGAL NOTICE THE MANSFIEL
Given by: *
P.O. #:
Created: lmoul 01/10/20 12:03
Last Changed: lmoul 01/10/20 12:05

COMMENTS:
COPIED from AD 172936

PUB	ZONE	EDT	TP	RUN DATES
CHR	A	97	S	01/11,16

AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

Name (print or type) Name (signature)

(CONTINUED ON NEXT PAGE)

CHRONICLE MEDIA LLC
P. O. BOX 229
WILLIMANTIC CT 06226
(860)423-8466
Fax (860)423-7641

ORDER CONFIRMATION (CONTINUED)

Salesperson: Laurie Moulthrope Printed at 01/10/20 12:11 by lmoul-cm

---

Acct #: 3141 Ad #: 173397 Status: New

LEGAL NOTICE

The Mansfield Planning and Zoning Commission will hold the following Public Hearings on Tuesday, January 21, 2020, in the Council Chamber, A.P. Beck Bldg., 4. S. Eagleville Rd., Mansfield, CT to hear comments regarding the following applications;

6:35 PM Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-1)
6:40 PM Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multifamily residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2)

No information from the public shall be received after the close of the Public Hearings. Additional information is available in the Planning Office.

P. Aho, Chair
V. Ward, Secretary

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

NOVEMBER 25, 2019

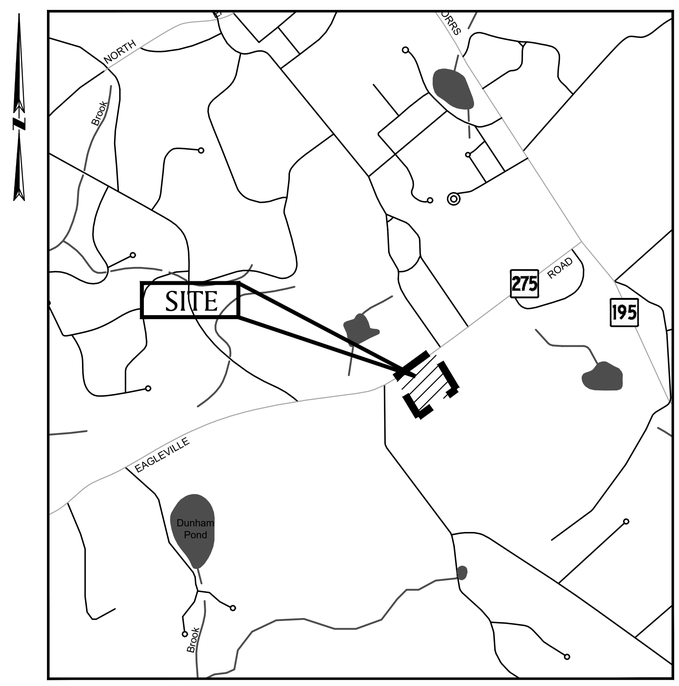
REVISED: MARCH 12, 2020

WETLAND DISTURBANCE = 0
UPLAND DISTANCE = 47,518 SF

ZONING TABLE

ZONE: SER–HO	REQUIRED	EXISTING	PROVIDED
MINIMUM LOT AREA/ACRES	5	5.2	5.2
MINIMUM LOT FRONTAGE (FT)	300	704	704
MINIMUM FRONT SETBACK[1] (FT)	25	44	30
MINIMUM SIDE SETBACK (FT)	5	272	16
MINIMUM STAIR SETBACK (FT)	2	48	2
MINIMUM REAR SETBACK (FT)	5	214	6
MAXIMUM HEIGHT (FT)	45	N/A	33 (WITHOUT CUPOLA) 38'–6" (WITH CUPOLA)
MAXIMUM BUILDING GROUND COVERAGE (%)	20	0.7	14.40
OFF–STREET PARKING	1/UNIT * 42 = 42	N/A	87
ACCESSIBLE PARKING SPACES	4	N/A	8
BUILDABLE AREA (AC)	N/A	N/A	3.2
DWELLING UNITS	–	N/A	42
RESIDENTIAL DENSITY	15	N/A	42/3.2 = 13.125
GROSS FLOOR AREA (SF)	–	N/A	40,198
OPEN SPACE (SF)	–	N/A	103,689

1. MEASURED FROM 30–FOOT HIGHWAY CLEARANCE SETBACK



SITE MAP

500 0 1000 2000 3000 feet

SCALE: 1"=1000'

ISSUED FOR PERMITTING

INDEX OF DRAWINGS

T-1.0	TITLE SHEET
1, 1-2	SITE SURVEYS
EC-1.0	EXISTING CONDITIONS PLAN
OV-1.0	OVERALL SITE IMPROVEMENTS
G-1.0	GENERAL NOTES
C-1.0	EROSION & SEDIMENTATION CONTROL PLAN
C-2.0	SITE PREPARATION PLAN
C-3.0	LAYOUT & MATERIALS PLAN
C-3.1	UCONN FIRE TRUCK TURNING MOVEMENT PLAN
C-4.0	GRADING & DRAINAGE PLAN
C-5.0	UTILITY PLAN
C-5.1	SANITARY SEWER PLAN & PROFILE
C-6.0-6.5	DETAILS
C-7.0	INTERSECTION SIGHT DISTANCE PLAN
L-1.0	PLANTING PLAN
L-1.1	PLANTING RATIO
L-1.2	SHADE STUDY
L-2.0	PHOTOMETRICS PLAN
A1.1	SITE PLAN
A1.1a	SITE INFORMATION

PREPARED FOR:

MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

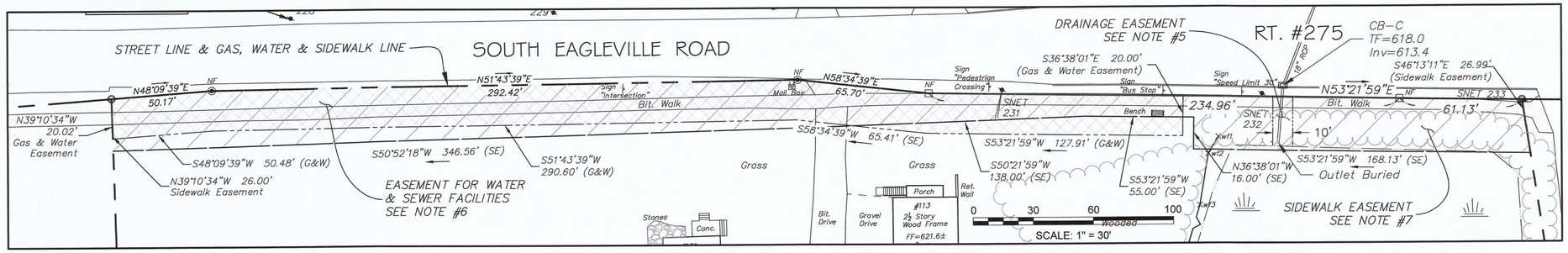
PREPARED BY:

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

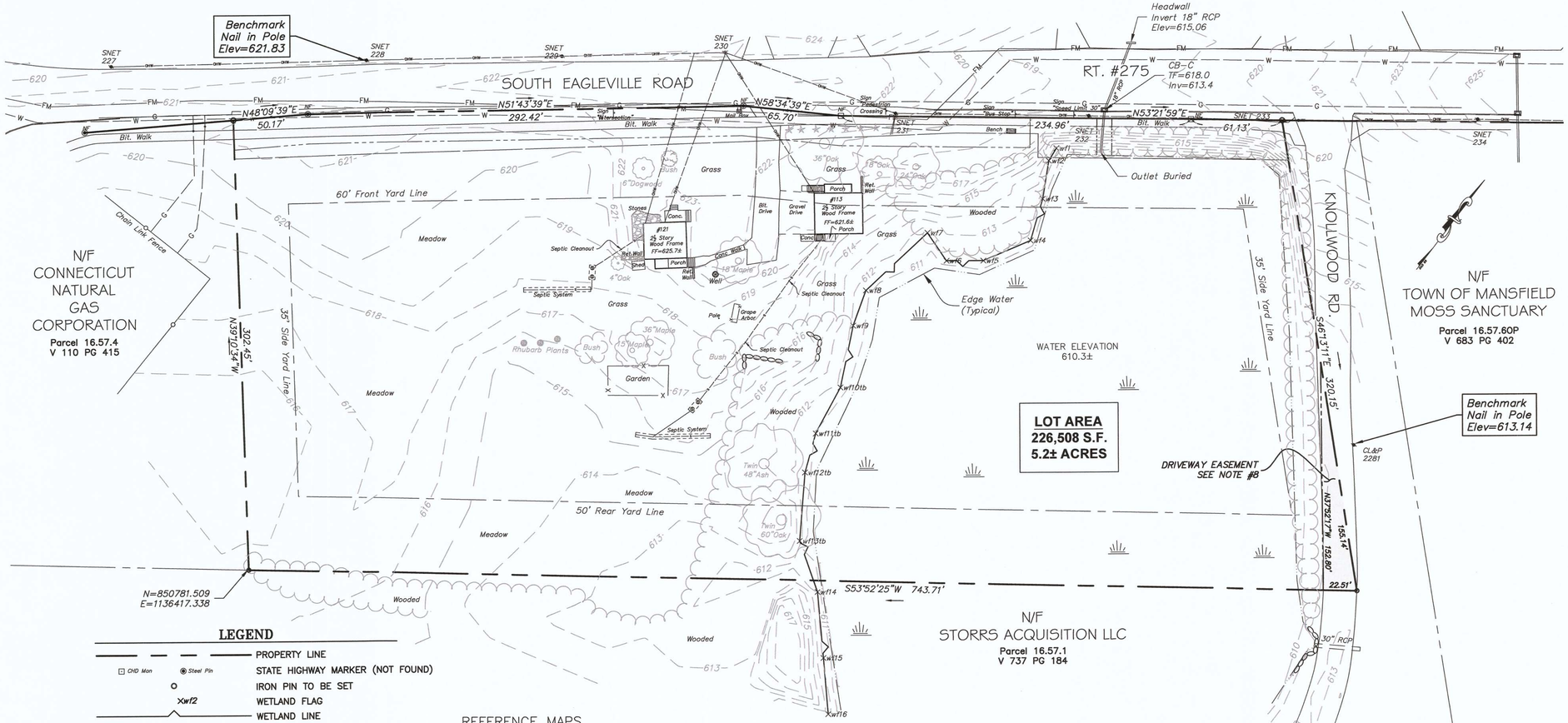
CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

JOB NO: 83749.00 DWG NO: SHEET T–1.0



DETAIL DEPICTING EASEMENTS

Scale 1"=30'



LEGEND

	PROPERTY LINE
CHD Mon / Steel Pin	STATE HIGHWAY MARKER (NOT FOUND)
	IRON PIN TO BE SET
Xwf2	WETLAND FLAG
	WETLAND LINE
616	EXISTING GROUND CONTOUR
	TREELINE
	GAS & WATER EASEMENT LINE
	SIDEWALK EASEMENT LINE
	ROADWAY EASEMENT LINE
	DRAINAGE EASEMENT
	SETBACK LINE
G	GAS MAIN
W	WATER MAIN
FM	SEWER FORCE MAIN
	SANITARY SEWER LINE
OHW	OVERHEAD ELECTRIC WIRE
	WELL

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.

2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rossman, RLS 4797 Book 9 P 14 Mansfield Land Records

3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records

4. Map Showing Easement to be Acquired From Elsie Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 12 Page 92 Mansfield Land Records

5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records

6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-6-1996 Meehan & Goodin Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records

7. Resurvey Prepared For The University Of Connecticut South Eagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

8. Water And Sewer Services Mansfield Retirement Community, Mansfield Connecticut South Eagleville Road Sta. 11+00 to Sta. 25+70 sheets #2 & #3, Scale As Noted Date: Aug. 1979 Rev. As Built 10-22-80 Loureiro Engineering Associates.

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.

3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM. EXISTING GROUND CONTOURS ARE 1' INTERVAL.

4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS AREA=226,508 S.F. 5.2± ACRES

5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF. MAP #3 AREA=180± S.F.

6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 200 REF. MAP #4. AREA=10,696± S.F.

7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5. AREA=16,250± S.F.

8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 285 REF. MAP #6. AREA=1,655± S.F.

9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.

10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981

11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2006. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.

12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.

13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE 6/27/16

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Basemap

Drawing Scale: 1"=40'
Drawing date: June 27, 2016

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD

STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
19 Midstate Drive AUBURN, MA (508) 721-7000
140 Willow Street WINSTED, CT (860) 379-9669
2210 Main Street GLASTONBURY, CT (860) 659-3100

Drawing #: 1

Job #: 16-358

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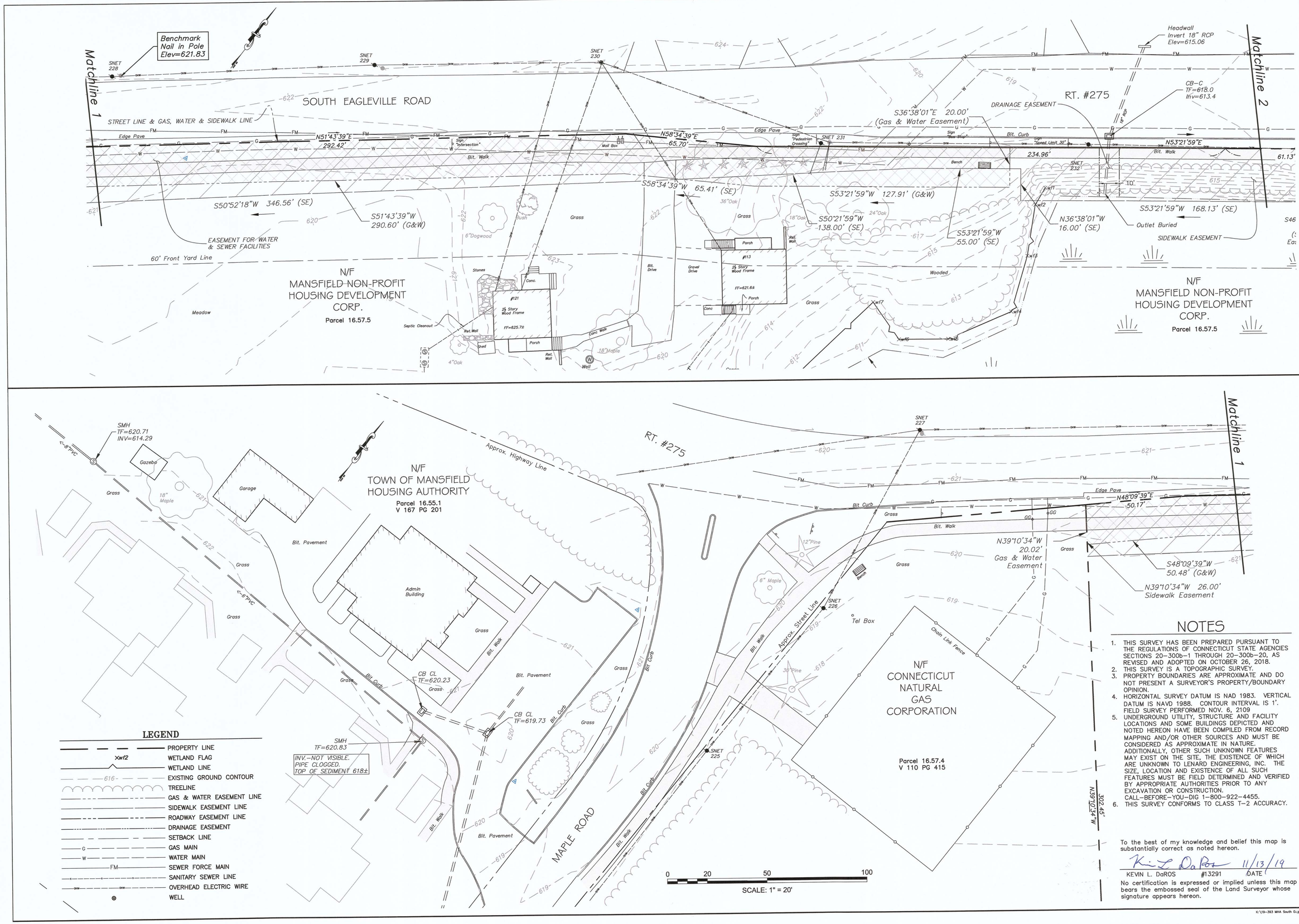

LEGEND

- PROPERTY LINE
- Xwf2 WETLAND FLAG
- WETLAND LINE
- 616 EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G GAS MAIN
- W WATER MAIN
- FM SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW OVERHEAD ELECTRIC WIRE
- WELL

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20, AS REVISED AND ADOPTED ON OCTOBER 26, 2018.
2. THIS SURVEY IS A TOPOGRAPHIC SURVEY.
3. PROPERTY BOUNDARIES ARE APPROXIMATE AND DO NOT PRESENT A SURVEYOR'S PROPERTY/BOUNDARY OPINION.
4. HORIZONTAL SURVEY DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988. CONTOUR INTERVAL IS 1'. FIELD SURVEY PERFORMED NOV. 6, 2109
5. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS AND SOME BUILDINGS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH UNKNOWN FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION. CALL-BEFORE-YOU-DIG 1-800-922-4455.
6. THIS SURVEY CONFORMS TO CLASS T-2 ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

Kevin L. DaRos 11/13/19

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 1 of 2

Job #: 19-404

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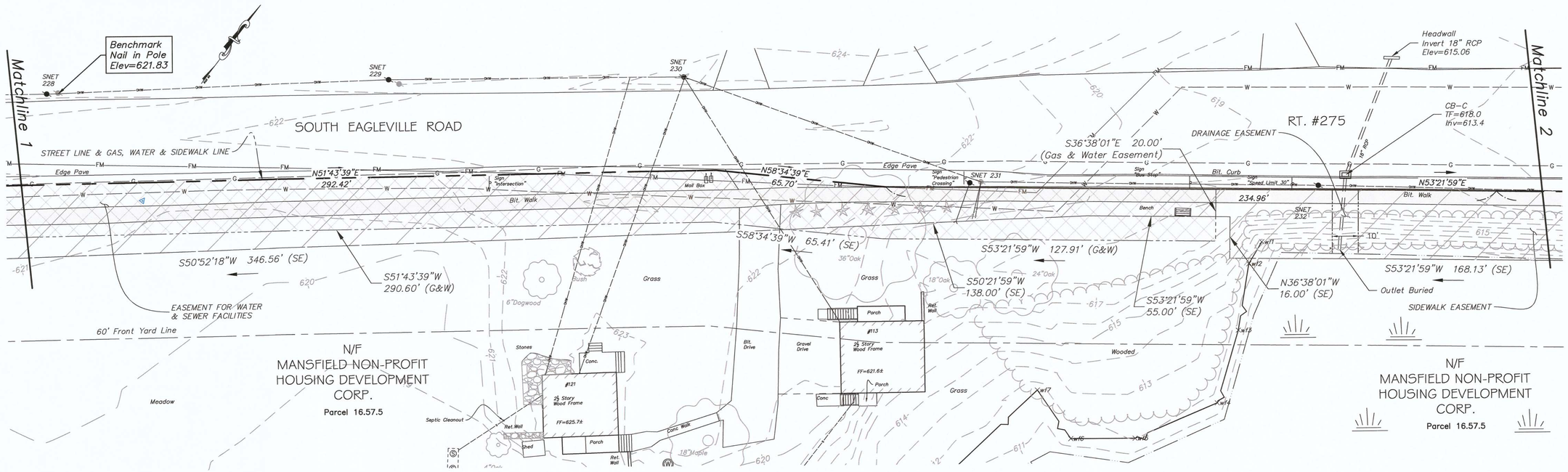

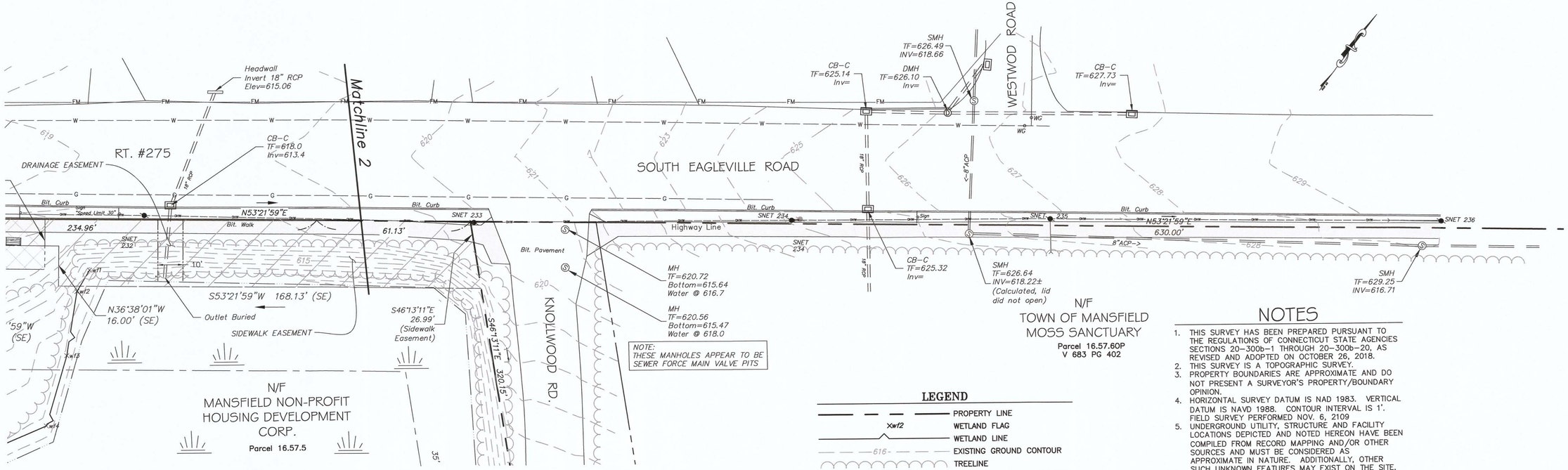

Reference Map:
Property Boundary Survey Prepared for Mansfield Non-Profit Housing Development Corp. 113-121 South Eagleville Road, Storrs, Connecticut. Date June 24, 2016 Scale: 1"=40' Class A-2 and Class T-2 Accuracy Lenard Engineering, Inc. 2210 Main St. Glastonbury, Connecticut

0 20 50 100
SCALE: 1" = 20'

LEGEND

- PROPERTY LINE
- Xwf2 WETLAND FLAG
- WETLAND LINE
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- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
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Kevin L. DaRos 11/13/19
KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-8689
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 2 OF 2

Job #: 19-404

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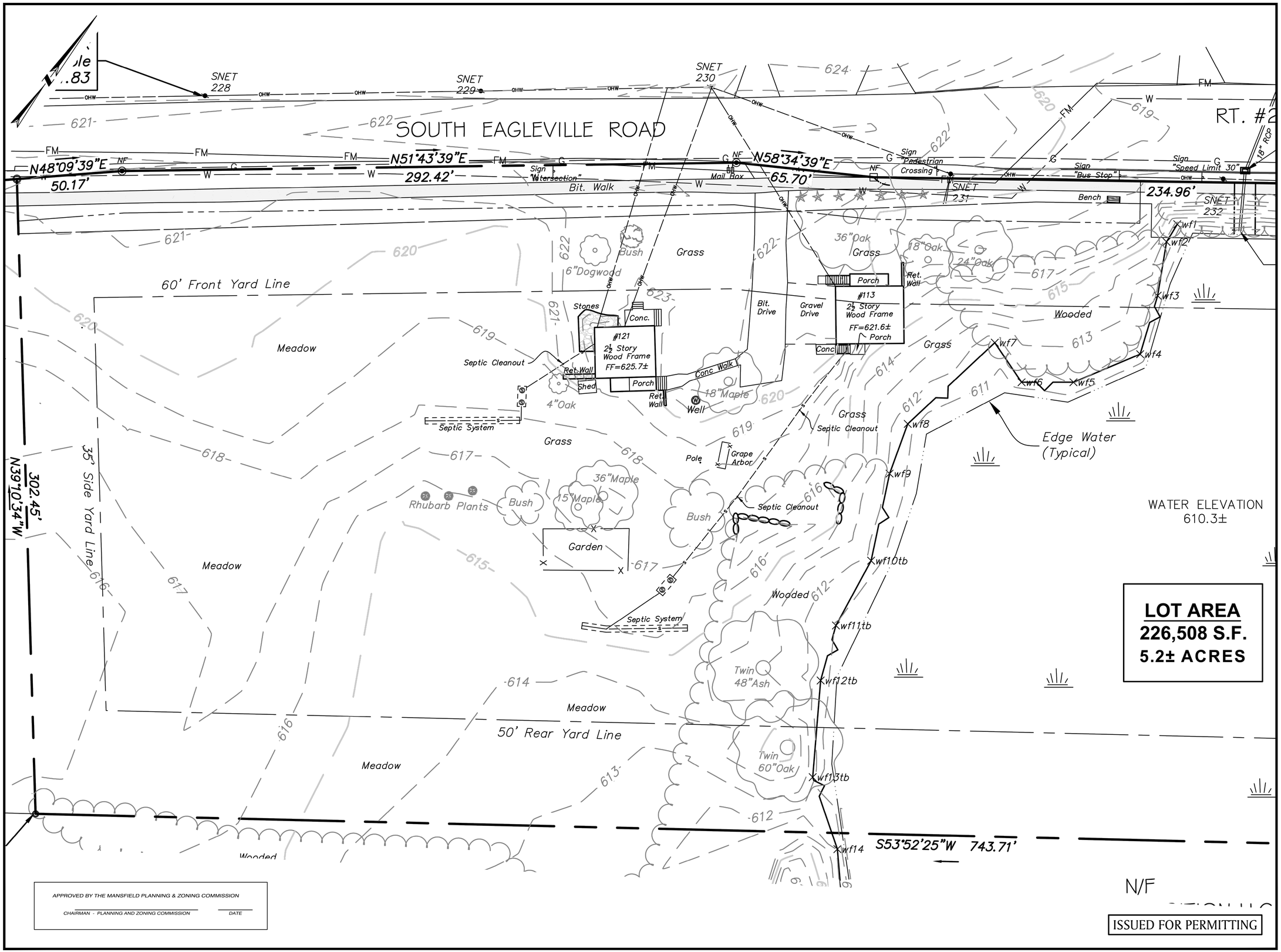


LOT AREA
226,508 S.F.
5.2± ACRES

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING CONDITIONS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

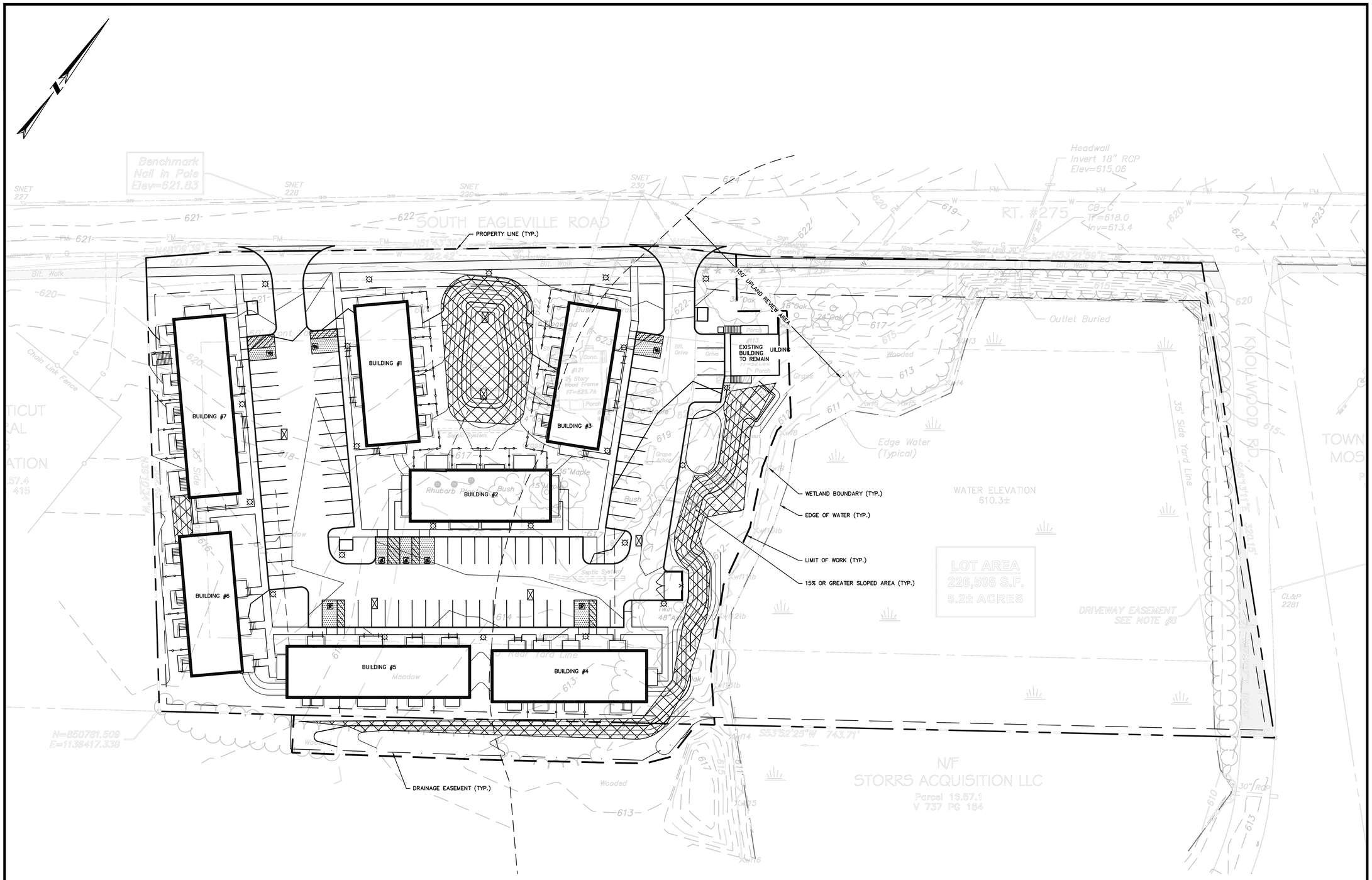
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-EC.DWG
DWG. NO:
JOB. NO: 83749.00

EC-1.0



PROPOSED STEEP SLOPES–15% OR GREATER = 0.25 ACRES
WETLAND AREA = 1.75 ACRES
EARTHWORK FILL = 6,868 CUBIC YARDS
EARTHWORK CUT = 591 CUBIC YARDS
NET EARTHWORK = 6,277 CUBIC YARDS

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

OVERALL SITE IMPROVEMENTS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900–SITE.DWG
DWG. NO:
JOB. NO: 83749.00

OV-1.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EROSION AND SEDIMENTATION CONTROL NOTES:

1. DO NOT PROCEED WITH THE WORK UNTIL ALL E&S CONTROL MEASURES ARE IN-PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. THE MEASURES SPECIFIED ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER, ENGINEER, OR TOWN.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2002 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, AS AMENDED."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR STRAW BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO ENTER ANY STORMWATER SYSTEM OR EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER. SHOULD THE CONSTRUCTION ENTRANCE FAIL TO PREVENT THE TRACKING OF SOILS OR SEDIMENT OFF OF THE PROJECT SITE, A WASHING RACK SHALL BE INSTALLED ALONG WITH APPROPRIATE MEASURES TO COLLECT RESULTING WASTEWATER.
13. DRAINAGE STRUCTURE FILTER INSERTS SHALL BE INSTALLED AND CLEANED/CHANGED PER THE MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL BE INSTALLED COMPLETELY AROUND INLETS OF EXISTING AND PROPOSED DRAINAGE STRUCTURES SUCH THAT NO RUNOFF IS ALLOWED TO ENTER DRAINAGE SYSTEMS WITHOUT FILTERING THROUGH THE DEVICE.
14. CONTRACTOR SHALL DOCUMENT RESULTS OF SCHEDULED EROSION AND SEDIMENTATION INSPECTIONS AND RESULTING CORRECTIVE MEASURES. THESE DOCUMENTS SHALL BE AVAILABLE FOR TOWN INSPECTION UPON REQUEST.

CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER, AND TOWN PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. FOLLOWING THE ENGINEER'S APPROVAL OF INSTALLED E&S CONTROLS, COMMENCE CONSTRUCTION OPERATIONS.
5. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.

NOTE: THE CONTRACTOR MAY MODIFY THE SUGGESTED CONSTRUCTION SEQUENCE INDICATED ABOVE, PROVIDED A REVISED SEQUENCE IS SUBMITTED FOR REVIEW AND APPROVED BY THE OWNER, ENGINEER, AND TOWN.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALES	REPAIR DAMAGED AREAS WITHIN 24 HRS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY
STRAW BALES/ SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED, REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TARP TEMPORARY STOCKPILES	ENSURE TARP IS SECURED OVER STOCKPILE AT THE END OF EACH DAY	DAILY
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY

*ALL E&S MEASURES SHALL BE INSPECTED PRIOR TO AN ANTICIPATED RAIN EVENT OF GREATER THAN ½ INCH DISCHARGE.

PERCOLATION TEST RESULTS:

PERCOLATION TESTS PERFORMED ON 11/21/2019 BY BSC GROUP
SEE SHEET C-4.0 FOR LOCATIONS OF PERCOLATION TESTS

PT-A
DEPTH: ~30"
PRESOAK @ 11:30 AM
DRY @ 12:33 PM
BEGIN TEST @ 12:35 PM

TIME	DEPTH	CHANGE
12:35	9.5"	–
12:36	13.5"	4"
12:37	16.5"	3"
12:38	18.75"	2.25"
12:39	20.25"	1.5"
12:40	21.25"	1"
12:41	22.25"	1"
12:42	15.75"	REFILL
12:43	18"	2.25"
12:44	20"	2"
12:45	21.5"	1.5"
12:46	22.25"	0.75"
12:47	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) = 30 IN/HR

PT-B
DEPTH: ~30"
PRESOAK @ 12:00 PM
BEGIN TEST @ 2:00 PM

TIME	DEPTH	CHANGE
2:00	3"	–
2:05	5.25"	2.25"
2:10	7.25"	2"
2:15	8.75"	1.5"
2:20	10.25"	1.5"
2:25	11.50"	1.25"
2:30	12.50"	1"
2:35	13.50"	1"
2:40	14.50"	1"
2:45	15.50"	1"

EFFECTIVE INFILTRATION RATE (FS=2) = 6 IN/HR

PT-C
DEPTH: ~30"
PRESOAK @ 12:10 PM
DRY @ 12:54 PM
BEGIN TEST @ 1:00 PM

TIME	DEPTH	CHANGE
1:00	5.5"	–
1:01	7.25"	1.75"
1:02	8.25"	1"
1:03	9"	0.75"
1:04	9.75"	0.75"
1:06	11"	1.25"
1:08	12"	1"
1:10	13"	1"
1:12	14"	1"
1:14	14.75"	0.75"
1:16	15.50"	0.75"
1:18	16"	0.50"
1:20	16.5"	0.50"
1:22	17.25"	0.75"
1:24	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) =7.5 IN/HR

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION   *DATE*

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL CONSTRUCTION FENCING AND WARNING SIGNS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION. INSTALL CONSTRUCTION FENCING AT THE LIMIT OF WORK.
8. PRIOR TO THE TERMINATION, ABANDONMENT, OR REMOVAL OF ANY UTILITY, VERIFY THAT APPLICABLE NOTIFICATIONS HAVE BEEN MADE TO THE UTILITY OWNER/OPERATOR AND THAT THE UTILITY HAS BEEN PROPERLY TERMINATED, CAPPED, OR PLUGGED AS REQUIRED.
9. PROTECT ALL IMPROVEMENTS NOT INCLUDED IN THE SCOPE OF SITE DEMOLITION. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
10. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
11. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.

UTILITY NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.
3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.
4. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
5. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
6. ALL LIGHTING ELECTRICAL SUPPLIES SHALL BE INSTALLED IN MINIMUM 1-INCH PVC CONDUIT PER APPLICABLE SPECIFICATIONS. PLASTIC MARKING TAPE SHALL BE USED ON ALL CONDUIT RUNS.
7. THE ROUTING OF LIGHTING ELECTRICAL SUPPLIES SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DETERMINE THE SPECIFIC ROUTING OF ALL LIGHTING SYSTEMS BASED ON THE ACTUAL LOCATION OF TIE-IN(S) TO EXISTING LIGHTING FEEDS AND AS REQUIRED TO AVOID CONFLICTS WITH OTHER CONSTRUCTION OR SUBSURFACE FACILITIES. PRIOR TO INSTALLATION, PROVIDE SHOP DRAWING SHOWING THE ROUTING OF ALL CONDUIT, LOCATIONS OF HANDHOLES, AND DETAILS OF TIE-INS TO EXISTING SYSTEM.
8. CONDUIT: RIGID PVC ELECTRICAL CONDUIT, NEMA TC 2 AND UL -651; FITTINGS AND CONDUIT BODIES: PVC TO MATCH CONDUIT, NEMA TC-3. PRIMER/SOLVENT CEMENT: ASTM F656/ASTM D2564; PULL ROPE: 3/8-INCH DOUBLE BRAIDED, LOW STRETCH POLYESTER COMPOSITE ROPE.
9. TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
10. ALL UNDERGROUND TELECOMMUNICATIONS AND ELECTRIC CONDUITS SHALL BE ENCASED IN CONCRETE EXCEPT BRANCH DISTRIBUTION FOR LIGHTING. WORK CONCRETE TO REMOVE ALL TRAPPED AIR AND INSURE EACH CONDUIT IS COMPLETELY SURROUNDED BY A MINIMUM 2" OF CONCRETE. ALLOW CONCRETE TO CURE FOR AT LEAST ONE HOUR BEFORE BACKFILLING.
11. FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
12. SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
13. ALL WORK ASSOCIATED WITH FIRE PROTECTION AND DOMESTIC WATER SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL WATER UTILITY.
14. ALL WORK ASSOCIATED WITH ELECTRICAL SERVICE SHALL CONFORM TO THE STANDARDS OF EVERSOURCE. IF THERE ARE ANY CONFLICTS BETWEEN THE REQUIREMENTS INDICATED AND EVERSOURCE STANDARDS, EVERSOURCE STANDARDS SHALL PREVAIL.
15. ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL PROVIDER.
16. INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.
17. ALTHOUGH NOT SHOWN ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

LAYOUT AND MATERIALS NOTES:

1. NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
8. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
9. ALL CURBING IS BITUMINOUS CONCRETE UNLESS OTHERWISE INDICATED. WHERE CURBING IS CALLED-FOR ADJACENT TO SIDEWALKS, IT SHALL BE MONOLITHIC CONCRETE CURB AND SIDEWALK PER APPLICABLE DETAILS.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. CONSTRUCTION JOINTS: REINFORCEMENT SHALL NOT CONTINUE THROUGH CONSTRUCTION JOINTS.
14. PRIOR TO INITIATION OF CONCRETE FLATWORK, SUBMIT PROPOSED CONSTRUCTION JOINT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. COORDINATE SUCH PLAN WITH THE JOINT PATTERNS DEPICTED ON THE DRAWINGS.
15. UNLESS OTHERWISE SPECIFIED, MISCELLANEOUS CONCRETE PADS SHALL BE CONSTRUCTED PER SIDEWALK DETAIL.
16. ALL NON-ACCESSIBLE PARKING SPACES ARE 9' X 18'. VERIFY OVERALL LAYOUT DIMENSIONS BASED ON THESE DIMENSIONS AND THE NUMBER OF SPACES INDICATED. FIELD-ADJUST OVERALL LAYOUT DIMENSION IN CONCERT WITH THE ENGINEER IF REQUIRED.
17. DIMENSIONS INDICATED ARE TO FACE OF CURB, PAVEMENT EDGE, EDGE OR CENTERLINE OF IMPROVEMENT, OR AS OTHERWISE NOTED.
18. PROVIDE FOR THE LAYOUT AND STAKING/MARKING OF THE PROPOSED LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING FURNISHINGS. OBTAIN ENGINEER'S APPROVAL OF THE LAYOUT PRIOR TO PROCEEDING WITH THE WORK.
19. UNLESS OTHERWISE INDICATED, LINES ARE PARALLEL OR PERPENDICULAR TO LINE FROM WHICH THEY ARE MEASURED.

PLANTING NOTES:

1. THE CONTRACTOR SHALL CLEARLY MARK LIMITS OF CLEARING AND LIMITS OF TREE REMOVAL, SELECTIVE PRUNING AND THINNING FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO ANY CLEARING OPERATIONS. ALL TREE WORK SHALL BE EXECUTED BY A LICENSED ARBORIST.
2. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT EXISTING VEGETATION THAT IS DESIGNATED, "TO REMAIN".
3. ALL TREES TO BE SAVED SHALL BE PROTECTED. SEE SPECIFICATION FOR TREE PROTECTION REQUIREMENTS.
4. EXISTING ON SITE TOPSOIL MAY BE REUSED UPON APPROVAL BY THE LANDSCAPE ARCHITECT. EXISTING TOPSOIL SHALL BE TESTED AND AMENDED FOR NUTRIENTS, ORGANIC MATTER, PH, AND SOIL TEXTURE. – SEE SPECIFICATIONS.
5. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE AND GRADE TO AN EVEN SURFACE. – SEE SPECIFICATIONS.
6. COMPLETE QUANTITIES OF PLANTS FOR EACH AREA TO BE AVAILABLE ON SITE AT THE TIME OF PLANTING FOR FIELD LAYOUT BY OWNER'S REPRESENTATIVE. NO PARTIAL LAYOUT AND PLANTING OF AREAS WILL BE ACCEPTABLE.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. – SEE SPECIFICATION FOR DETAILED REQUIREMENTS.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL IN OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. NO SUBSTITUTION OF PLANT SPECIES OR VARIETIES WILL BE ACCEPTABLE WITHOUT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.
9. OWNER'S REPRESENTATIVE TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE AND AGAIN AT THE PROJECT SITE PRIOR TO PLANTING.
10. VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER OR HIS REPRESENTATIVE.
11. NO PLANTING SHALL OCCUR PRIOR TO ACCEPTANCE OF FINAL GRADING.
12. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH GRADE. IMMEDIATELY REPLANT PLANTS WHICH SETTLE OUT OF PLUMB OR BELOW FINISH GRADE.
13. SEE SPECIFICATIONS FOR PLANTING MAINTENANCE AND GUARANTEE REQUIREMENTS.
14. THE LANDSCAPE ARCHITECT OR ENGINEER RESERVES THE RIGHT TO ADJUST FINAL GRADES IN THE FIELD TO SAVE EXISTING VEGETATION.
15. PLANT QUANTITIES NOTED IN THE PLANT SCHEDULE ARE APPROXIMATE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING AND INSTALLATION OF ALL PLANT MATERIALS NOTED ON THE PLANTING PLAN.
16. CAUTION SHALL BE USED NOT TO EXTEND MULCH LAYER ABOVE SOIL LEVEL AT TRUNKS/STEMS OF INSTALLED PLANT MATERIAL.
17. PROVIDE FOUR (4) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS AND CONTINUOUS MULCH BED AROUND SHRUB, PERENNIAL AND GROUNDCOVER PLANTINGS, UNLESS OTHERWISE NOTED. DO NOT MOUND SOIL OR MULCH AT TRUNKS.
18. ALL PLANTING SHALL BE DONE UNDER FULL SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT.
19. LOOSE OR CRACKED ROOTBALLS SHALL BE REJECTED.

SEWER DESIGN NOTES:

1. SEWER DESIGN IN ACCORDANCE WITH CT PUBLIC HEALTH CODE ON-SITE SEWAGE DISPOSAL REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS (SSDS), REVISED JANUARY 2018.
2. TOTAL NUMBER OF PROPOSED BEDROOMS = 73
3. PER SECTION IV.A, DESIGN FLOW = 150 GPD/BEDROOM
4. DESIGN FLOW = 150 GPD X 73 BEDROOMS = 10,950 GPD
5. MINIMUM PUMP CHAMBER SIZE = 10,950 GPD X 4 HOURS = 1,825 GALLONS
6. PUMP CHAMBER SIZE USED = 2,000 GALLONS

GRADING AND DRAINAGE NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK.
6. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
7. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
8. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.
9. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. VERIFY ALL GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
14. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
15. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
16. UNLESS OTHERWISE INDICATED, BLEND TRANSITIONS IN ELEVATION BETWEEN NEW WORK AND AREAS TO REMAIN AT A MAXIMUM SLOPE OF 1V:2H AND RESTORE WITH FOUR (4) INCHES OF LOAM AND SEED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED. COORDINATE WITH ENGINEER IF DIMENSIONAL CONSTRAINTS REQUIRE STEEPER SLOPES.
17. UPON REACHING PROPOSED SUBGRADE ELEVATIONS WITHIN THE FIELD, ENGINEER WILL REVIEW SUBGRADE PRIOR TO INSTALLATION OF DRAINAGE SYSTEM. SEE SPECIFICATION SECTION 31 2310 – EARTHWORK.
18. ALL CATCH BASINS AND SHALLOW DROP INLETS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C". ALL OTHERS SHALL BE CONNDOT TYPE "C-L".
19. ALL UNDERDRAINS SHALL BE 6-INCH HDPE. SEE SPECIFICATIONS.
20. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
21. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM, INCLUDING NEW WORK AND EXISTING WORK THAT REMAINS OR IS INCORPORATED INTO THE NEW SYSTEM.

OPERATION AND MAINTENANCE PLAN:

THE FOLLOWING MAINTENANCE PROCEDURES SHALL BE FOLLOWED BY THE CONTRACTOR FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION MEASURES AND STORMWATER TREATMENT SYSTEMS INSTALLED DURING THE CONSTRUCTION PERIOD:

- DUST CONTROL: MOISTEN DISTURBED SOIL AREAS WITH WATER PERIODICALLY, OR USE A NON-ASPHALTIC SOIL TACIFIER TO MINIMIZE DUST.
- TEMPORARY SEEDING: INSPECT WEEKLY AND WITHIN 24 HOURS OF A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- PERMANENT SEEDING: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- TEMPORARY SOIL PROTECTION: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- TEMPORARY EROSION CONTROL MAT: INSPECT MATS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- CATCH BASIN FILTER INSERTS: INSPECT THE FABRIC AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. CHECK THE FABRIC FOR STRUCTURAL SOUNDNESS (I.E. TEARS), PROPER ANCHORING/ALIGNMENT WITHIN THE GRATE AND ABILITY TO DRAIN RUNOFF (I.E. PERCENT OF CLOGGING BY SEDIMENT). REMOVE THE SEDIMENT EVERY WEEK, OR SOONER IF PONDING IS EXCESSIVE. EACH TIME THE SEDIMENT IS REMOVED, REPLACE THE SECTION OF FABRIC REMOVED WITH A NEW SECTION. DO NOT REMOVE THE SEDIMENT AND REUSE THE SAME SECTION OF FABRIC.
- HAY BALE/ SILT FENCE BARRIER: INSPECT THE BARRIER AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. FOR DEWATERING OPERATIONS, INSPECT FREQUENTLY BEFORE, DURING AND AFTER PUMPING OPERATIONS. REMOVE THE SEDIMENT DEPOSITS WHEN THE DEPTH REACHES ONE HALF THE BARRIER HEIGHTS. REPAIR OR REPLACE A BARRIER WITHIN 24 HOURS OF OBSERVED FAILURE. MAINTAIN THE BARRIER UNTIL THE CONTRIBUTING DISTURBED AREA IS STABILIZED.
- CONSTRUCTION ENTRANCE/EXIT PAD: MAINTAIN THE PAD IN A CONDITION THAT WILL PREVENT TRACKING AND WASHING OF SEDIMENT ONTO PAVED SURFACES. PLACE ADDITIONAL CLEAN GRAVEL ON TOP OF GRAVEL THAT HAS BECOME SILTED, OR REMOVE THE SILTED GRAVEL AND REPLACE THE GRAVEL TO THE DEPTH REMOVED WITH CLEAN GRAVEL, AS CONDITIONS WARRANT. REMOVE IMMEDIATELY ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED AT THE END OF EACH DAY BY HAND SWEEPING OR SWEEPER TRUCK.
- DEWATERING SETTLING BASIN (IF USED): INSPECT THE BASIN AT LEAST EVERY TWO HOURS DURING PERIODS OF USE. REMOVE ACCUMULATED SEDIMENTS WHEN THE VOLUME EQUALS ONE HALF THE PROVIDED STORAGE VOLUME.
- EXISTING CATCH BASINS AND SUMPS: INSPECT THE SEDIMENT TRAPS AS SPECIFIED IN "F" ABOVE. AFTER FINAL REMOVAL OF THE SEDIMENT TRAPS AT THE END OF CONSTRUCTION, CLEAN THE SUMP OF ALL SILT AND DEBRIS.
- NEW CATCH BASINS AND SUMPS: AS NEW CATCH BASINS ARE CONSTRUCTED, A FILTER INSERT SHALL BE INSTALLED IN THE UNIT AND A SEDIMENT BARRIER INSTALLED AROUND THE GRATE. INSPECT THE FILTER AND BARRIER WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. AFTER STABILIZATION OF THE DRAINAGE AREA ENTERING THE CATCH BASIN, REMOVE THE FILTER AND BARRIER AND CLEAN THE BASIN SUMP OF ALL SILT AND DEBRIS.
- TEMPORARY STOCKPILES: INSPECT TEMPORARY STOCKPILES AT THE END OF EACH WORKDAY TO ENSURE THAT TARPS ARE IN PLACE AND SECURED. TEMPORARY STOCKPILES THAT ARE EXPECTED TO BE INACTIVE FOR MORE THAN 30 DAYS SHOULD BE TEMPORARILY SEEDED (SEE ABOVE).

AFTER CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE OWNER, IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO MAINTAIN ALL DRAINAGE STRUCTURES. IN ADDITION, THE FOLLOWING INSPECTION AND MAINTENANCE GUIDELINES SHALL BE THE RESPONSIBILITY OF THE OWNER, OR THE OWNER'S REPRESENTATIVE, BEGINNING THE FIRST YEAR PERIOD FOLLOWING CONSTRUCTION COMPLETION AND ACCEPTANCE, AND SHALL BE FOLLOWED EACH YEAR THEREAFTER:

- PARKING LOT AND SITE CLEANUP: INSPECT ON A REGULAR BASIS NOT TO EXCEED WEEKLY FOR LITTER AND DEBRIS.
- PARKING LOT AND DRIVEWAY SWEEPING: AT LEAST TWICE A YEAR, WITH THE FIRST OCCURRING AS SOON AS POSSIBLE AFTER SNOWMELT AND THE SECOND NOT LESS THAN 90 DAYS FOLLOWING THE FIRST.
- CATCH BASIN SUMPS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED WHEN THE SUMP IS ONE HALF FULL OF SILT AND / OR DEBRIS.
- HYDRODYNAMIC SEPARATOR: SHALL BE INSPECTED AND CLEANED ANNUALLY.
- LANDSCAPED AREAS: INSPECT SEMI-ANNUALLY FOR EROSION OR DYING VEGETATION. REPAIR AND STABILIZE ANY BARE OR ERODED AREAS AND REPLACE VEGETATION AS SOON AS POSSIBLE.
- ABOVE-GROUND DETENTION BASIN: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS. SHALL BE MOWED ANNUALLY. SHALL BE INSPECTED TO ENSURE IT IS DRAINING IN LESS THAN 24 HOURS AFTER A STORM EVENT.
- UNDERGROUND DETENTION SYSTEMS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS. SHALL BE INSPECTED TO ENSURE IT IS DRAINING IN LESS THAN 72 HOURS AFTER A STORM EVENT.

DEEP TEST PIT RESULTS:

DEEP TESTS PERFORMED ON 02/08/2020 BY BSC GROUP. SEE SHEET C-4.0 FOR LOCATIONS OF DEEP TESTS.

TH-1 (APPROX. GROUND EL. 619.00±)
0-8" TOPSOIL
8-40" BROWN SANDY LOAM
40-100" BROWN SAND WITH SOME FINES

GW @ 100"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 610.67±

TH-2 (APPROX. GROUND EL. 615.75±)
0-12" TOPSOIL
12-20" BROWN SAND
20-72" GRAY GLACIAL TILL

GW @ 54"
MOTTLING @ 48"
RESTRICTIVE LAYER @ EL. 611.75±

TH-3 (APPROX. GROUND EL. 614.75±)
0-12" TOPSOIL
12-60" BROWN SILTY SAND

GW @ 60"
MOTTLING @ 38"
RESTRICTIVE LAYER @ EL. 611.58±

TH-4 (APPROX. GROUND EL. 616.50±)
0-12" TOPSOIL
12-36" BROWN SAND
36-84" GRAY GLACIAL TILL

POSSIBLE LEDGE @ 84"
GW @ 84"
RESTRICTIVE LAYER @ EL. 609.50±

TH-5 (APPROX. GROUND EL. 618.50±)
0-12" TOPSOIL
12-24" BROWN SANDY LOAM
24-84" BROWN FINE SAND

GW @ 80"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.83±

TH-6 (APPROX. GROUND EL. 619.75±)
0-12" TOPSOIL
12-40" BROWN SAND WITH FINES
40-96" GRAY FINE SAND

NO GW OBSERVED
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.75±

ISSUED FOR PERMITTING

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

GENERAL NOTES

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS
5	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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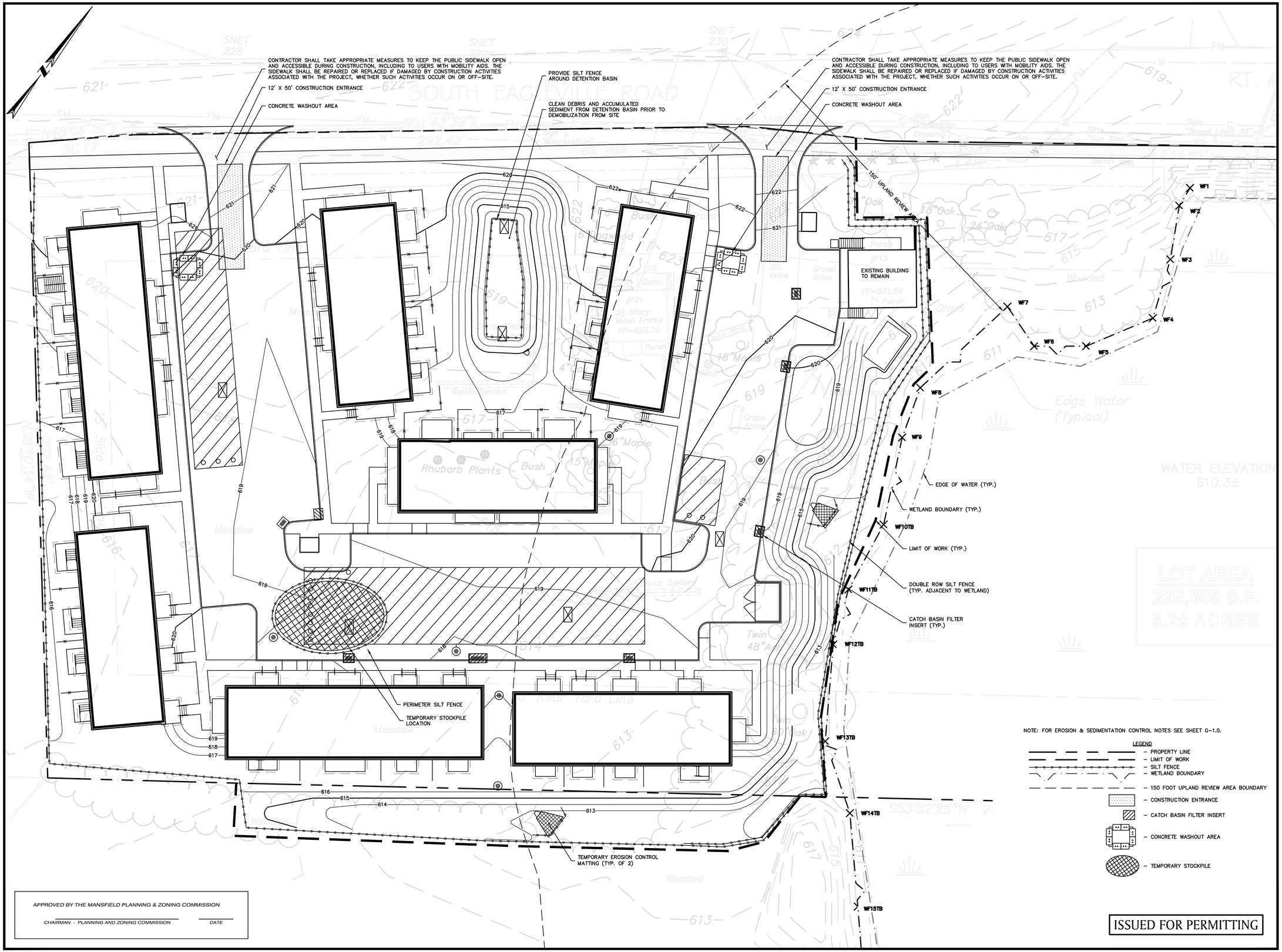
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-NOTES.DWG
DWG. NO: G-1.0
JOB. NO: 83749.00



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS
5	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
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Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
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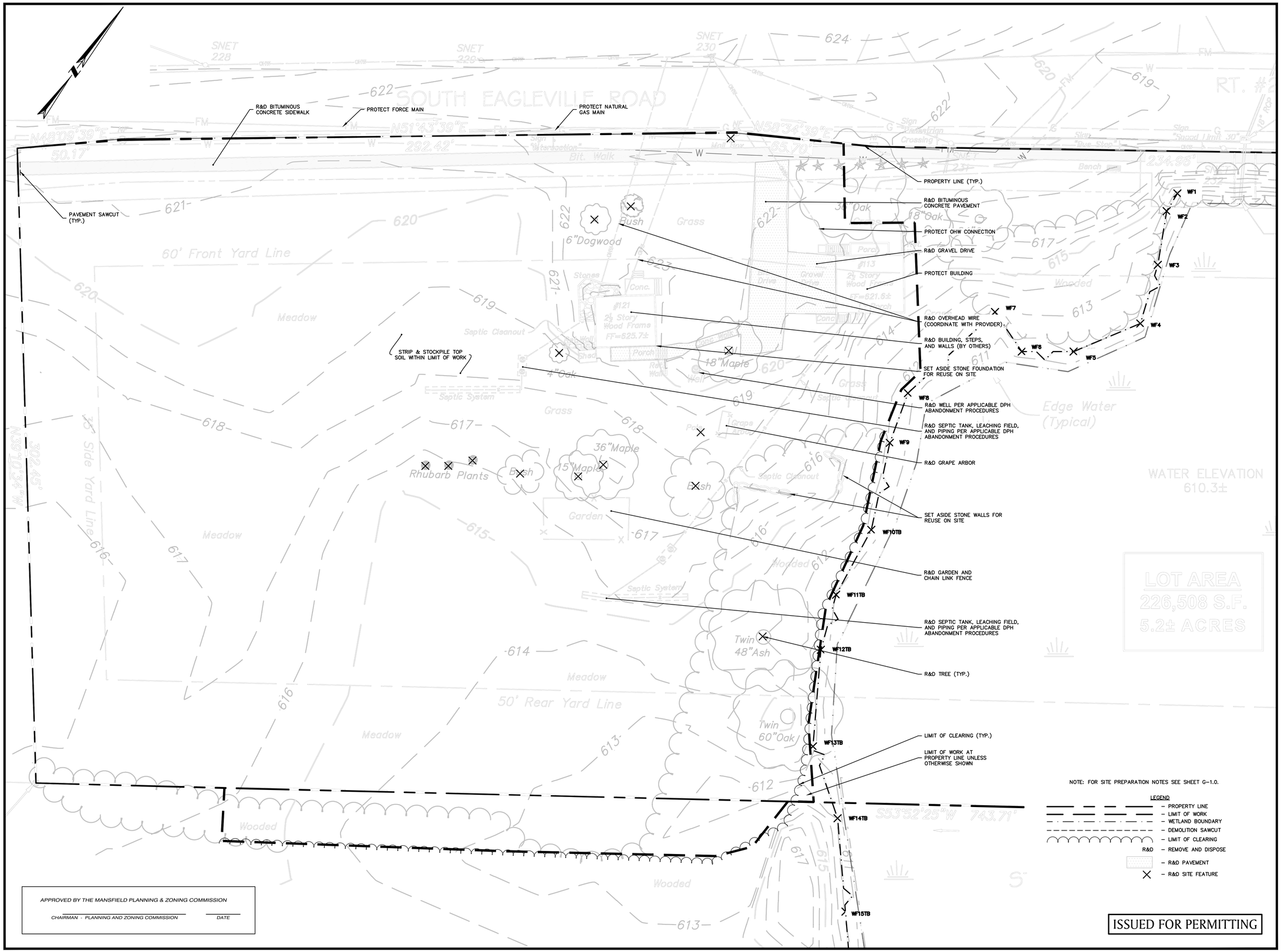
FILE: 8374900-ES.DWG
DWG. NO:
JOB. NO: 83749.00

C-1.0



NOTE: FOR SITE PREPARATION NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- DEMOLITION SAWCUT
- LIMIT OF CLEARING
- R&D – REMOVE AND DISPOSE
- R&D PAVEMENT
- R&D SITE FEATURE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SITE PREPARATION PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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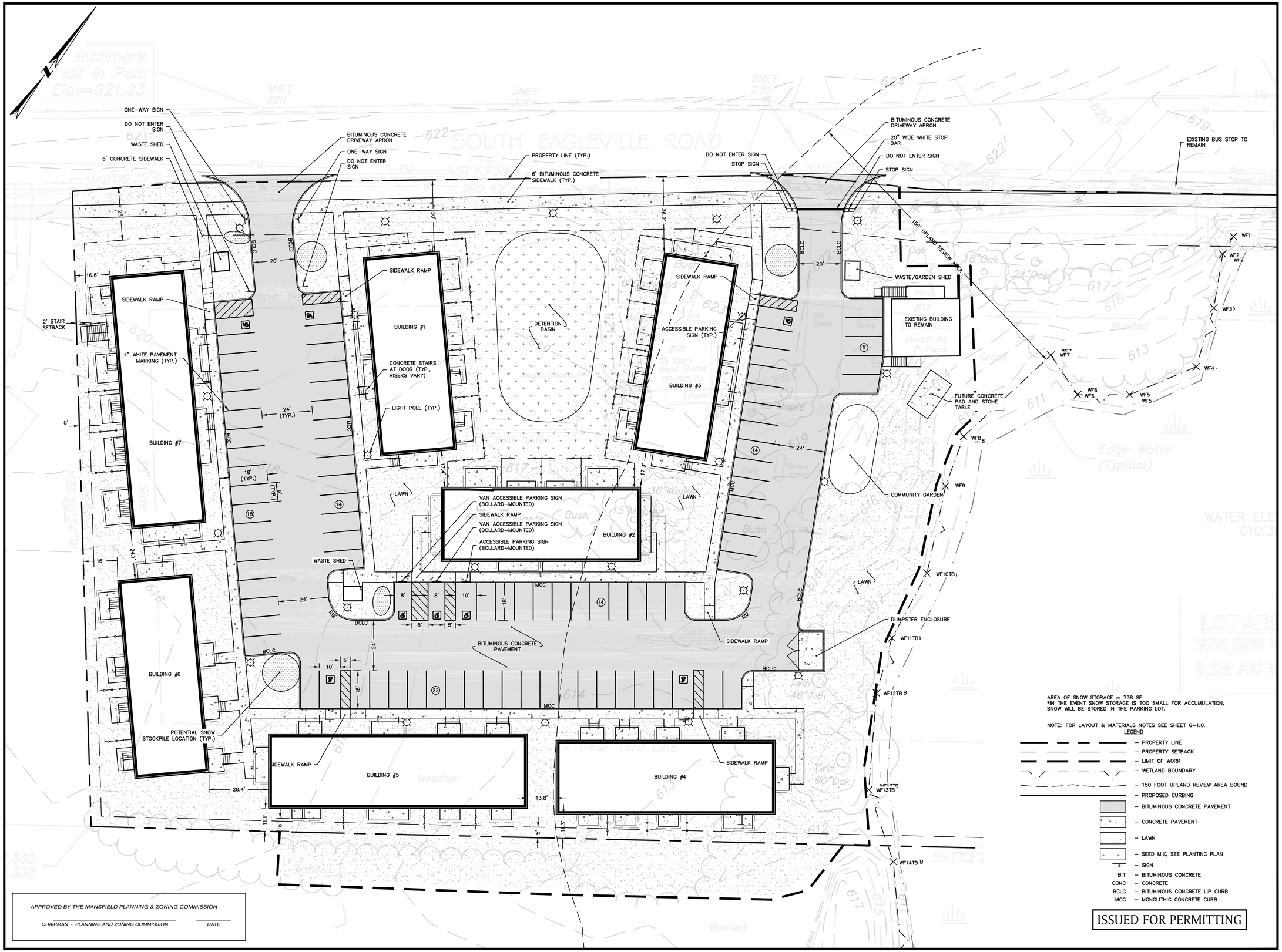
SCALE: 1" = 20'

0 10 20 40 FEET

FILE: 8374900-PREP.DWG

DWG. NO: C-2.0

JOB. NO: 83749.00



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

AREA OF SNOW STORAGE = 738 SF
*IN THE EVENT SNOW STORAGE IS TOO SMALL FOR ACCUMULATION, SNOW WILL BE STORED IN THE PARKING LOT.

NOTE: FOR LAYOUT & MATERIALS NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- PROPERTY SETBACK
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUND
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB

ISSUED FOR PERMITTING

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

LAYOUT & MATERIALS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS
5	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

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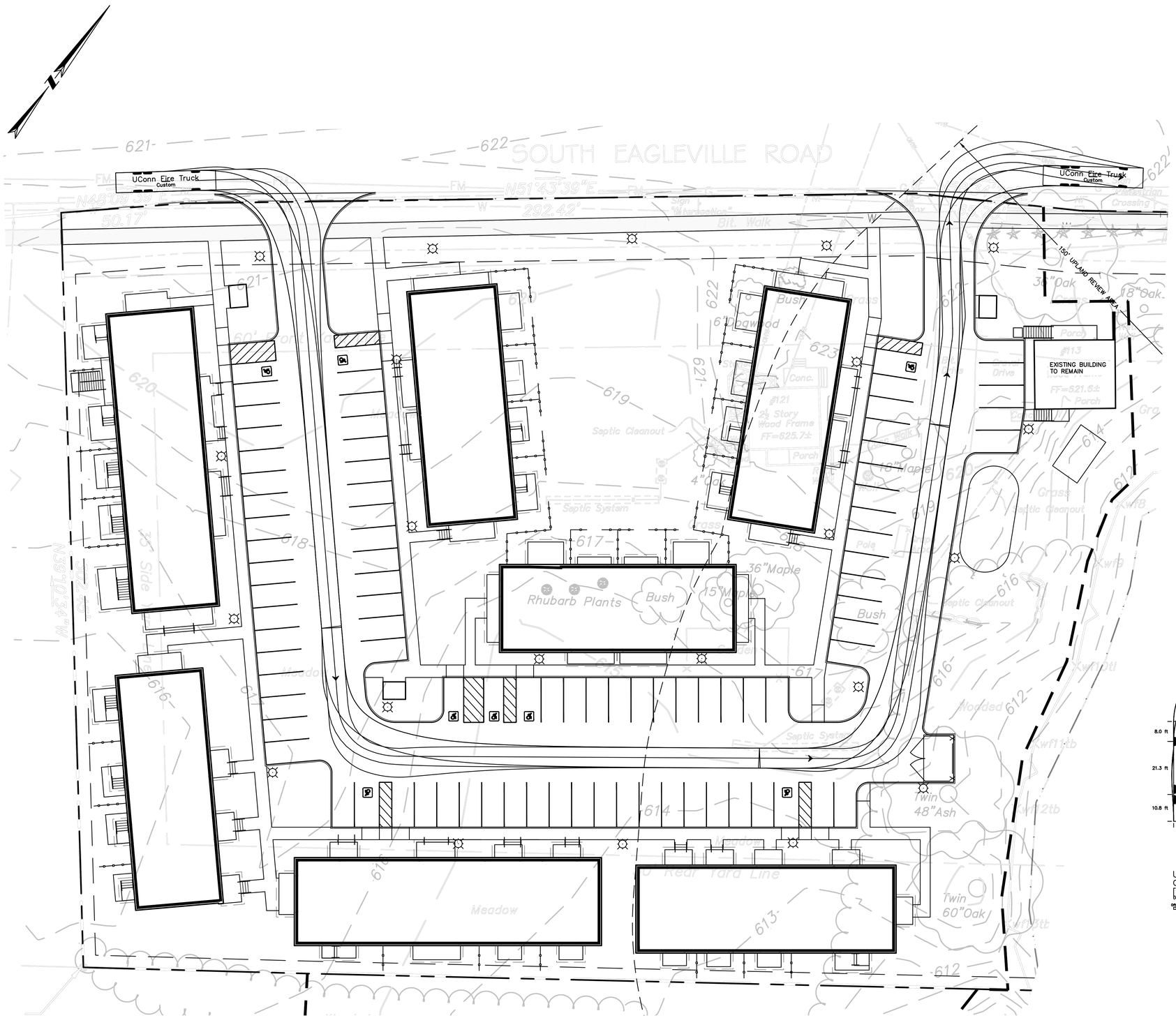
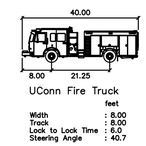
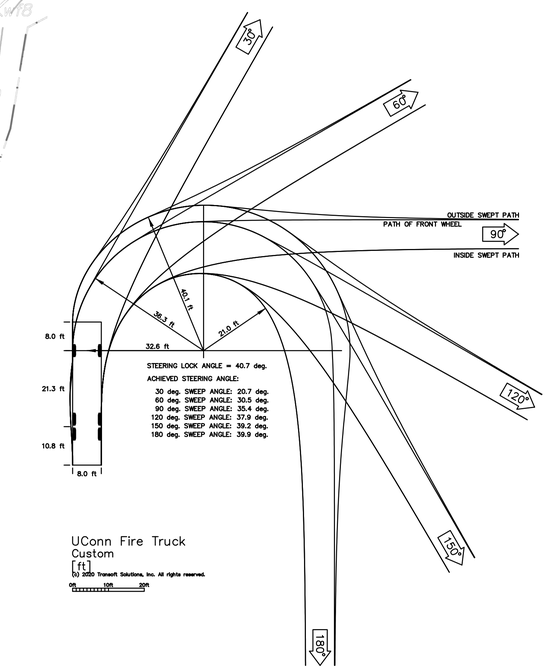
DWG. NO:
JOB. NO: 83749.00

C-3.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019







ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
ROBERT S. NEWBURY
No. 20662
LICENSED
PROFESSIONAL ENGINEER

ROBERT S. NEWBURY, P.E.
No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UCONN FIRE TRUCK TURNING MOVEMENT PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
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STORRS, CT 06268

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300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
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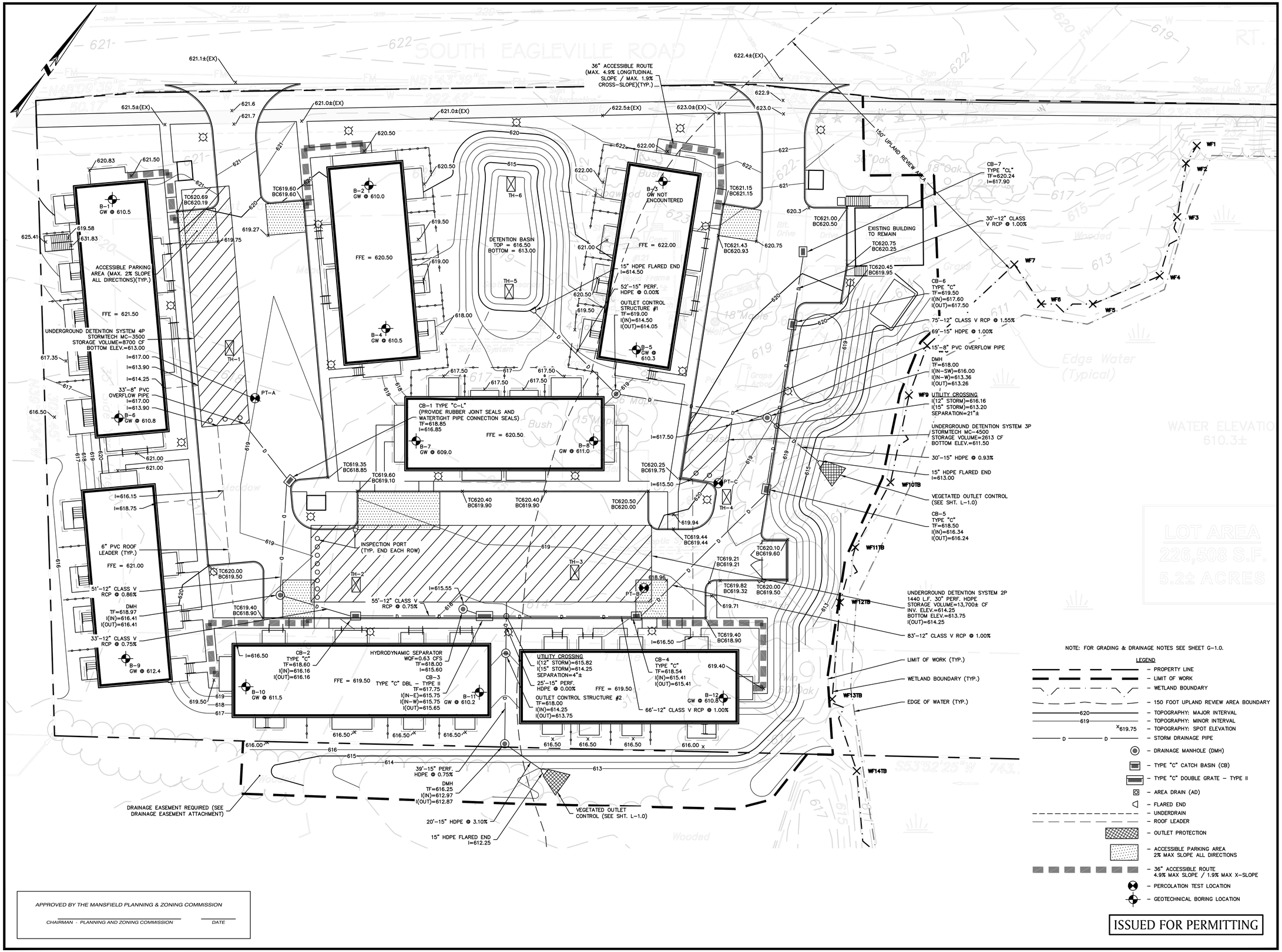
FILE: 8374900–AUTOTURN.DWG
DWG. NO:
JOB. NO: 83749.00

C-3.1



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	02/26/2020	PER REVIEW COMMENTS
5	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

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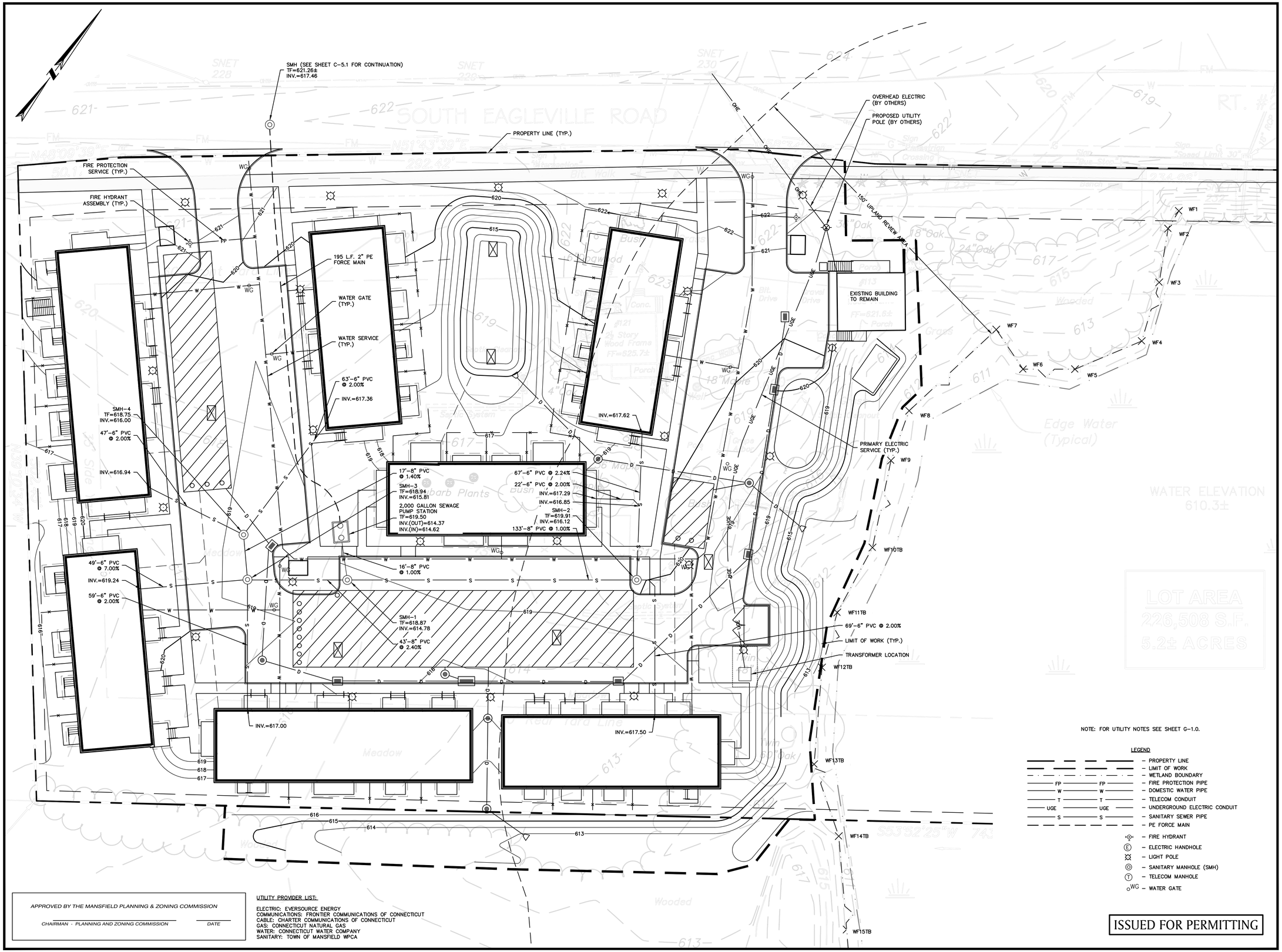
C-4.0



NOTE: FOR UTILITY NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- FIRE PROTECTION PIPE
- DOMESTIC WATER PIPE
- TELECOM CONDUIT
- UNDERGROUND ELECTRIC CONDUIT
- SANITARY SEWER PIPE
- PE FORCE MAIN
- FIRE HYDRANT
- ELECTRIC HANDHOLE
- LIGHT POLE
- SANITARY MANHOLE (SMH)
- TELECOM MANHOLE
- WATER GATE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

UTILITY PROVIDER LIST:

ELECTRIC: EVERSOURCE ENERGY
COMMUNICATIONS: FRONTIER COMMUNICATIONS OF CONNECTICUT
CABLE: CHARTER COMMUNICATIONS OF CONNECTICUT
GAS: CONNECTICUT NATURAL GAS
WATER: CONNECTICUT WATER COMPANY
SANITARY: TOWN OF MANSFIELD WPCA

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UTILITY PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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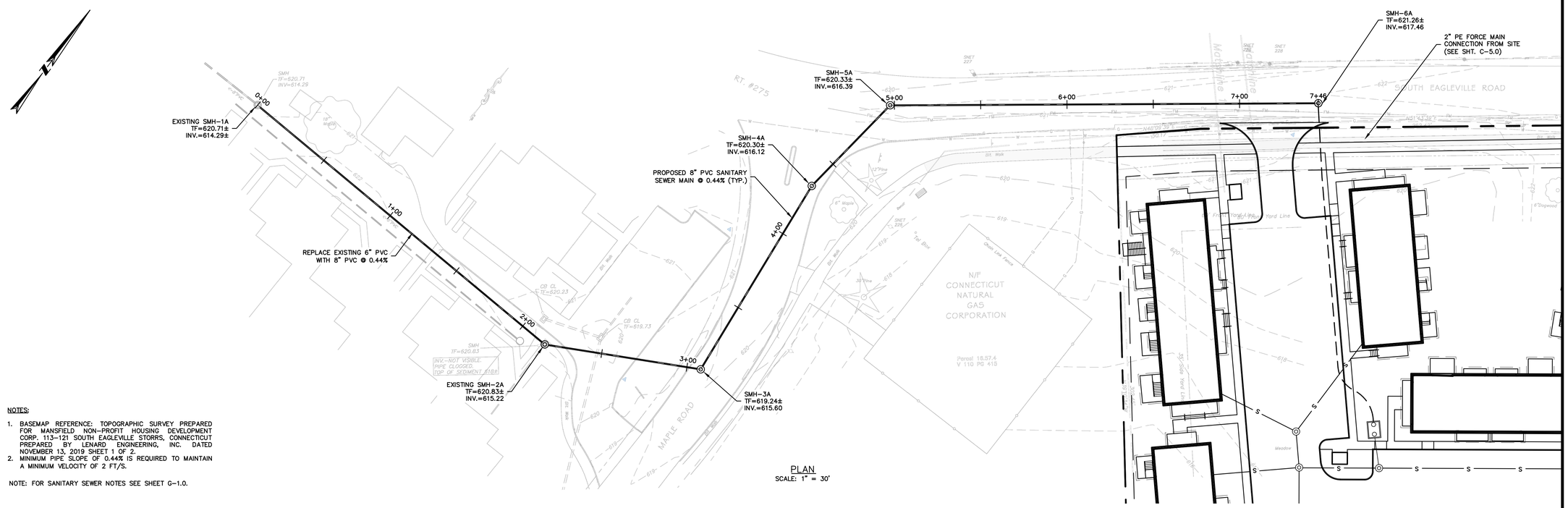
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-UT.DWG
DWG. NO:
JOB. NO: 83749.00

C-5.0



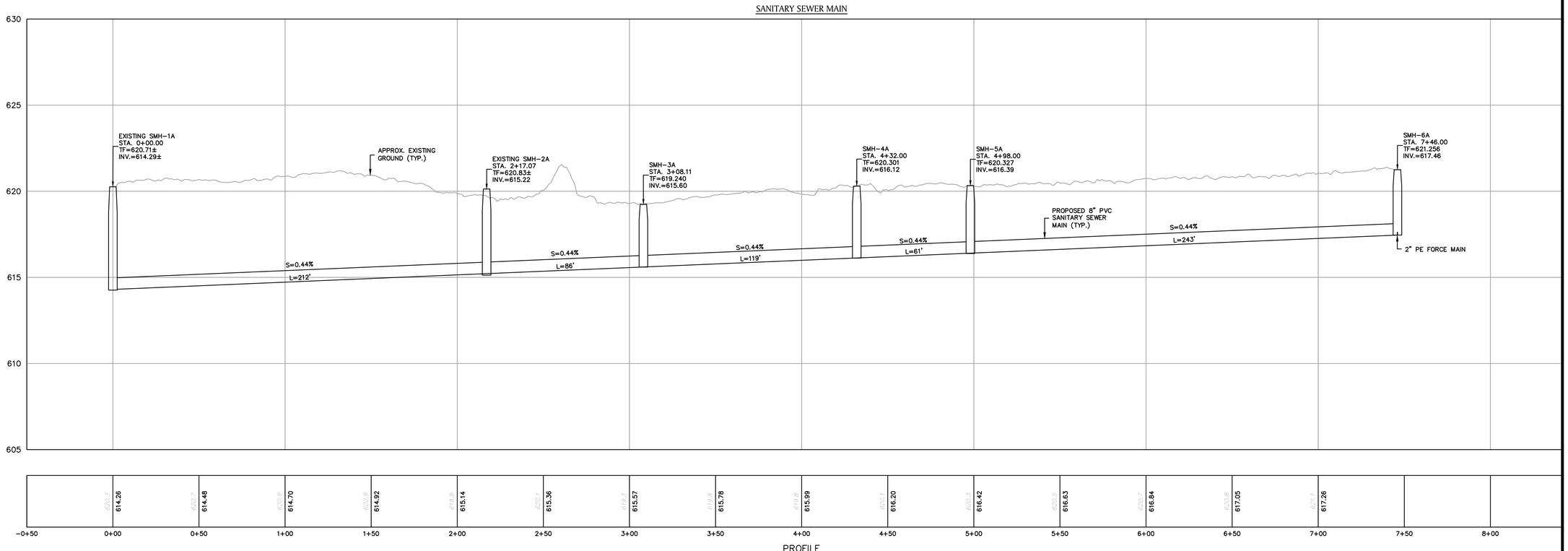
PLAN
SCALE: 1" = 30'

NOTES:

1. BASEMAP REFERENCE: TOPOGRAPHIC SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE STORRS, CONNECTICUT PREPARED BY LENARD ENGINEERING, INC. DATED NOVEMBER 13, 2019 SHEET 1 OF 2.
2. MINIMUM PIPE SLOPE OF 0.44% IS REQUIRED TO MAINTAIN A MINIMUM VELOCITY OF 2 FT/S.

NOTE: FOR SANITARY SEWER NOTES SEE SHEET G-1.0.

SANITARY SEWER MAIN



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
ROBERT S. NEWTON
No. 20662
LICENSED
PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SANITARY SEWER PLAN & PROFILE

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
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SCALE: 1" = 30'
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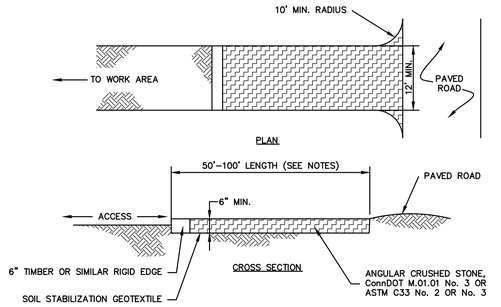
DWG. NO: C-5.1
JOB. NO: 83749.00

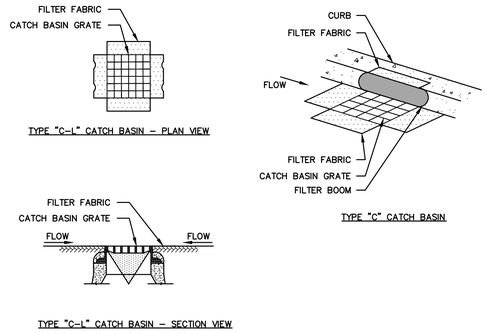


NOTES:

1. REMOVE TOPSOIL AND ORGANICS PRIOR TO CRUSHED STONE PLACEMENT.
2. INSTALL SUB-BASE OF FREE DRAINING BACKFILL OR ROAD STABILIZATION GEOTEXTILE AS NECESSARY ON UNSTABLE SOILS.
3. LENGTH SHALL BE 50 FOOT MINIMUM. WHERE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, LENGTH SHALL BE 100 FOOT MINIMUM.
4. IF THE GRADE OF THE CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND IT EXCEEDS 2% SLOPE, CONSTRUCT ENTRANCE AT LEASE 15 FEET FROM ITS ENTRANCE ONTO THE PAVED SURFACE WHILE DIVERTING RUN-OFF WATER TO A SETTLING OR FILTERING AREA.
5. CONSTRUCT ANY DRAINAGE AND SETTLING FACILITIES REQUIRED TO ACCOMMODATE VEHICLE WASHING OPERATIONS. DIVERT ALL WASH WATER AWAY FROM ENTRANCE TO THE SETTLING AREA.
6. MAINTAIN ENTRANCE IS A CONDITION THAT WILL PREVENT WASHING OF SEDIMENT ONTO PAVED SURFACES.

CONSTRUCTION ENTRANCE

SCALE: NONE
EC-101-CT

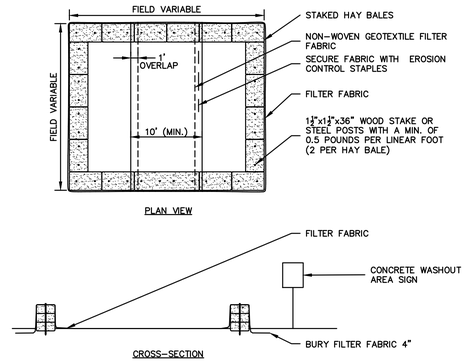


GENERAL NOTES

1. PROVIDE INLET PROTECTION TO ALL EXISTING CATCH BASINS IN THE VICINITY OF CONSTRUCTION. PROTECT NEW CATCH BASINS AS THEY ARE CONSTRUCTED.
2. GRATE TO BE PLACED OVER FILTER FABRIC.

CATCH BASIN FILTER INSERT

SCALE: NONE

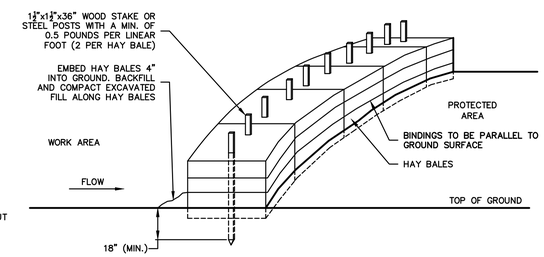


NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

TEMPORARY CONCRETE WASHOUT AREA

SCALE: NONE

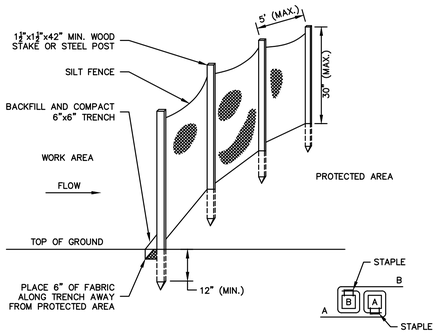


GENERAL NOTES

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

STRAW BALE BARRIER

SCALE: NONE
EC-106-CT

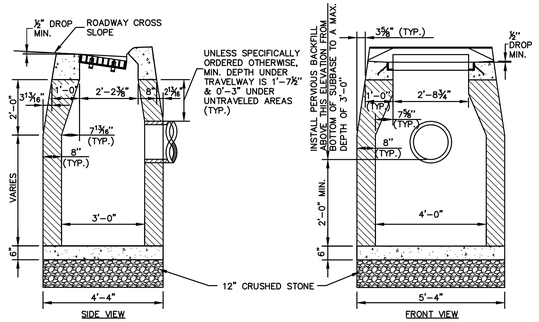


GENERAL NOTES

1. FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE OP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
2. FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

SILT FENCE BARRIER

SCALE: NONE
EC-107

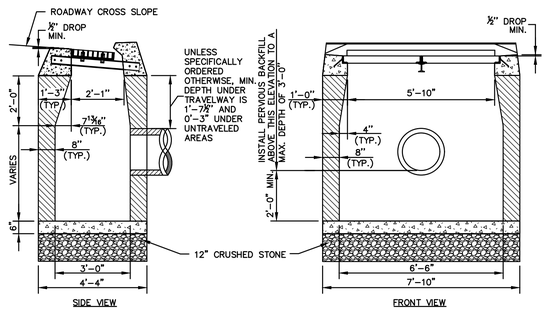


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN

SCALE: NONE
STM-101-CT

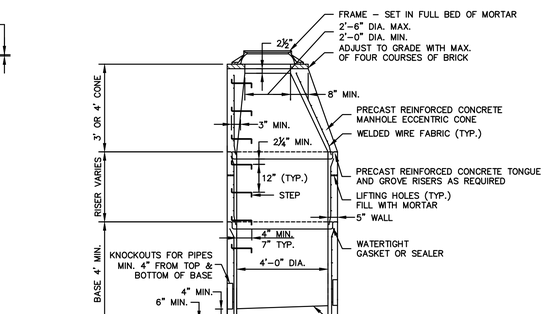


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN DOUBLE GRATE TYPE II

SCALE: NONE
STM-106-CT

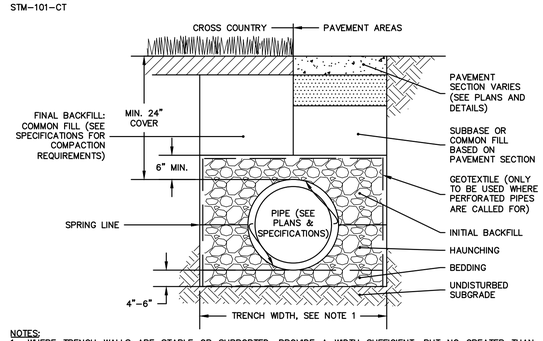


GENERAL NOTES

1. 5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' OR 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.
2. FRAME DIAMETER OF 3'-3" WITH 4" FLANGE MUST BE USED WHEN THE TOP DIA. OF THE PRECAST CONE IS LESS THAN 3'-6". ALL OTHER FRAME DIMENSIONS ARE TO REMAIN THE SAME.
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

STORM DRAINAGE MANHOLE

SCALE: NONE
STM-109-CT

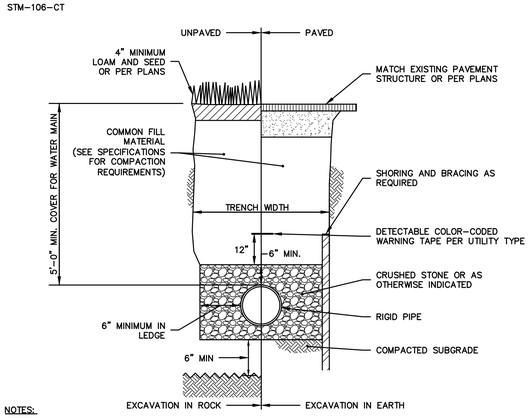


NOTES:

1. WHERE TRENCH WALLS ARE STABLE OR SUPPORTED, PROVIDE A WIDTH SUFFICIENT, BUT NO GREATER THAN NECESSARY, TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER EMBEDMENT MATERIALS. UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER, THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED IN THE PIPE ZONE. MINIMUM WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER THE PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES.
2. WHERE PERFORATED PIPES ARE CALLED-FOR, BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6 CRUSHED STONE SHALL MEET THE REQUIREMENTS OF FORM 816 M.08.
3. WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL PER THE SPECIFICATIONS. AS AN ALTERNATIVE, AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL UNDER SOME CIRCUMSTANCES.
4. BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6, NO. 67, OR NO. 8 AGGREGATE OR OTHER MATERIALS MEETING THE REQUIREMENTS OF ASTM D2321 FOR CLASS IA, IB, II, OR III UNLESS OTHERWISE INDICATED BY THE PIPE MANUFACTURER.

TYPICAL TRENCH SECTION - THERMOPLASTIC DRAINAGE PIPE

SCALE: NONE

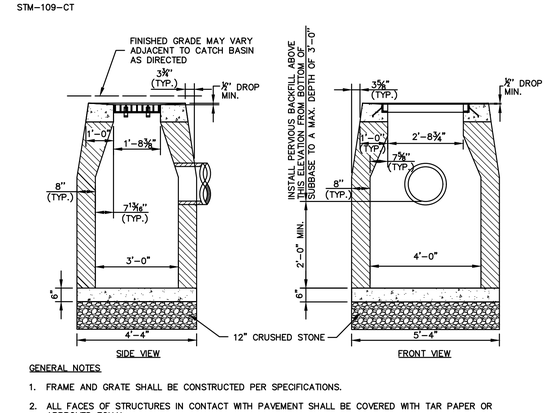


NOTES:

1. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
2. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.

TYPICAL PIPE TRENCH - RIGID PIPE

SCALE: NONE



GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C-L" CATCH BASIN

SCALE: NONE
STM-102-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

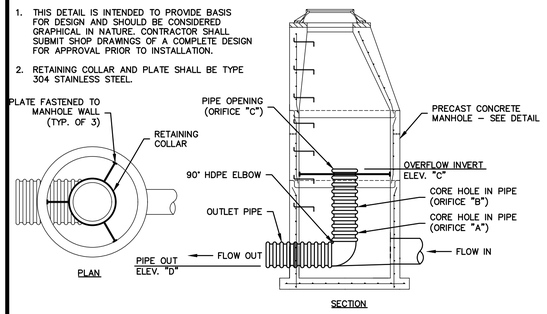
C-6.0

OUTLET CONTROL STRUCTURE	ORIFICE "A"		ORIFICE "B"		ELEV. "C"		ELEV. "D"	
	DIA.	INV.	DIA.	INV.	DIA.	INV.	DIA.	INV.
#1	6"	614.30'	N/A	N/A	15"	616.00'	15"	614.05'
#2	4"	614.86'	8"	615.33'	10"	617.00'	15"	613.25'

NOTES:
1. DESIGN TO CONFORM TO H-20 LOADING.
2. THE INLET PIPE CONNECTING THE OUTLET CONTROL STRUCTURE TO THE DETENTION SYSTEM SHALL BE SET AT 0.00% SLOPE.

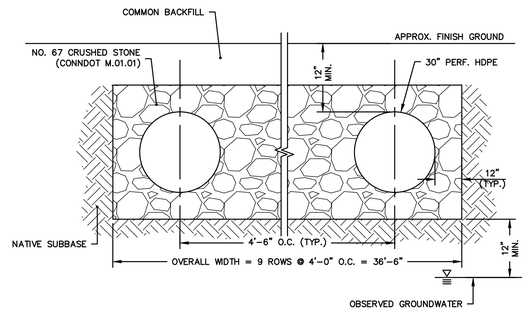
GENERAL NOTES

1. THIS DETAIL IS INTENDED TO PROVIDE BASIS FOR DESIGN AND SHOULD BE CONSIDERED GRAPHICAL IN NATURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF A COMPLETE DESIGN FOR APPROVAL PRIOR TO INSTALLATION.
2. RETAINING COLLAR AND PLATE SHALL BE TYPE 304 STAINLESS STEEL.



OUTLET CONTROL STRUCTURE

SCALE: NONE

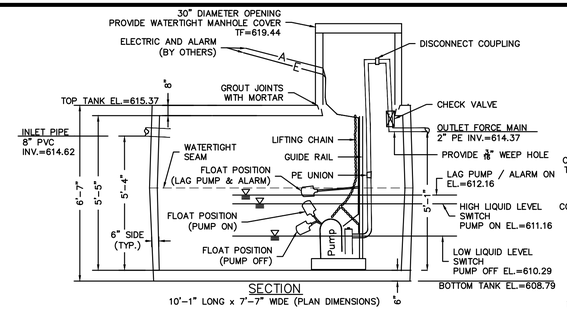


NOTE:

1. PERFORATED PIPE SHALL BE WRAPPED IN GEOTEXTILE FABRIC.

30" PIPE DETENTION SECTION

SCALE: NONE

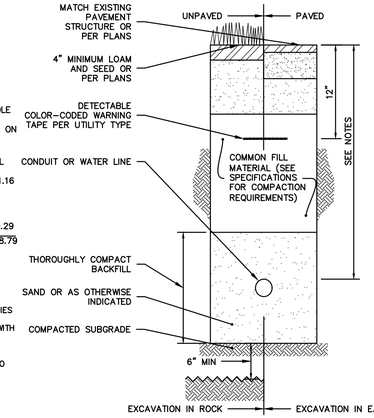


PRECAST CONCRETE PUMP CHAMBER NOTES:
1. TANK SIZE = 4 HOURS OF STORAGE = 10,950 GPD x 4 Hrs = 1,825. USE 2,000.
2. TANK DESIGN SHALL CONFORM TO LATEST ASTM DESIGNATION C913.
3. JOINT SEALANT: BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-198. MEETS FEDERAL SPECIFICATIONS SS-S-0021 (210-A).
4. PIPE INLET AND OUTLET LOCATIONS SHALL HAVE POLYLOK II PIPE SEALS.
5. TANK EXTERIOR SHALL BE COATED WITH BAY OIL, "EBONY" OR APPROVED EQUAL.
6. THE TANK INTERIOR SHALL BE COATED WITH FLOROK EPOXY OR EQUAL.
7. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
8. CONCRETE COMPRESSIVE STRENGHT – 4,000 PSI AT 28 DAYS.
9. METHOD OF MANUFACTURE: WET CAST.
10. SECTION SHALL BE MONOLITHIC.
11. CHAMBER TO BE DESIGNED FOR HS-20 LOADING.

PUMP DESIGN NOTES:
1. PUMPS SHALL BE LIBERTY PUMPS MODEL LSG200-SERIES SEWAGE GRINDER PUMP OR APPROVED EQUAL.
2. PUMP CYCLE DESIGNED FOR 10 MINUTES AT 50 GPM WITH 3 FEET OF STATIC HEAD.
3. PUMPS TO BE CONFIGURED WITH DUPLEX ELECTRICAL ALTERNATOR CONTROL PANEL.
4. ALL PUMPS AND APPURTENANCES TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS AND APPLICABLE BUILDING ELECTRICAL CODES.
5. PUMP AND FORCE MAIN SHALL BE CONFIGURED SUCH THAT THE FORCE MAIN WILL COMPLETELY DRAIN ONCE THE PUMP SHUTS OFF.
6. ROUTING OF ELECTRIC AND ALARM TO BE BY OTHERS.
7. CONTRACTOR SHALL SUBMIT A COMPLETE PUMPING SYSTEM SHOP DRAWING PACKAGE FOR REVIEW BY THE ENGINEER.

2,000 GALLON SEWAGE PUMP STATION

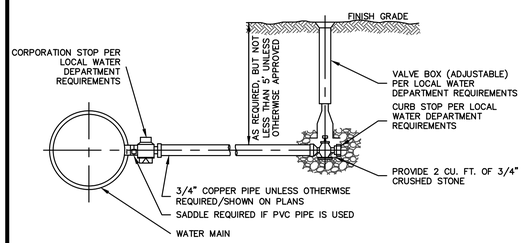
SCALE: NONE



NOTES:
1. THIS DETAIL IS APPLICABLE FOR SINGLE CONDUIT OR PIPE UP TO FOUR INCHES IN DIAMETER.
2. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.
4. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
5. PULL-LINE IN ALL CONDUIT: 3/8-INCH DOUBLE-BRAIDED LOW STRETCH POLYESTER COMPOSITE ROPE.
6. ALL CONDUIT AND PIPE DEPTHS PER CONNECTICUT BUILDING CODE OR UTILITY OWNER'S REQUIREMENTS, WHICHEVER IS MORE STRINGENT.

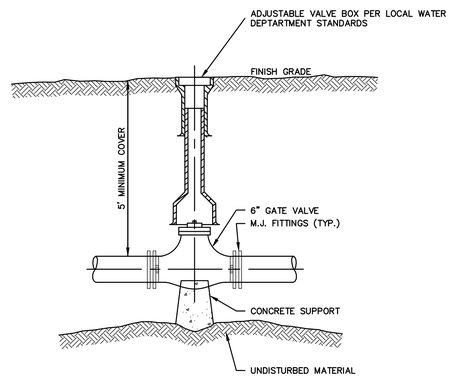
CONDUIT OR WATER SERVICE TRENCH

SCALE: NONE



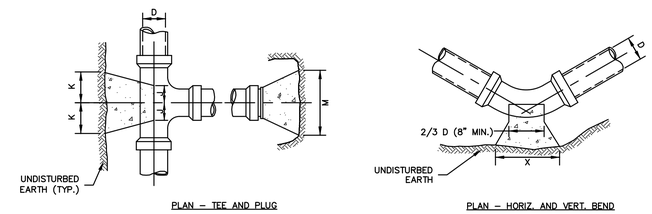
WATER SERVICE CONNECTION

SCALE: NONE
WTR-104-CT



GATE VALVE

SCALE: NONE
WTR-102-CT

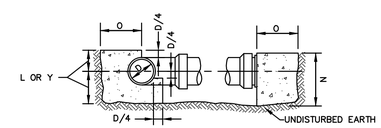


SIZE OF BRANCH	J	K	L	M	N	O
4" TO 8"	10"	10"	1'-0"	2'-0"	1'-6"	10"
10" TO 16"	1'-0"	1'-6"	1'-8"	3'-10"	2'-10"	1'-6"
24"	1'-4"	2'-0"	2'-6"	5'-0"	3'-6"	1'-8"

TEES AND PLUGS

	90° & 45°			22½° & 11¼°		
D	4" TO 8"	10" TO 16"	24"	4" TO 8"	10" TO 16"	24"
X	1'-8"	3'-4"	3'-6"	1'-4"	2'-0"	3'-6"
Y	1'-2"	1'-8"	2'-4"	1'-0"	1'-2"	2'-4"

BENDS



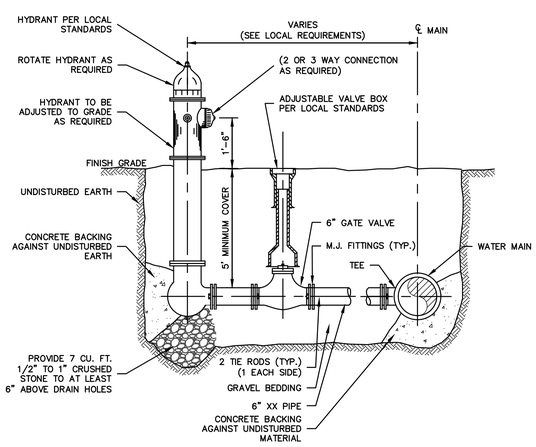
TYPICAL SECTION – TEES, BENDS AND PLUGS

GENERAL NOTES

1. PROVIDE CONCRETE THRUST BLOCKS AT ALL BENDS, DEAD ENDS, & TEES UNLESS OTHERWISE DIRECTED. CONCRETE FOR ALL THRUST BLOCKS TO BE PLACED AGAINST FIRM, UNDISTURBED EARTH. PROVIDE APPROVED ANCHOR HARNESS RODS AND SOCKET CLAMPS AS SPECIFIED AND IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS WHERE SOIL HAS BEEN DISTURBED OR THRUST BLOCKS CANNOT BE USED.
2. ALL SOCKET CLAMP METAL SHALL BE COATED WITH BLACK ASPHALTUM OR OTHER WATER DEPARTMENT APPROVED COATINGS.
3. CONCRETE THRUST BLOCKS POURED BEHIND 3-WAY TEE AND HYDRANT SHOE TO BE USED WITH SOCKET CLAMPS.
4. NO CONCRETE SHALL COVER PIPE JOINTS, FITTING JOINTS, BOLTS OR HYDRANT DRAINS.

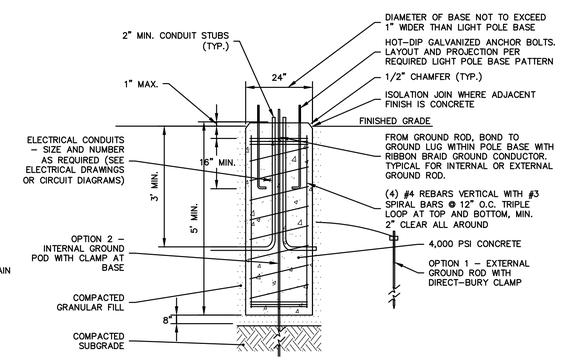
CONCRETE THRUST BLOCK FOR PRESSURE PIPE

SCALE: NONE
WTR-105-CT



FIRE HYDRANT & VALVE

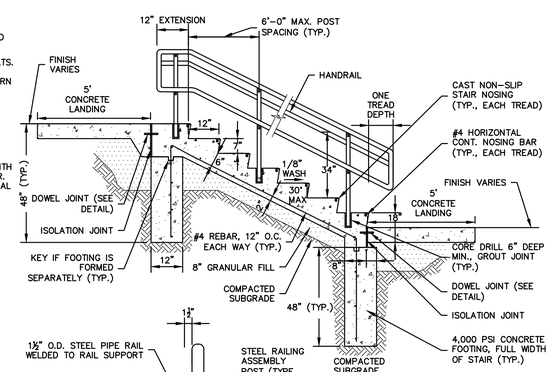
SCALE: NONE
WTR-103-CT



NOTES:
1. REINFORCING BARS SHALL BE DEFORMED BAR, ASTM A615 GRADE 60.
2. CONDUIT LOCATIONS SHOWN ARE CONCEPTUAL. REFER TO ELECTRICAL DRAWINGS OR CIRCUIT DIAGRAMS FOR THE NUMBER, SIZES, AND ORIENTATION REQUIRED.
3. ALL GROUND RODS SHALL BE COPPER-COATED. DIAMETER AND LENGTH PER APPLICABLE CODES. GROUNDING WIRE SHALL BE No. 4 AWG STRANDED COPPER WIRE UNLESS OTHERWISE SPECIFIED.
4. ANCHOR BOLTS SHOWN ARE CONCEPTUAL. ANCHOR BOLT SPECIFICATIONS SHALL MEET THE POLE MANUFACTURER'S REQUIREMENTS FOR SIZE, LENGTH, AND GRADE, BASED ON POLE TYPE, HEIGHT, AND FIXTURE(S).

LIGHT POLE BASE

SCALE: NONE



NOTES:
1. COMPLY WITH ICC/ANSI A117.1 CHAPTER 5.
2. SUBMIT DETAILED SHOP DRAWINGS FOR APPROVAL SHOWING THE LAYOUT AND DIMENSIONS OF ALL STAIR SYSTEM COMPONENTS.
3. EXPOSED SURFACES TO BE BRUSHED FINISH TROWELED EDGES.
4. MINIMUM WIDTH TO BE 48" CLEAR HANDRAIL TO HANDRAIL.
5. MAXIMUM RADIUS OF CURVATURE AT THE LEADING EDGE OF TREADS SHALL BE 1/2".
6. CONSTRUCT CONCRETE LANDINGS PER SIDEWALK DETAIL.

CONCRETE STAIRS

SCALE: NONE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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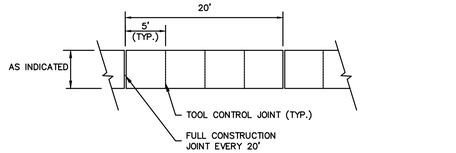
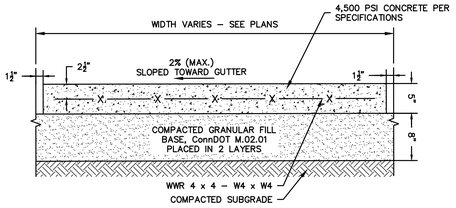
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

C-6.1



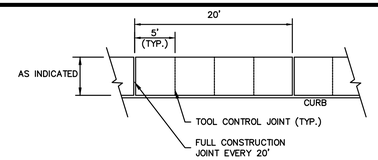


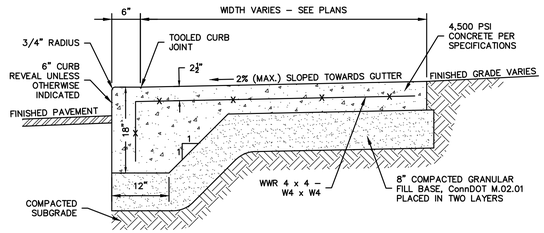
NOTES:

1. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
2. FULL-DEPTH JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
3. SIDEWALK SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

CONCRETE SIDEWALK

SCALE: NONE



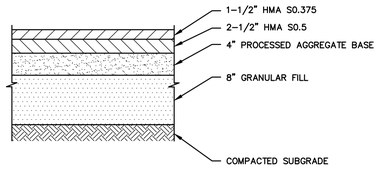


NOTES:

1. CURB REVEAL DIMENSION MAY VARY, SEE PLANS.
2. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
3. TOOLED CURB JOINT SHALL BE 1/4-INCH DEEP MAX.
4. CONSTRUCTION JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
5. SIDEWALKS SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

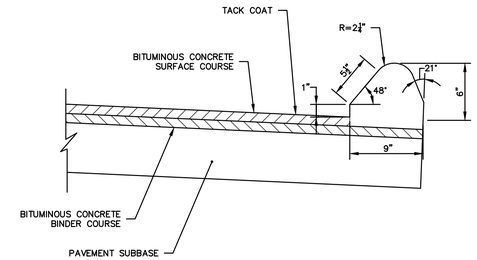
MONOLITHIC CONCRETE CURB AND SIDEWALK

SCALE: NONE



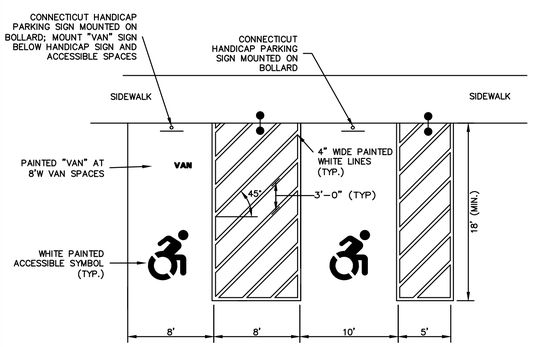
BITUMINOUS CONCRETE PAVEMENT

SCALE: NONE



6" BITUMINOUS CONCRETE LIP CURBING

SCALE: NONE
CRB-103-CT

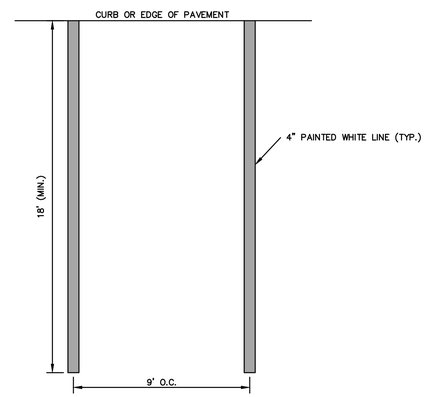


NOTES:

1. GRADING WITHIN HANDICAP SPACES SHALL BE LESS THAN 2.00% IN ALL DIRECTIONS
2. SIGN LOCATION VARIES – SEE PLAN

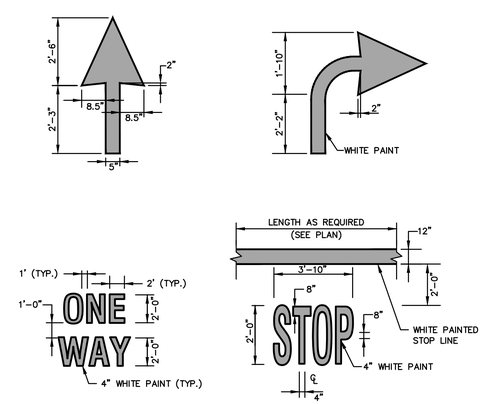
ACCESSIBLE PARKING SPACES

SCALE: NONE



STANDARD PAINTED PARKING MARKINGS

SCALE: NONE

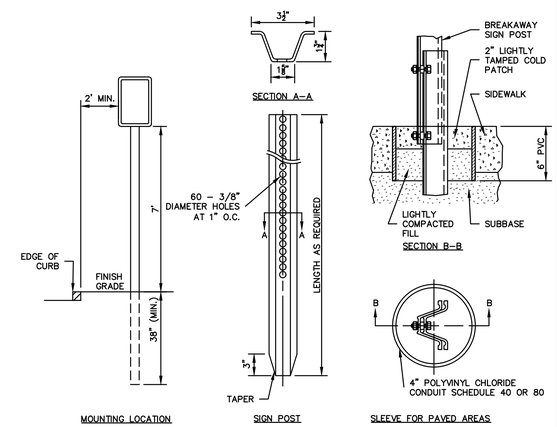


NOTES:

1. PAVEMENT MARKINGS SHOWN SHALL NOT BE INSTALLED ON PUBLIC ROADWAYS.

PAINTED PAVEMENT MARKINGS

SCALE: NONE
PVT-104-CT

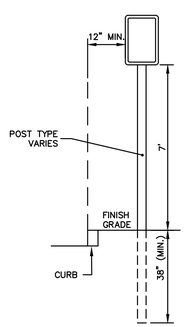


NOTES:

1. MOUNT SIGN TO POST PER CONNDOT 816 SPECIFICATIONS AND DETAILS.
2. PROVIDE SLEEVE FOR ALL SIGNS MOUNTED IN CONCRETE.

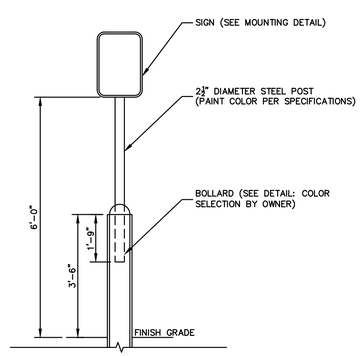
TYPICAL SIGN SUPPORT – BREAKAWAY TYPE II

SCALE: NONE



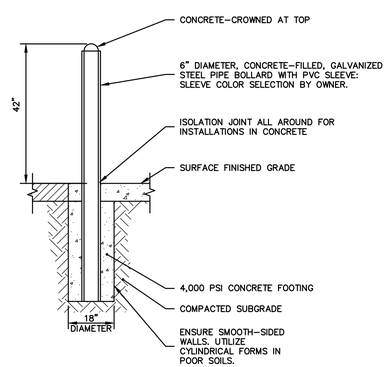
POST-MOUNTED SIGN

SCALE: NONE



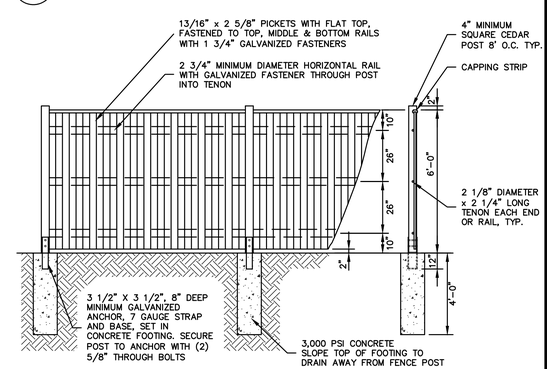
BOLLARD-MOUNTED SIGN

SCALE: NONE



CONCRETE-FILLED STEEL BOLLARD

SCALE: NONE



GENERAL NOTES

1. ALL FENCING MATERIAL SHALL BE TREATED NORTHERN WHITE CEDAR, TO THE DIMENSIONS SHOWN ON THE DRAWING.
2. LINE FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. ALL POSTS AND FACING BOARDS OR SLATS SHALL BE INSTALLED PARALLEL AND PLUMB. ALL RAILS SHALL BE INSTALLED PARALLEL AND TRUE.
3. ALL GATE HARDWARE SHALL BE DOUBLE DIP HOT GALVANIZED. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

6' SINGLE SIDED WOOD FENCE

SCALE: NONE
FSN-105-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

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JOB. NO: 83749.00

ADVANCED DRAINAGE SYSTEMS, INC.

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

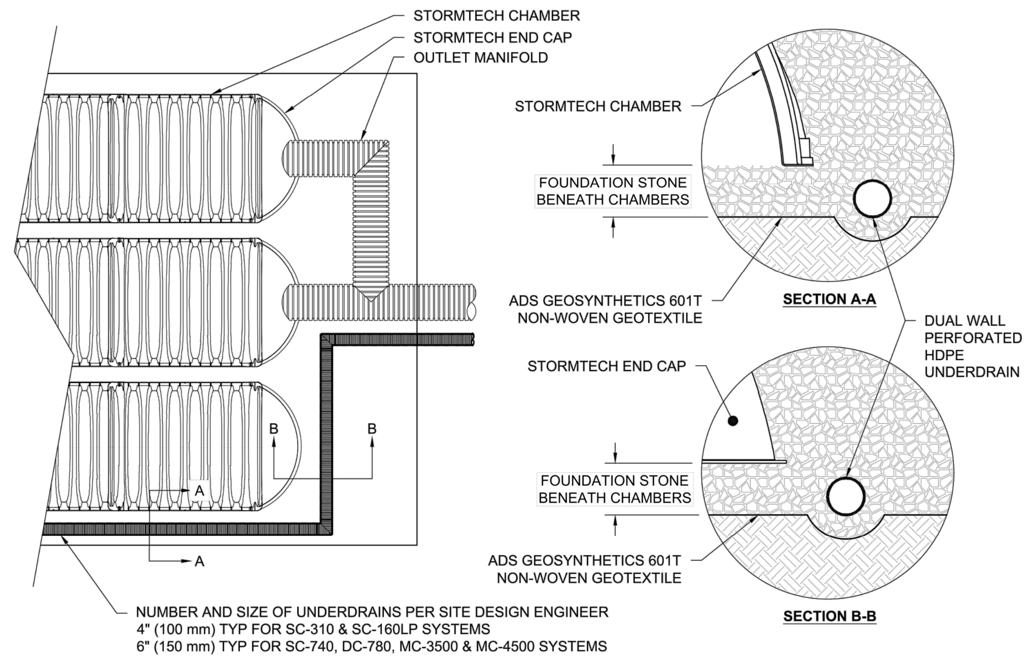
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

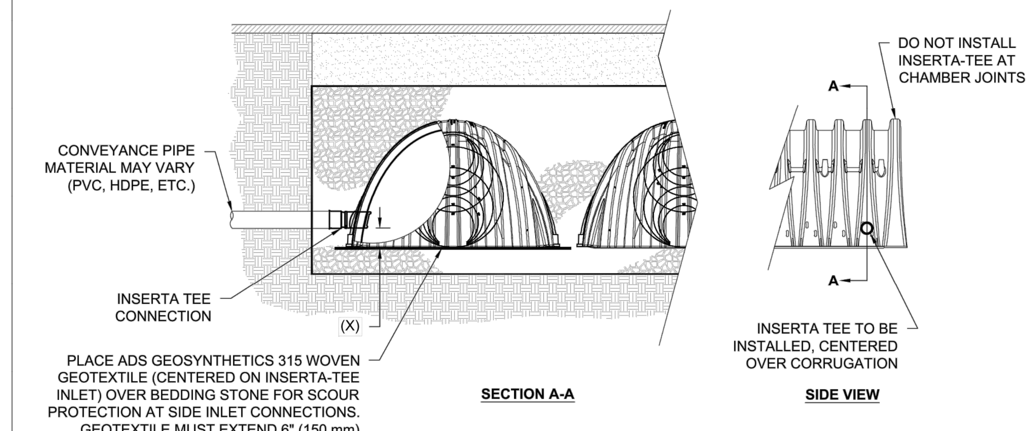
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



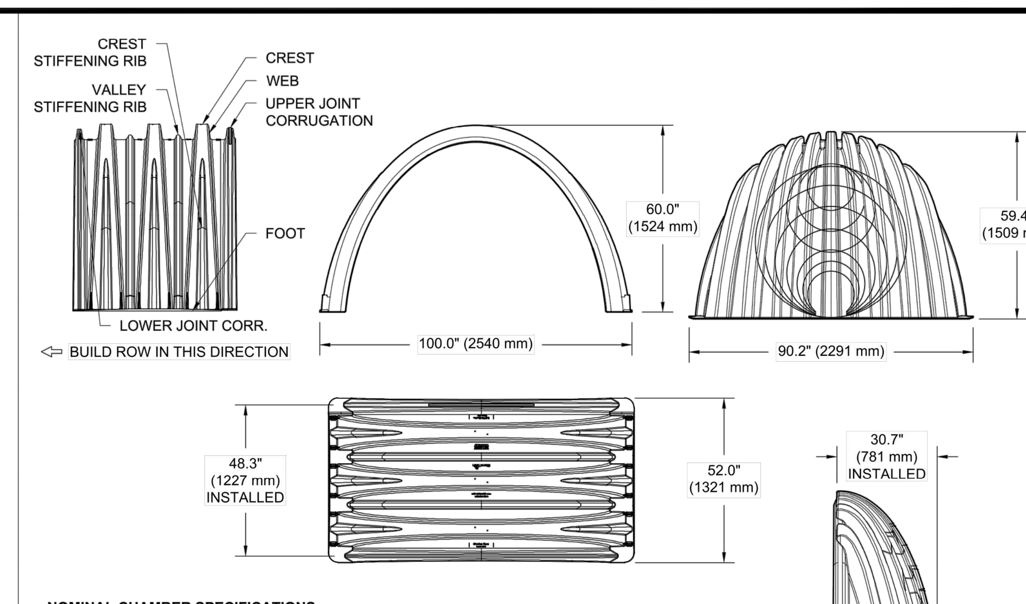
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

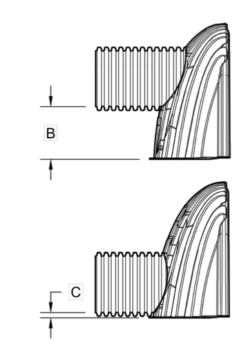
SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	(1.01 m³)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	(3.08 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

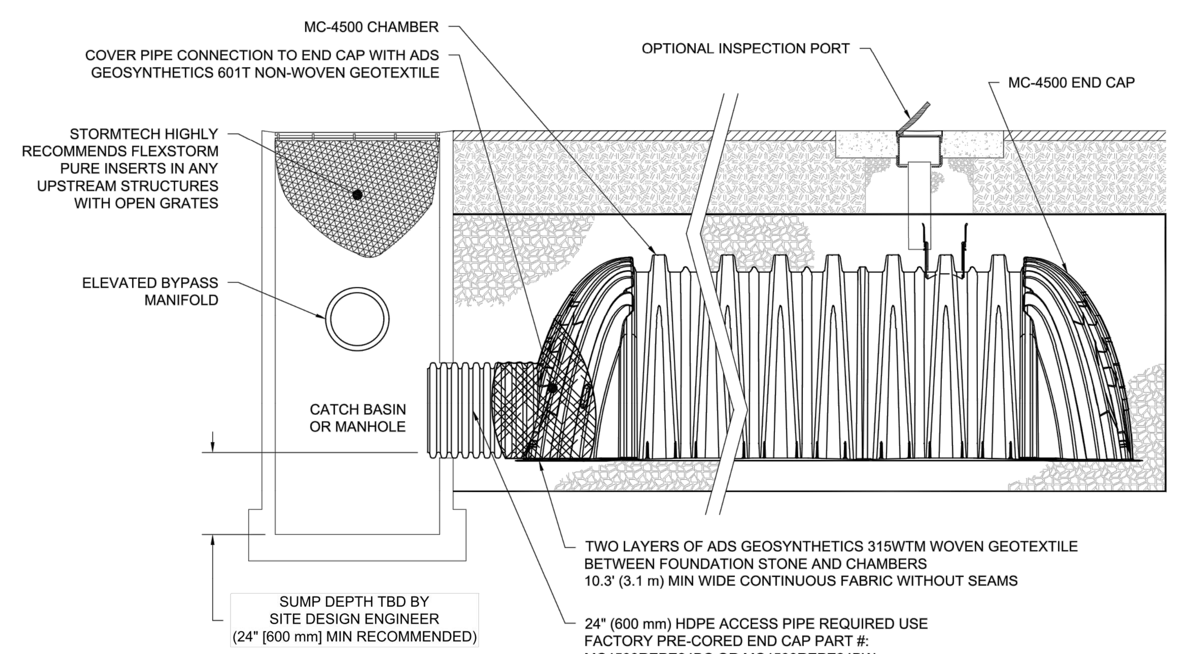
PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18TW			
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE18BW			
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24TW			
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE24BW			
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-4500 TECHNICAL SPECIFICATIONS



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

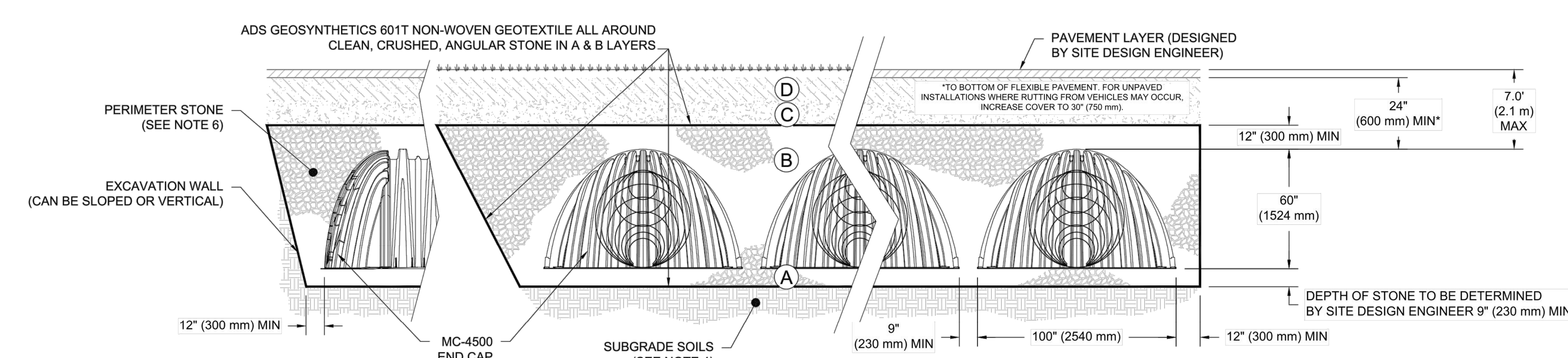
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-4500 ISOLATOR ROW DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

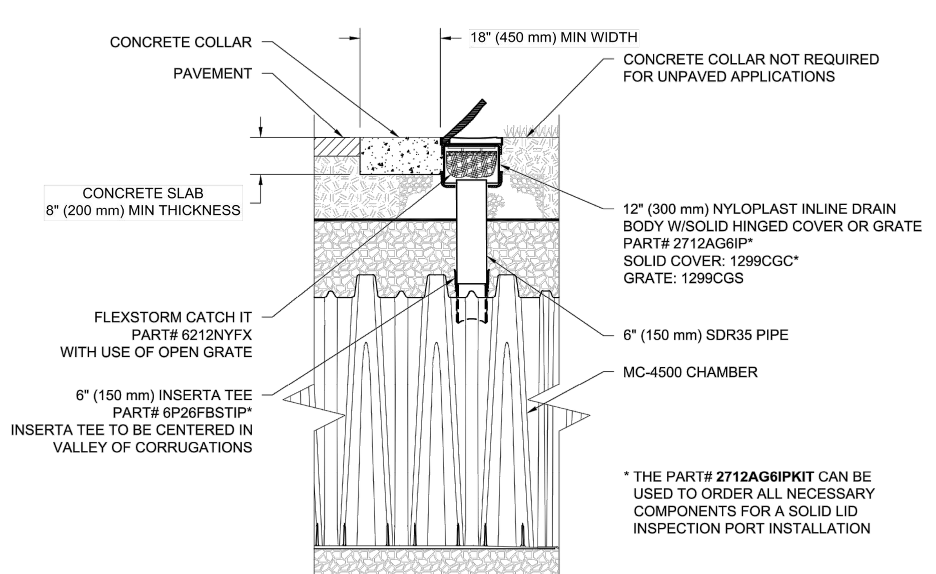
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

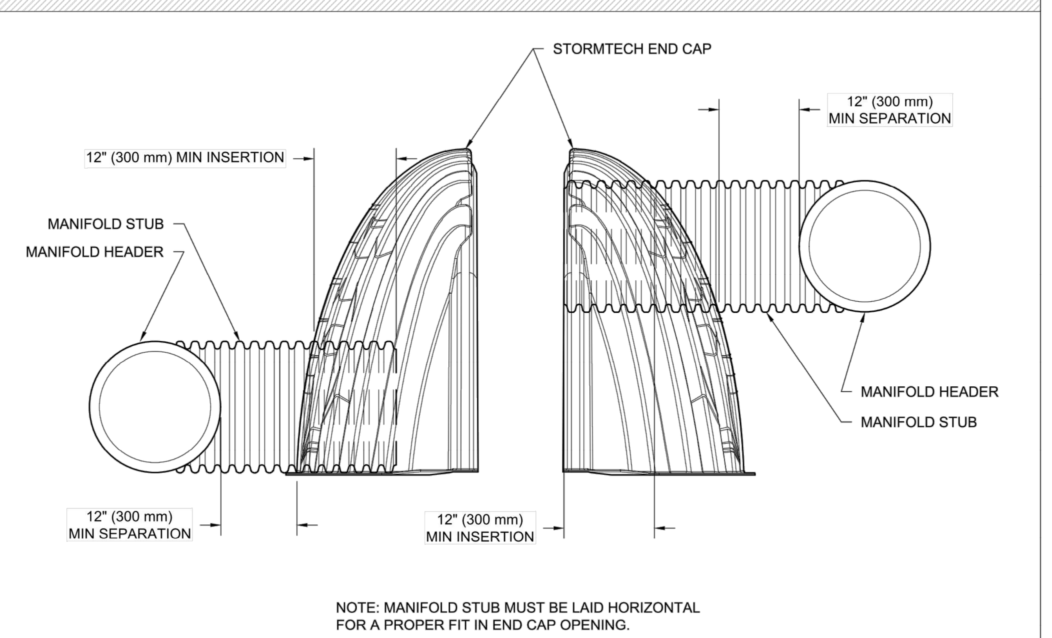
1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

1 MC-4500 CROSS SECTION DETAIL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

4 MC-4500 6" (150 mm) INSPECTION PORT DETAIL



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

7 MC-SERIES END CAP INSERTION DETAIL

DATE: 08/28/18
PROJECT NO:
NOT TO SCALE
DRAWN: JLM
REVIEWED: JLM
REV:

MC-4500
STANDARD DETAILS

StormTech
Detention • Retention • Water Quality
70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067
860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

ADVANCED DRAINAGE SYSTEMS, INC.

SHEET
1 OF 1

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT, UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER. THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION   DATE

ISSUED FOR PERMITTING

NOTES:
1. ADS STORMTECH MC-4500 USED AS BASIS FOR DESIGN. CONTRACTOR SHALL SELECT THIS PRODUCT OR APPROVED EQUAL AND SUBMIT A COMPLETE SHOP DRAWING PACKAGE FOR REVIEW AND APPROVAL BY THE ENGINEER.

EAGLEVILLE GREEN - NOVEMBER 25, 2019

ROBERT NEWTON, PE   No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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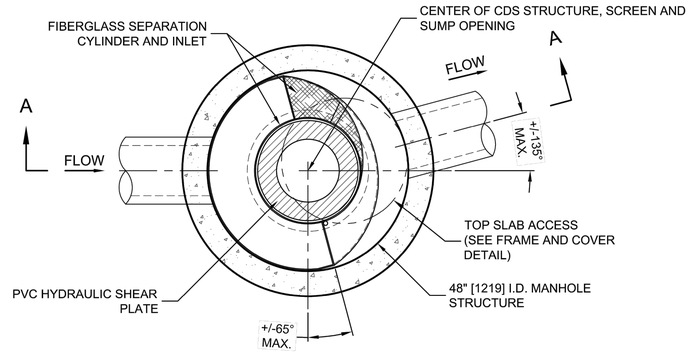
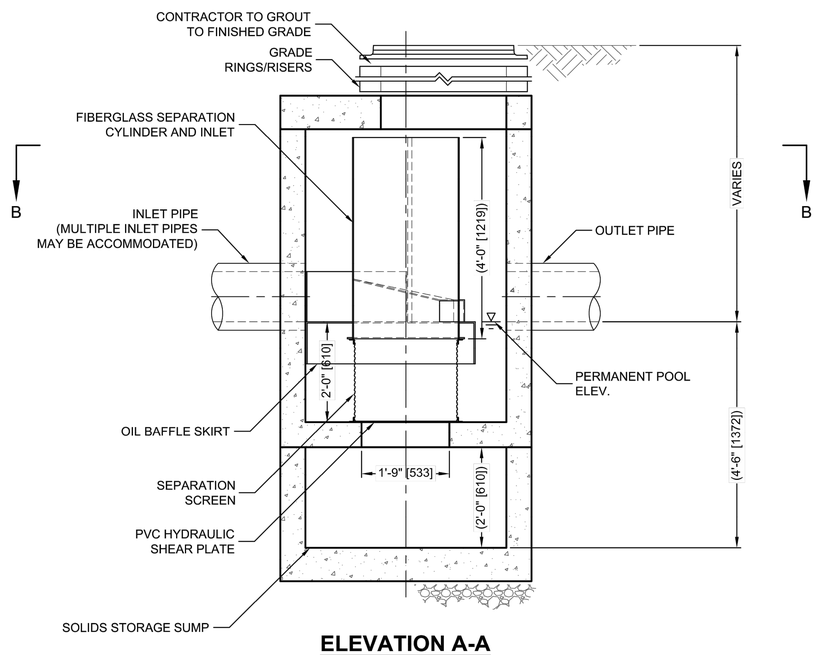
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.3
JOB. NO: 83749.00



PLAN VIEW B-B
N.T.S.



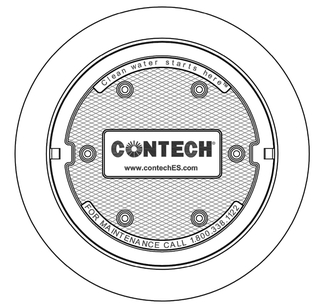
ELEVATION A-A
N.T.S.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,846; 6,641,720; 6,511,595; 6,581,793; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

C:\USERS\SCHLACHTER\DESKTOP\CDS DETAILS 180 MICRON SIZING\ACAD\CDS2015-4-C-DTL.DWG 5/19/2014 5:16 PM

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
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PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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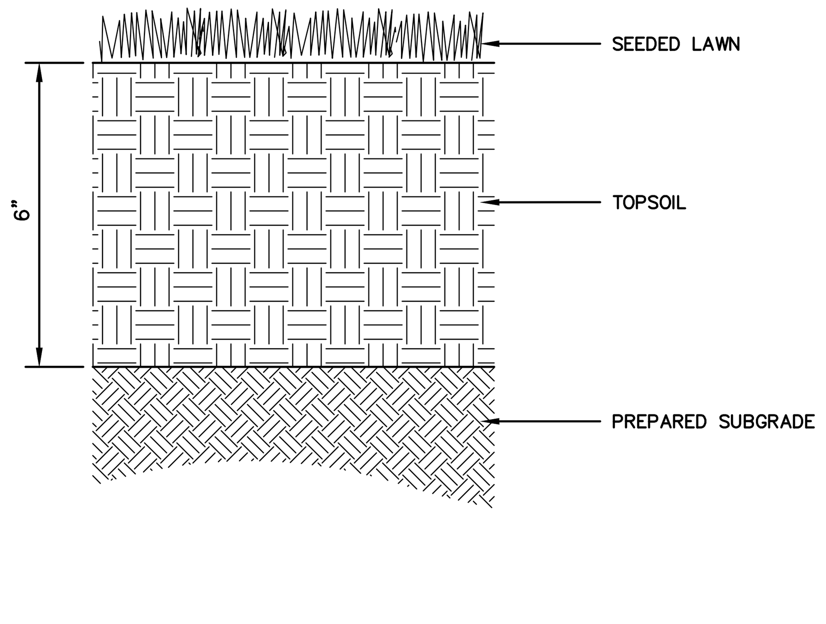
SCALE: AS SHOWN

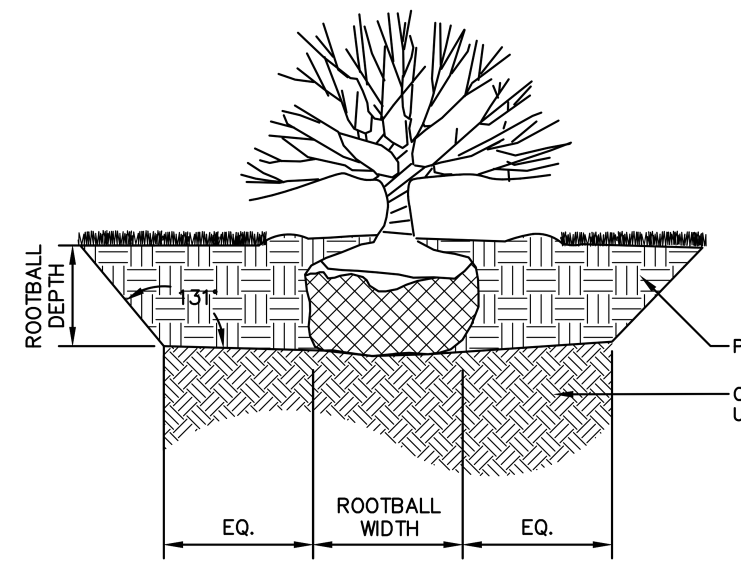
FILE: 8374900-DET.DWG
DWG. NO: C-6.4
JOB. NO: 83749.00



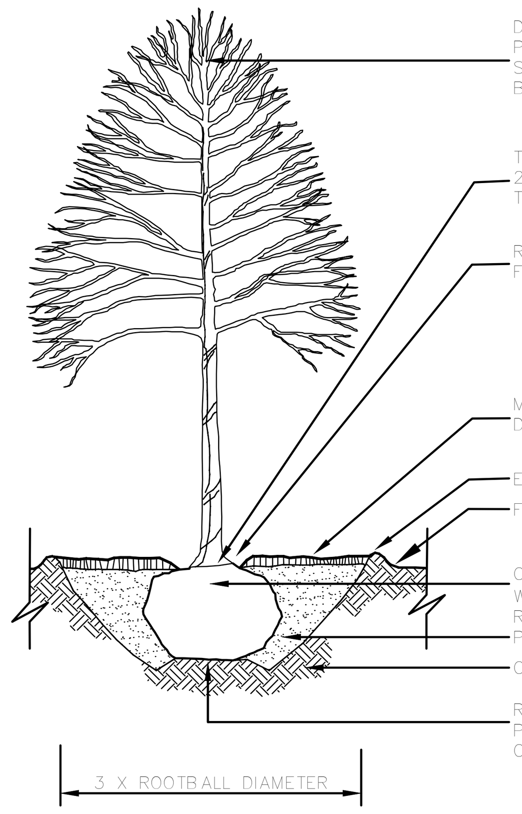
NOTES:
1. CONTRACTOR SHALL PREPARE SOILS IN ALL DISTURBED AREAS AND AREAS USED FOR EQUIPMENT ACCESS.

LAWN
SCALE: NONE

NOTES:
1. LOOSE OR CRACKED ROOT BALLS ARE UNACCEPTABLE.
2. EXCAVATE TO REQUIRED DEPTH AND DO NOT EXCAVATE BELOW ROOT BALL DEPTH.
3. SET SHRUBS PLUMB WITH ROOT FLARE 1" ABOVE FINISHED GRADE, BACKFILL WITH PLANTING MIX.
4. FLOOD WATERING SAUCER TWICE IN FIRST 24 HOURS AFTER PLANTING.
5. RAISE AND REPLANT ANY SHRUBS THAT SETTLE AFTER PLANTING & WATERING.
6. REMOVE 1/3 BURLAP PRIOR TO BACKFILL. SYNTHETIC BURLAP UNACCEPTABLE.E
7. 2" DEPTH MULCH (KEEP MULCH 1" AWAY FROM SHRUB BASE) 3" HIGH EARTH WATERING SAUCER 1'–0" BEYOND ROOT BALL PLANTING MIXTURE.
8. FOR CONTAINERIZED PLANTS: REMOVE CONTAINER PRIOR TO PLANTING, SCARIFY ROOT BALL BELOW EDGE 1/2" DEEP IN FOUR LOCATIONS.

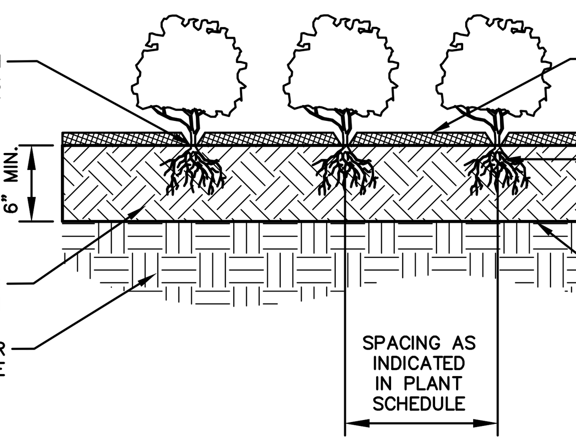


SHRUB PLANTING
SCALE: NONE



NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
3. DO NOT STAKE OR WRAP TREE UNLESS NOTED OTHERWISE.

DECIDUOUS TREE PLANTING
SCALE: NONE
PLNT–107–CT
11/05



GROUNDCOVER PLANTING TYP.
SCALE: NONE

1710LED VILLA SERIES
LED

EPA 0.78 (ft²) WEIGHT 35 LBS | 7 YEAR WARRANTY | LUMEN RANGE 3,070 to 7,365 | LIFE SPAN L70 MINIMUM 100,000 HOURS | UL LISTED | CLICK FOR FAQ's | IP RATING* IP66

*Optical module only

JOB NAME
FIXTURE TYPE
MEMO

*Fixture "A" shown above, additional styles on page 3.

BUILD A PART NUMBER

ORDERING EXAMPLE: PT-1710CLED-RA-IH1-R3-1L40TS-MDL07-SV2-MS-R5-PE/BKT

Mounting Config.	Fixture	Roof	Internal Housing	Fitter	LED	CCT	Type	Driver	Internal Lens	Option Mini Shade	Option External Rings	Option Control Recept.	Option Control	Option Fuse	Option Hangstraight	Option House Side Shield	Arm See Arm Spec Sheets	Pole See Pole Spec Sheets	Finish

Mounting Configuration (Click here to view mounting configuration sheet)
• 1W • 2A • 3A90 • 1AM • CAT
• PT • 2A90 • 3APT • 2AM
• 1A • 2APT • 4A • 450PB
• 1APT • 3A • 4APT • SH44[1]

W = Wall Mount PT = Post Top A = Arm Mount AM = Arm Mid-Mount PB = Pier Base CAT = Catenary SH = Stem Hung

[1] Include overall drop length in inches after designation for stem application (IE: SH44-48").

Fixture
• 1710ALED • 1710BLED • 1710CLED
• 1710ALEDH • 1710BLEDH • 1710CLEDH
H = Hanging Fixture

Roof
• RA (Deep shade w/ sloped top)
• ~~RB (Deep shade w/ stepped top)~~
• RC[2] (Thin shade)
• RD (Shallow shade w/ flat top)
• RE[3] (No shade w/ flat top)

[2] Not for use with "A" or "B" style fixture
[3] Not for use with "B" style fixture

Internal Housing[7]
• IH1[4,5] (Stacked louvers)
• IH2[5] (Smooth cylinder)
• IH3[5] (Tapered cylinder)
• IH4[5] (4-vaned deco)
• IH5[5] (Ringed cylinder)
• IH6[6] (Low-rise cone)

[4] Not for use with "SV2RB" Internal Lens
[5] For use with "TS" optic only
[6] For use with "TSL" or "TAL" optic only
[7] Internal Housing offered with Silver finish only

Fitter
• R3 • R4 • NA[8]
[8] For use with hanging (H) fixture only

LED
• 1L

CCT - Color Temperature (K)
• 27(00) • 30(00) • 40(00) • 50(00)

Distribution Type
• TS (Symmetric, behind internal lens)
• TSL[9] (Symmetric, with large optic)
• TAL[9] (Asymmetric, with large optic)
[9] Not for use with "RC" roof.

Driver
• MDL05 (120V-277V, 500mA)
• MDL07 (120V-277V, 700mA)
• MDL09 (120V-277V, 900mA)
• MDL11 (120V-277V, 1100mA)
• MDH07 (347V-480V, 700mA)
• MDH09 (347V-480V, 900mA)
• MDH11 (347V-480V, 1100mA)

Internal Lens
• SV2RB[10] (Soft Vue Moderate Diffused Ribbed Acrylic Vertical Lens)
• SV2[10] (Soft Vue Moderate Diffused Acrylic Vertical Lens)
• SV4[10] (Soft Vue Maximum Diffused Acrylic Vertical Lens)
• NIL[11] (No Internal Vertical Lens)
[10] For use with "TS" optic only.
[11] For use with "TSL" or "TAL" optic only.

Options (Click here to view accessories sheet)
• MS[12] Mini-Shade
• ERS[12] External Rings
• R[13] 3-Pin control receptacle only
• R5[13] 5-Pin control receptacle only
• R7[13] 7-Pin control receptacle only
• PE[14] Twist-Lock Photocontrol (120V-277V)
• PE3[14] Twist-Lock Photocontrol (347V)
• PE4[14] Twist-Lock Photocontrol (480V)
• SC[14] Shorting Cap
• FHD[15] Double Fuse and Holder
• HSHS[16] Standard Horizontal Hangstraight, Spike Finial
• HSHN[16] Standard Horizontal Hangstraight, No Finial
• HSHB[16] Standard Horizontal Hangstraight, Ball Finial
• EZ[16] Vertical Hangstraight, Large, "EZ" Mount
• HSV[16] Vertical Hangstraight, Standard
• HSS 120° House Side Shield
[12] For use with "C" style fixture only
[13] Cannot be used with SH44, CAT, EZ or HSV mounting style
[14] Requires control receptacle
[15] Ships loose for installation in base
[16] For use with hanging (H) fixture only

Arm (Click here to link to arm specification page)
See Arms & Wall Brackets specification sheets.
• OMS • HMS • VCS
• VFS • VLS

Pole (Click here to link to pole specification page)
See Pole specification sheets.

Finish (Click here to view paint finish sheet)
Standard Urban Finishes
• UGMT Gun Metal Textured
• UGM Gun Metal Matte
• UBT Urban Bronze Textured
• UB Urban Bronze Matte
• ULBT Urban Light Bronze Textured
• ULB Urban Light Bronze Matte
• USLT Urban Silver Textured
• USL Urban Silver Matte
• UWHT Urban White Textured
• UWH Urban White Matte
• UCHS Urban Champagne Satin Smooth
• BKT Black Textured

Custom Urban Finishes[17]
• CM Custom Match
• CHL Custom Highlights (consult factory for more information)
[17] Custom finish requires upcharge, consult factory for more information.

Specifications
Fixture
Fixture shall be cylindrical in form (straight or tapered lens as specified), and feature both a roof casting and internal housing manufactured via permanent mold tooling. The outer lens shall be one-piece, injection molded, non-yellowing acrylic, sealed top and bottom with seamless silicone gaskets to an IP66 rating. Set screws and related hardware shall be finish painted to match the fixture housing. The luminaire shall be UL listed in the U.S. and Canada.

Optional Mini-Shade / External Rings
Offered on fixture style "C" only.
(Mini-Shade) A small cast aluminum louvered shade measuring 17-1/2" OD x 1-1/2" tall,
See next page

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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1710LED VILLA SERIES
LED

installed above the shade on roof style RC. Installed under shade on styles RA, RB, RD & RE
(External Rings) 2 flat cast aluminum rings measuring 13" OD, installed above the shade on roof style RC. Installed under shade on styles RA, RB, RD & RE

Fitter - Standard
Fixture shall house the driver and be provided with a heavy wall die cast aluminum fitter designed to slip-fit 3"OD (R3) or 4"OD (R4) x 3" tall tenons/poles. The fitter shall have three (3) stainless steel allen head screws to secure the connection between the fitter and tenon/pole. All external hardware shall be finish painted to match the rest of the fixture housing.

LEDs
The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating of 1 to 3 mils. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K or 5000K option) color temperature with a minimum of 70 CRI. Consult factory for custom color CCT. The luminaire shall have a minimum ______ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Optics
(TS Optic) The luminaire shall be provided with an individual, molded silicone refractor type optic applied to the COB (Chip On Board) LED assembly. An additional vertical diffused acrylic lens installed inside the unit allows for a high level of visual comfort. All testing shall be done in accordance with IESNA LM-79.
(TSL & TAL Optic) The luminaire shall be provided with an individual, large injection molded acrylic refractor type optic applied to the COB (Chip On Board) LED assembly. The optic visually spreads out size of the light source while creating a Symmetric (TSL) or asymmetric (TAL) light pattern. All testing shall be done in accordance with IESNA LM-79.

Electronic Drivers
The LED driver shall be U.L. Recognized. It shall be securely mounted inside the fixture, for optimized performance and longevity. It shall be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections and fixture installation. It shall have overload, overheat and short circuit protection, and have a DC voltage output, constant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It shall be a high efficiency driver with a THD less than 20% and a high power factor greater than .9. It shall be dimming capable using a 0-10v signal, consult factory for more information.

Photocontrols
Twist-Lock Style: The photocontrol shall be mounted externally on the fixture and prewired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years.

Wireless Controls
A 5-pin (R5) or 7-pin (R7) NEMA receptacle can be included on the unit for wireless control systems.

Warranty
Seven-year limited warranty. See product and finish warranty guide for details.

Finish
Refer to website for details.

Performance (based on "C" style fixture with "RD" roof)

MODEL #	TS DELIVERED LUMENS	EFFICACY (LPW)	TSL DELIVERED LUMENS	EFFICACY (LPW)	TAL DELIVERED LUMENS	EFFICACY (LPW)	WATTAGE
1L40T_-MDL11	7325	114.5	7365	115.1	7270	113.6	64
1L30T_-MDL11	7140	111.6	7175	112.1	7085	110.7	64
1L27T_-MDL11	6485	101.3	6520	101.9	6435	100.5	64
1L40T_-MDL09	6060	116.5	6130	117.9	6045	116.3	52
1L30T_-MDL09	5905	113.6	5975	114.9	5890	113.3	52
1L27T_-MDL09	5365	103.2	5425	104.3	5350	102.9	52
1L40T_-MDL07	4790	116.8	4845	118.2	4770	116.3	41
1L30T_-MDL07	4670	113.9	4720	115.1	4650	113.4	41
1L27T_-MDL07	4240	103.4	4290	104.6	4225	103.0	41
1L40T_-MDL05	3500	116.7	3540	118.0	3470	115.7	30
1L30T_-MDL05	3410	113.7	3450	115.0	3380	112.7	30
1L27T_-MDL05	3100	103.3	3135	104.5	3070	102.3	30

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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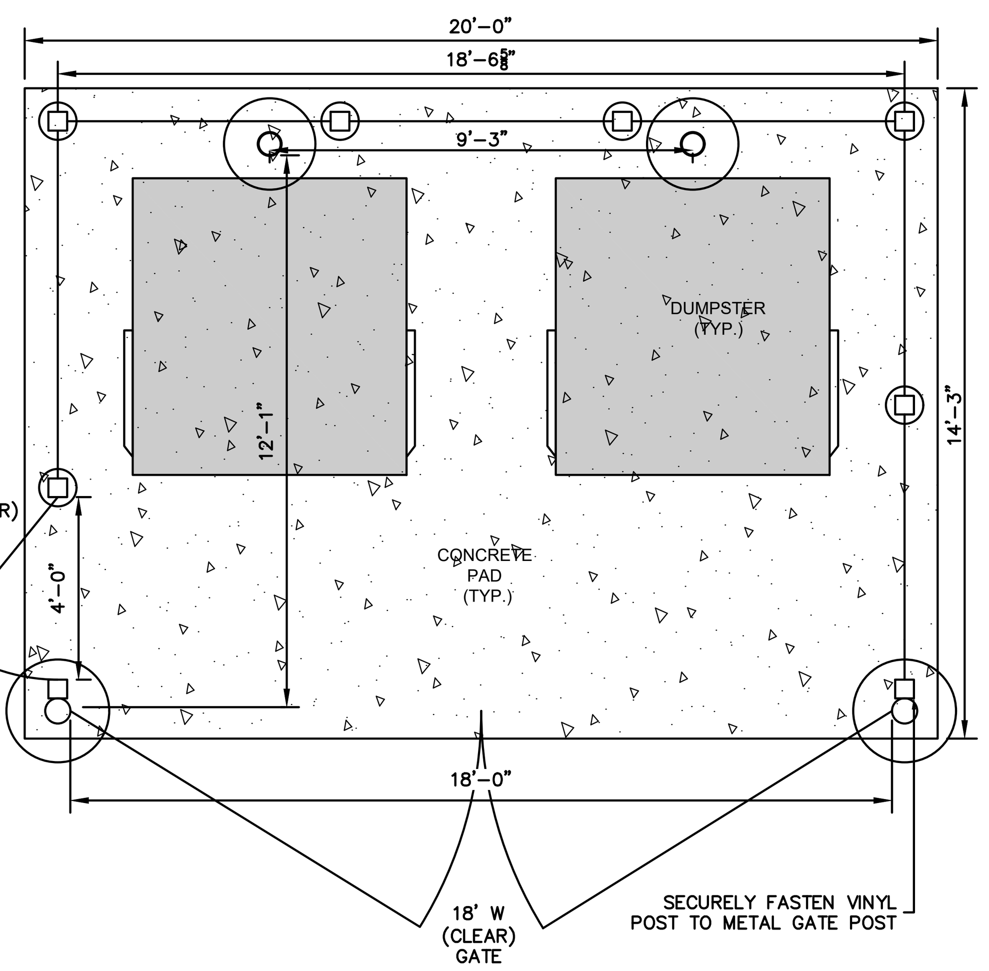
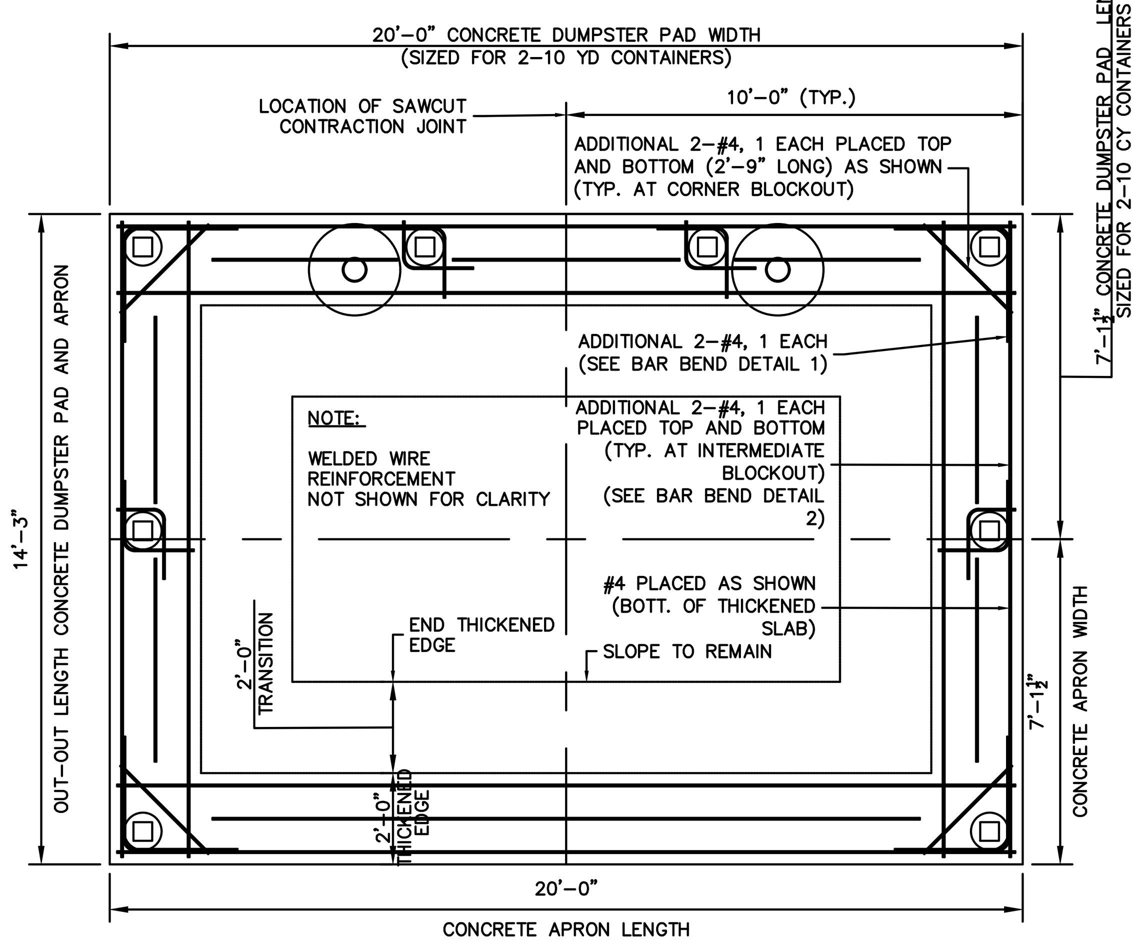
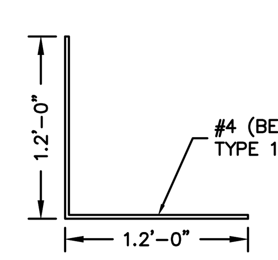


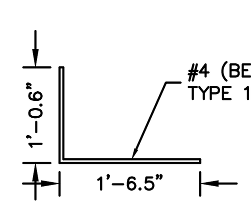
DUMPSTER PAD LAYOUT



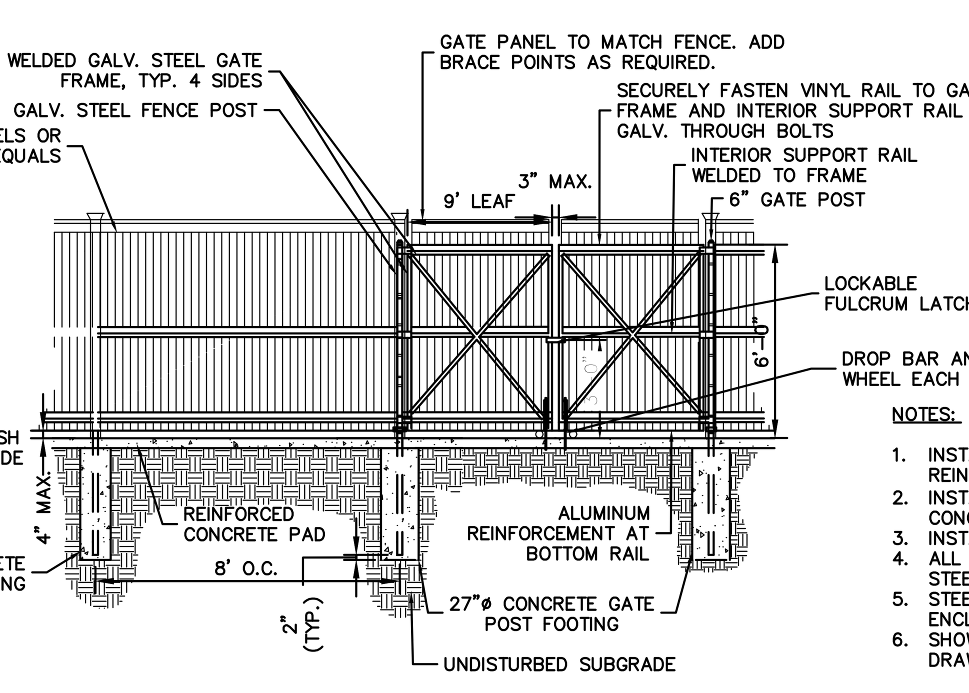
CONCRETE SLAB LAYOUT



BAR BEND DETAIL 1



BAR BEND DETAIL 2



FENCE FRAMEWORK SCHEDULE

FENCE HEIGHT	UP TO 4'	5' TO 6'
FENCE POST	2.375" O.D.	2.875" O.D.
TOP AND BOTTOM RAIL	1.6" O.D.	2.375"
MIDDLE RAIL	NONE	2.375"
FOOTING	12" DIA.	12" DIA.

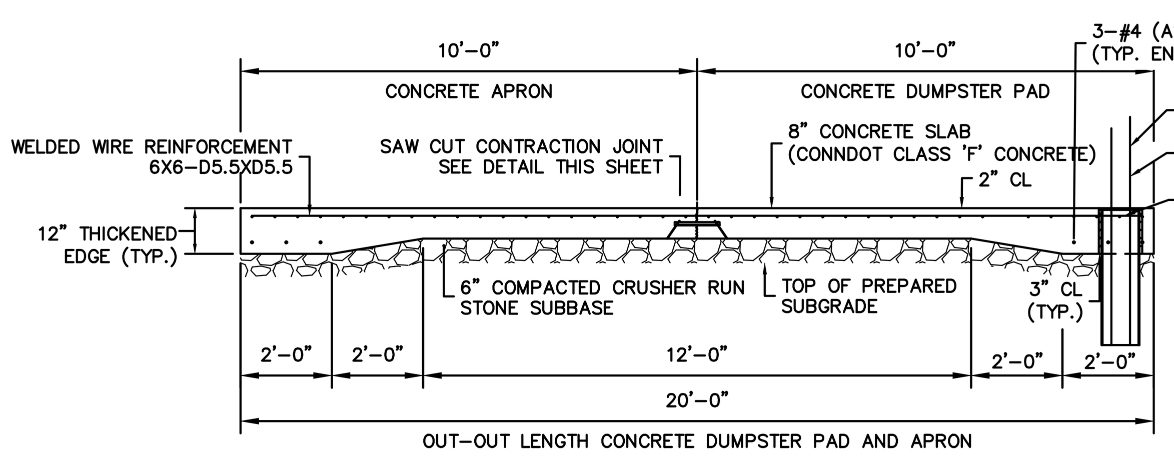
GATE FRAMEWORK SCHEDULE

GATE LEAF WIDTH	6'W OR LESS	>6'W – <12'W
GATE POST	6" O.D.	6" O.D.
GATE FRAME (4 SIDES)	2"	2.375"
INTERIOR SUPPORT	NONE	2.375"
HEAVY DUTY HINGE	3 PER LEAF	3 PER LEAF
FOOTING	16" DIA.	24" DIA.

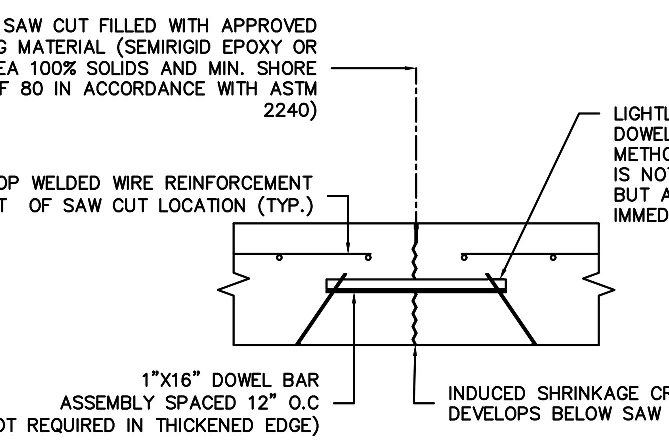
NOTES:
1. INSTALL FENCE FOOTINGS PRIOR TO INSTALLATION OF REINFORCED CONCRETE PAD.
2. INSTALL FENCE POSTS 6" FROM THE EDGE OF THE CONCRETE PAD.
3. INSTALL STOCKADE ON OUTSIDE OF POSTS.
4. ALL FENCE POSTS SHALL BE SCHEDULE 80 GALV. STEEL.
5. STEEL POSTS SHALL NOT BE VISIBLE FROM OUTSIDE OF ENCLOSURE.
6. SHOWN FOR DIAGRAMMATIC PURPOSES. PROVIDE SHOP DRAWING FOR APPROVAL.

DUMPSTER PAD ENCLOSURE

DUMPSTER ENCLOSURE
SCALE: NONE



CONCRETE SLAB SECTION



SAWCUT CONTRACTION JOINT DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION *DATE*

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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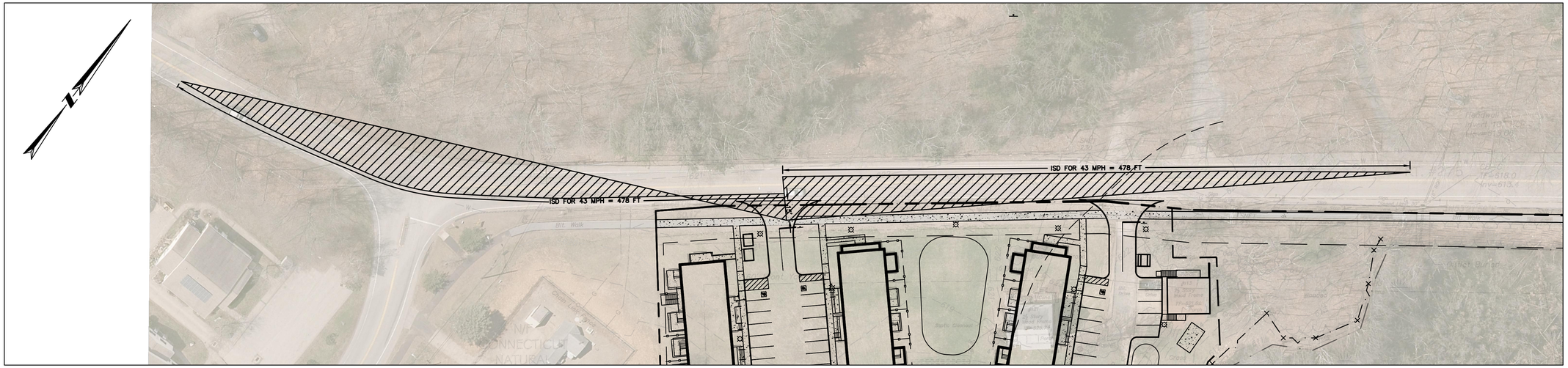
SCALE: AS SHOWN

FILE: 8374900–DET.DWG
DWG. NO: C-6.5
JOB. NO: 83749.00



WEST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

EAST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

NOTES:

1. INTERSECTION SIGHT DISTANCE IDENTIFIED ON THIS PLAN IS DESIGNED IN ACCORDANCE WITH THE CONNECTICUT HIGHWAY DESIGN MANUAL, CHAPTER 11 "INTERSECTIONS AT GRADE," SECTION 2.03.01 – FIGURE 11–2C "INTERSECTION SIGHT DISTANCES (TWO–LANE HIGHWAY OR STREET)."
2. THE 85TH PERCENTILE SPEED ON SOUTH EAGLEVILLE ROAD (STATE ROUTE NO. 275) AT THE LOCATION OF THE SITE IS 43 MPH.
3. THE INTERSECTION SIGHT DISTANCE FOR A PASSENGER VEHICLE MAKING A LEFT TURN ONTO THE 43 MPH ROAD IS 478 FEET ALONG THE VEHICLE PATH.
4. THE INTERSECTION SIGHT DISTANCE LINE OF SIGHT IS MEASURED 15 FEET BACK OF THE GUTTER LINE AT THE CENTER OF THE EXIT LANE.
5. THE APPROACH GRADE AT BOTH INTERSECTIONS IS LESS THAN +3.0% SLOPE.

INTERSECTION DISTANCES (MINIMUM REQUIRED = 478 FEET):

WEST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = 478 FEET

EAST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = GREATER THAN 600 FEET

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- PROPOSED CURBING
- INTERSECTION SIGHT DISTANCE TRIANGLE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

INTERSECTION SIGHT DISTANCE PLAN

NOVEMBER 25, 2019

REVISIONS:

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PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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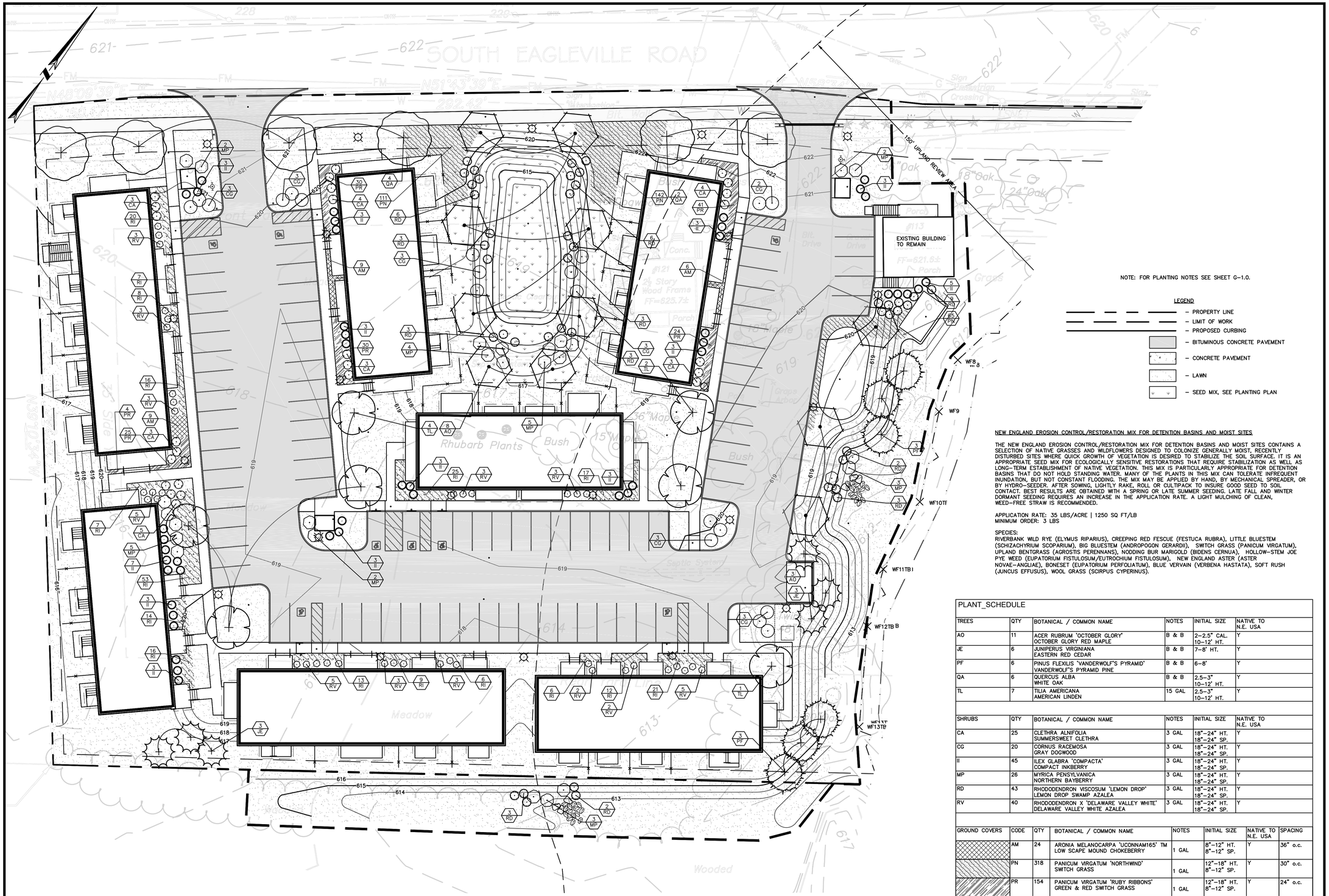
SCALE: 1" = 40'
0 20 40 80 FEET

FILE: 8374900–ISD.DWG
DWG. NO:
JOB. NO: 83749.00

C-7.0



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG-TERM ESTABLISHMENT OF NATIVE VEGETATION. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS THAT DO NOT HOLD STANDING WATER. MANY OF THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDATION, BUT NOT CONSTANT FLOODING. THE MIX MAY BE APPLIED BY HAND, BY MECHANICAL SPREADER, OR BY HYDRO-SEEDER. AFTER SOWING, LIGHTLY RAKE, ROLL OR CULTIPACK TO INSURE GOOD SEED TO SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE FALL AND WINTER DORMANT SEEDING REQUIRES AN INCREASE IN THE APPLICATION RATE. A LIGHT MULCHING OF CLEAN, WEED-FREE STRAW IS RECOMMENDED.

APPLICATION RATE: 35 LBS/ACRE | 1250 SQ FT/LB
MINIMUM ORDER: 3 LBS

SPECIES:
RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW-STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

PLANT_SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
AO	11	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	B & B	2-2.5" CAL. 10-12' HT.	Y
JE	6	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	B & B	7-8' HT.	Y
PF	6	PINUS FLEXILIS 'VANDERWOLF'S PYRAMID' VANDERWOLF'S PYRAMID PINE	B & B	6-8'	Y
QA	6	QUERCUS ALBA WHITE OAK	B & B	2.5-3" 10-12' HT.	Y
TL	7	TILIA AMERICANA AMERICAN LINDEN	15 GAL	2.5-3" 10-12' HT.	Y

SHRUBS	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
CA	25	CLETHRA ALNIFOLIA SUMMERSWEET CLETHRA	3 GAL	18"-24" HT. 18"-24" SP.	Y
CG	20	CORNUS RACEMOSA GRAY DOGWOOD	3 GAL	18"-24" HT. 18"-24" SP.	Y
II	45	ILEX GLABRA 'COMPACTA' COMPACT INKBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
MP	26	MYRICA PENSYLVANICA NORTHERN BAYBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
RD	43	RHODODENDRON VISCOSUM 'LEMON DROP' LEMON DROP SWAMP AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y
RV	40	RHODODENDRON X 'DELAWARE VALLEY WHITE' DELAWARE VALLEY WHITE AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA	SPACING
	AM	24	ARONIA MELANOCARPA 'UCONNAM165' TM LOW SCAPE MOUND CHOKEBERRY	1 GAL	8"-12" HT. 8"-12" SP.	Y	36" o.c.
	PN	318	PANICUM VIRGATUM 'NORTHWIND' SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	30" o.c.
	PR	154	PANICUM VIRGATUM 'RUBY RIBBONS' GREEN & RED SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	24" o.c.
	RI	250	RUDBECKIA FULGIDA 'INDIAN SUMMER' CONEFLOWER	1 GAL	8"-12" HT. 8"-12" SP.	Y	30" o.c.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · RACHEL NICOLE SALCH · LICENSED LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/12/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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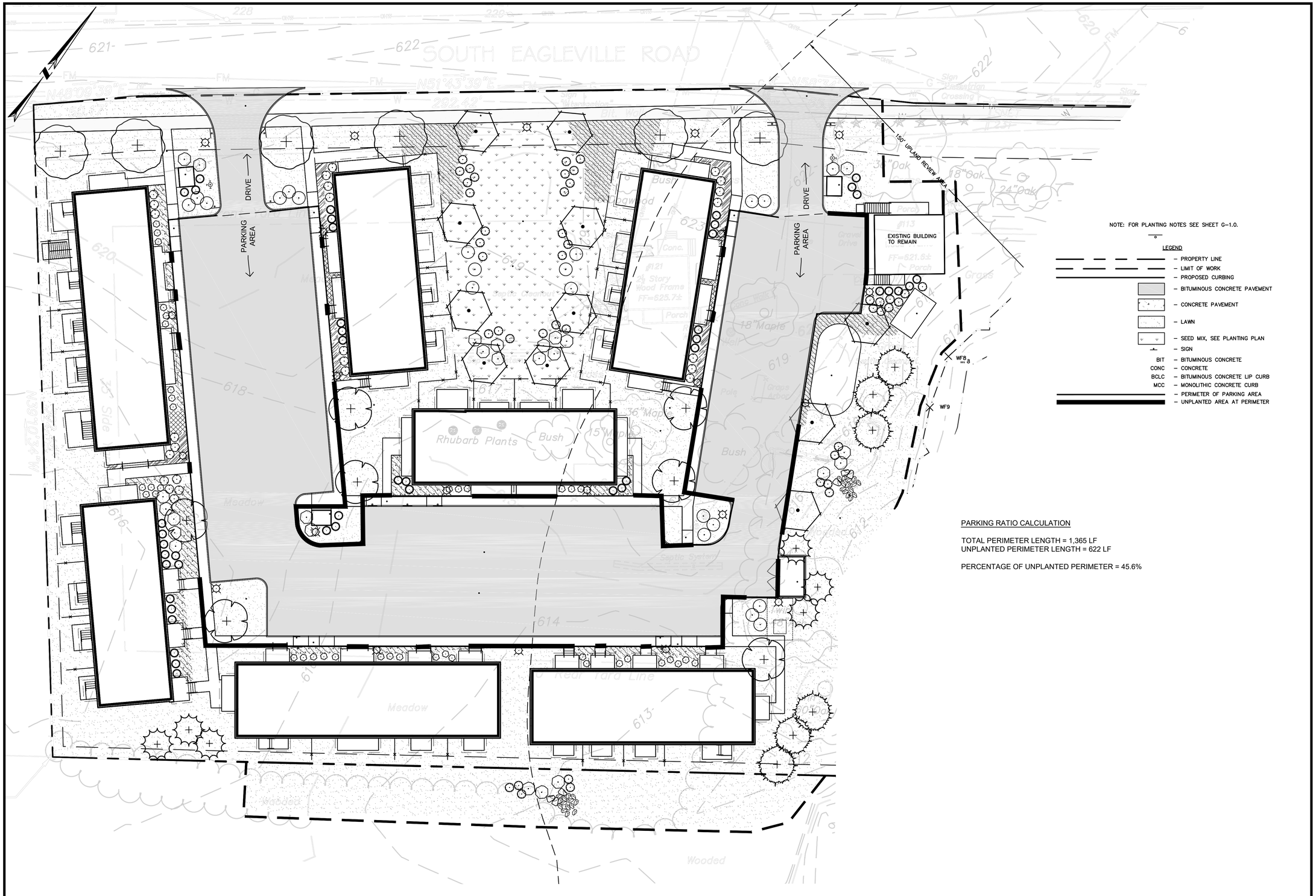
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PLANT.DWG
DWG. NO: L-1.0
JOB. NO: 83749.00



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB
– PERIMETER OF PARKING AREA
– UNPLANTED AREA AT PERIMETER

PARKING RATIO CALCULATION

TOTAL PERIMETER LENGTH = 1,365 LF
UNPLANTED PERIMETER LENGTH = 622 LF

PERCENTAGE OF UNPLANTED PERIMETER = 45.6%

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
RACHEL NICOLE SALCH
LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING RATIO

NOVEMBER 25, 2019

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SCALE: 1" = 20'
0 10 20 40 FEET

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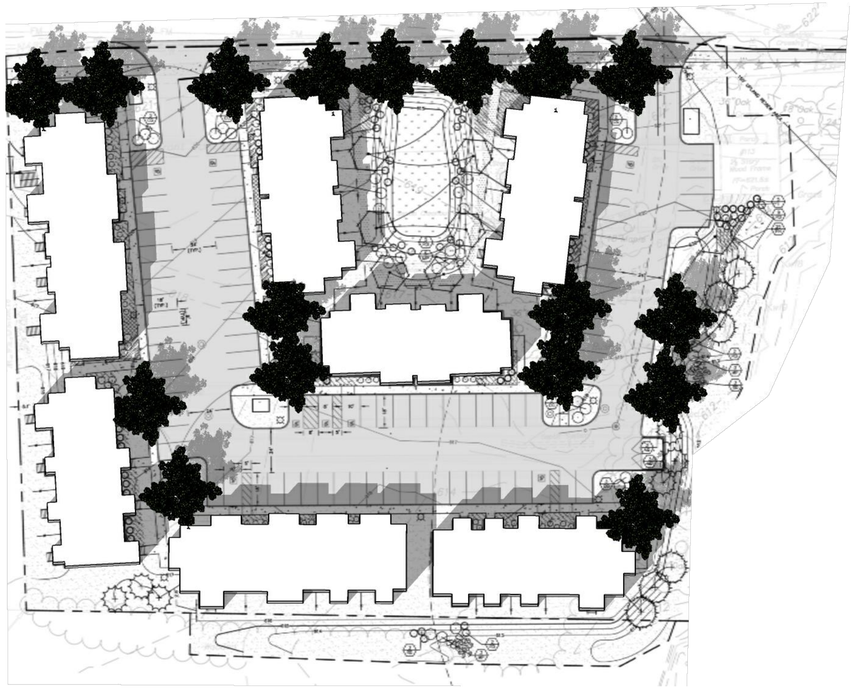
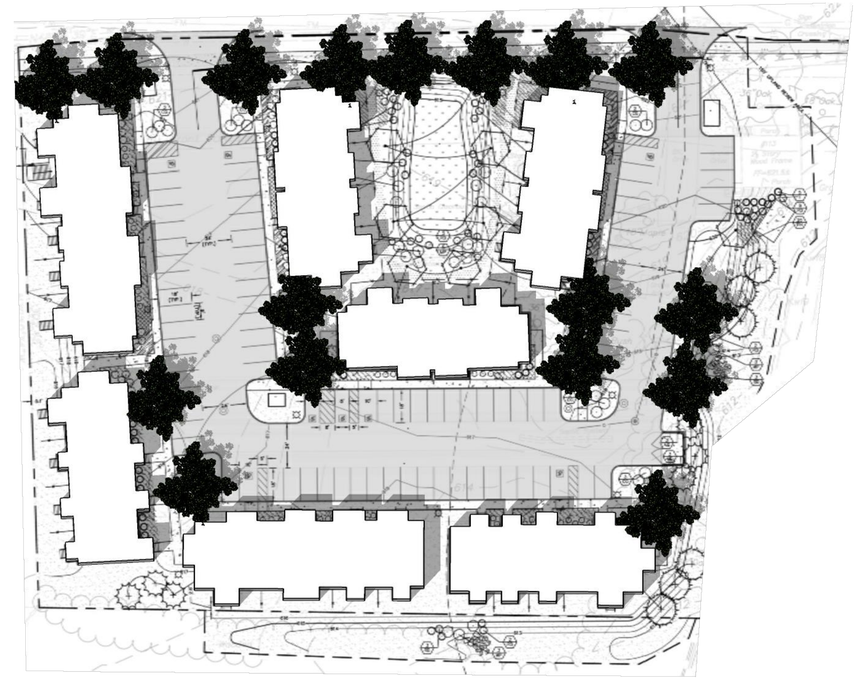
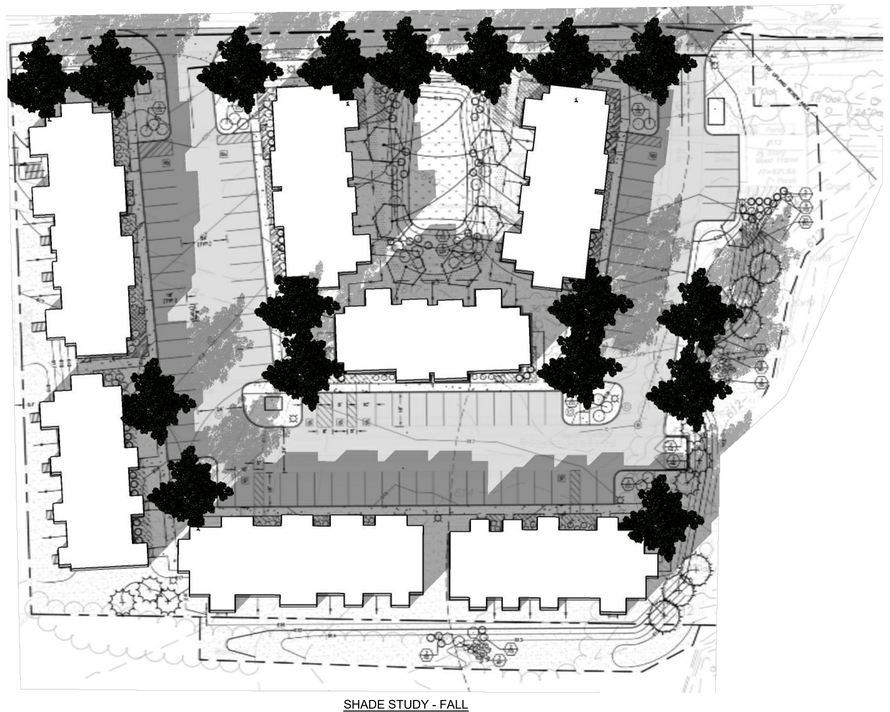


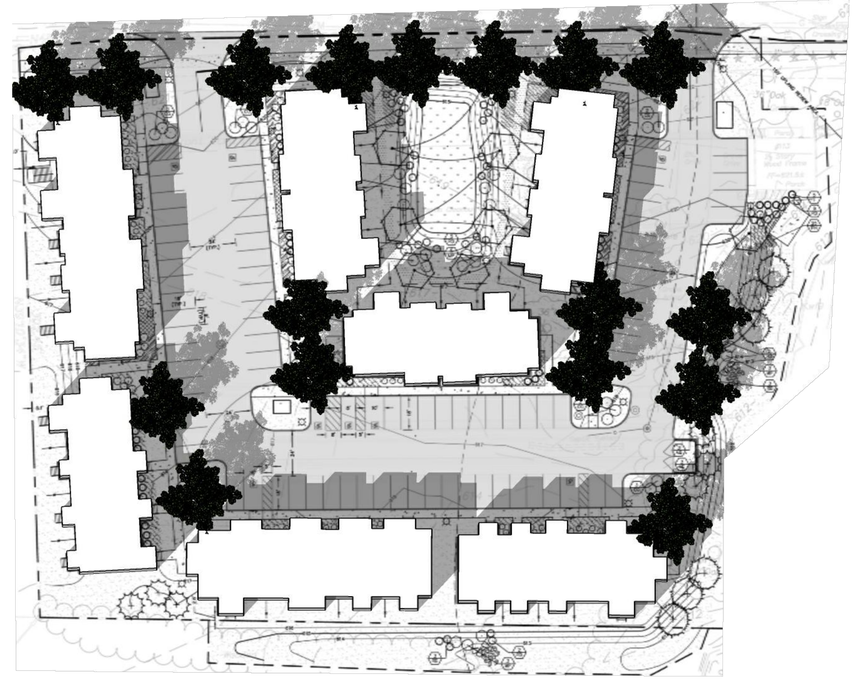
SHADE STUDY - SPRING



SHADE STUDY - SUMMER



SHADE STUDY - FALL



SHADE STUDY - WINTER

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SHADE STUDY

NOVEMBER 25, 2019

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STORRS, CT 06268

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SCALE: NONE

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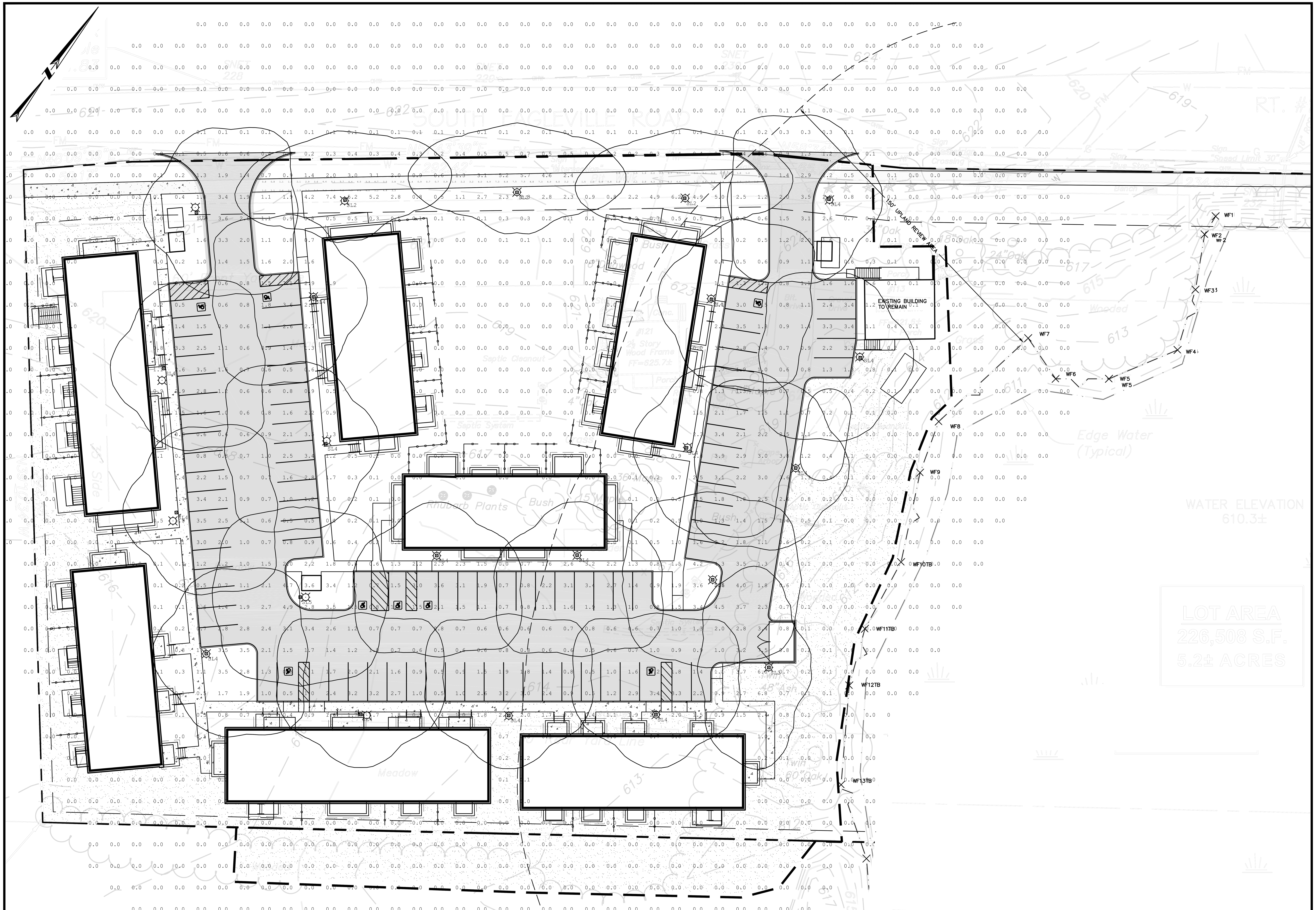
L-1.2



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CHAIRMAN - PLANNING AND ZONING COMMISSION   DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

PHOTOMETRICS PLAN

NOVEMBER 25, 2019

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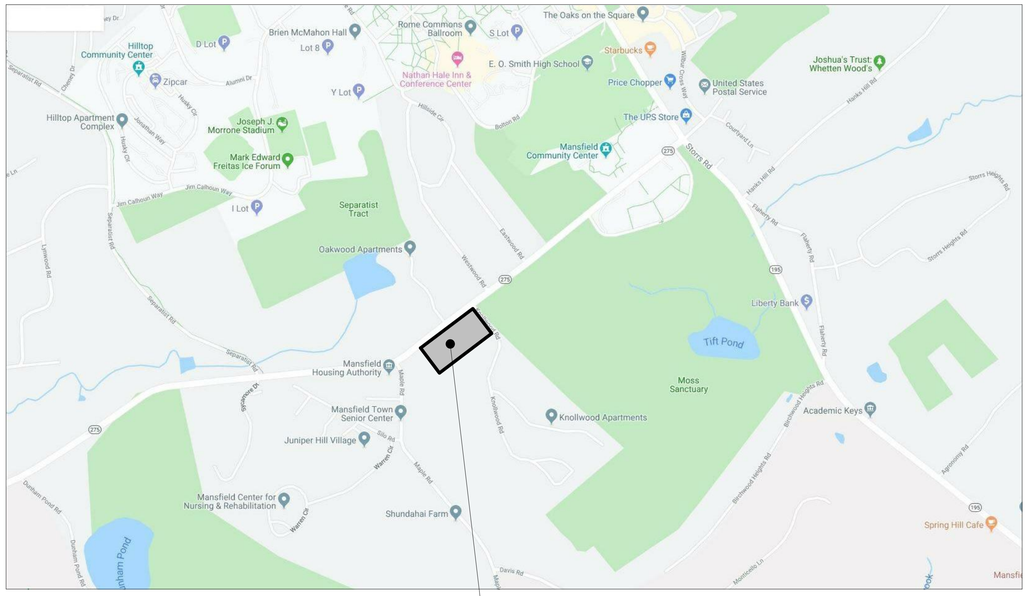
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PHOTO.DWG
DWG. NO:
JOB. NO: 83749.00
L-2.0

1 A1.1 CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	dorgan architecture & planning	SHEET TITLE: SITE PLAN
		1 Revision #1 2/11/20	PROJECT NAME: EAGLEVILLE GREEN
		REVISIONS:	PROJECT #: DRAWN BY:
			DATE: 2/6/20
			SHEET NUMBER A1.1



1 A1.1a LOCATION PLAN
SCALE: 1" = 1'-0"

PARKING

(79) REGULAR SPACES
(8) ACCESSIBLE SPACES

(87) TOTAL SPACES

87 SPACES/ 42 DWELLING UNITS = 2.07 SPACES/ UNIT

UNITS PER ACRE

PROPERTY AREA = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = +/-3.2 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 13.125

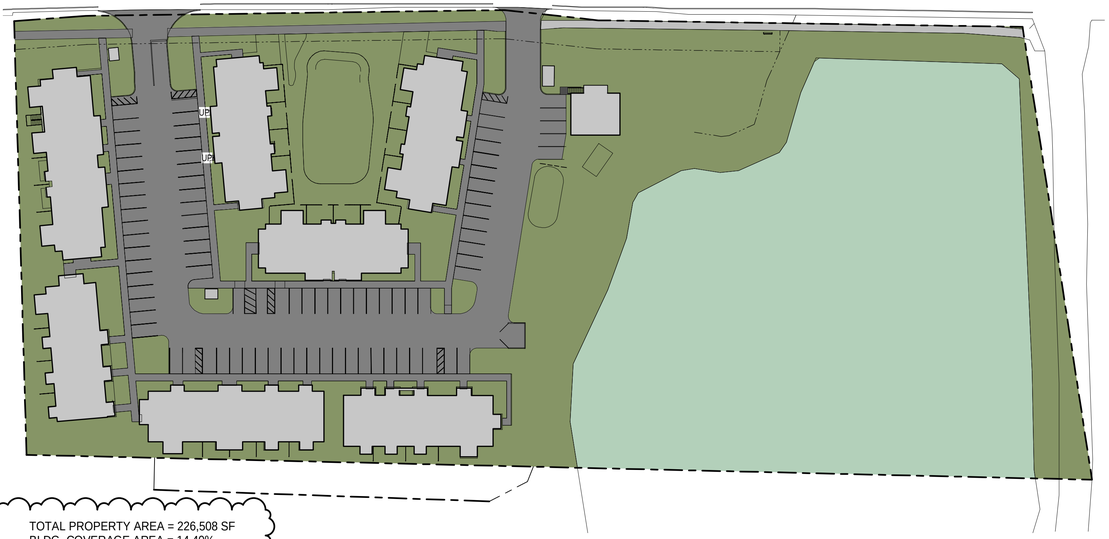
BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNIT BREAKDOWN

UNIT TYPE	UNIT QUANTITY.		AFFORDABLE UNITS*				BEDS		BATHS		1/2 BATHS		NET AREA		COMMENTS
	QTY.	TOTAL	80%	60%	TOTAL	RENT	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	
1 BEDROOM - TYPE #1	6		2	1			1	6	1	6	0	0	706	4,236	Typical 1st floor unit
1 BEDROOM - TYPE #2	8		1	2			1	8	1	8	0	0	780	6,240	Typical 2nd floor unit
1 BEDROOM - TYPE #3	1						1	1	1	1	0	0	780	780	2nd floor - stacked over 3 BR
1 BEDROOM - TYPE #4	1						1	1	1	1	0	0	750	750	2nd floor - stacked over 3 BR
1 BEDROOM - ACCESSIBLE	2						1	2	1	2	0	0	706	1,412	1st floor - accessible
Total 1 BEDROOM UNITS		**18**	3	3	**6**										
2 BEDROOM - TYPE #1	12		2	2			2	24	1	12	1	12	1,045	12,540	Typical 2 story unit
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2						2	4	1	2	0	0	980	1,960	1st floor - accessible
2 BEDROOM - TYPE #3	2		1				2	4	1	2	0	0	1,060	2,120	2nd floor - stacked over 2 BR
2 BEDROOM - EXISTING BUILDING	1						2	2	1	1	1	1	1,200	1,200	Renovated exist. residence
Total 2 BEDROOM UNITS		**17**	3	2	**5**										
3 BEDROOM - TYPE #1	6		1	1			3	18	2	12	0	0	1,260	7,560	Typical 2 story unit
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1						3	3	2	2	0	0	1,400	1,400	1st floor - accessible
Total 3 BEDROOM UNITS		**7**	1	1	**2**										
TOTAL		**42**	7	6	**13 (31%)**			73		49		13		40,198	

*** THIS PLAN ILLUSTRATES A TYPICAL DISTRIBUTION OF AFFORDABLE UNITS. THE LOCATION OF AFFORDABLE UNITS WILL FLOAT DEPENDING ON THE NEEDS AND PREFERENCES OF RESIDENTS.**



TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 14.40%

2 A1.1a SITE COVERAGE PLAN
SCALE: 1" = 50'-0"

PROJECT NORTH

3 A1.1a DWELLING UNIT BREAKDOWN
SCALE: 1" = 50'-0"

PROJECT NORTH

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

1	Revision #1	2/11/20

REVISIONS:

SHEET TITLE: SITE INFORMATION

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 2/6/20

SHEET NUMBER A1.1a

BSC GROUP
Transportation ▪ Energy ▪ Land Development

300 Winding Brook Drive
Glastonbury, CT 06033

Tel: 860-652-8227
800-288-8123
Fax: 860-652-8229

www.bscgroup.com

November 25, 2019
Revised February 12, 2020
Revised March 9, 2020

Ms. Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Traffic Summary
Mansfield Nonprofit Housing Development Corporation
Traffic Summary - Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

BSC Group-Connecticut, Inc. (BSC) is pleased to submit this summary of traffic-related considerations associated with *Mansfield Nonprofit Housing Development Corporation's* proposed Eagleville Green housing project located at 113-121 South Eagleville Road (S.R. 275) in the Town of Mansfield (the "Town"), Connecticut.

1.0 INTRODUCTION

The Eagleville Green development is located on a 5.2-acre parcel and will consist of seven (7) new multi-story housing buildings, accommodating 42 dwelling units, renovation of an existing house, surface parking for 87 vehicles, and other "typical" site improvements to support the proposed building program. In addition to the constructed building complex, the site will include access via two driveways intersection S.R. 275, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site.

2.0 REGULATORY SUMMARY

2.1 Local Regulations

The project is located in the South Eagleville Road Housing Zone. Local regulations were used as the standard for the site design.

2.2 State Regulations

Office of the State Traffic Administration - Pursuant to Sections 14-311 and 14-311c of the Connecticut General Statutes, major traffic generators (MTG) are regulated as to their traffic impact on the state highway system in Connecticut by the Office of the State Traffic Administration (OSTA). A MTG is defined by Section 14-312-1 of the OSTA regulations as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces. The OSTA authority under these statutes applies to new MTGs as well as expansions

Engineers
Environmental Scientists
GIS Consultants
Landscape Architects
Planners
Surveyors

or land use changes to those already in existence. However, entirely residential developments of 100 units or less are exempt from OSTA regulation under these statutes. The regulation of MTGs by the OSTA is accomplished via either an Administrative Decision (AD) or certification process (Certificate).

Although located on a State Highway (Route 275), the project does not require a MTG as it does not include 100,000 square feet or more of gross floor area, 200 or more parking spaces, and is an entirely residential development less than 100 units.

Encroachment Permit - The regulations associated with encroachments on the State highway system are defined in Section 13b-17 ("Encroachment Permit Regulations") of the Connecticut General Statutes. The proposed development includes two (2) driveways that will encroach on the state highway system (intersecting the S.R. 275 right-of-way) and therefore will require an Encroachment Permit from CTDOT District 2. Project plans depicting the proposed improvements will be submitted to CTDOT District 2 for their review following issuance of local land-use approvals. In accordance with the Encroachment Permit process, the contractor will secure the actual Encroachment Permit when the work has been scheduled.

Driveway Permit - Section 13a-143a (Driveway Permits) of the Connecticut General Statutes, requires a permit from the Commissioner of Transportation to construct a new driveway or relocate an existing driveway leading onto a state highway. In determining the advisability of issuing such permit, the commissioner shall include, in his consideration, the location of the driveway with respect to its effect on highway drainage, highway safety, the width and character of the highway affected, the density of traffic thereon and the character of such traffic.

3.0 DEVELOPMENT SUMMARY

Ingress/Egress - Ingress/egress for the project is accommodated with two (2) driveways intersection S.R. 275. S.R. 275 (South Eagleville Road) is classified by CTDOT as a two-lane bi-directional minor arterial. There is one-way circulation on the property. The western driveway serves as the entrance with the drivers from the property exiting through the eastern driveway. The exit lane is stop-controlled with a stop sign (MUTCD R1-1/CTDOT 31-0536) and a 12-inch wide white stop bar. The curb radius of each driveway is 25-feet. The intersection site distance at each driveway has been assessed at over 478-ft., which exceeds the minimum sight distance required for the 85th percentile speed of 43mph on S.R. 275 in the vicinity of both driveways.

Circulation and Parking - The parking area is configured as a single, continuous loop with a 24-foot drive isle that meets each driveway at S.R. 275. Parking fields are generally laid-out in three (3) primary areas, accommodating a total of 87 spaces (79 standard spaces and 8 handicapped parking spaces). Standard parking spaces are configured 90-degrees to the curb and are 9 feet wide by 20-feet deep, delineated with 4-inch white lines. Handicapped parking spaces are configured 90-degrees to the curb and consist of passenger car spaces (10-foot wide with a 5-foot access isle) and van spaces (8-foot wide with an 8-foot access isle). Handicapped parking signs are in accordance with the 2018 Connecticut State Building Code.

Traffic Impact – The CT DOT performed traffic counts at the nearby intersection of Route 275 at Separatist Road and Sycamore Drive on Thursday, September 12, 2019. This study represents the most accurate traffic information available for Route 275. During the morning peak between 7am-9am, South Eagleville Road (Route 275) had a combined number of trips

(east and west) of 1,410 vehicles. During the evening peak between 4pm-6pm, South Eagleville Road had a combined number of trip (east and west) of 1,494 vehicles.

Eagleville Green is proposed to have 42 dwelling units developed on the property. It is expected that these units will add vehicle trips to Route 275. To determine the number of expected trips during the peak morning and evening hours, the Institute of Transportation Engineer (ITE) Trip Generation Manual (7th Edition) was consulted. The units that are being proposed for this development can be best described as Low-Rise Apartment units in accordance with the Trip Generation Manual. It is expected that during the peak morning hours, the proposed development will generate 30 vehicle trips. During the peak evening hours, the proposed development is expected to generate 33 vehicle trips. These additional trips from the proposed development represent approximately a 2% increase to the existing peak volumes on Route 275. It can also be assumed that a percentage of the people who would be living in the proposed development already live in the area and may have already been counted in the base numbers for Route 275.

It is our opinion that the small increase in vehicle trips generated from this development will not have a significant impact on the capacity of the roadway system to handle the additional volume of anticipated vehicles.

We appreciate the opportunity to be part of your team for this project. Please contact me at 860-652-8227 (extension 4558) if you have any questions or comments.

Sincerely,
BSC Group – Connecticut, Inc.

Kurt A. Prochorena, PE, LEED AP
Principal

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

NOVEMBER 25, 2019

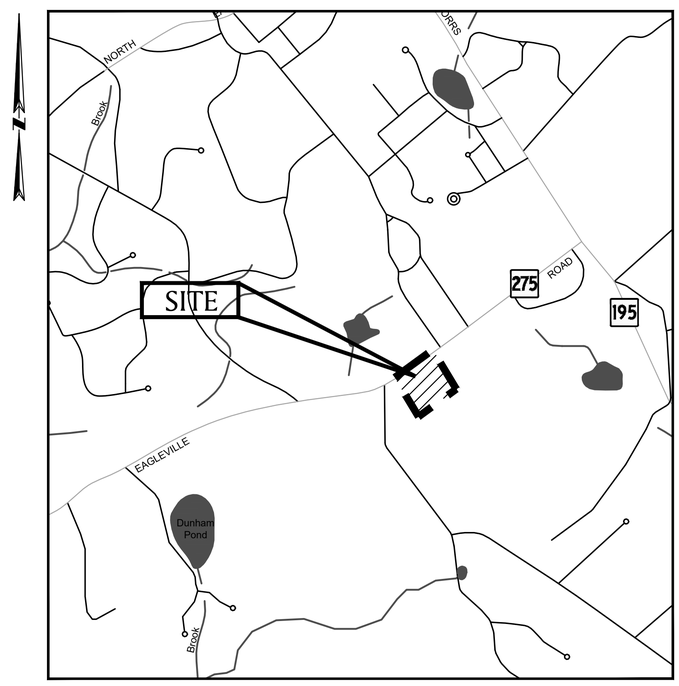
REVISED: MARCH 2, 2020

WETLAND DISTURBANCE = 0
UPLAND DISTANCE = 47,518 SF

ZONING TABLE

ZONE: SER–HO	REQUIRED	EXISTING	PROVIDED
MINIMUM LOT AREA/ACRES	5	5.2	5.2
MINIMUM LOT FRONTAGE (FT)	300	704	704
MINIMUM FRONT SETBACK[1] (FT)	25	44	30
MINIMUM SIDE SETBACK (FT)	5	272	16
MINIMUM STAIR SETBACK (FT)	2	48	2
MINIMUM REAR SETBACK (FT)	5	214	6
MAXIMUM HEIGHT (FT)	45	N/A	33 (WITHOUT CUPOLA) 38'–6" (WITH CUPOLA)
MAXIMUM BUILDING GROUND COVERAGE (%)	20	0.7	14.40
OFF–STREET PARKING	1/UNIT * 42 = 42	N/A	87
ACCESSIBLE PARKING SPACES	4	N/A	8
BUILDABLE AREA (AC)	N/A	N/A	3.2
DWELLING UNITS	–	N/A	42
RESIDENTIAL DENSITY	15	N/A	42/3.2 = 13.125
GROSS FLOOR AREA (SF)	–	N/A	40,198
OPEN SPACE (SF)	–	N/A	103,689

1. MEASURED FROM 30–FOOT HIGHWAY CLEARANCE SETBACK



SITE MAP

500 0 1000 2000 3000 feet

SCALE: 1"=1000'

ISSUED FOR PERMITTING

INDEX OF DRAWINGS

T-1.0	TITLE SHEET
1, 1-2	SITE SURVEYS
EC-1.0	EXISTING CONDITIONS PLAN
OV-1.0	OVERALL SITE IMPROVEMENTS
G-1.0	GENERAL NOTES
C-1.0	EROSION & SEDIMENTATION CONTROL PLAN
C-2.0	SITE PREPARATION PLAN
C-3.0	LAYOUT & MATERIALS PLAN
C-3.1	UCONN FIRE TRUCK TURNING MOVEMENT PLAN
C-4.0	GRADING & DRAINAGE PLAN
C-5.0	UTILITY PLAN
C-5.1	SANITARY SEWER PLAN & PROFILE
C-6.0-6.5	DETAILS
C-7.0	INTERSECTION SIGHT DISTANCE PLAN
L-1.0	PLANTING PLAN
L-1.1	PLANTING RATIO
L-1.2	SHADE STUDY
L-2.0	PHOTOMETRICS PLAN
A1.1	SITE PLAN
A1.1a	SITE INFORMATION

PREPARED FOR:

MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

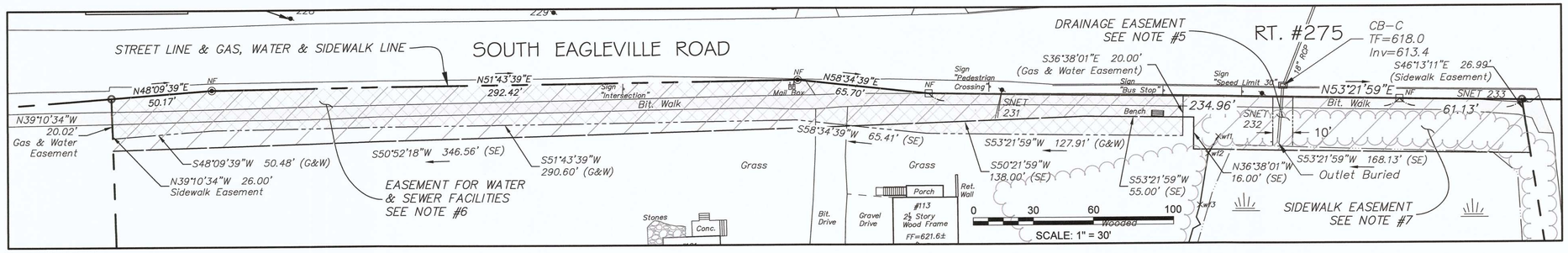
PREPARED BY:

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

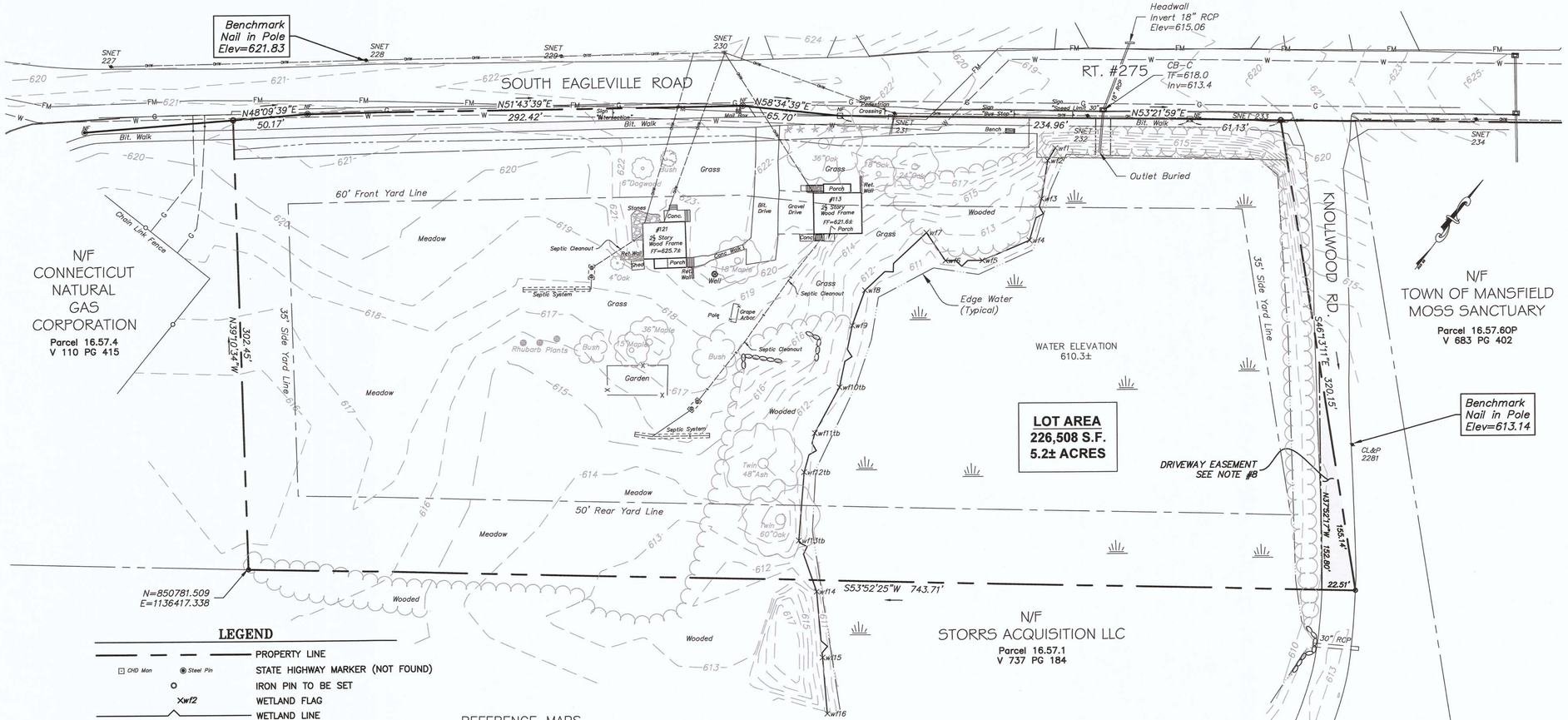
APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

JOB NO: 83749.00 DWG NO: SHEET T–1.0



DETAIL DEPICTING EASEMENTS
Scale 1"=30'



LEGEND

- PROPERTY LINE
- CHD Mon / Steel Pin — STATE HIGHWAY MARKER (NOT FOUND)
- IRON PIN TO BE SET
- Xwf2 — WETLAND FLAG
- WETLAND LINE
- 616 — EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G — GAS MAIN
- W — WATER MAIN
- FM — SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW — OVERHEAD ELECTRIC WIRE
- WELL

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.

2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rossman, RLS 4797 Book 9 P 14 Mansfield Land Records

3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records

4. Map Showing Easement to be Acquired From Elsie Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 12 Page 92 Mansfield Land Records

5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records

6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-6-1996 Meehan & Goodin Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records

7. Resurvey Prepared For The University Of Connecticut South Eagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

8. Water And Sewer Services Mansfield Retirement Community, Mansfield Connecticut South Eagleville Road Sta. 11+00 to Sta. 25+70 sheets #2 & #3, Scale As Noted Date: Aug. 1979 Rev. As Built 10-22-80 Loureiro Engineering Associates.

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.

3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM. EXISTING GROUND CONTOURS ARE 1' INTERVAL.

4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS AREA=226,508 S.F. 5.2± ACRES

5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF. MAP #3 AREA=180± S.F.

6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 200 REF. MAP #4. AREA=10,696± S.F.

7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5. AREA=16,250± S.F.

8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 285 REF. MAP #6. AREA=1,655± S.F.

9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.

10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981

11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2006. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.

12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.

13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE 6/27/16

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Basemap

Drawing Scale: 1"=40'
Drawing date: June 27, 2016

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD

STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
19 Midstate Drive AUBURN, MA (508) 721-7000
140 Willow Street WINSTED, CT (860) 379-9669
2210 Main Street GLASTONBURY, CT (860) 659-3100

Drawing #: 1

Job #: 16-358

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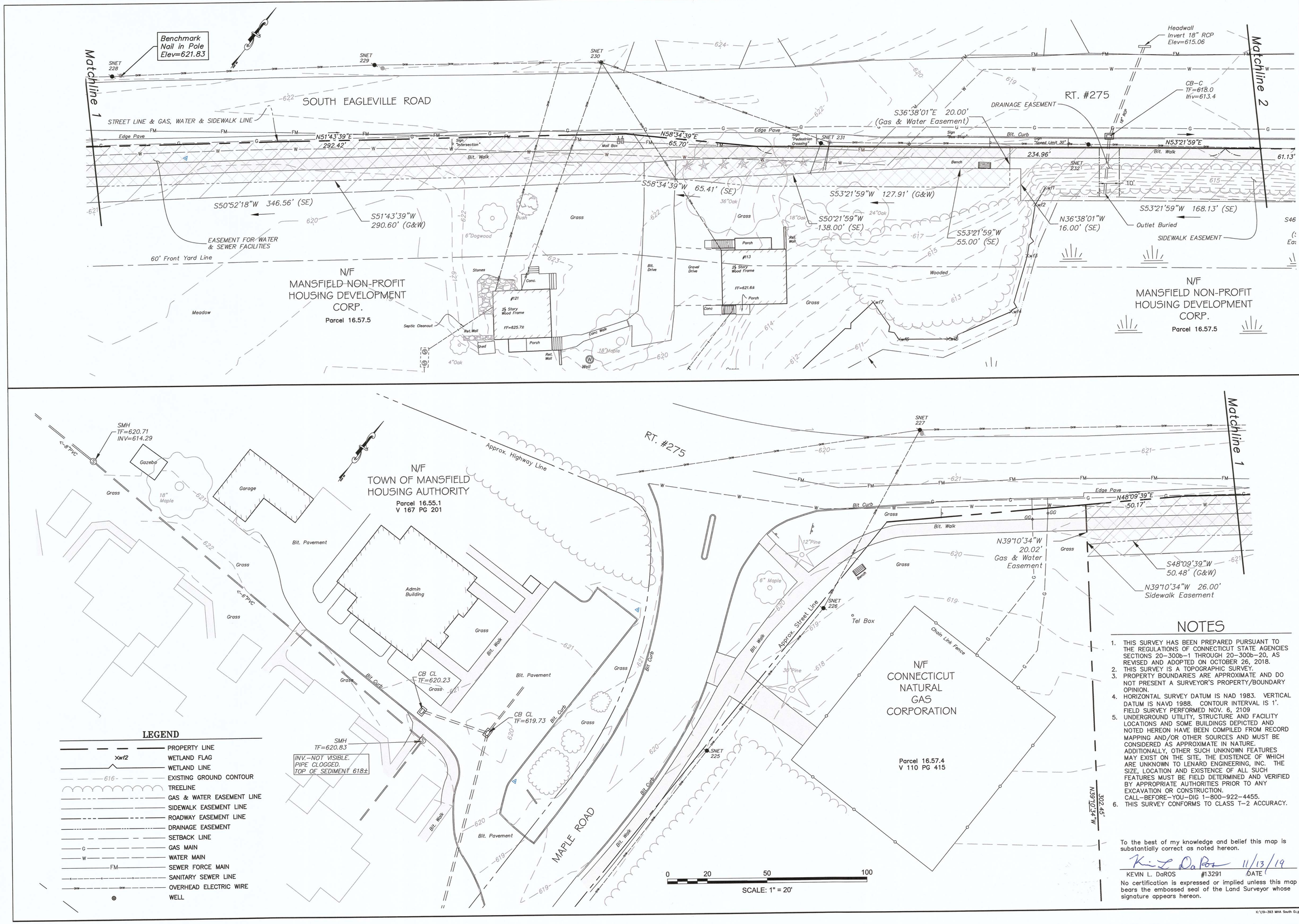

LEGEND

- PROPERTY LINE
- Xwf2 — WETLAND FLAG
- WETLAND LINE
- 616 — EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G — GAS MAIN
- W — WATER MAIN
- FM — SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW — OVERHEAD ELECTRIC WIRE
- WELL

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20, AS REVISED AND ADOPTED ON OCTOBER 26, 2018.
2. THIS SURVEY IS A TOPOGRAPHIC SURVEY.
3. PROPERTY BOUNDARIES ARE APPROXIMATE AND DO NOT PRESENT A SURVEYOR'S PROPERTY/BOUNDARY OPINION.
4. HORIZONTAL SURVEY DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988. CONTOUR INTERVAL IS 1'. FIELD SURVEY PERFORMED NOV. 6, 2109
5. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS AND SOME BUILDINGS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH UNKNOWN FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION. CALL-BEFORE-YOU-DIG 1-800-922-4455.
6. THIS SURVEY CONFORMS TO CLASS T-2 ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

Kevin L. DaRos 11/13/19

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 1 of 2

Job #: 19-404

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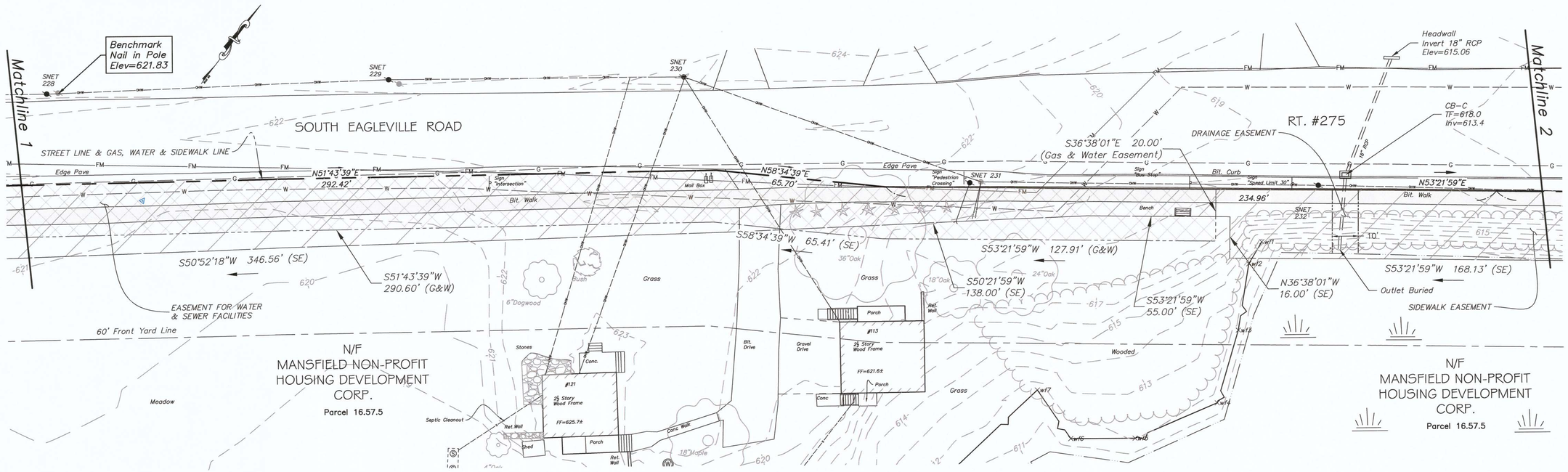

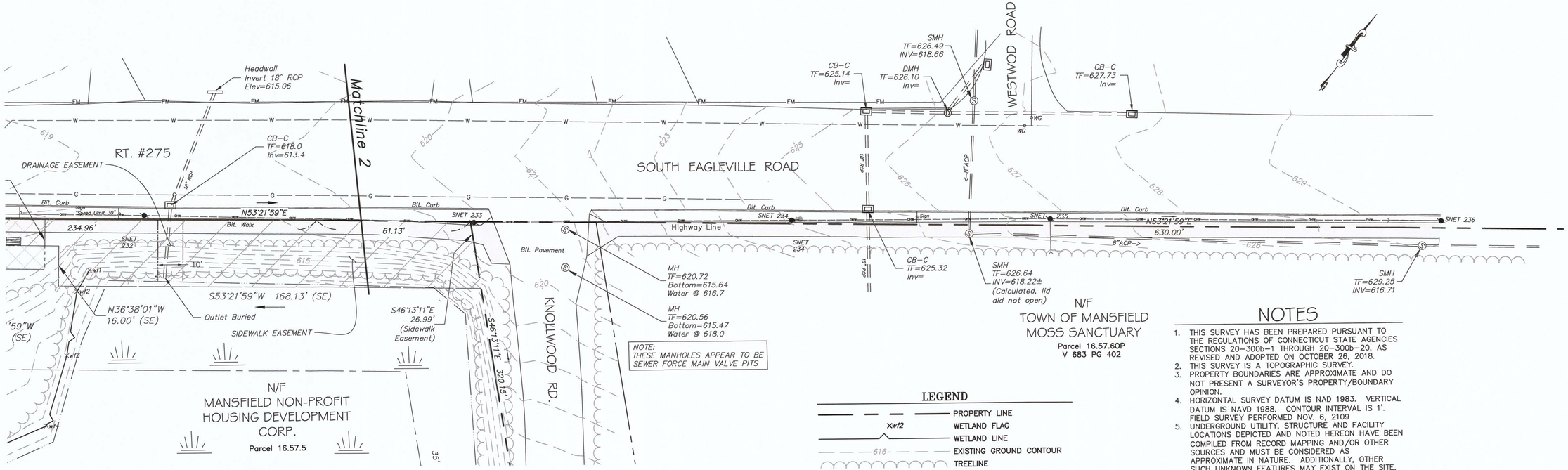

Reference Map:
Property Boundary Survey Prepared for Mansfield Non-Profit Housing Development Corp. 113-121 South Eagleville Road, Storrs, Connecticut. Date June 24, 2016 Scale: 1"=40' Class A-2 and Class T-2 Accuracy Lenard Engineering, Inc. 2210 Main St. Glastonbury, Connecticut

0 20 50 100
SCALE: 1" = 20'

LEGEND

- PROPERTY LINE
- Xwf2 WETLAND FLAG
- WETLAND LINE
- 616 EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
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- WELL

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Kevin L. DaRos 11/13/19
KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-8689
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 2 OF 2

Job #: 19-404

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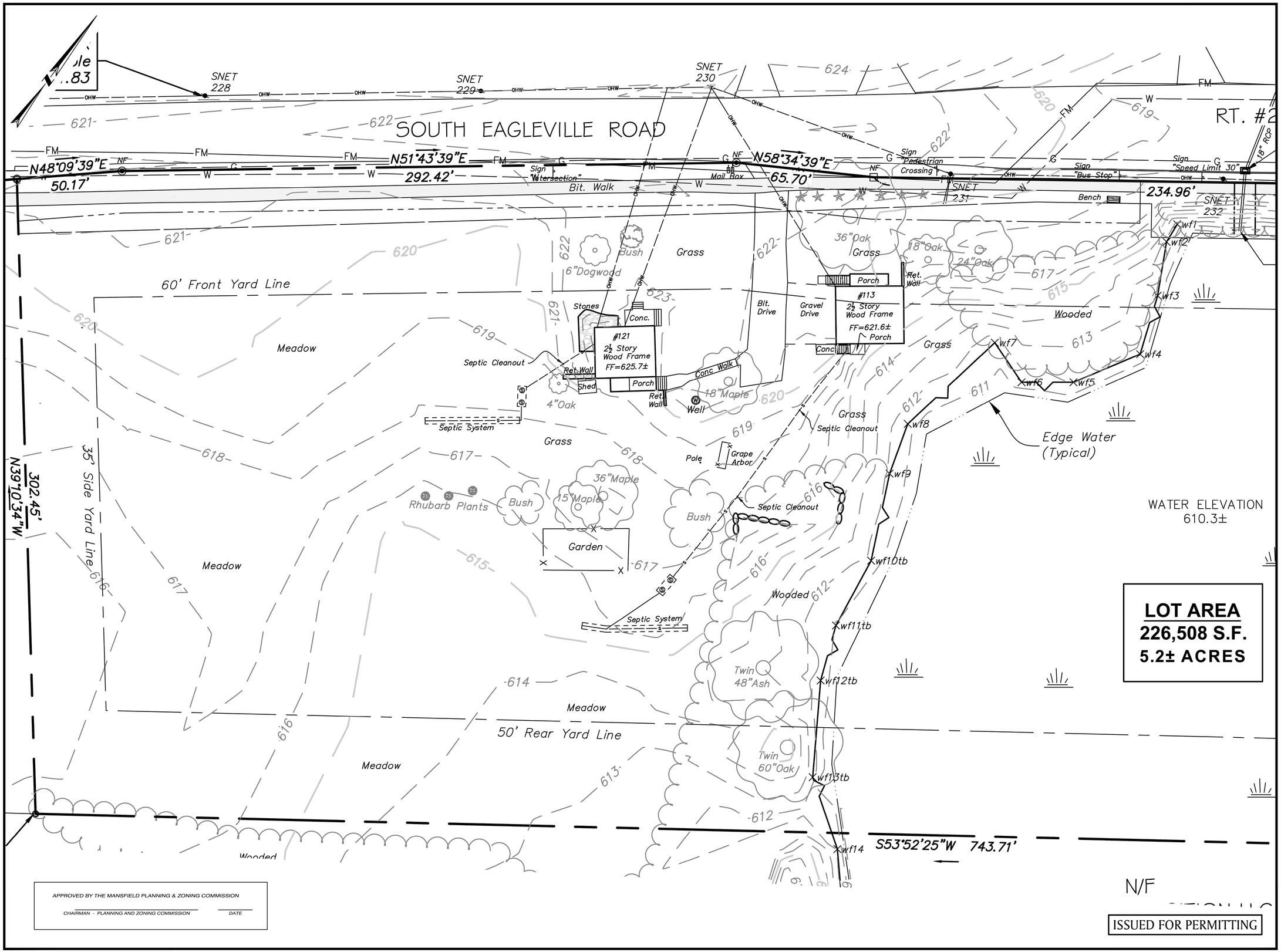


LOT AREA
226,508 S.F.
5.2± ACRES

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING CONDITIONS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

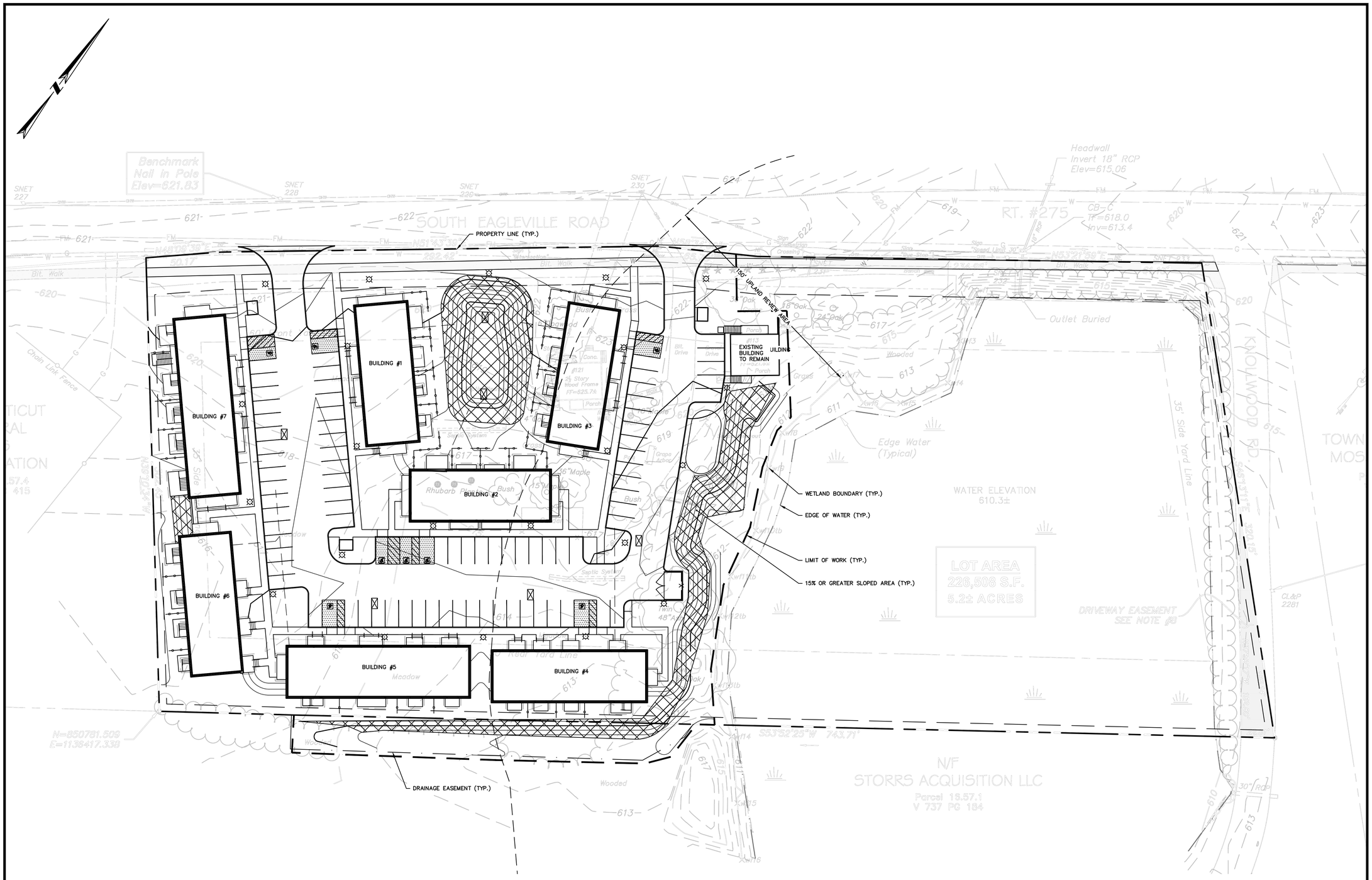
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-EC.DWG
DWG. NO:
JOB. NO: 83749.00

EC-1.0



PROPOSED STEEP SLOPES–15% OR GREATER = 0.25 ACRES
WETLAND AREA = 1.75 ACRES
EARTHWORK FILL = 6,868 CUBIC YARDS
EARTHWORK CUT = 591 CUBIC YARDS
NET EARTHWORK = 6,277 CUBIC YARDS

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

OVERALL SITE IMPROVEMENTS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900–SITE.DWG
DWG. NO:
JOB. NO: 83749.00

OV-1.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EROSION AND SEDIMENTATION CONTROL NOTES:

1. DO NOT PROCEED WITH THE WORK UNTIL ALL E&S CONTROL MEASURES ARE IN-PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. THE MEASURES SPECIFIED ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER OR THE ENGINEER.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2002 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR HAY BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO ENTER ANY STORMWATER SYSTEM OR EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER. SHOULD THE CONSTRUCTION ENTRANCE FAIL TO PREVENT THE TRACKING OF SOILS OR SEDIMENT OFF OF THE PROJECT SITE, A WASHING RACK SHALL BE INSTALLED ALONG WITH APPROPRIATE MEASURES TO COLLECT RESULTING WASTEWATER.
13. DRAINAGE STRUCTURE FILTER INSERTS SHALL BE INSTALLED AND CLEANED/CHANGED PER THE MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL BE INSTALLED COMPLETELY AROUND INLETS OF EXISTING AND PROPOSED DRAINAGE STRUCTURES SUCH THAT NO RUNOFF IS ALLOWED TO ENTER DRAINAGE SYSTEMS WITHOUT FILTERING THROUGH THE DEVICE.

SUGGESTED CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER AND ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. FOLLOWING THE ENGINEER'S APPROVAL OF INSTALLED E&S CONTROLS, COMMENCE CONSTRUCTION OPERATIONS.
5. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.

NOTE: THE CONTRACTOR MAY MODIFY THE SUGGESTED CONSTRUCTION SEQUENCE INDICATED ABOVE, PROVIDED A REVISED SEQUENCE IS SUBMITTED FOR REVIEW AND APPROVED BY THE OWNER AND ENGINEER.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALES	REPAIR DAMAGED AREAS WITHIN 24 HRS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY
HAY BALES/ SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED, REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TARP TEMPORARY STOCKPILES	ENSURE TARP IS SECURED OVER STOCKPILE AT THE END OF EACH DAY	DAILY
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY

PERCOLATION TEST RESULTS:

PERCOLATION TESTS PERFORMED ON 11/21/2019 BY BSC GROUP
SEE SHEET C-4.0 FOR LOCATIONS OF PERCOLATION TESTS

PT-A
DEPTH: ~30"
PRESOAK @ 11:30 AM
DRY @ 12:33 PM
BEGIN TEST @ 12:35 PM

TIME	DEPTH	CHANGE
12:35	9.5"	–
12:36	13.5"	4"
12:37	16.5"	3"
12:38	18.75"	2.25"
12:39	20.25"	1.5"
12:40	21.25"	1"
12:41	22.25"	1"
12:42	15.75"	REFILL
12:43	18"	2.25"
12:44	20"	2"
12:45	21.5"	1.5"
12:46	22.25"	0.75"
12:47	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) = 30 IN/HR

PT-B
DEPTH: ~30"
PRESOAK @ 12:00 PM
BEGIN TEST @ 2:00 PM

TIME	DEPTH	CHANGE
2:00	3"	–
2:05	5.25"	2.25"
2:10	7.25"	2"
2:15	8.75"	1.5"
2:20	10.25"	1.5"
2:25	11.50"	1.25"
2:30	12.50"	1"
2:35	13.50"	1"
2:40	14.50"	1"
2:45	15.50"	1"

EFFECTIVE INFILTRATION RATE (FS=2) = 6 IN/HR

PT-C
DEPTH: ~30"
PRESOAK @ 12:10 PM
DRY @ 12:54 PM
BEGIN TEST @ 1:00 PM

TIME	DEPTH	CHANGE
1:00	5.5"	–
1:01	7.25"	1.75"
1:02	8.25"	1"
1:03	9"	0.75"
1:04	9.75"	0.75"
1:06	11"	1.25"
1:08	12"	1"
1:10	13"	1"
1:12	14"	1"
1:14	14.75"	0.75"
1:16	15.50"	0.75"
1:18	16"	0.50"
1:20	16.5"	0.50"
1:22	17.25"	0.75"
1:24	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) =7.5 IN/HR

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION ______ *DATE* ______

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL CONSTRUCTION FENCING AND WARNING SIGNS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION. INSTALL CONSTRUCTION FENCING AT THE LIMIT OF WORK.
8. PRIOR TO THE TERMINATION, ABANDONMENT, OR REMOVAL OF ANY UTILITY, VERIFY THAT APPLICABLE NOTIFICATIONS HAVE BEEN MADE TO THE UTILITY OWNER/OPERATOR AND THAT THE UTILITY HAS BEEN PROPERLY TERMINATED, CAPPED, OR PLUGGED AS REQUIRED.
9. PROTECT ALL IMPROVEMENTS NOT INCLUDED IN THE SCOPE OF SITE DEMOLITION. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
10. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
11. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.

UTILITY NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.
3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.
4. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
5. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
6. ALL LIGHTING ELECTRICAL SUPPLIES SHALL BE INSTALLED IN MINIMUM 1-INCH PVC CONDUIT PER APPLICABLE SPECIFICATIONS. PLASTIC MARKING TAPE SHALL BE USED ON ALL CONDUIT RUNS.
7. THE ROUTING OF LIGHTING ELECTRICAL SUPPLIES SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DETERMINE THE SPECIFIC ROUTING OF ALL LIGHTING SYSTEMS BASED ON THE ACTUAL LOCATION OF TIE-IN(S) TO EXISTING LIGHTING FEEDS AND AS REQUIRED TO AVOID CONFLICTS WITH OTHER CONSTRUCTION OR SUBSURFACE FACILITIES. PRIOR TO INSTALLATION, PROVIDE SHOP DRAWING SHOWING THE ROUTING OF ALL CONDUIT, LOCATIONS OF HANDHOLES, AND DETAILS OF TIE-INS TO EXISTING SYSTEM.
8. CONDUIT: RIGID PVC ELECTRICAL CONDUIT, NEMA TC 2 AND UL -651; FITTINGS AND CONDUIT BODIES: PVC TO MATCH CONDUIT, NEMA TC-3. PRIMER/SOLVENT CEMENT: ASTM F656/ASTM D2564; PULL ROPE: 3/8-INCH DOUBLE BRAIDED, LOW STRETCH POLYESTER COMPOSITE ROPE.
9. TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
10. ALL UNDERGROUND TELECOMMUNICATIONS AND ELECTRIC CONDUITS SHALL BE ENCASED IN CONCRETE EXCEPT BRANCH DISTRIBUTION FOR LIGHTING. WORK CONCRETE TO REMOVE ALL TRAPPED AIR AND INSURE EACH CONDUIT IS COMPLETELY SURROUNDED BY A MINIMUM 2" OF CONCRETE. ALLOW CONCRETE TO CURE FOR AT LEAST ONE HOUR BEFORE BACKFILLING.
11. FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
12. SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
13. ALL WORK ASSOCIATED WITH FIRE PROTECTION AND DOMESTIC WATER SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL WATER UTILITY.
14. ALL WORK ASSOCIATED WITH ELECTRICAL SERVICE SHALL CONFORM TO THE STANDARDS OF EVERSOURCE. IF THERE ARE ANY CONFLICTS BETWEEN THE REQUIREMENTS INDICATED AND EVERSOURCE STANDARDS, EVERSOURCE STANDARDS SHALL PREVAIL.
15. ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL PROVIDER.
16. INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.
17. ALTHOUGH NOT SHOWN ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

LAYOUT AND MATERIALS NOTES:

1. NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
8. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
9. ALL CURBING IS BITUMINOUS CONCRETE UNLESS OTHERWISE INDICATED. WHERE CURBING IS CALLED-FOR ADJACENT TO SIDEWALKS, IT SHALL BE MONOLITHIC CONCRETE CURB AND SIDEWALK PER APPLICABLE DETAILS.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. CONSTRUCTION JOINTS: REINFORCEMENT SHALL NOT CONTINUE THROUGH CONSTRUCTION JOINTS.
14. PRIOR TO INITIATION OF CONCRETE FLATWORK, SUBMIT PROPOSED CONSTRUCTION JOINT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. COORDINATE SUCH PLAN WITH THE JOINT PATTERNS DEPICTED ON THE DRAWINGS.
15. UNLESS OTHERWISE SPECIFIED, MISCELLANEOUS CONCRETE PADS SHALL BE CONSTRUCTED PER SIDEWALK DETAIL.
16. ALL NON-ACCESSIBLE PARKING SPACES ARE 9' X 18'. VERIFY OVERALL LAYOUT DIMENSIONS BASED ON THESE DIMENSIONS AND THE NUMBER OF SPACES INDICATED. FIELD-ADJUST OVERALL LAYOUT DIMENSION IN CONCERT WITH THE ENGINEER IF REQUIRED.
17. DIMENSIONS INDICATED ARE TO FACE OF CURB, PAVEMENT EDGE, EDGE OR CENTERLINE OF IMPROVEMENT, OR AS OTHERWISE NOTED.
18. PROVIDE FOR THE LAYOUT AND STAKING/MARKING OF THE PROPOSED LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING FURNISHINGS. OBTAIN ENGINEER'S APPROVAL OF THE LAYOUT PRIOR TO PROCEEDING WITH THE WORK.
19. UNLESS OTHERWISE INDICATED, LINES ARE PARALLEL OR PERPENDICULAR TO LINE FROM WHICH THEY ARE MEASURED.

PLANTING NOTES:

1. THE CONTRACTOR SHALL CLEARLY MARK LIMITS OF CLEARING AND LIMITS OF TREE REMOVAL, SELECTIVE PRUNING AND THINNING FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO ANY CLEARING OPERATIONS. ALL TREE WORK SHALL BE EXECUTED BY A LICENSED ARBORIST.
2. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT EXISTING VEGETATION THAT IS DESIGNATED, "TO REMAIN".
3. ALL TREES TO BE SAVED SHALL BE PROTECTED. SEE SPECIFICATION FOR TREE PROTECTION REQUIREMENTS.
4. EXISTING ON SITE TOPSOIL MAY BE REUSED UPON APPROVAL BY THE LANDSCAPE ARCHITECT. EXISTING TOPSOIL SHALL BE TESTED AND AMENDED FOR NUTRIENTS, ORGANIC MATTER, PH, AND SOIL TEXTURE. – SEE SPECIFICATIONS.
5. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE AND GRADE TO AN EVEN SURFACE. – SEE SPECIFICATIONS.
6. COMPLETE QUANTITIES OF PLANTS FOR EACH AREA TO BE AVAILABLE ON SITE AT THE TIME OF PLANTING FOR FIELD LAYOUT BY OWNER'S REPRESENTATIVE. NO PARTIAL LAYOUT AND PLANTING OF AREAS WILL BE ACCEPTABLE.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. – SEE SPECIFICATION FOR DETAILED REQUIREMENTS.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL IN OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. NO SUBSTITUTION OF PLANT SPECIES OR VARIETIES WILL BE ACCEPTABLE WITHOUT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.
9. OWNER'S REPRESENTATIVE TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE AND AGAIN AT THE PROJECT SITE PRIOR TO PLANTING.
10. VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER OR HIS REPRESENTATIVE.
11. NO PLANTING SHALL OCCUR PRIOR TO ACCEPTANCE OF FINAL GRADING.
12. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH GRADE. IMMEDIATELY REPLANT PLANTS WHICH SETTLE OUT OF PLUMB OR BELOW FINISH GRADE.
13. SEE SPECIFICATIONS FOR PLANTING MAINTENANCE AND GUARANTEE REQUIREMENTS.
14. THE LANDSCAPE ARCHITECT OR ENGINEER RESERVES THE RIGHT TO ADJUST FINAL GRADES IN THE FIELD TO SAVE EXISTING VEGETATION.
15. PLANT QUANTITIES NOTED IN THE PLANT SCHEDULE ARE APPROXIMATE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING AND INSTALLATION OF ALL PLANT MATERIALS NOTED ON THE PLANTING PLAN.
16. CAUTION SHALL BE USED NOT TO EXTEND MULCH LAYER ABOVE SOIL LEVEL AT TRUNKS/STEMS OF INSTALLED PLANT MATERIAL.
17. PROVIDE FOUR (4) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS AND CONTINUOUS MULCH BED AROUND SHRUB, PERENNIAL AND GROUNDCOVER PLANTINGS, UNLESS OTHERWISE NOTED. DO NOT MOUND SOIL OR MULCH AT TRUNKS.
18. ALL PLANTING SHALL BE DONE UNDER FULL SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT.
19. LOOSE OR CRACKED ROOTBALLS SHALL BE REJECTED.

SEWER DESIGN NOTES:

1. SEWER DESIGN IN ACCORDANCE WITH CT PUBLIC HEALTH CODE ON-SITE SEWAGE DISPOSAL REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS (SSDS), REVISED JANUARY 2018.
2. TOTAL NUMBER OF PROPOSED BEDROOMS = 73
3. PER SECTION IV.A, DESIGN FLOW = 150 GPD/BEDROOM
4. DESIGN FLOW = 150 GPD X 73 BEDROOMS = 10,950 GPD
5. MINIMUM PUMP CHAMBER SIZE = 10,950 GPD X 4 HOURS = 1,825 GALLONS
6. PUMP CHAMBER SIZE USED = 2,000 GALLONS

GRADING AND DRAINAGE NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK.
6. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
7. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
8. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.
9. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. VERIFY ALL GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
14. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
15. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
16. UNLESS OTHERWISE INDICATED, BLEND TRANSITIONS IN ELEVATION BETWEEN NEW WORK AND AREAS TO REMAIN AT A MAXIMUM SLOPE OF 1V:2H AND RESTORE WITH FOUR (4) INCHES OF LOAM AND SEED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED. COORDINATE WITH ENGINEER IF DIMENSIONAL CONSTRAINTS REQUIRE STEEPER SLOPES.
17. UPON REACHING PROPOSED SUBGRADE ELEVATIONS WITHIN THE FIELD, ENGINEER WILL REVIEW SUBGRADE PRIOR TO INSTALLATION OF DRAINAGE SYSTEM. SEE SPECIFICATION SECTION 31 2310 – EARTHWORK.
18. ALL CATCH BASINS AND SHALLOW DROP INLETS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C". ALL OTHERS SHALL BE CONNDOT TYPE "C-L"..
19. ALL UNDERDRAINS SHALL BE 6-INCH HDPE. SEE SPECIFICATIONS.
20. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
21. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM, INCLUDING NEW WORK AND EXISTING WORK THAT REMAINS OR IS INCORPORATED INTO THE NEW SYSTEM.

OPERATION AND MAINTENANCE PLAN:

THE FOLLOWING MAINTENANCE PROCEDURES SHALL BE FOLLOWED BY THE CONTRACTOR FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION MEASURES AND STORMWATER TREATMENT SYSTEMS INSTALLED DURING THE CONSTRUCTION PERIOD:

- DUST CONTROL: MOISTEN DISTURBED SOIL AREAS WITH WATER PERIODICALLY, OR USE A NON-ASPHALTIC SOIL TACIFIER TO MINIMIZE DUST.
- TEMPORARY SEEDING: INSPECT WEEKLY AND WITHIN 24 HOURS OF A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- PERMANENT SEEDING: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- TEMPORARY SOIL PROTECTION: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- TEMPORARY EROSION CONTROL MAT: INSPECT MATS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- CATCH BASIN FILTER INSERTS: INSPECT THE FABRIC AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. CHECK THE FABRIC FOR STRUCTURAL SOUNDNESS (I.E. TEARS), PROPER ANCHORING/ALIGNMENT WITHIN THE GRATE AND ABILITY TO DRAIN RUNOFF (I.E. PERCENT OF CLOGGING BY SEDIMENT). REMOVE THE SEDIMENT EVERY WEEK, OR SOONER IF PONDING IS EXCESSIVE. EACH TIME THE SEDIMENT IS REMOVED, REPLACE THE SECTION OF FABRIC REMOVED WITH A NEW SECTION. DO NOT REMOVE THE SEDIMENT AND REUSE THE SAME SECTION OF FABRIC.
- HAY BALE/ SILT FENCE BARRIER: INSPECT THE BARRIER AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. FOR DEWATERING OPERATIONS, INSPECT FREQUENTLY BEFORE, DURING AND AFTER PUMPING OPERATIONS. REMOVE THE SEDIMENT DEPOSITS WHEN THE DEPTH REACHES ONE HALF THE BARRIER HEIGHTS. REPAIR OR REPLACE A BARRIER WITHIN 24 HOURS OF OBSERVED FAILURE. MAINTAIN THE BARRIER UNTIL THE CONTRIBUTING DISTURBED AREA IS STABILIZED.
- CONSTRUCTION ENTRANCE/EXIT PAD: MAINTAIN THE PAD IN A CONDITION THAT WILL PREVENT TRACKING AND WASHING OF SEDIMENT ONTO PAVED SURFACES. PLACE ADDITIONAL CLEAN GRAVEL ON TOP OF GRAVEL THAT HAS BECOME SILTED, OR REMOVE THE SILTED GRAVEL AND REPLACE THE GRAVEL TO THE DEPTH REMOVED WITH CLEAN GRAVEL, AS CONDITIONS WARRANT. REMOVE IMMEDIATELY ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED AT THE END OF EACH DAY BY HAND SWEEPING OR SWEEPER TRUCK.
- DEWATERING SETTLING BASIN (IF USED): INSPECT THE BASIN AT LEAST EVERY TWO HOURS DURING PERIODS OF USE. REMOVE ACCUMULATED SEDIMENTS WHEN THE VOLUME EQUALS ONE HALF THE PROVIDED STORAGE VOLUME.
- EXISTING CATCH BASINS AND SUMPS: INSPECT THE SEDIMENT TRAPS AS SPECIFIED IN "F" ABOVE. AFTER FINAL REMOVAL OF THE SEDIMENT TRAPS AT THE END OF CONSTRUCTION, CLEAN THE SUMP OF ALL SILT AND DEBRIS.
- NEW CATCH BASINS AND SUMPS: AS NEW CATCH BASINS ARE CONSTRUCTED, A FILTER INSERT SHALL BE INSTALLED IN THE UNIT AND A SEDIMENT BARRIER INSTALLED AROUND THE GRATE. INSPECT THE FILTER AND BARRIER WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. AFTER STABILIZATION OF THE DRAINAGE AREA ENTERING THE CATCH BASIN, REMOVE THE FILTER AND BARRIER AND CLEAN THE BASIN SUMP OF ALL SILT AND DEBRIS.
- TEMPORARY STOCKPILES: INSPECT TEMPORARY STOCKPILES AT THE END OF EACH WORKDAY TO ENSURE THAT TARPS ARE IN PLACE AND SECURED. TEMPORARY STOCKPILES THAT ARE EXPECTED TO BE INACTIVE FOR MORE THAN 30 DAYS SHOULD BE TEMPORARILY SEEDED (SEE ABOVE).

AFTER CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE OWNER, IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO MAINTAIN ALL DRAINAGE STRUCTURES. IN ADDITION, THE FOLLOWING INSPECTION AND MAINTENANCE GUIDELINES SHALL BE THE RESPONSIBILITY OF THE OWNER, OR THE OWNER'S REPRESENTATIVE, BEGINNING THE FIRST YEAR PERIOD FOLLOWING CONSTRUCTION COMPLETION AND ACCEPTANCE, AND SHALL BE FOLLOWED EACH YEAR THEREAFTER:

- PARKING LOT AND SITE CLEANUP: INSPECT ON A REGULAR BASIS NOT TO EXCEED WEEKLY FOR LITTER AND DEBRIS.
- PARKING LOT AND DRIVEWAY SWEEPING: AT LEAST TWICE A YEAR, WITH THE FIRST OCCURRING AS SOON AS POSSIBLE AFTER SNOWMELT AND THE SECOND NOT LESS THAN 90 DAYS FOLLOWING THE FIRST.
- CATCH BASIN SUMPS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED WHEN THE SUMP IS ONE HALF FULL OF SILT AND / OR DEBRIS.
- HYDRODYNAMIC SEPARATOR: SHALL BE INSPECTED AND CLEANED ANNUALLY.
- LANDSCAPED AREAS: INSPECT SEMI-ANNUALLY FOR EROSION OR DYING VEGETATION. REPAIR AND STABILIZE ANY BARE OR ERODED AREAS AND REPLACE VEGETATION AS SOON AS POSSIBLE.
- ABOVE-GROUND DETENTION BASIN: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS. SHALL BE MOWED ANNUALLY.
- UNDERGROUND DETENTION SYSTEMS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS.

DEEP TEST PIT RESULTS:

DEEP TESTS PERFORMED ON 02/08/2020 BY BSC GROUP. SEE SHEET C-4.0 FOR LOCATIONS OF DEEP TESTS.

TH-1 (APPROX. GROUND EL. 619.00±)
0-8" TOPSOIL
8-40" BROWN SANDY LOAM
40-100" BROWN SAND WITH SOME FINES

GW @ 100"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 610.67±

TH-2 (APPROX. GROUND EL. 615.75±)
0-12" TOPSOIL
12-20" BROWN SAND
20-72" GRAY GLACIAL TILL

GW @ 54"
MOTTLING @ 48"
RESTRICTIVE LAYER @ EL. 611.75±

TH-3 (APPROX. GROUND EL. 614.75±)
0-12" TOPSOIL
12-60" BROWN SILTY SAND

GW @ 60"
MOTTLING @ 38"
RESTRICTIVE LAYER @ EL. 611.58±

TH-4 (APPROX. GROUND EL. 616.50±)
0-12" TOPSOIL
12-36" BROWN SAND
36-84" GRAY GLACIAL TILL

POSSIBLE LEDGE @ 84"
GW @ 84"
RESTRICTIVE LAYER @ EL. 609.50±

TH-5 (APPROX. GROUND EL. 618.50±)
0-12" TOPSOIL
12-24" BROWN SANDY LOAM
24-84" BROWN FINE SAND

GW @ 80"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.83±

TH-6 (APPROX. GROUND EL. 619.75±)
0-12" TOPSOIL
12-40" BROWN SAND WITH FINES
40-96" GRAY FINE SAND

NO GW OBSERVED
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.75±

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

GENERAL NOTES

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 30'
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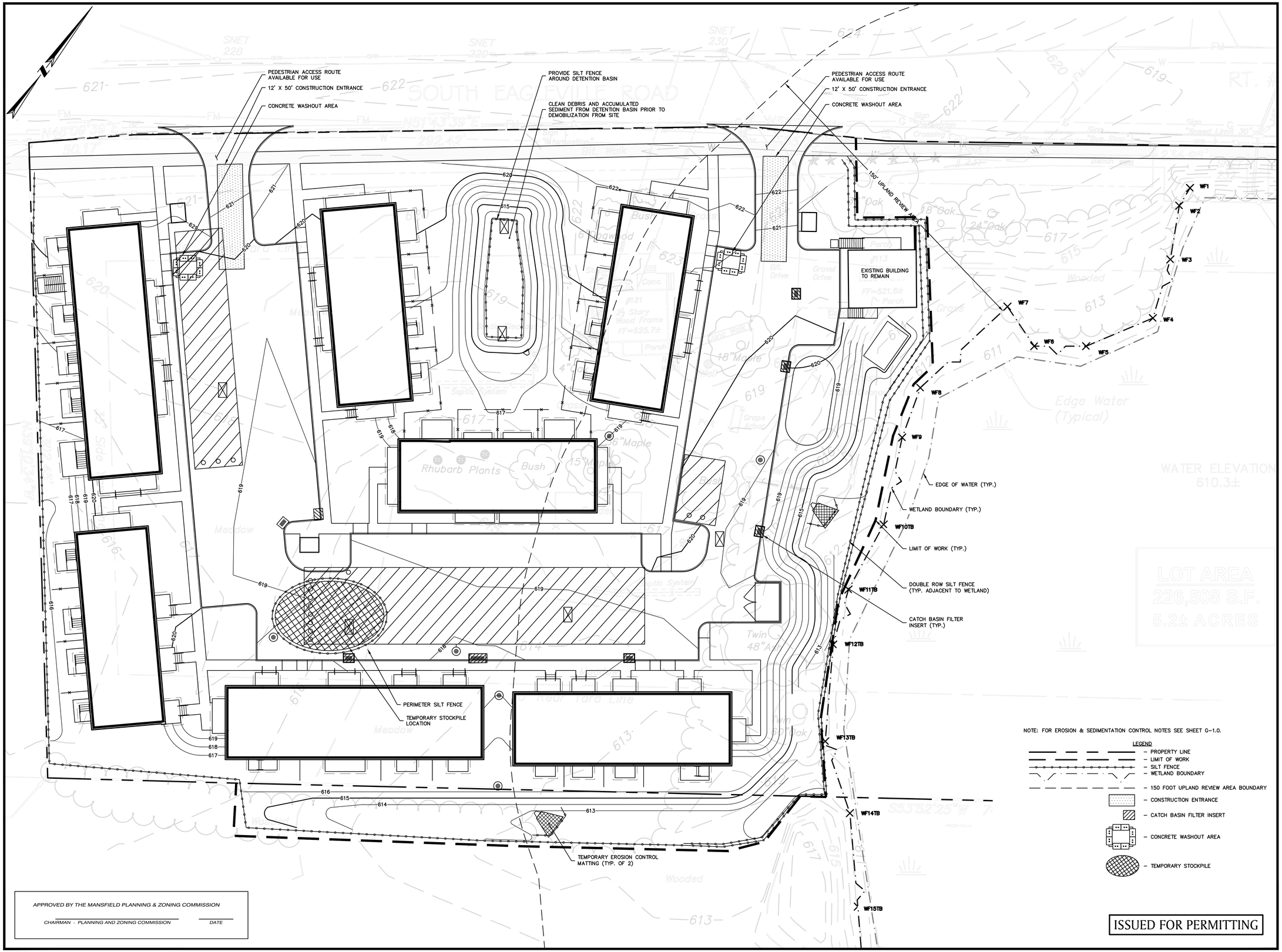
FILE: 8374900-NOTES.DWG
DWG. NO: G-1.0
JOB. NO: 83749.00



NOTE: FOR EROSION & SEDIMENTATION CONTROL NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- SILT FENCE
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- CONSTRUCTION ENTRANCE
- CATCH BASIN FILTER INSERT
- CONCRETE WASHOUT AREA
- TEMPORARY STOCKPILE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS

PREPARED FOR:
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STORRS, CT 06268

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860 652 8227

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SCALE: 1" = 20'
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DWG. NO: C-1.0
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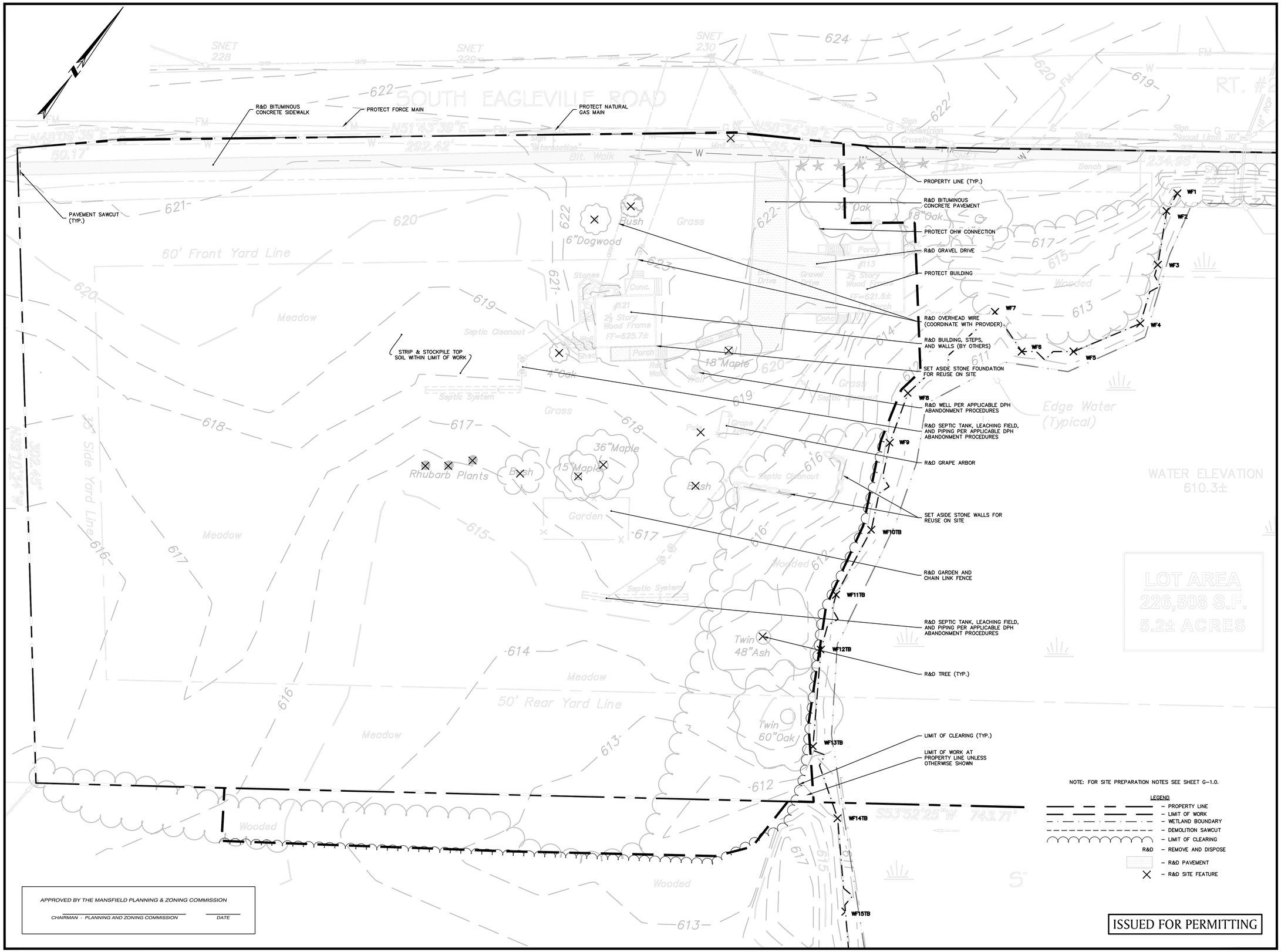

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SITE PREPARATION PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
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SCALE: 1" = 20'
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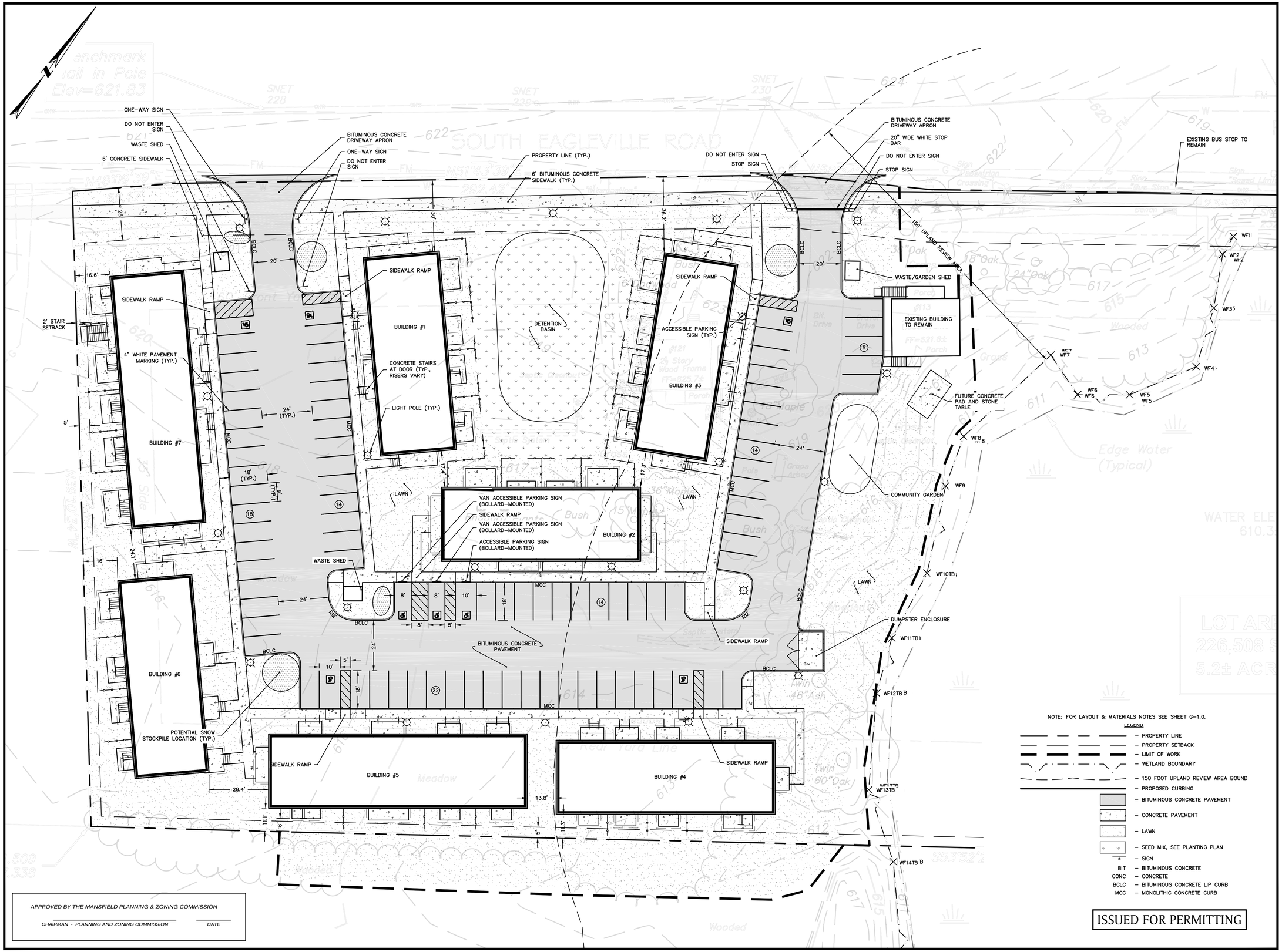
DWG. NO:
JOB. NO: 83749.00

C-2.0



NOTE: FOR LAYOUT & MATERIALS NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- PROPERTY SETBACK
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUND
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

LAYOUT & MATERIALS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	03/02/2020	PER TOWN COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

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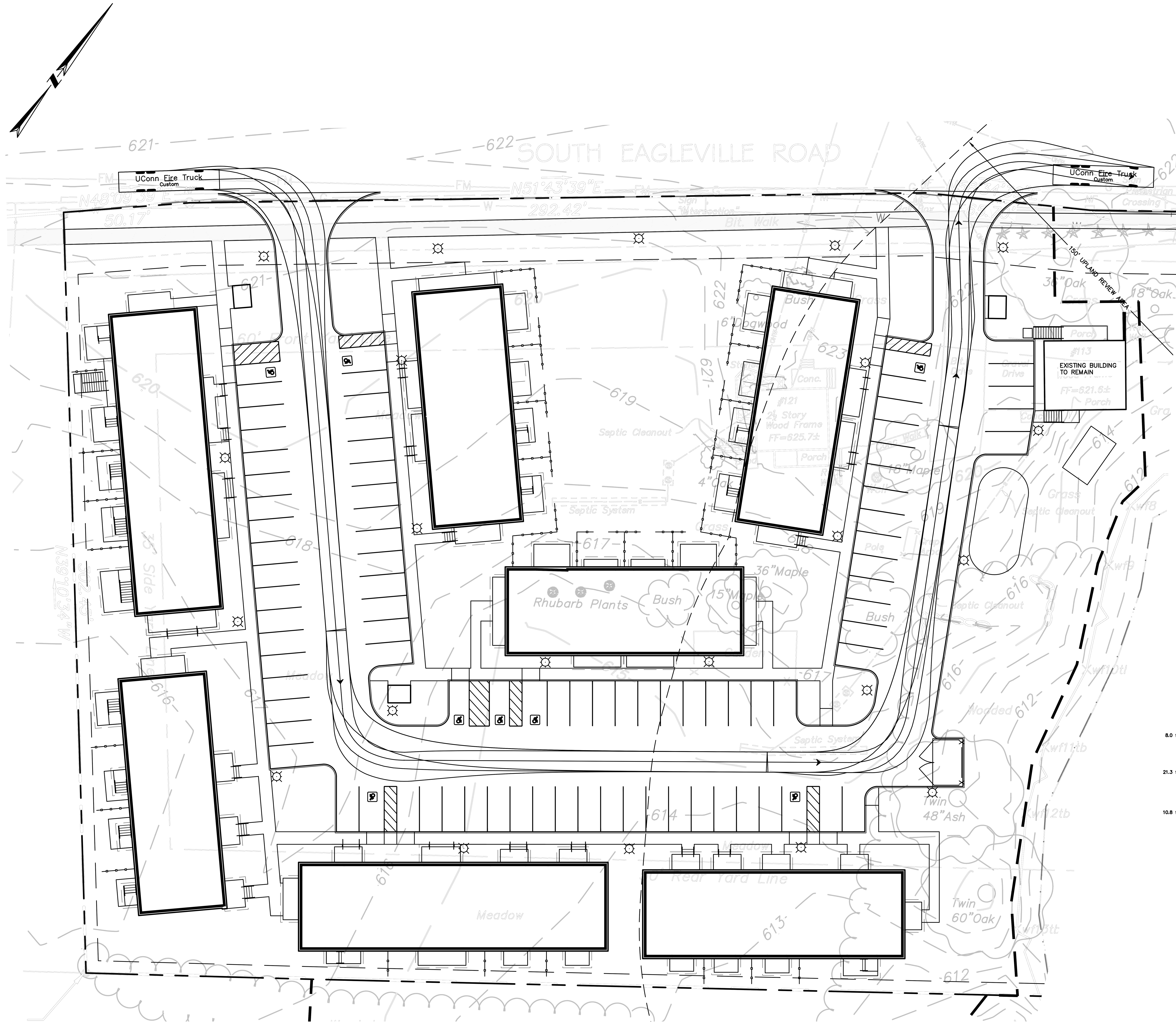
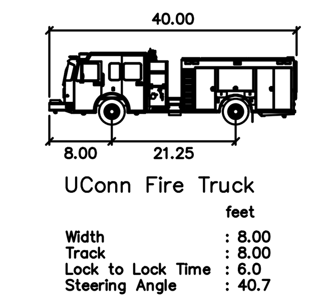
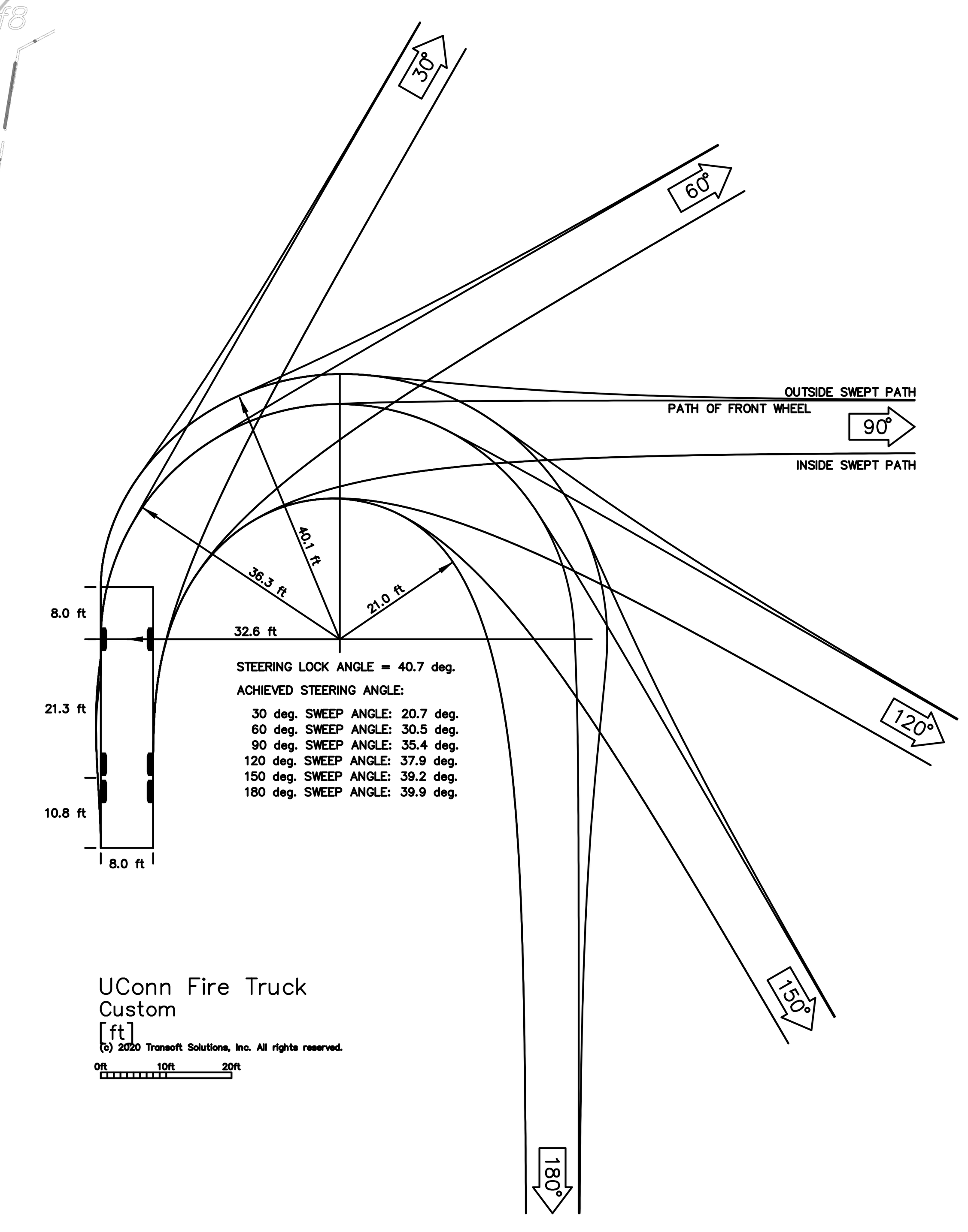
DWG. NO:
JOB. NO: 83749.00

C-3.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019







EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · ROBERT S. NEWTON · No. 20662 · LICENSED · PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

UCONN FIRE TRUCK TURNING MOVEMENT PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
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STORRS, CT 06268

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860 652 8227

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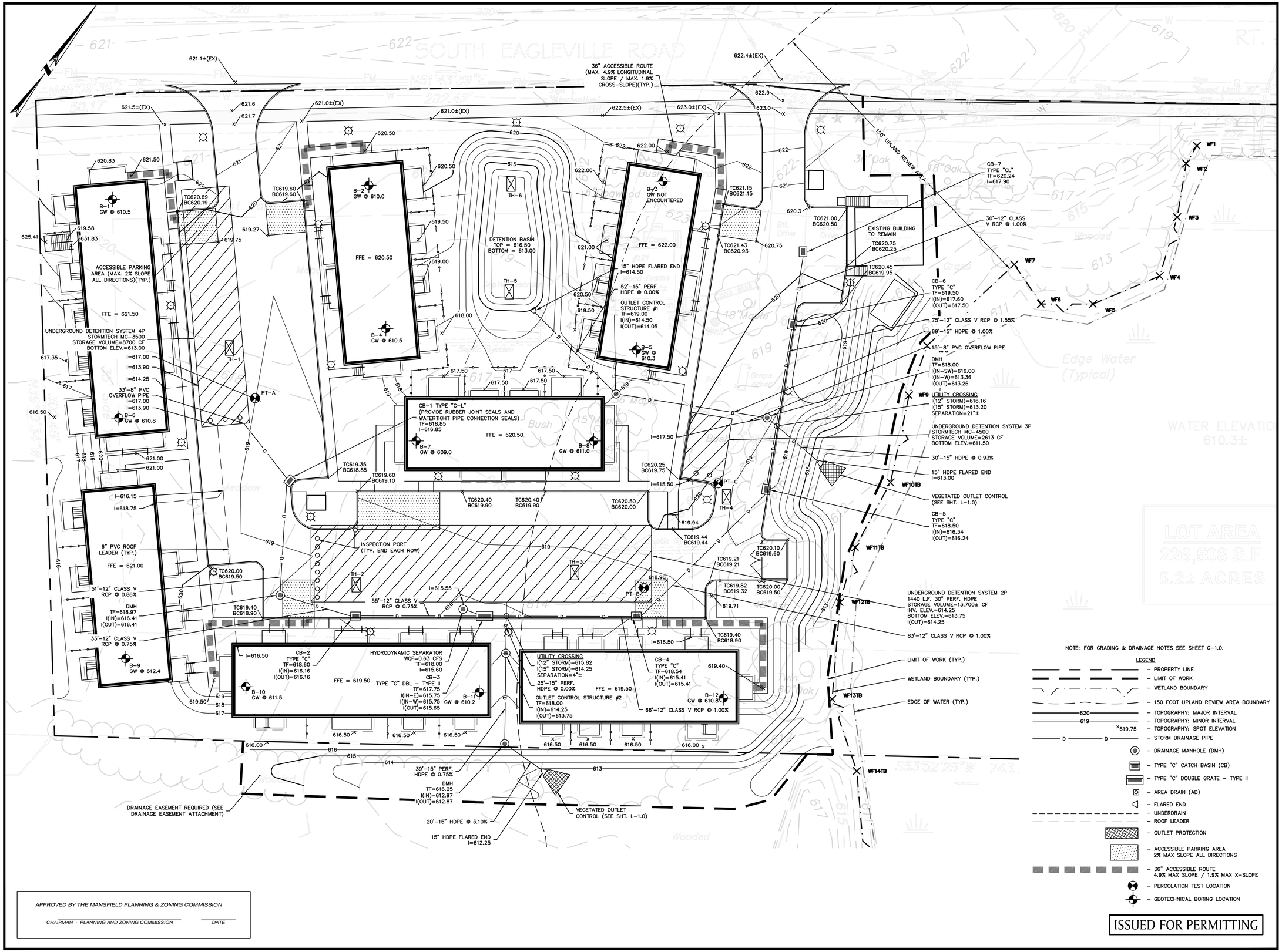
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900–AUTOTURN.DWG
DWG. NO: C-3.1
JOB. NO: 83749.00

ISSUED FOR PERMITTING



NOTE: FOR GRADING & DRAINAGE NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- 620 – TOPOGRAPHY: MAJOR INTERVAL
- 619 – TOPOGRAPHY: MINOR INTERVAL
- x619.75 – TOPOGRAPHY: SPOT ELEVATION
- D — D – STORM DRAINAGE PIPE
- DRAINAGE MANHOLE (DMH)
- TYPE "C" CATCH BASIN (CB)
- TYPE "C" DOUBLE GRATE – TYPE II
- AREA DRAIN (AD)
- FLARED END
- UNDERDRAIN
- ROOF LEADER
- OUTLET PROTECTION
- ACCESSIBLE PARKING AREA 2% MAX SLOPE ALL DIRECTIONS
- 36" ACCESSIBLE ROUTE 4.9% MAX SLOPE / 1.9% MAX X-SLOPE
- PERCOLATION TEST LOCATION
- GEOTECHNICAL BORING LOCATION

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	02/26/2020	PER REVIEW COMMENTS

PREPARED FOR:
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STORRS, CT 06268

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SCALE: 1" = 20'
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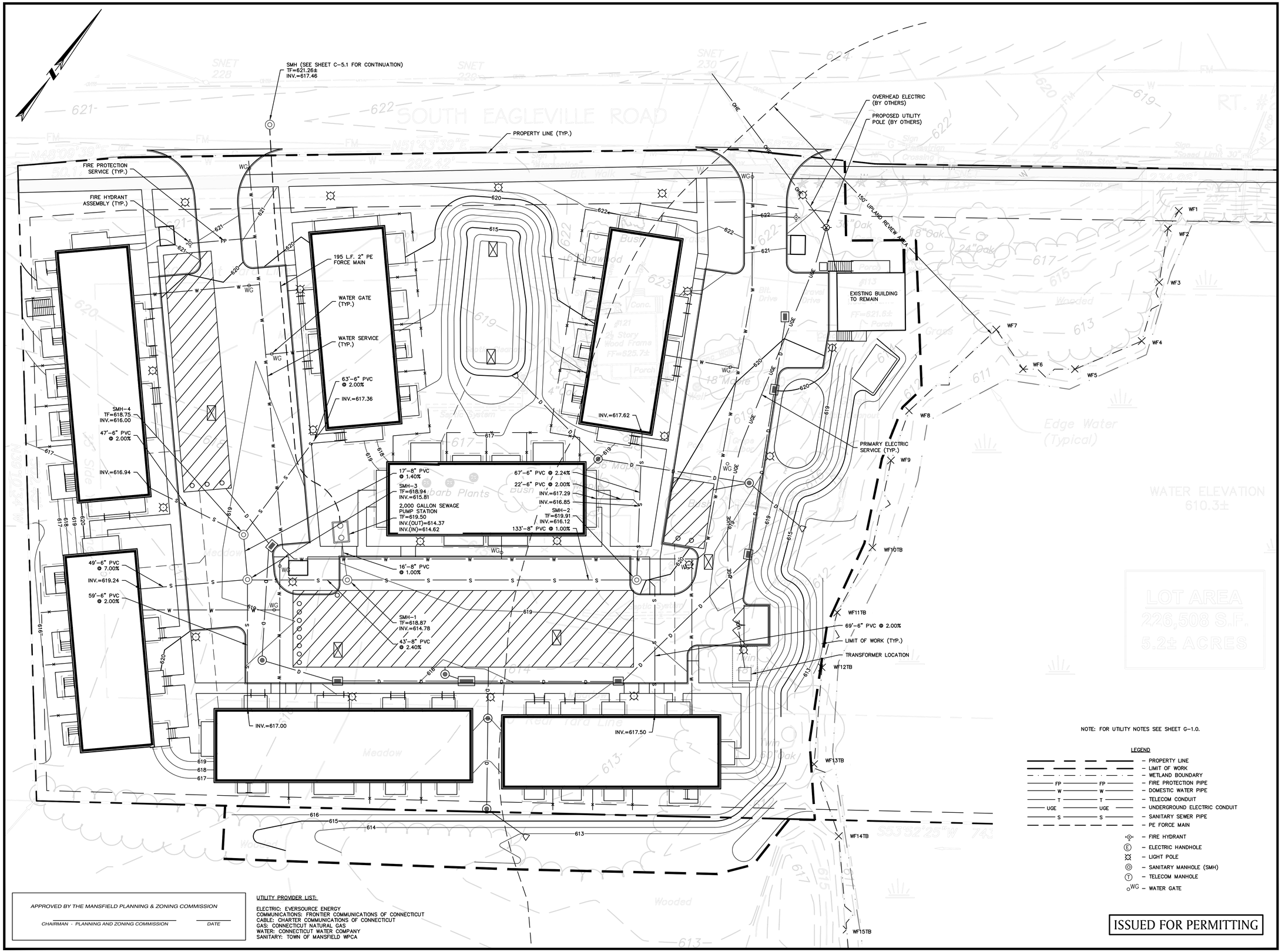
FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

UTILITY PROVIDER LIST:

ELECTRIC: EVERSOURCE ENERGY
COMMUNICATIONS: FRONTIER COMMUNICATIONS OF CONNECTICUT
CABLE: CHARTER COMMUNICATIONS OF CONNECTICUT
GAS: CONNECTICUT NATURAL GAS
WATER: CONNECTICUT WATER COMPANY
SANITARY: TOWN OF MANSFIELD WPCA

NOTE: FOR UTILITY NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- FP — FIRE PROTECTION PIPE
- W — DOMESTIC WATER PIPE
- T — TELECOM CONDUIT
- UGE — UNDERGROUND ELECTRIC CONDUIT
- S — SANITARY SEWER PIPE
- PE FORCE MAIN
- FIRE HYDRANT
- E — ELECTRIC HANDHOLE
- LIGHT POLE
- SANITARY MANHOLE (SMH)
- T — TELECOM MANHOLE
- WG — WATER GATE

ISSUED FOR PERMITTING

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UTILITY PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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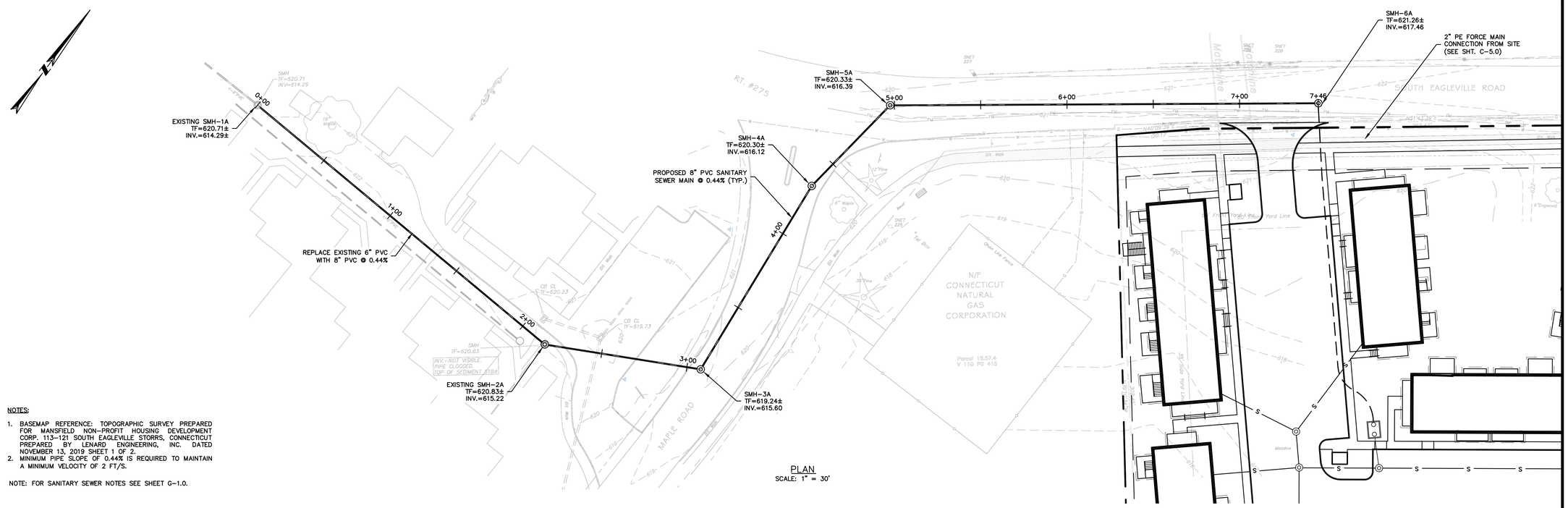
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-UT.DWG
DWG. NO:
JOB. NO: 83749.00

C-5.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019



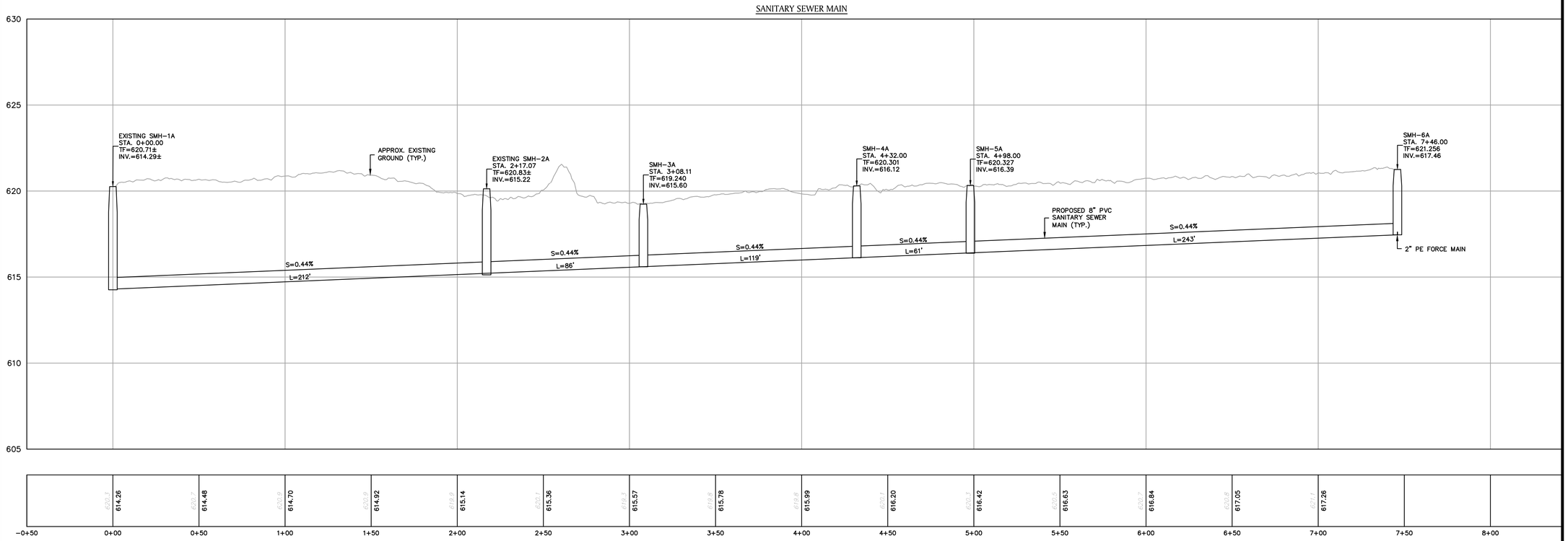
PLAN
SCALE: 1" = 30'

NOTES:

1. BASEMAP REFERENCE: TOPOGRAPHIC SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE STORRS, CONNECTICUT PREPARED BY LENARD ENGINEERING, INC. DATED NOVEMBER 13, 2019 SHEET 1 OF 2.
2. MINIMUM PIPE SLOPE OF 0.44% IS REQUIRED TO MAINTAIN A MINIMUM VELOCITY OF 2 FT/S.

NOTE: FOR SANITARY SEWER NOTES SEE SHEET G-1.0.

SANITARY SEWER MAIN



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
ROBERT S. NEWTON
No. 20662
LICENSED
PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SANITARY SEWER PLAN & PROFILE

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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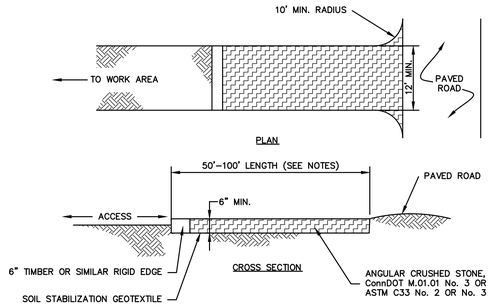
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-SEWER_ALT2.DWG
DWG. NO: C-5.1
JOB. NO: 83749.00

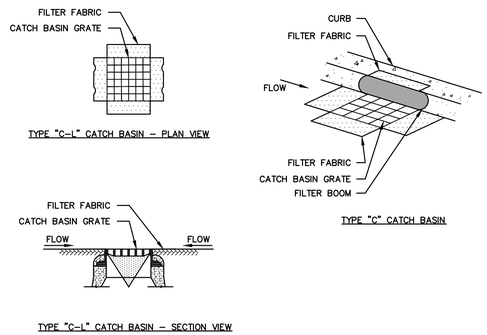


NOTES:

1. REMOVE TOPSOIL AND ORGANICS PRIOR TO CRUSHED STONE PLACEMENT.
2. INSTALL SUB-BASE OF FREE DRAINING BACKFILL OR ROAD STABILIZATION GEOTEXTILE AS NECESSARY ON UNSTABLE SOILS.
3. LENGTH SHALL BE 50 FOOT MINIMUM. WHERE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, LENGTH SHALL BE 100 FOOT MINIMUM.
4. IF THE GRADE OF THE CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND IT EXCEEDS 2% SLOPE, CONSTRUCT ENTRANCE AT LEASE 15 FEET FROM ITS ENTRANCE ONTO THE PAVED SURFACE WHILE DIVERTING RUN-OFF WATER TO A SETTLING OR FILTERING AREA.
5. CONSTRUCT ANY DRAINAGE AND SETTLING FACILITIES REQUIRED TO ACCOMMODATE VEHICLE WASHING OPERATIONS. DIVERT ALL WASH WATER AWAY FROM ENTRANCE TO THE SETTLING AREA.
6. MAINTAIN ENTRANCE IS A CONDITION THAT WILL PREVENT WASHING OF SEDIMENT ONTO PAVED SURFACES.

CONSTRUCTION ENTRANCE

SCALE: NONE
EC-101-CT

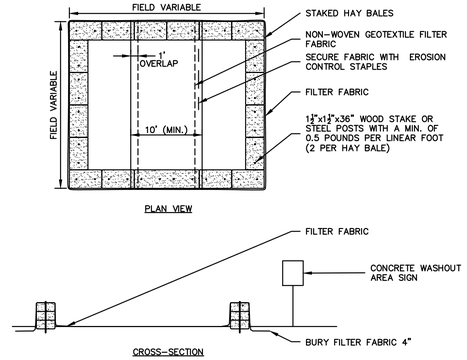


GENERAL NOTES

1. PROVIDE INLET PROTECTION TO ALL EXISTING CATCH BASINS IN THE VICINITY OF CONSTRUCTION. PROTECT NEW CATCH BASINS AS THEY ARE CONSTRUCTED.
2. GRATE TO BE PLACED OVER FILTER FABRIC.

CATCH BASIN FILTER INSERT

SCALE: NONE

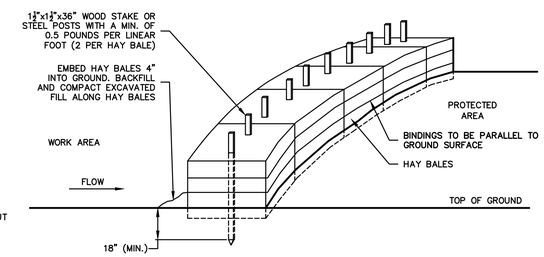


NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

TEMPORARY CONCRETE WASHOUT AREA

SCALE: NONE

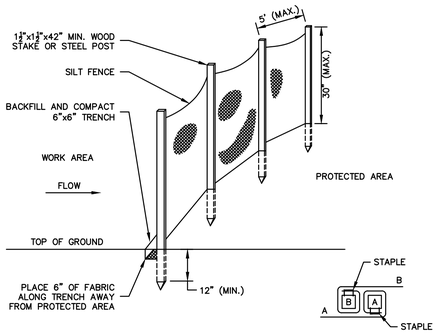


GENERAL NOTES

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

STRAW BALE BARRIER

SCALE: NONE
EC-106-CT

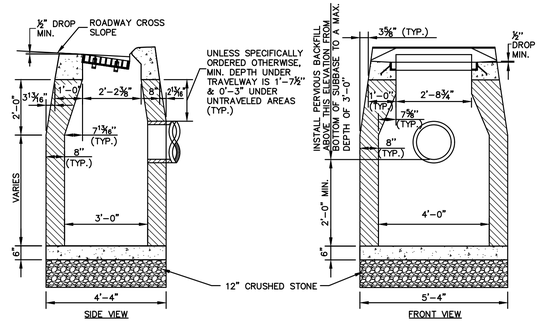


GENERAL NOTES

1. FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE OP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
2. FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

SILT FENCE BARRIER

SCALE: NONE
EC-107

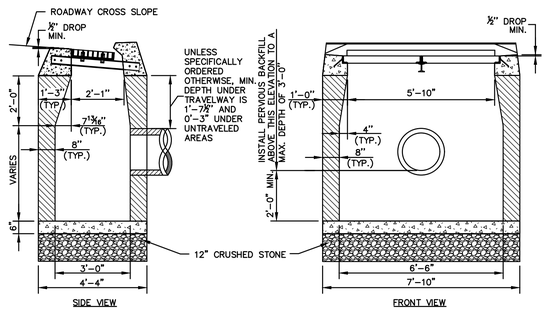


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN

SCALE: NONE
STM-101-CT



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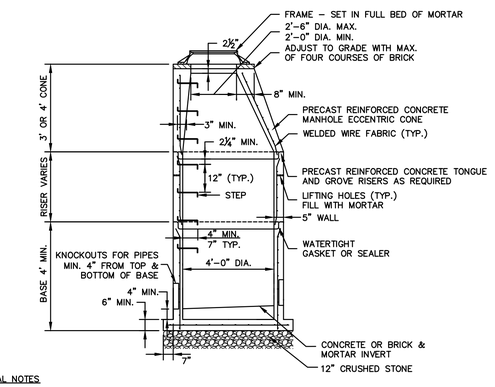
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C" CATCH BASIN DOUBLE GRATE TYPE II

SCALE: NONE
STM-106-CT

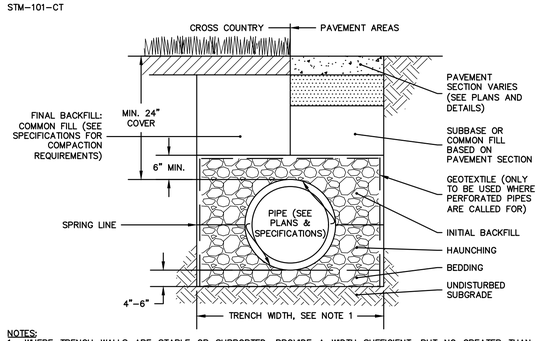


GENERAL NOTES

1. 5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' OR 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.
2. FRAME DIAMETER OF 3'-3" WITH 4" FLANGE MUST BE USED WHEN THE TOP DIA. OF THE PRECAST CONE IS LESS THAN 3'-6". ALL OTHER FRAME DIMENSIONS ARE TO REMAIN THE SAME.
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

STORM DRAINAGE MANHOLE

SCALE: NONE
STM-109-CT

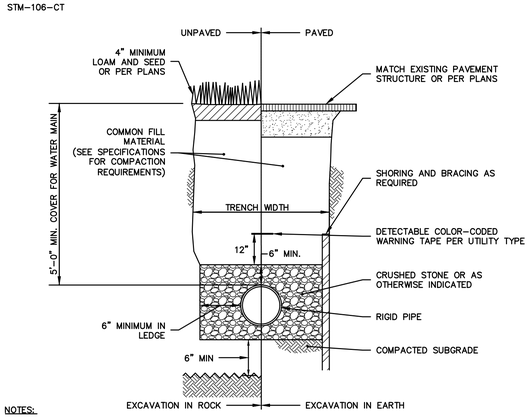


NOTES:

1. WHERE TRENCH WALLS ARE STABLE OR SUPPORTED, PROVIDE A WIDTH SUFFICIENT, BUT NO GREATER THAN NECESSARY, TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER EMBEDMENT MATERIALS. UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER, THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED IN THE PIPE ZONE. MINIMUM WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER THE PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES.
2. WHERE PERFORATED PIPES ARE CALLED-FOR, BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6 CRUSHED STONE SHALL MEET THE REQUIREMENTS OF FORM 816 M.08.
3. WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL PER THE SPECIFICATIONS. AS AN ALTERNATIVE, AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL UNDER SOME CIRCUMSTANCES.
4. BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6, NO. 67, OR NO. 8 AGGREGATE OR OTHER MATERIALS MEETING THE REQUIREMENTS OF ASTM D2321 FOR CLASS IA, IB, II, OR III UNLESS OTHERWISE INDICATED BY THE PIPE MANUFACTURER.

TYPICAL TRENCH SECTION - THERMOPLASTIC DRAINAGE PIPE

SCALE: NONE

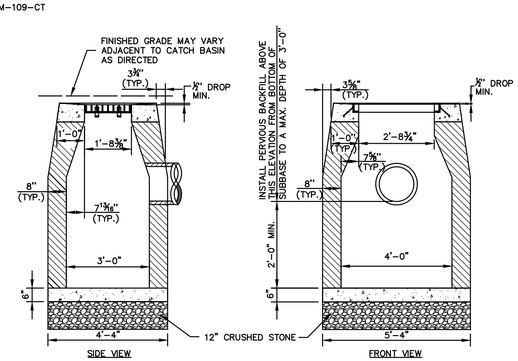


NOTES:

1. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
2. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.

TYPICAL PIPE TRENCH - RIGID PIPE

SCALE: NONE



GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C-L" CATCH BASIN

SCALE: NONE
STM-102-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

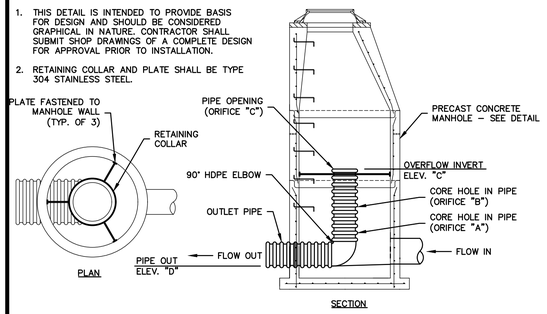
C-6.0

OUTLET CONTROL STRUCTURE	ORIFICE "A"		ORIFICE "B"		ELEV. "C"		ELEV. "D"	
	DIA.	INV.	DIA.	INV.	DIA.	INV.	DIA.	INV.
#1	6"	614.30'	N/A	N/A	15"	616.00'	15"	614.05'
#2	4"	614.86'	8"	615.33'	10"	617.00'	15"	613.25'

NOTES:
1. DESIGN TO CONFORM TO H-20 LOADING.
2. THE INLET PIPE CONNECTING THE OUTLET CONTROL STRUCTURE TO THE DETENTION SYSTEM SHALL BE SET AT 0.00% SLOPE.

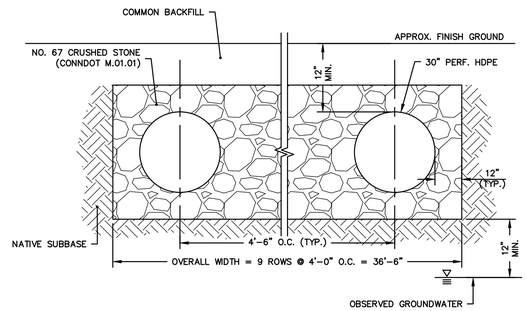
GENERAL NOTES

1. THIS DETAIL IS INTENDED TO PROVIDE BASIS FOR DESIGN AND SHOULD BE CONSIDERED GRAPHICAL IN NATURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF A COMPLETE DESIGN FOR APPROVAL PRIOR TO INSTALLATION.
2. RETAINING COLLAR AND PLATE SHALL BE TYPE 304 STAINLESS STEEL.



OUTLET CONTROL STRUCTURE

SCALE: NONE

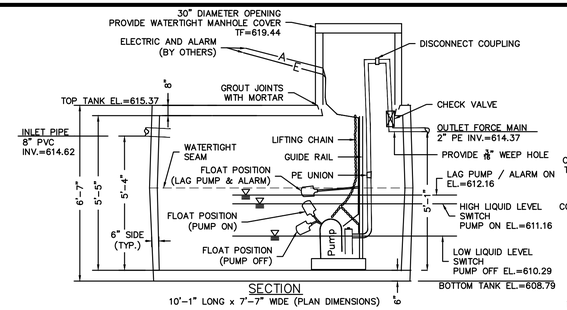


NOTE:

1. PERFORATED PIPE SHALL BE WRAPPED IN GEOTEXTILE FABRIC.

30" PIPE DETENTION SECTION

SCALE: NONE

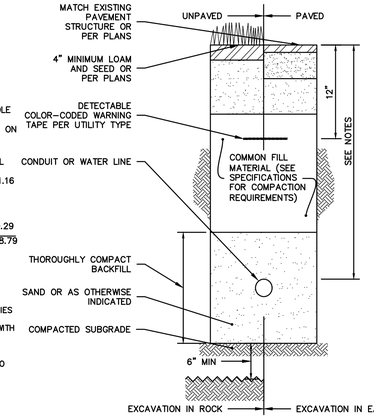


PRECAST CONCRETE PUMP CHAMBER NOTES:
1. TANK SIZE = 4 HOURS OF STORAGE = 10,950 GPD x 4 Hrs = 1,825. USE 2,000.
2. TANK DESIGN SHALL CONFORM TO LATEST ASTM DESIGNATION C913.
3. JOINT SEALANT: BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-198. MEETS FEDERAL SPECIFICATIONS SS-S-0021 (210-A).
4. PIPE INLET AND OUTLET LOCATIONS SHALL HAVE POLYLOK II PIPE SEALS.
5. TANK EXTERIOR SHALL BE COATED WITH BAY OIL, "EBONY" OR APPROVED EQUAL.
6. THE TANK INTERIOR SHALL BE COATED WITH FLOROK EPOXY OR EQUAL.
7. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
8. CONCRETE COMPRESSIVE STRENGHT – 4,000 PSI AT 28 DAYS.
9. METHOD OF MANUFACTURE: WET CAST.
10. SECTION SHALL BE MONOLITHIC.
11. CHAMBER TO BE DESIGNED FOR HS-20 LOADING.

PUMP DESIGN NOTES:
1. PUMPS SHALL BE LIBERTY PUMPS MODEL LSG200-SERIES SEWAGE GRINDER PUMP OR APPROVED EQUAL.
2. PUMP CYCLE DESIGNED FOR 10 MINUTES AT 50 GPM WITH 3 FEET OF STATIC HEAD.
3. PUMPS TO BE CONFIGURED WITH DUPLEX ELECTRICAL ALTERNATOR CONTROL PANEL.
4. ALL PUMPS AND APPURTENANCES TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS AND APPLICABLE BUILDING ELECTRICAL CODES.
5. PUMP AND FORCE MAIN SHALL BE CONFIGURED SUCH THAT THE FORCE MAIN WILL COMPLETELY DRAIN ONCE THE PUMP SHUTS OFF.
6. ROUTING OF ELECTRIC AND ALARM TO BE BY OTHERS.
7. CONTRACTOR SHALL SUBMIT A COMPLETE PUMPING SYSTEM SHOP DRAWING PACKAGE FOR REVIEW BY THE ENGINEER.

2,000 GALLON SEWAGE PUMP STATION

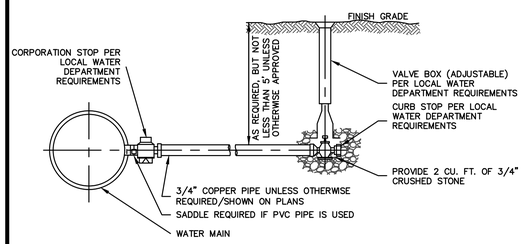
SCALE: NONE



NOTES:
1. THIS DETAIL IS APPLICABLE FOR SINGLE CONDUIT OR PIPE UP TO FOUR INCHES IN DIAMETER.
2. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.
4. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
5. PULL-LINE IN ALL CONDUIT: 3/8-INCH DOUBLE-BRAIDED LOW STRETCH POLYESTER COMPOSITE ROPE.
6. ALL CONDUIT AND PIPE DEPTHS PER CONNECTICUT BUILDING CODE OR UTILITY OWNER'S REQUIREMENTS, WHICHEVER IS MORE STRINGENT.

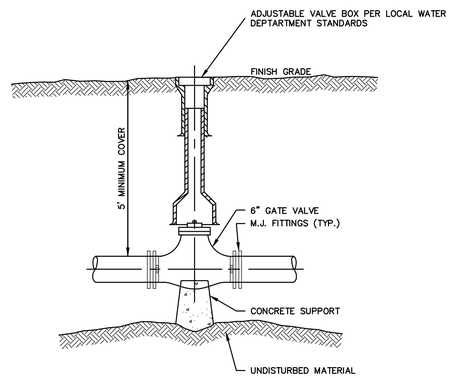
CONDUIT OR WATER SERVICE TRENCH

SCALE: NONE



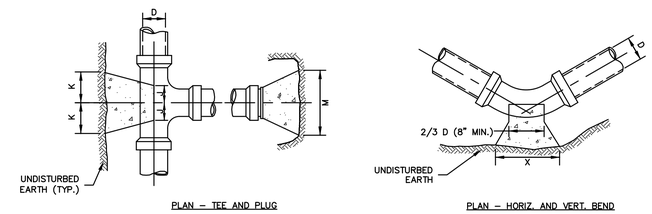
WATER SERVICE CONNECTION

SCALE: NONE
WTR-104-CT



GATE VALVE

SCALE: NONE
WTR-102-CT

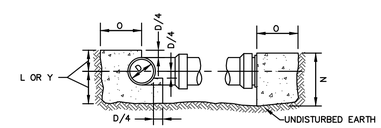


SIZE OF BRANCH	J	K	L	M	N	O
4" TO 8"	10"	10"	1'-0"	2'-0"	1'-6"	10"
10" TO 16"	1'-0"	1'-6"	1'-8"	3'-10"	2'-10"	1'-6"
24"	1'-4"	2'-0"	2'-6"	5'-0"	3'-6"	1'-8"

TEES AND PLUGS

	90° & 45°			22½° & 11¼°		
D	4" TO 8"	10" TO 16"	24"	4" TO 8"	10" TO 16"	24"
X	1'-8"	3'-4"	3'-6"	1'-4"	2'-0"	3'-6"
Y	1'-2"	1'-8"	2'-4"	1'-0"	1'-2"	2'-4"

BENDS



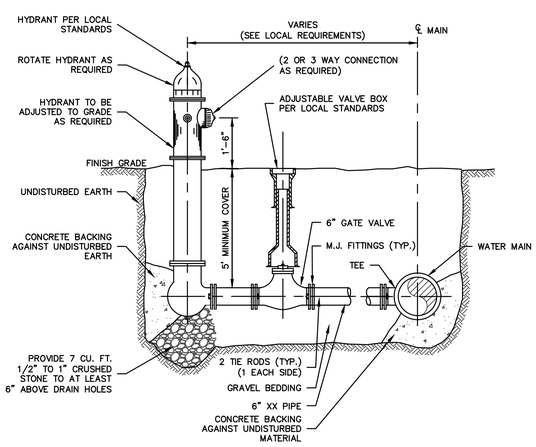
TYPICAL SECTION – TEES, BENDS AND PLUGS

GENERAL NOTES

1. PROVIDE CONCRETE THRUST BLOCKS AT ALL BENDS, DEAD ENDS, & TEES UNLESS OTHERWISE DIRECTED. CONCRETE FOR ALL THRUST BLOCKS TO BE PLACED AGAINST FIRM, UNDISTURBED EARTH. PROVIDE APPROVED ANCHOR HARNESS RODS AND SOCKET CLAMPS AS SPECIFIED AND IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS WHERE SOIL HAS BEEN DISTURBED OR THRUST BLOCKS CANNOT BE USED.
2. ALL SOCKET CLAMP METAL SHALL BE COATED WITH BLACK ASPHALTUM OR OTHER WATER DEPARTMENT APPROVED COATINGS.
3. CONCRETE THRUST BLOCKS POURED BEHIND 3-WAY TEE AND HYDRANT SHOE TO BE USED WITH SOCKET CLAMPS.
4. NO CONCRETE SHALL COVER PIPE JOINTS, FITTING JOINTS, BOLTS OR HYDRANT DRAINS.

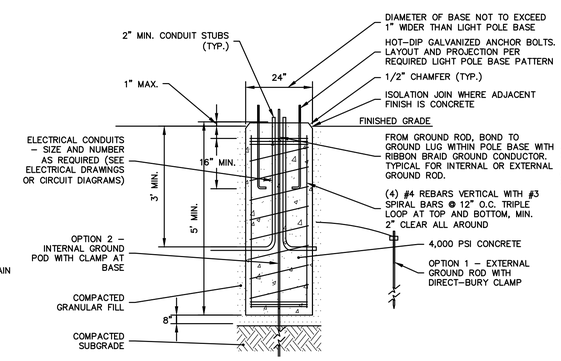
CONCRETE THRUST BLOCK FOR PRESSURE PIPE

SCALE: NONE
WTR-105-CT



FIRE HYDRANT & VALVE

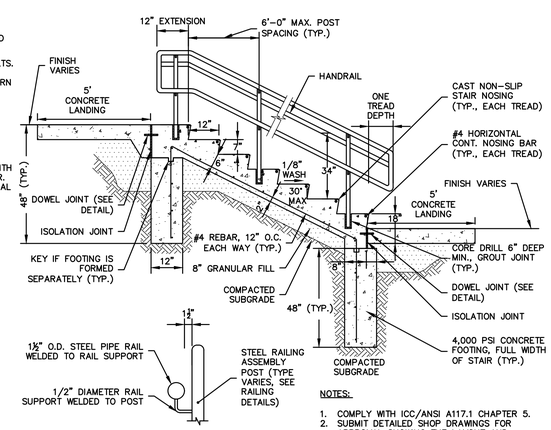
SCALE: NONE
WTR-103-CT



NOTES:
1. REINFORCING BARS SHALL BE DEFORMED BAR, ASTM A615 GRADE 60.
2. CONDUIT LOCATIONS SHOWN ARE CONCEPTUAL. REFER TO ELECTRICAL DRAWINGS OR CIRCUIT DIAGRAMS FOR THE NUMBER, SIZES, AND ORIENTATION REQUIRED.
3. ALL GROUND RODS SHALL BE COPPER-COATED. DIAMETER AND LENGTH PER APPLICABLE CODES. GROUNDING WIRE SHALL BE No. 4 AWG STRANDED COPPER WIRE UNLESS OTHERWISE SPECIFIED.
4. ANCHOR BOLTS SHOWN ARE CONCEPTUAL. ANCHOR BOLT SPECIFICATIONS SHALL MEET THE POLE MANUFACTURER'S REQUIREMENTS FOR SIZE, LENGTH, AND GRADE, BASED ON POLE TYPE, HEIGHT, AND FIXTURE(S).

LIGHT POLE BASE

SCALE: NONE



NOTES:
1. COMPLY WITH ICC/ANSI A117.1 CHAPTER 5.
2. SUBMIT DETAILED SHOP DRAWINGS FOR APPROVAL SHOWING THE LAYOUT AND DIMENSIONS OF ALL STAIR SYSTEM COMPONENTS.
3. EXPOSED SURFACES TO BE BRUSHED FINISH TROWELED EDGES.
4. MINIMUM WIDTH TO BE 48" CLEAR HANDRAIL TO HANDRAIL.
5. MAXIMUM RADIUS OF CURVATURE AT THE LEADING EDGE OF TREADS SHALL BE 1/2".
6. CONSTRUCT CONCRETE LANDINGS PER SIDEWALK DETAIL.

CONCRETE STAIRS

SCALE: NONE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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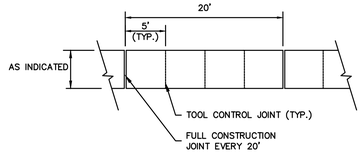
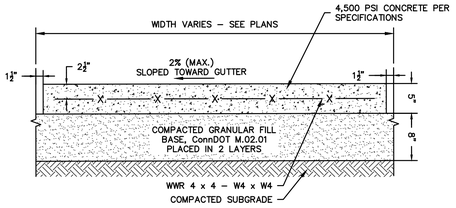
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.1
JOB. NO: 83749.00



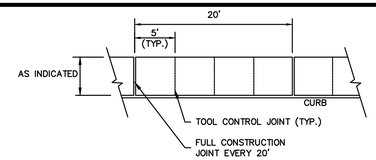


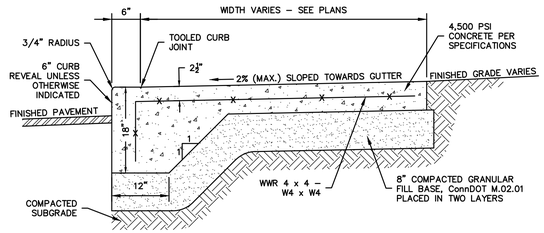
NOTES:

1. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
2. FULL-DEPTH JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
3. SIDEWALK SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

CONCRETE SIDEWALK

SCALE: NONE



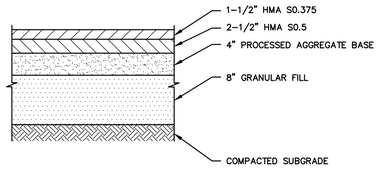


NOTES:

1. CURB REVEAL DIMENSION MAY VARY, SEE PLANS.
2. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
3. TOOLED CURB JOINT SHALL BE 1/4-INCH DEEP MAX.
4. CONSTRUCTION JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
5. SIDEWALKS SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

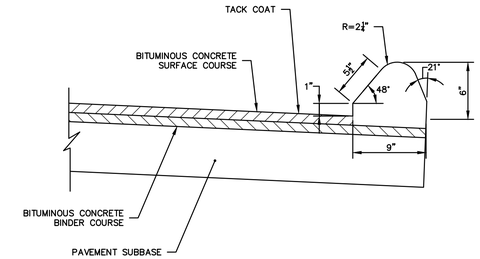
MONOLITHIC CONCRETE CURB AND SIDEWALK

SCALE: NONE



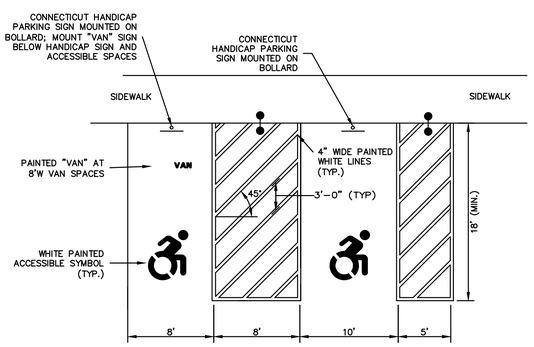
BITUMINOUS CONCRETE PAVEMENT

SCALE: NONE



6" BITUMINOUS CONCRETE LIP CURBING

SCALE: NONE
CRB-103-CT

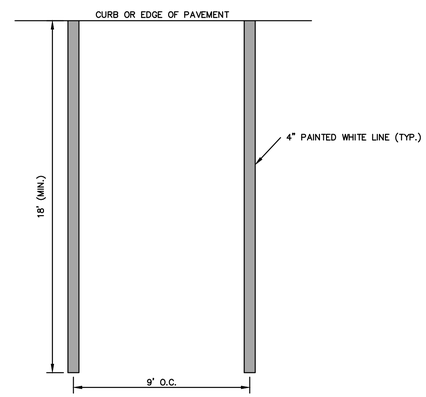


NOTES:

1. GRADING WITHIN HANDICAP SPACES SHALL BE LESS THAN 2.00% IN ALL DIRECTIONS
2. SIGN LOCATION VARIES – SEE PLAN

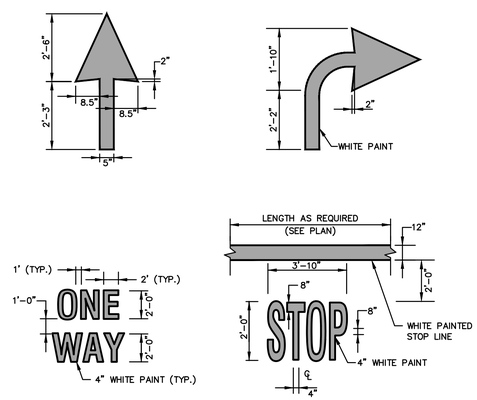
ACCESSIBLE PARKING SPACES

SCALE: NONE



STANDARD PAINTED PARKING MARKINGS

SCALE: NONE

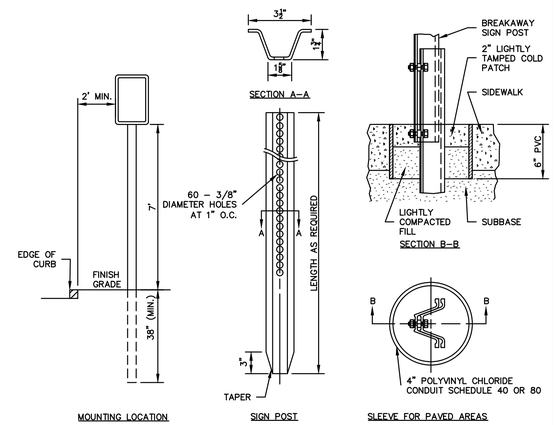


NOTES:

1. PAVEMENT MARKINGS SHOWN SHALL NOT BE INSTALLED ON PUBLIC ROADWAYS.

PAINTED PAVEMENT MARKINGS

SCALE: NONE
PVT-104-CT

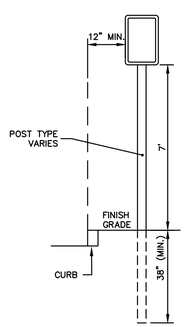


NOTES:

1. MOUNT SIGN TO POST PER CONNDOT 816 SPECIFICATIONS AND DETAILS.
2. PROVIDE SLEEVE FOR ALL SIGNS MOUNTED IN CONCRETE.

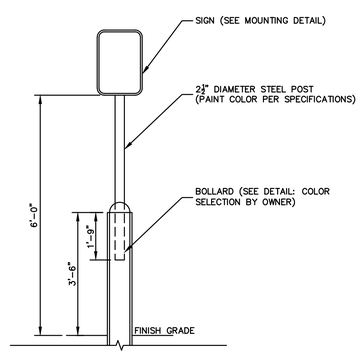
TYPICAL SIGN SUPPORT – BREAKAWAY TYPE II

SCALE: NONE



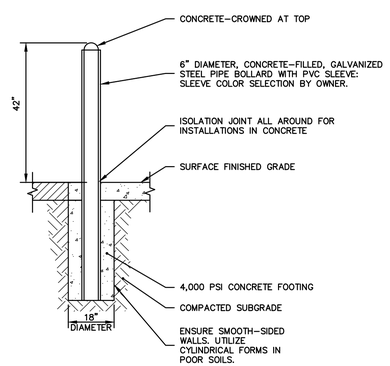
POST-MOUNTED SIGN

SCALE: NONE



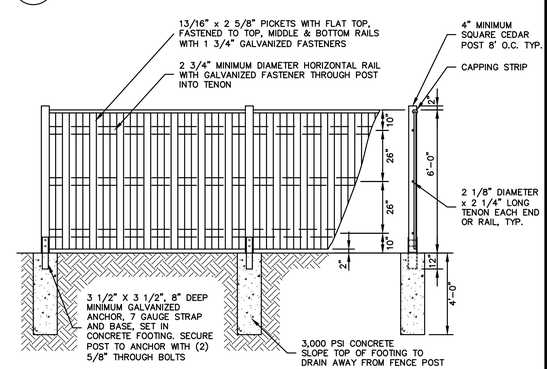
BOLLARD-MOUNTED SIGN

SCALE: NONE



CONCRETE-FILLED STEEL BOLLARD

SCALE: NONE



GENERAL NOTES

1. ALL FENCING MATERIAL SHALL BE TREATED NORTHERN WHITE CEDAR, TO THE DIMENSIONS SHOWN ON THE DRAWING.
2. LINE FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. ALL POSTS AND FACING BOARDS OR SLATS SHALL BE INSTALLED PARALLEL AND PLUMB. ALL RAILS SHALL BE INSTALLED PARALLEL AND TRUE.
3. ALL GATE HARDWARE SHALL BE DOUBLE DIP HOT GALVANIZED. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

6' SINGLE SIDED WOOD FENCE

SCALE: NONE
FSN-105-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.2
JOB. NO: 83749.00

ADVANCED DRAINAGE SYSTEMS, INC.

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

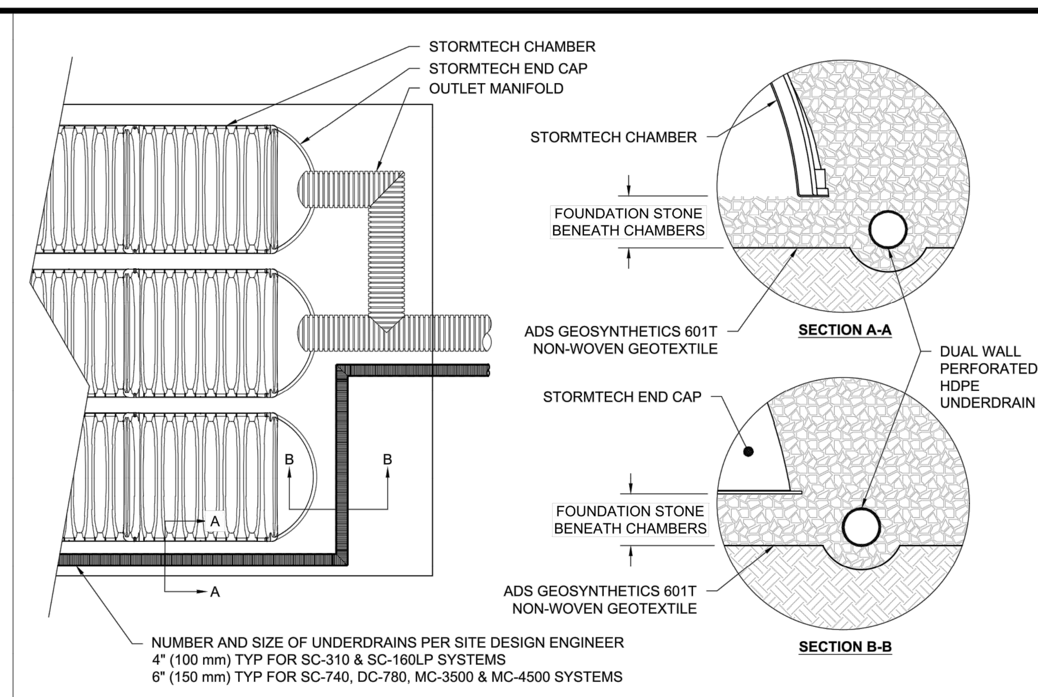
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

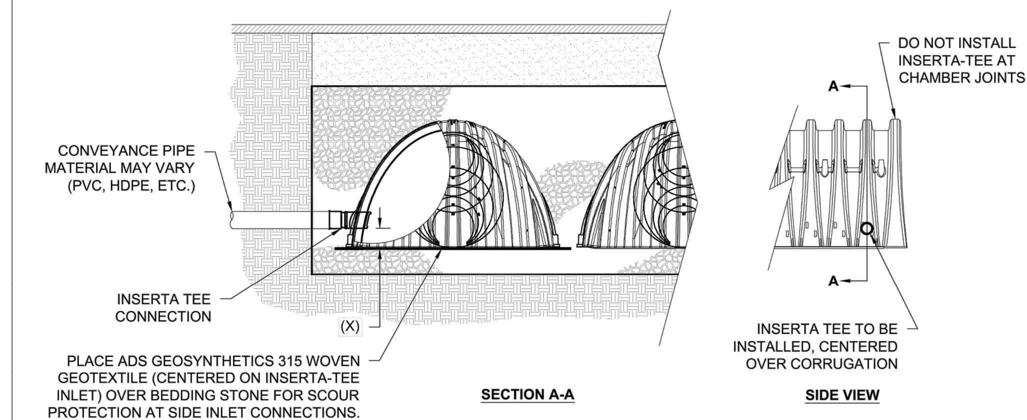
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



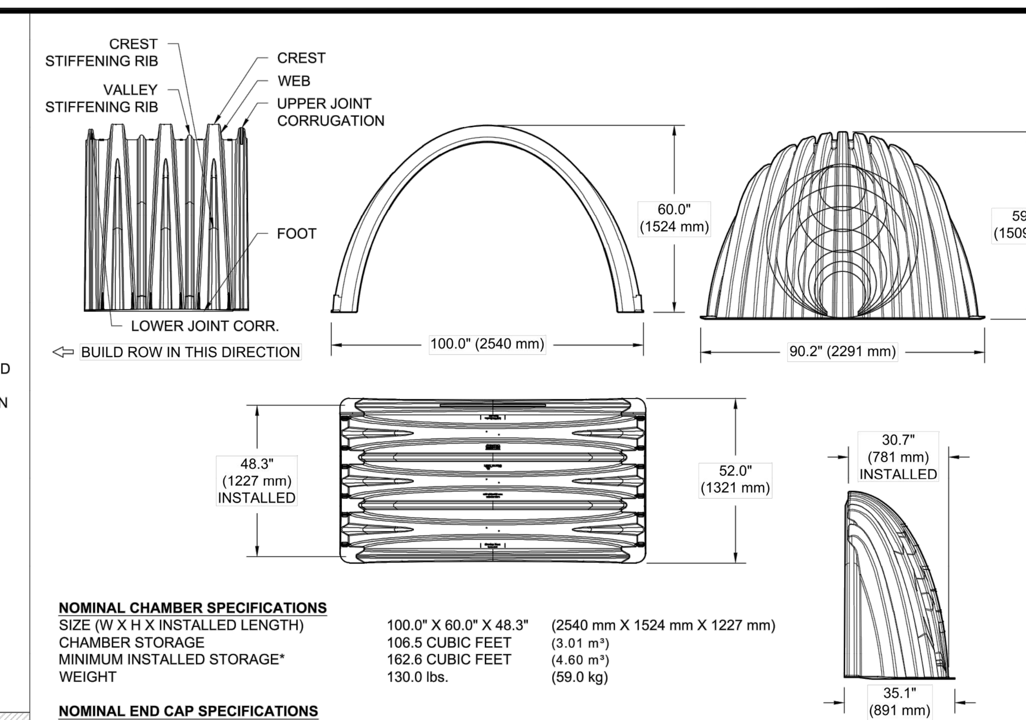
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

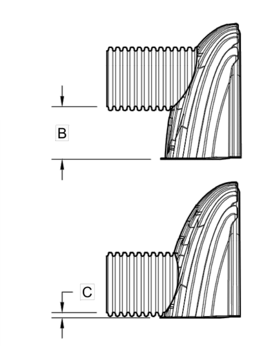
SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	(1.01 m³)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	(3.08 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

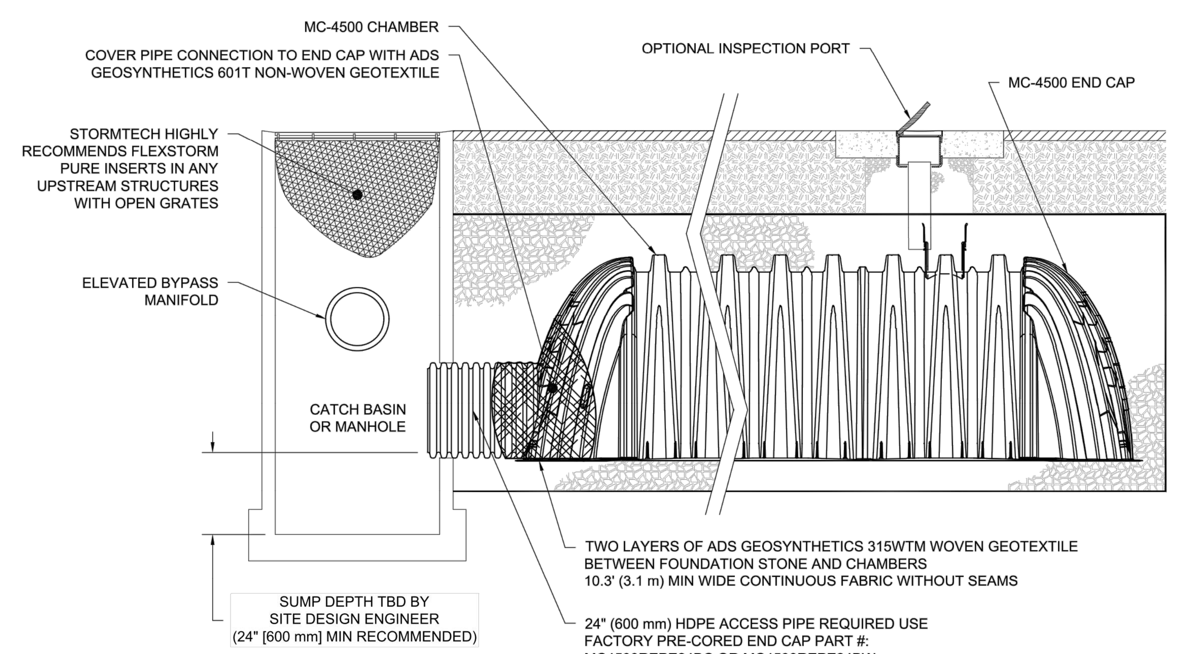
PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18TW			
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE18BW			
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24TW			
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE24BW			
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-4500 TECHNICAL SPECIFICATIONS



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

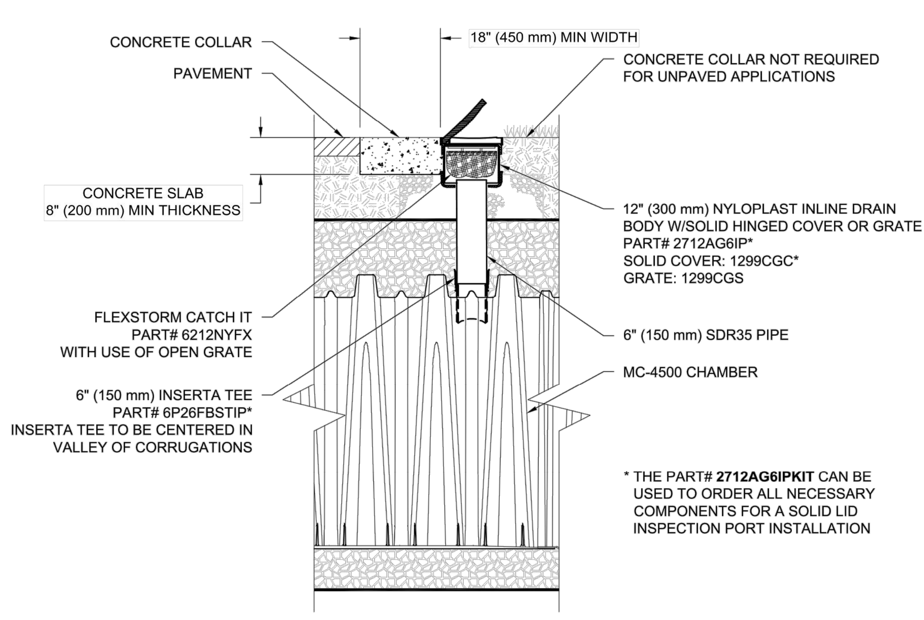
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

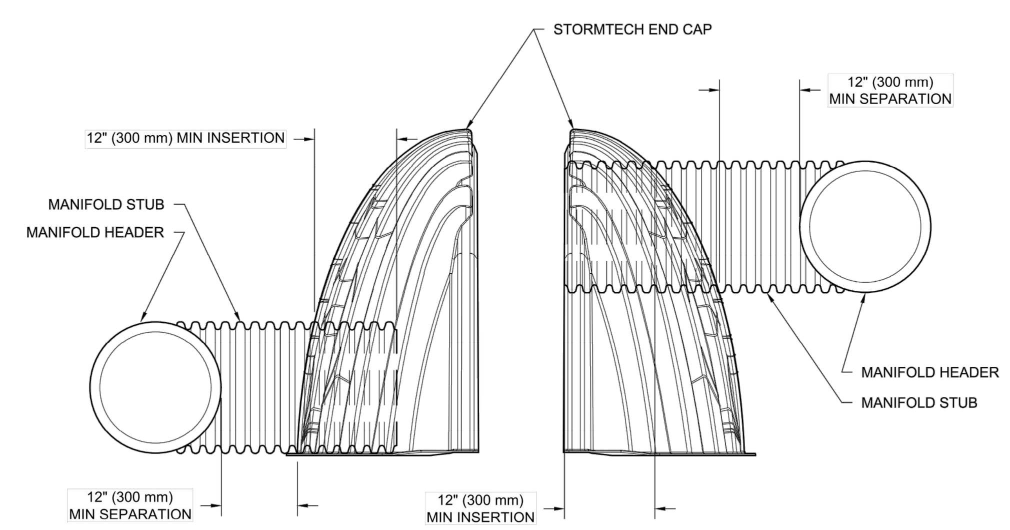
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-4500 ISOLATOR ROW DETAIL



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

4 MC-4500 6" (150 mm) INSPECTION PORT DETAIL



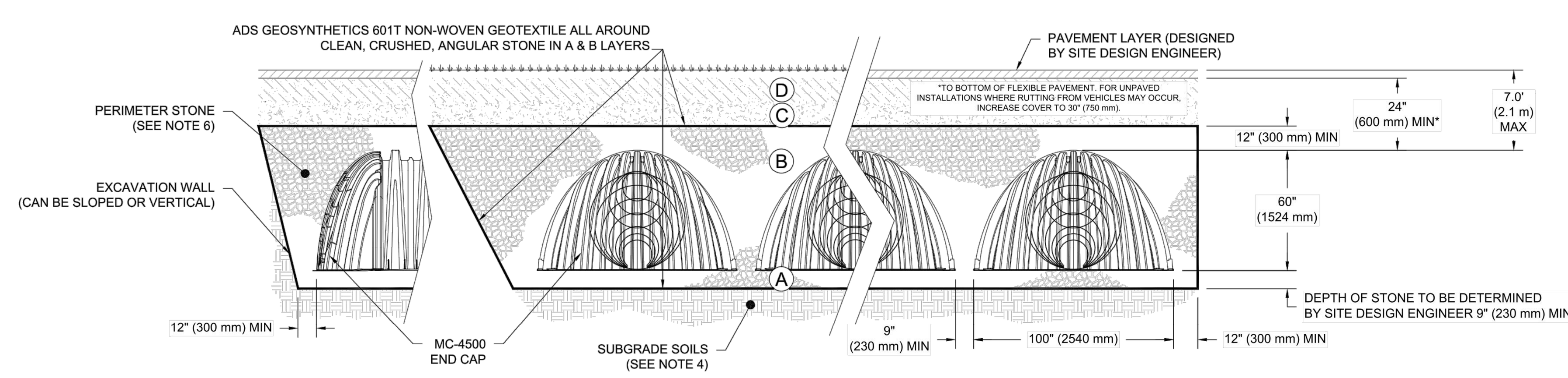
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

7 MC-SERIES END CAP INSERTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

1 MC-4500 CROSS SECTION DETAIL

DATE: 08/28/18
PROJECT NO:
NOT TO SCALE
DRAWN: JLM
REVIEWED: JLM
REV:

MC-4500 STANDARD DETAILS

StormTech® Detention • Retention • Water Quality
70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067
860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
ADVANCED DRAINAGE SYSTEMS, INC.

SHEET 1 OF 1

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT, UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER. THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION   DATE

ISSUED FOR PERMITTING

NOTES:
1. ADS STORMTECH MC-4500 USED AS BASIS FOR DESIGN. CONTRACTOR SHALL SELECT THIS PRODUCT OR APPROVED EQUAL AND SUBMIT A COMPLETE SHOP DRAWING PACKAGE FOR REVIEW AND APPROVAL BY THE ENGINEER.

EAGLEVILLE GREEN - NOVEMBER 25, 2019

ROBERT NEWTON, PE   No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

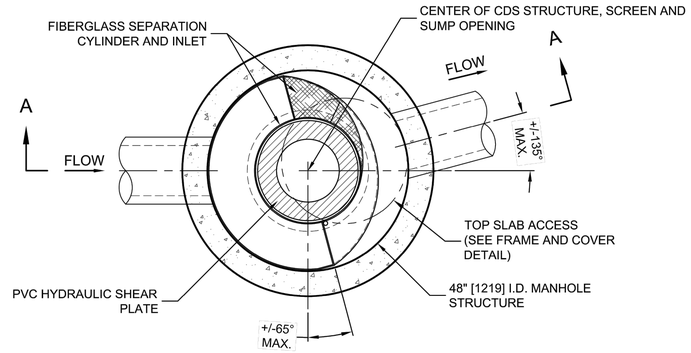
1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

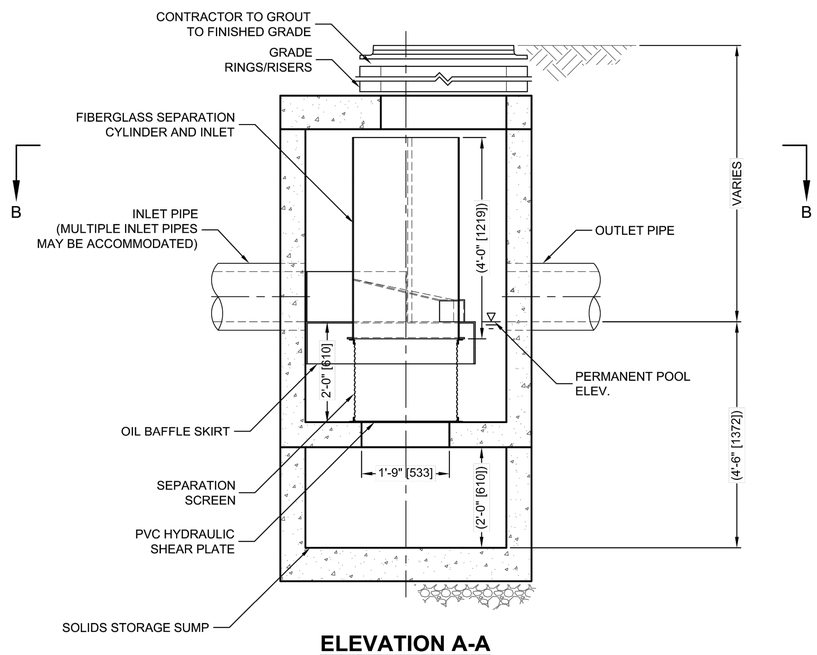
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.3
JOB. NO: 83749.00



PLAN VIEW B-B
N.T.S.



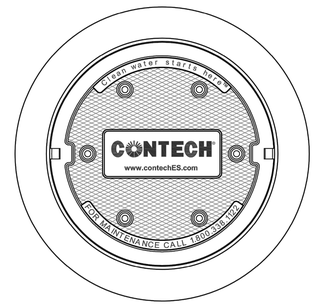
ELEVATION A-A
N.T.S.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,846; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

C:\USERS\SCHLACHTER\DESKTOP\CDS DETAILS 180 MICRON SIZING\ACAD\CDS2015-4-C-DTL.DWG 5/19/2014 5:16 PM

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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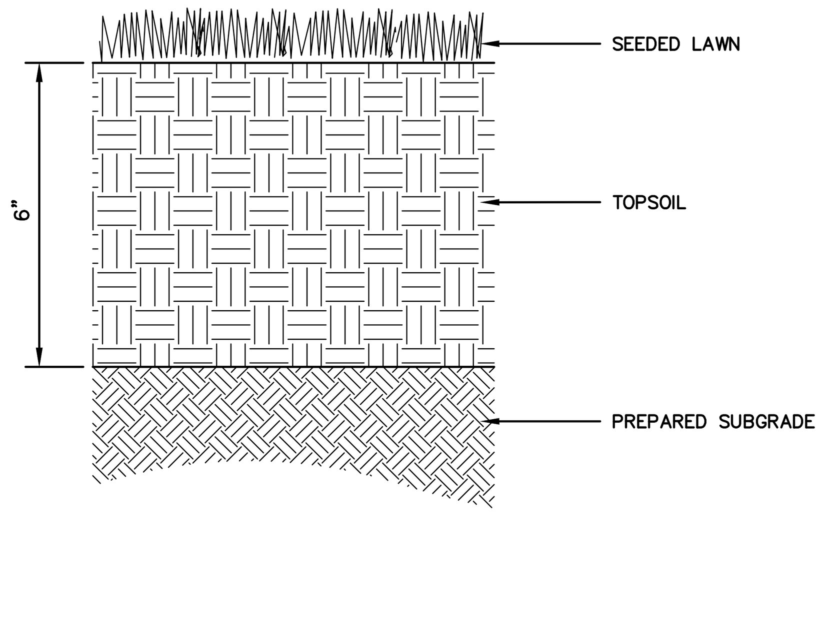
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.4
JOB. NO: 83749.00

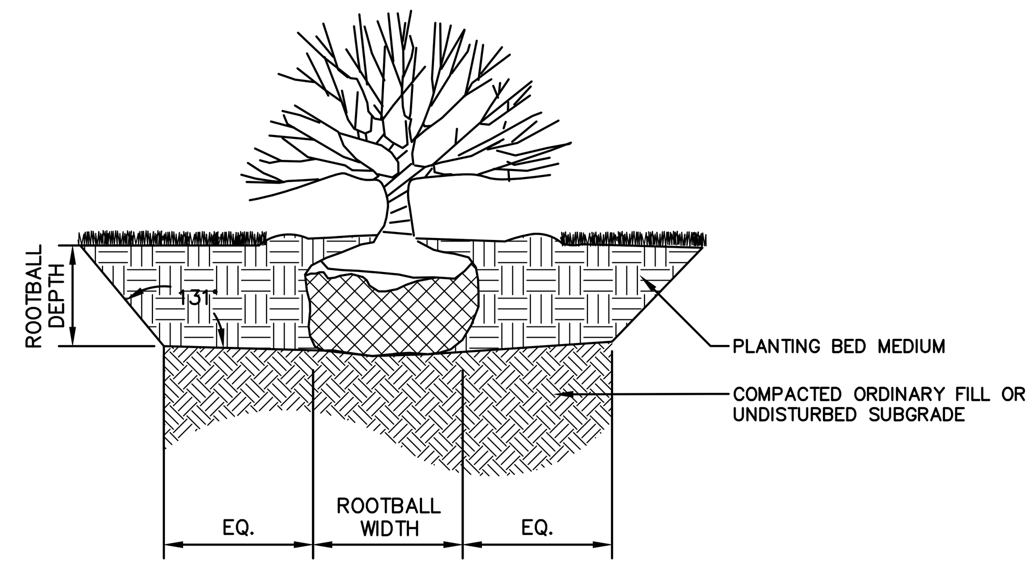


NOTES:
1. CONTRACTOR SHALL PREPARE SOILS IN ALL DISTURBED AREAS AND AREAS USED FOR EQUIPMENT ACCESS.

LAWN

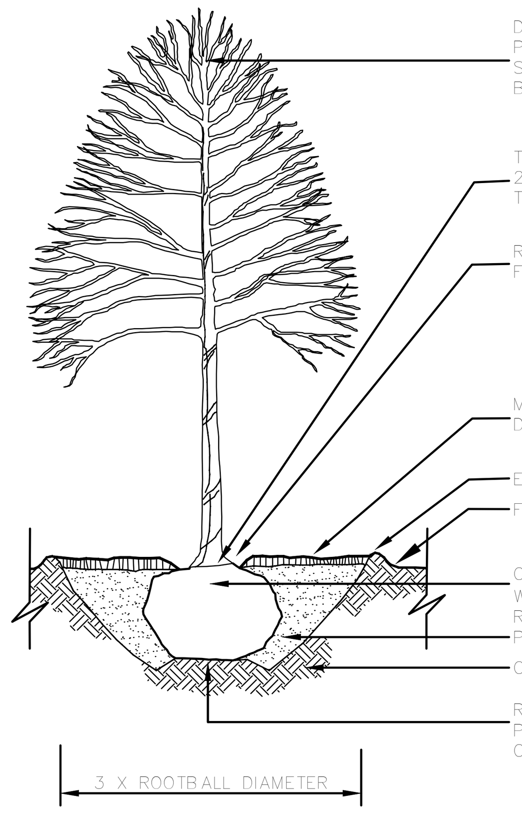
SCALE: NONE

NOTES:
1. LOOSE OR CRACKED ROOT BALLS ARE UNACCEPTABLE.
2. EXCAVATE TO REQUIRED DEPTH AND DO NOT EXCAVATE BELOW ROOT BALL DEPTH.
3. SET SHRUBS PLUMB WITH ROOT FLARE 1" ABOVE FINISHED GRADE, BACKFILL WITH PLANTING MIX.
4. FLOOD WATERING SAUCER TWICE IN FIRST 24 HOURS AFTER PLANTING.
5. RAISE AND REPLANT ANY SHRUBS THAT SETTLE AFTER PLANTING & WATERING.
6. REMOVE 1/3 BURLAP PRIOR TO BACKFILL. SYNTHETIC BURLAP UNACCEPTABLE.E
7. 2" DEPTH MULCH (KEEP MULCH 1" AWAY FROM SHRUB BASE) 3" HIGH EARTH WATERING SAUCER 1'-0" BEYOND ROOT BALL PLANTING MIXTURE.
8. FOR CONTAINERIZED PLANTS: REMOVE CONTAINER PRIOR TO PLANTING, SCARIFY ROOT BALL BELOW EDGE 1/2" DEEP IN FOUR LOCATIONS.



SHRUB PLANTING

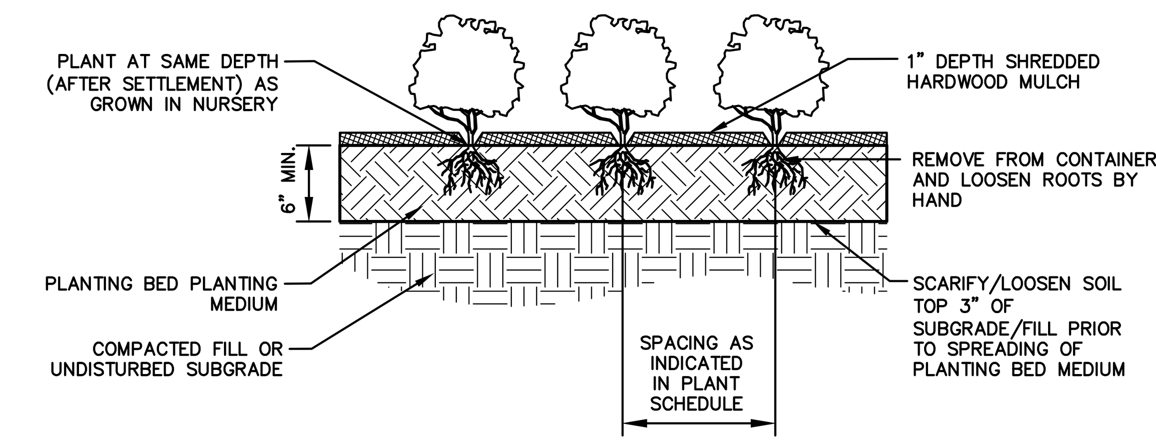
SCALE: NONE



NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
3. DO NOT STAKE OR WRAP TREE UNLESS NOTED OTHERWISE.

DECIDUOUS TREE PLANTING

SCALE: NONE
PLNT-107-CT
11/05



GROUNDCOVER PLANTING TYP.

SCALE: NONE

1710LED VILLA SERIES

LED

EPA 0.78 (ft²) | WEIGHT 35 LBS | 7 YEAR WARRANTY | LUMEN RANGE 3,070 to 7,365 | LIFE SPAN L70 MINIMUM 100,000 HOURS | UL LISTED | CLICK FOR FAQ's | IP RATING* IP66

JOB NAME
FIXTURE TYPE
MEMO

"Fixture "A" shown above, additional styles on page 3.
*Optical module only

BUILD A PART NUMBER

ORDERING EXAMPLE: PT-1710CLED-RA-IH1-R3-1L40TS-MDL07-SV2-MS-R5-PE/BKT

Mounting Config.	Fixture	Roof	Internal Housing	Fitter	LED	CCT	Type	Driver	Internal Lens	Option Mini Shade	Option External Rings	Option Control Recept.	Option Control	Option Fuse	Option Hangstraight	Option House Side Shield	Arm See Arm Spec Sheets	Pole See Pole Spec Sheets	Finish

Mounting Configuration (Click here to view mounting configuration sheet)
• 1W • 2A • 3A90 • 1AM • CAT
• PT • 2A90 • 3APT • 2AM
• 1A • 2APT • 4A • 450PB
• 1APT • 3A • 4APT • SH44[1]

W = Wall Mount PT = Post Top A = Arm Mount AM = Arm Mid-Mount PB = Pier Base CAT = Catenary SH = Stem Hung
[1] Include overall drop length in inches after designation for stem application (IE: SH44-48").

Fixture
• 1710ALED • 1710BLED • 1710CLED
• 1710ALEDH • 1710BLEDH • 1710CLEDH
H = Hanging Fixture

Roof
• RA (Deep shade w/ sloped top)
• ~~RB (Deep shade w/ stepped top)~~
• RC[2] (Thin shade)
• RD (Shallow shade w/ flat top)
• RE[3] (No shade w/ flat top)
[2] Not for use with "A" or "B" style fixture
[3] Not for use with "B" style fixture

Internal Housing[7]
• IH1[4,5] (Stacked louvers)
• IH2[5] (Smooth cylinder)
• IH3[5] (Tapered cylinder)
• IH4[5] (4-vaned deco)
• IH5[5] (Ringed cylinder)
• IH6[6] (Low-rise cone)
[4] Not for use with "SV2RB" Internal Lens
[5] For use with "TS" optic only
[6] For use with "TSL" or "TAL" optic only
[7] Internal Housing offered with Silver finish only

Fitter
• R3 • R4 • NA[8]
[8] For use with hanging (H) fixture only

LED
• 1L

CCT - Color Temperature (K)
• 27(00) • 30(00) • 40(00) • 50(00)

Distribution Type
• TS (Symmetric, behind internal lens)
• TSL[9] (Symmetric, with large optic)
• TAL[9] (Asymmetric, with large optic)
[9] Not for use with "RC" roof.

Driver
• MDL05 (120V-277V, 500mA)
• MDL07 (120V-277V, 700mA)
• MDL09 (120V-277V, 900mA)
• MDL11 (120V-277V, 1100mA)
• MDH07 (347V-480V, 700mA)
• MDH09 (347V-480V, 900mA)
• MDH11 (347V-480V, 1100mA)

Internal Lens
• SV2RB[10] (Soft Vue Moderate Diffused Ribbed Acrylic Vertical Lens)
• SV2[10] (Soft Vue Moderate Diffused Acrylic Vertical Lens)
• SV4[10] (Soft Vue Maximum Diffused Acrylic Vertical Lens)
• NIL[11] (No Internal Vertical Lens)
[10] For use with "TS" optic only.
[11] For use with "TSL" or "TAL" optic only.

Options (Click here to view accessories sheet)
• MS[12] Mini-Shade
• ERS[12] External Rings
• R[13] 3-Pin control receptacle only
• R5[13] 5-Pin control receptacle only
• R7[13] 7-Pin control receptacle only
• PE[14] Twist-Lock Photocontrol (120V-277V)
• PE3[14] Twist-Lock Photocontrol (347V)
• PE4[14] Twist-Lock Photocontrol (480V)
• SC[14] Shorting Cap
• FHD[15] Double Fuse and Holder
• HSHS[16] Standard Horizontal Hangstraight, Spike Finial
• HSHN[16] Standard Horizontal Hangstraight, No Finial
• HSHB[16] Standard Horizontal Hangstraight, Ball Finial
• EZ[16] Vertical Hangstraight, Large, "EZ" Mount
• HSV[16] Vertical Hangstraight, Standard
• HSS 120° House Side Shield
[12] For use with "C" style fixture only
[13] Cannot be used with SH44, CAT, EZ or HSV mounting style
[14] Requires control receptacle
[15] Ships loose for installation in base
[16] For use with hanging (H) fixture only

Arm (Click here to link to arm specification page)
See Arms & Wall Brackets specification sheets.
• OMS • HMS • VCS
• VFS • VLS

Pole (Click here to link to pole specification page)
See Pole specification sheets.

Finish (Click here to view paint finish sheet)
Standard Urban Finishes
• UGMT Gun Metal Textured
• UGM Gun Metal Matte
• UBT Urban Bronze Textured
• UB Urban Bronze Matte
• ULBT Urban Light Bronze Textured
• ULB Urban Light Bronze Matte
• USLT Urban Silver Textured
• USL Urban Silver Matte
• UWHT Urban White Textured
• UWH Urban White Matte
• UCHS Urban Champagne Satin Smooth
• BKT Black Textured

Custom Urban Finishes[17]
• CM Custom Match
• CHL Custom Highlights (consult factory for more information)
[17] Custom finish requires upcharge, consult factory for more information.

Specifications

Fixture
Fixture shall be cylindrical in form (straight or tapered lens as specified), and feature both a roof casting and internal housing manufactured via permanent mold tooling. The outer lens shall be one-piece, injection molded, non-yellowing acrylic, sealed top and bottom with seamless silicone gaskets to an IP66 rating. Set screws and related hardware shall be finish painted to match the fixture housing. The luminaire shall be UL listed in the U.S. and Canada.

Optional Mini-Shade / External Rings
Offered on fixture style "C" only.
(Mini-Shade) A small cast aluminum louvered shade measuring 17-1/2" OD x 1-1/2" tall,
See next page

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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1710LED VILLA SERIES

LED

installed above the shade on roof style RC. Installed under shade on styles RA, RB, RD & RE
(External Rings) 2 flat cast aluminum rings measuring 13" OD, installed above the shade on roof style RC. Installed under shade on styles RA, RB, RD & RE

Fitter - Standard
Fixture shall house the driver and be provided with a heavy wall die cast aluminum fitter designed to slip-fit 3"OD (R3) or 4"OD (R4) x 3" tall tenons/poles. The fitter shall have three (3) stainless steel allen head screws to secure the connection between the fitter and tenon/pole. All external hardware shall be finish painted to match the rest of the fixture housing.

LEDs
The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating of 1 to 3 mils. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K or 5000K option) color temperature with a minimum of 70 CRI. Consult factory for custom color CCT. The luminaire shall have a minimum ______ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Optics
(TS Optic) The luminaire shall be provided with an individual, molded silicone refractor type optic applied to the COB (Chip On Board) LED assembly. An additional vertical diffused acrylic lens installed inside the unit allows for a high level of visual comfort. All testing shall be done in accordance with IESNA LM-79.
(TSL & TAL Optic) The luminaire shall be provided with an individual, large injection molded acrylic refractor type optic applied to the COB (Chip On Board) LED assembly. The optic visually spreads out size of the light source while creating a Symmetric (TSL) or asymmetric (TAL) light pattern. All testing shall be done in accordance with IESNA LM-79.

Electronic Drivers
The LED driver shall be U.L. Recognized. It shall be securely mounted inside the fixture, for optimized performance and longevity. It shall be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections and fixture installation. It shall have overload, overheat and short circuit protection, and have a DC voltage output, constant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It shall be a high efficiency driver with a THD less than 20% and a high power factor greater than .9. It shall be dimming capable using a 0-10v signal, consult factory for more information.

Photocontrols
Twist-Lock Style: The photocontrol shall be mounted externally on the fixture and prewired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years.

Wireless Controls
A 5-pin (R5) or 7-pin (R7) NEMA receptacle can be included on the unit for wireless control systems.

Warranty
Seven-year limited warranty. See product and finish warranty guide for details.

Finish
Refer to website for details.

Performance (based on "C" style fixture with "RD" roof)

MODEL #	TS DELIVERED LUMENS	EFFICACY (LPW)	TSL DELIVERED LUMENS	EFFICACY (LPW)	TAL DELIVERED LUMENS	EFFICACY (LPW)	WATTAGE
1L40T_-MDL11	7325	114.5	7365	115.1	7270	113.6	64
1L30T_-MDL11	7140	111.6	7175	112.1	7085	110.7	64
1L27T_-MDL11	6485	101.3	6520	101.9	6435	100.5	64
1L40T_-MDL09	6060	116.5	6130	117.9	6045	116.3	52
1L30T_-MDL09	5905	113.6	5975	114.9	5890	113.3	52
1L27T_-MDL09	5365	103.2	5425	104.3	5350	102.9	52
1L40T_-MDL07	4790	116.8	4845	118.2	4770	116.3	41
1L30T_-MDL07	4670	113.9	4720	115.1	4650	113.4	41
1L27T_-MDL07	4240	103.4	4290	104.6	4225	103.0	41
1L40T_-MDL05	3500	116.7	3540	118.0	3470	115.7	30
1L30T_-MDL05	3410	113.7	3450	115.0	3380	112.7	30
1L27T_-MDL05	3100	103.3	3135	104.5	3070	102.3	30

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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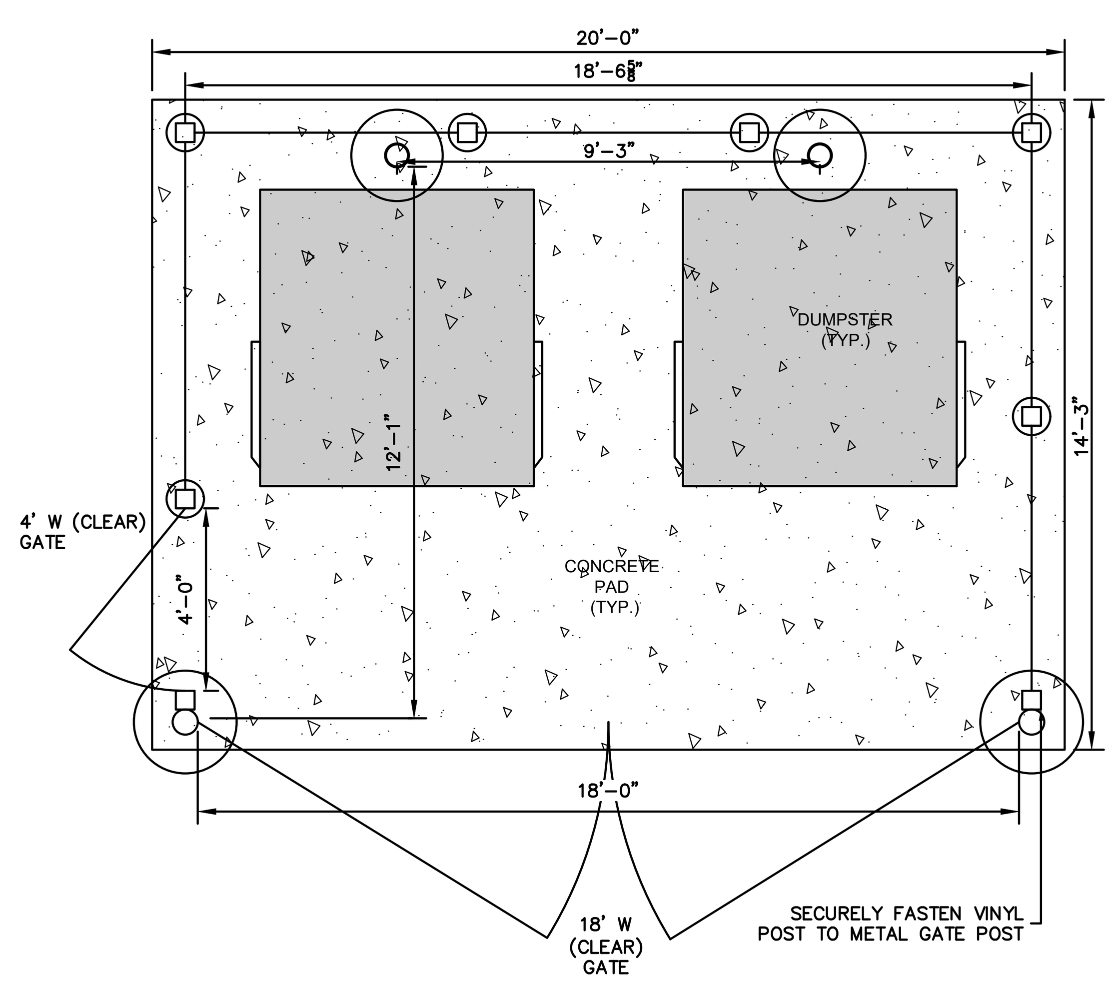
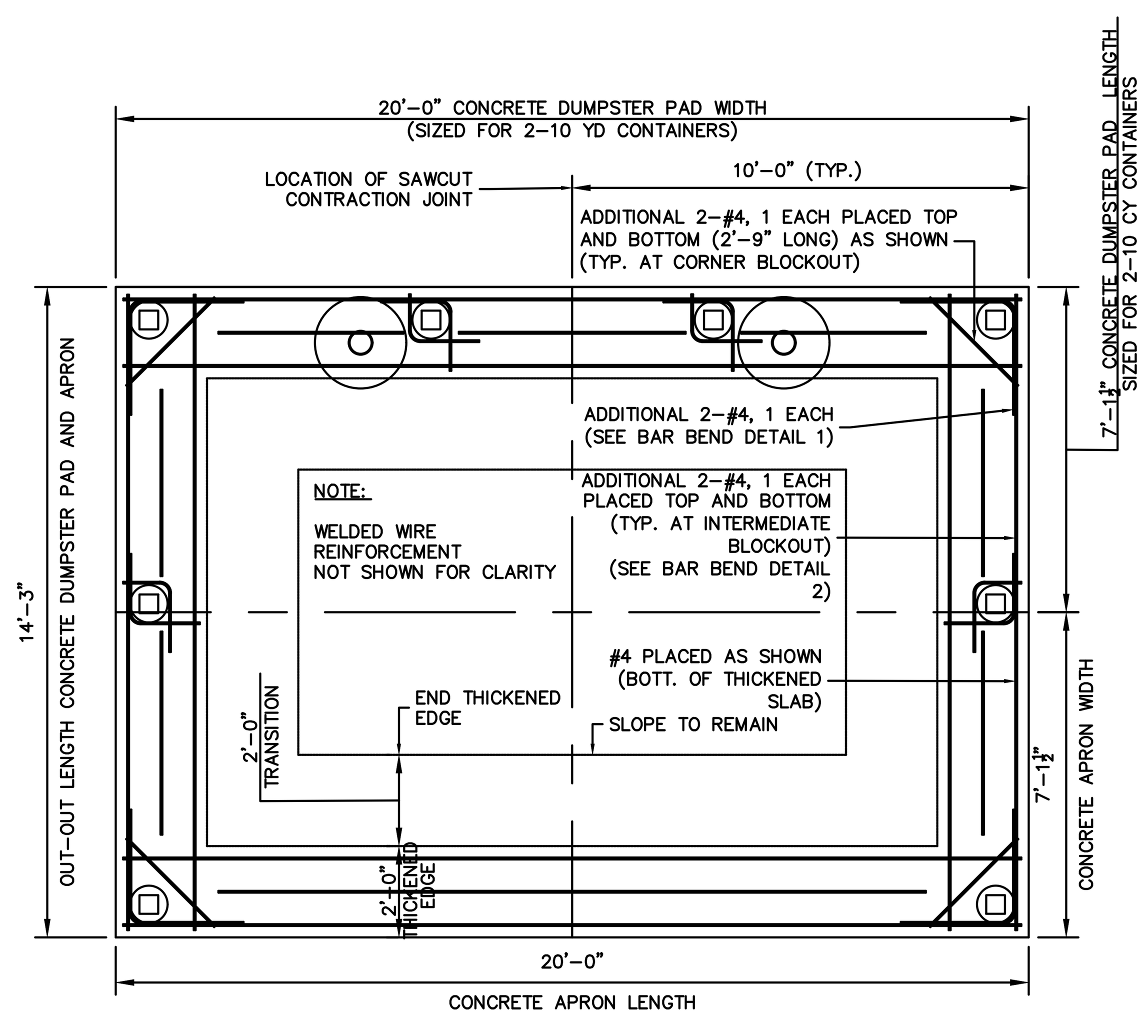
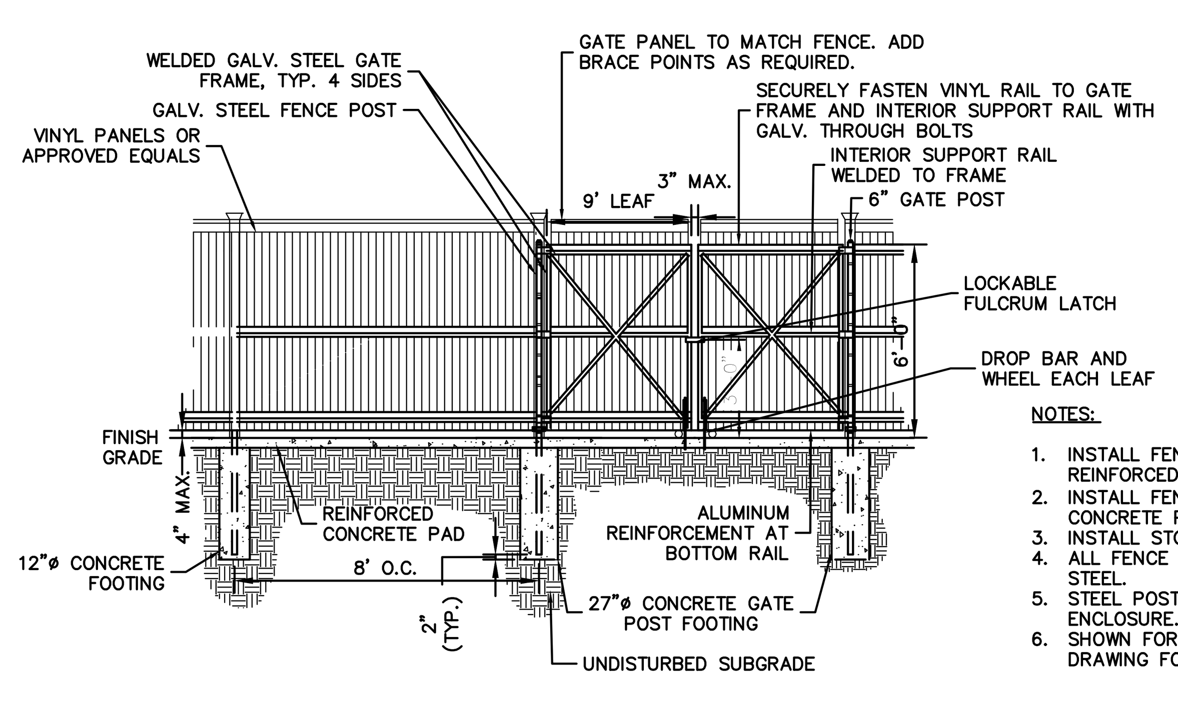


DUMPSTER PAD LAYOUT



CONCRETE SLAB LAYOUT



DUMPSTER PAD ENCLOSURE

FENCE FRAMEWORK SCHEDULE

FENCE HEIGHT	UP TO 4'	5' TO 6'
FENCE POST	2.375" O.D.	2.875" O.D.
TOP AND BOTTOM RAIL	1.6" O.D.	2.375"
MIDDLE RAIL	NONE	2.375"
FOOTING	12" DIA.	12" DIA.

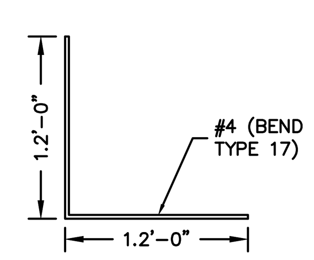
GATE FRAMEWORK SCHEDULE

GATE LEAF WIDTH	6'W OR LESS	>6'W - <12'W
GATE POST	6" O.D.	6" O.D.
GATE FRAME (4 SIDES)	2"	2.375"
INTERIOR SUPPORT	NONE	2.375"
HEAVY DUTY HINGE	3 PER LEAF	3 PER LEAF
FOOTING	16" DIA.	24" DIA.

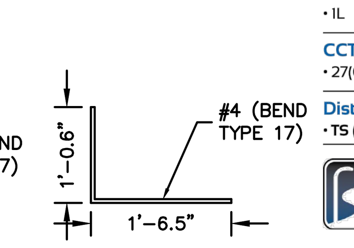
NOTES:
1. INSTALL FENCE FOOTINGS PRIOR TO INSTALLATION OF REINFORCED CONCRETE PAD.
2. INSTALL FENCE POSTS 6" FROM THE EDGE OF THE CONCRETE PAD.
3. INSTALL STOCKADE ON OUTSIDE OF POSTS.
4. ALL FENCE POSTS SHALL BE SCHEDULE 80 GALV. STEEL.
5. STEEL POSTS SHALL NOT BE VISIBLE FROM OUTSIDE OF ENCLOSURE.
6. SHOWN FOR DIAGRAMMATIC PURPOSES. PROVIDE SHOP DRAWING FOR APPROVAL.

DUMPSTER ENCLOSURE

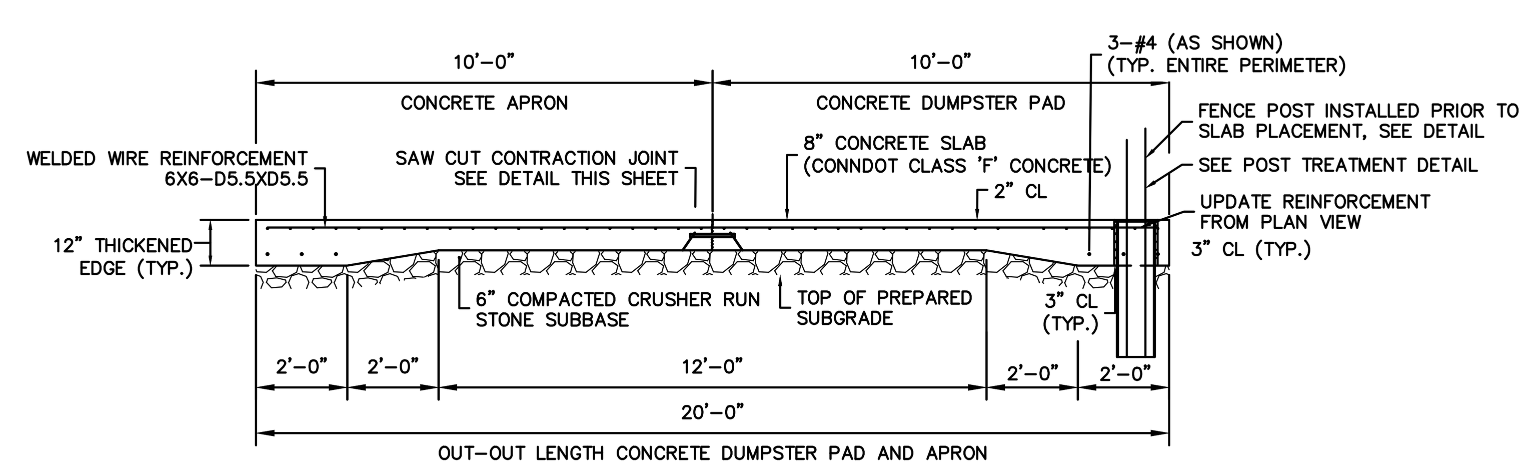
SCALE: NONE



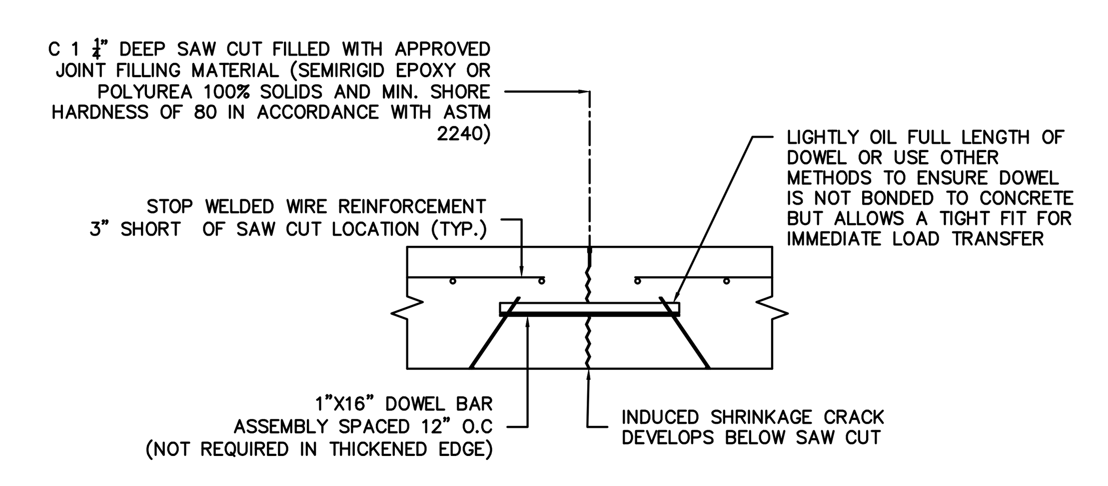
BAR BEND DETAIL 1



BAR BEND DETAIL 2



CONCRETE SLAB SECTION



SAWCUT CONTRACTION JOINT DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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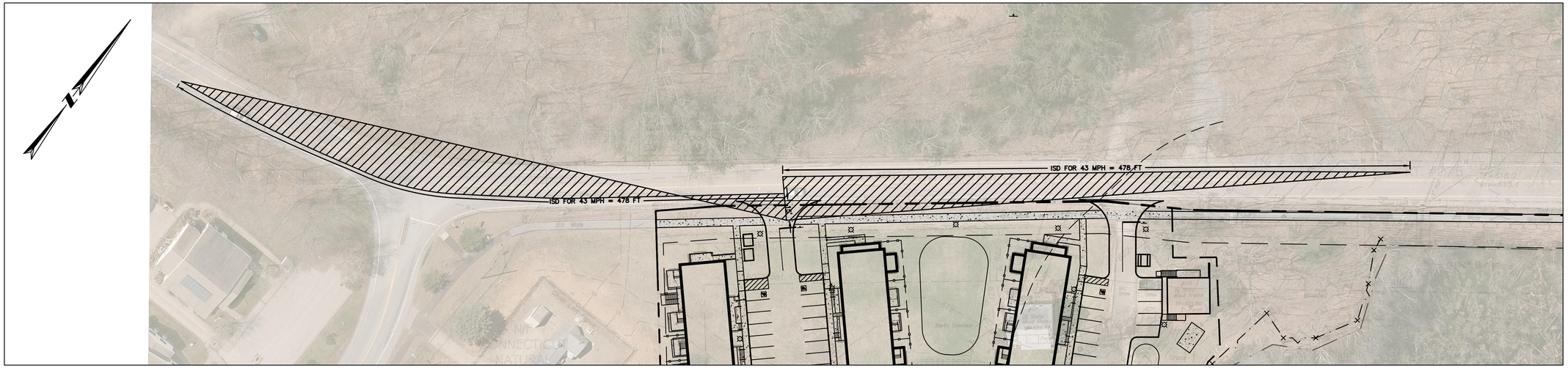
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.5
JOB. NO: 83749.00



WEST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

EAST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

NOTES:

1. INTERSECTION SIGHT DISTANCE IDENTIFIED ON THIS PLAN IS DESIGNED IN ACCORDANCE WITH THE CONNECTICUT HIGHWAY DESIGN MANUAL, CHAPTER 11 "INTERSECTIONS AT GRADE," SECTION 2.03.01 – FIGURE 11–2C "INTERSECTION SIGHT DISTANCES (TWO–LANE HIGHWAY OR STREET)."
2. THE 85TH PERCENTILE SPEED ON SOUTH EAGLEVILLE ROAD (STATE ROUTE NO. 275) AT THE LOCATION OF THE SITE IS 43 MPH.
3. THE INTERSECTION SIGHT DISTANCE FOR A PASSENGER VEHICLE MAKING A LEFT TURN ONTO THE 43 MPH ROAD IS 478 FEET ALONG THE VEHICLE PATH.
4. THE INTERSECTION SIGHT DISTANCE LINE OF SIGHT IS MEASURED 15 FEET BACK OF THE GUTTER LINE AT THE CENTER OF THE EXIT LANE.
5. THE APPROACH GRADE AT BOTH INTERSECTIONS IS LESS THAN +3.0% SLOPE.

INTERSECTION DISTANCES (MINIMUM REQUIRED = 478 FEET):

WEST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = 478 FEET

EAST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = GREATER THAN 600 FEET

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- PROPOSED CURBING
- INTERSECTION SIGHT DISTANCE TRIANGLE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

INTERSECTION SIGHT DISTANCE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
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309 MAPLE ROAD
STORRS, CT 06268

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300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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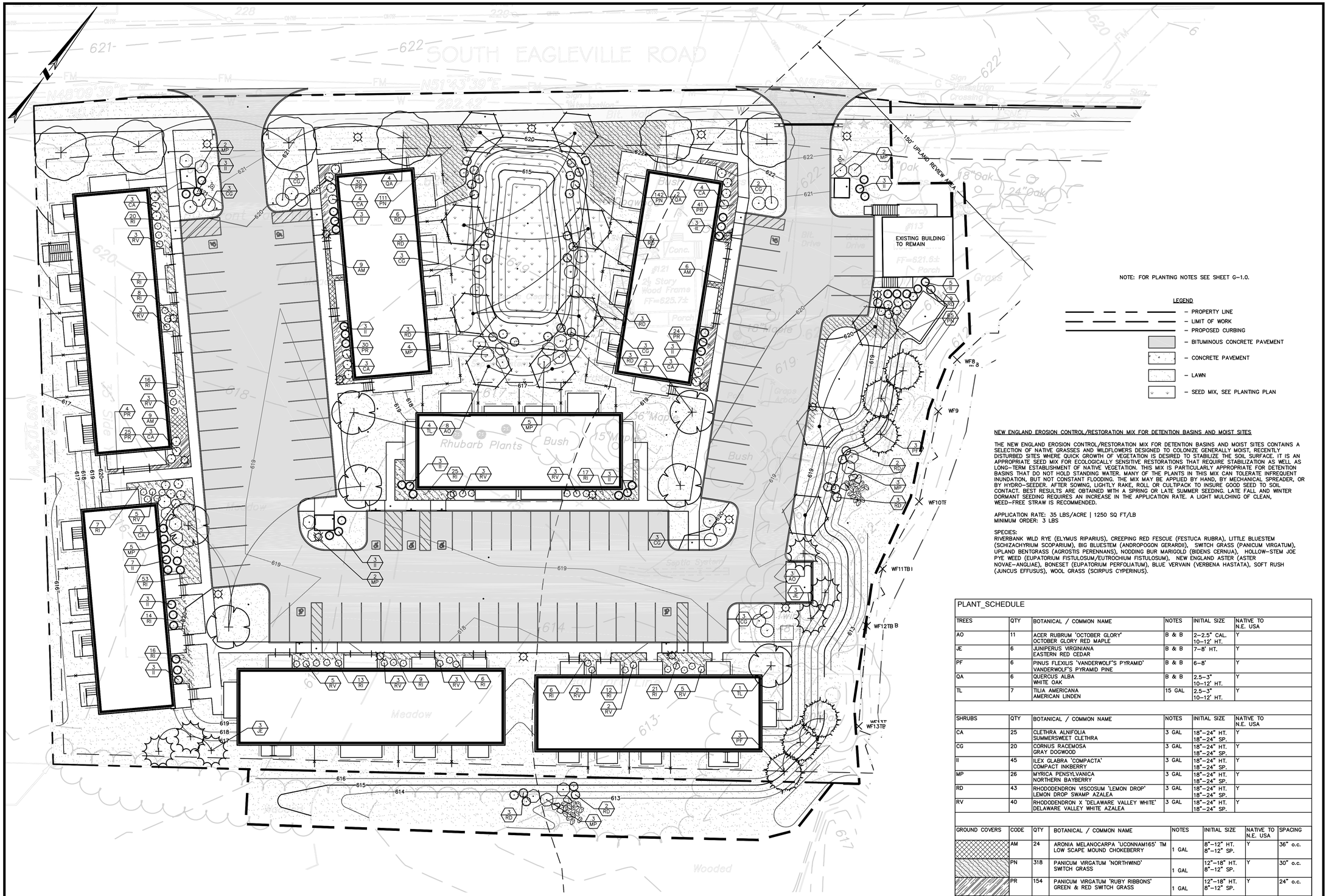
SCALE: 1" = 40'
0 20 40 80 FEET

FILE: 8374900–ISD.DWG
DWG. NO:
JOB. NO: 83749.00

C-7.0



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG-TERM ESTABLISHMENT OF NATIVE VEGETATION. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS THAT DO NOT HOLD STANDING WATER. MANY OF THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDATION, BUT NOT CONSTANT FLOODING. THE MIX MAY BE APPLIED BY HAND, BY MECHANICAL SPREADER, OR BY HYDRO-SEEDER. AFTER SOWING, LIGHTLY RAKE, ROLL OR CULTIPACK TO INSURE GOOD SEED TO SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE FALL AND WINTER DORMANT SEEDING REQUIRES AN INCREASE IN THE APPLICATION RATE. A LIGHT MULCHING OF CLEAN, WEED-FREE STRAW IS RECOMMENDED.

APPLICATION RATE: 35 LBS/ACRE | 1250 SQ FT/LB
MINIMUM ORDER: 3 LBS

SPECIES:
RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW-STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

PLANT_SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
AO	11	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	B & B	2-2.5" CAL. 10-12' HT.	Y
JE	6	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	B & B	7-8' HT.	Y
PF	6	PINUS FLEXILIS 'VANDERWOLF'S PYRAMID' VANDERWOLF'S PYRAMID PINE	B & B	6-8'	Y
QA	6	QUERCUS ALBA WHITE OAK	B & B	2.5-3" 10-12' HT.	Y
TL	7	TILIA AMERICANA AMERICAN LINDEN	15 GAL	2.5-3" 10-12' HT.	Y

SHRUBS	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
CA	25	CLETHRA ALNIFOLIA SUMMERSWEET CLETHRA	3 GAL	18"-24" HT. 18"-24" SP.	Y
CG	20	CORNUS RACEMOSA GRAY DOGWOOD	3 GAL	18"-24" HT. 18"-24" SP.	Y
II	45	ILEX GLABRA 'COMPACTA' COMPACT INKBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
MP	26	MYRICA PENSYLVANICA NORTHERN BAYBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
RD	43	RHODODENDRON VISCOSUM 'LEMON DROP' LEMON DROP SWAMP AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y
RV	40	RHODODENDRON X 'DELAWARE VALLEY WHITE' DELAWARE VALLEY WHITE AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA	SPACING
	AM	24	ARONIA MELANOCARPA 'UCONNAM165' TM LOW SCAPE MOUND CHOKEBERRY	1 GAL	8"-12" HT. 8"-12" SP.	Y	36" o.c.
	PN	318	PANICUM VIRGATUM 'NORTHWIND' SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	30" o.c.
	PR	154	PANICUM VIRGATUM 'RUBY RIBBONS' GREEN & RED SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	24" o.c.
	RI	250	RUDBECKIA FULGIDA 'INDIAN SUMMER' CONEFLOWER	1 GAL	8"-12" HT. 8"-12" SP.	Y	30" o.c.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · RACHEL NICOLE SALCH · LICENSED LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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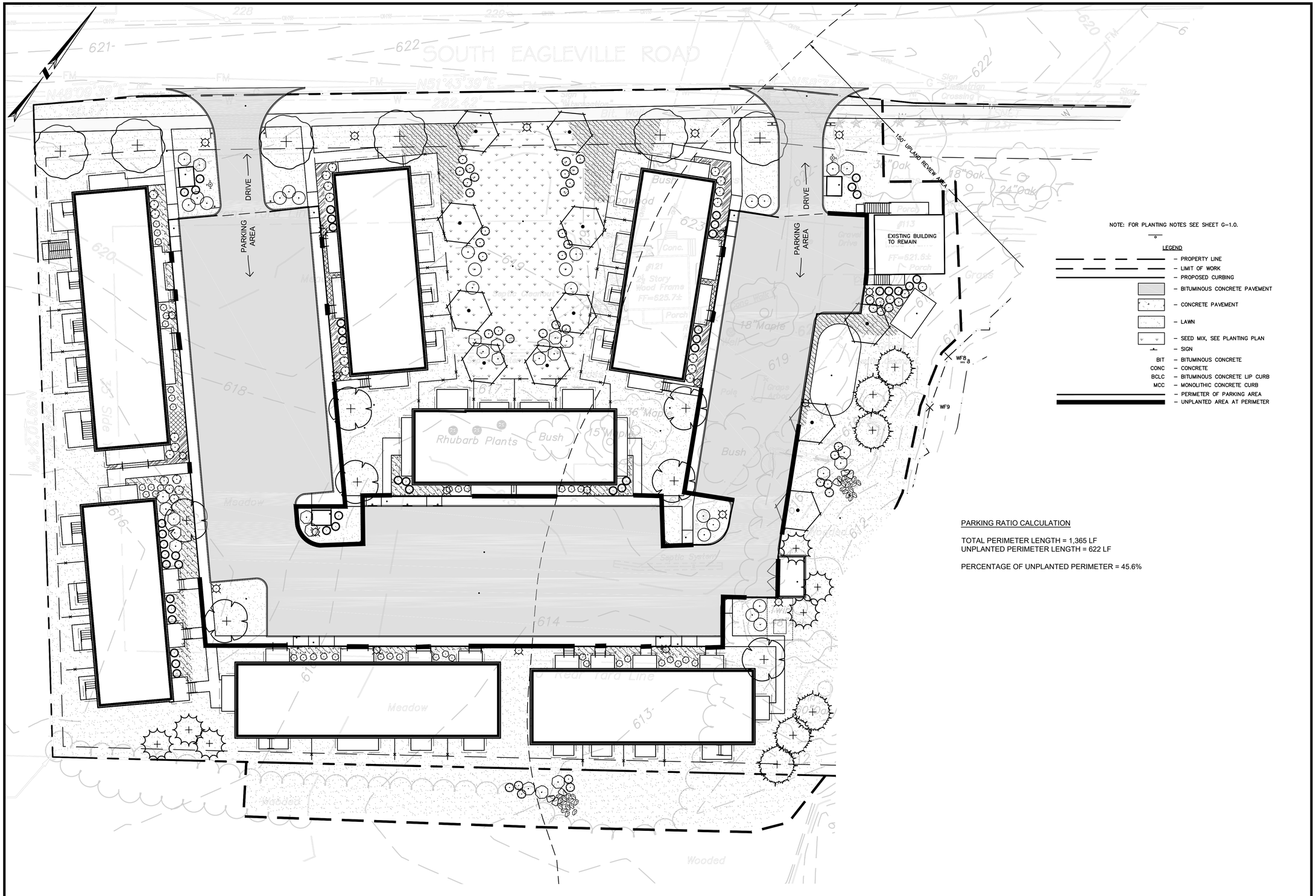
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PLANT.DWG
DWG. NO:
JOB. NO: 83749.00

L-1.0



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB
– PERIMETER OF PARKING AREA
– UNPLANTED AREA AT PERIMETER

PARKING RATIO CALCULATION

TOTAL PERIMETER LENGTH = 1,365 LF
UNPLANTED PERIMETER LENGTH = 622 LF

PERCENTAGE OF UNPLANTED PERIMETER = 45.6%

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
RACHEL NICOLE SALCH
LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING RATIO

NOVEMBER 25, 2019

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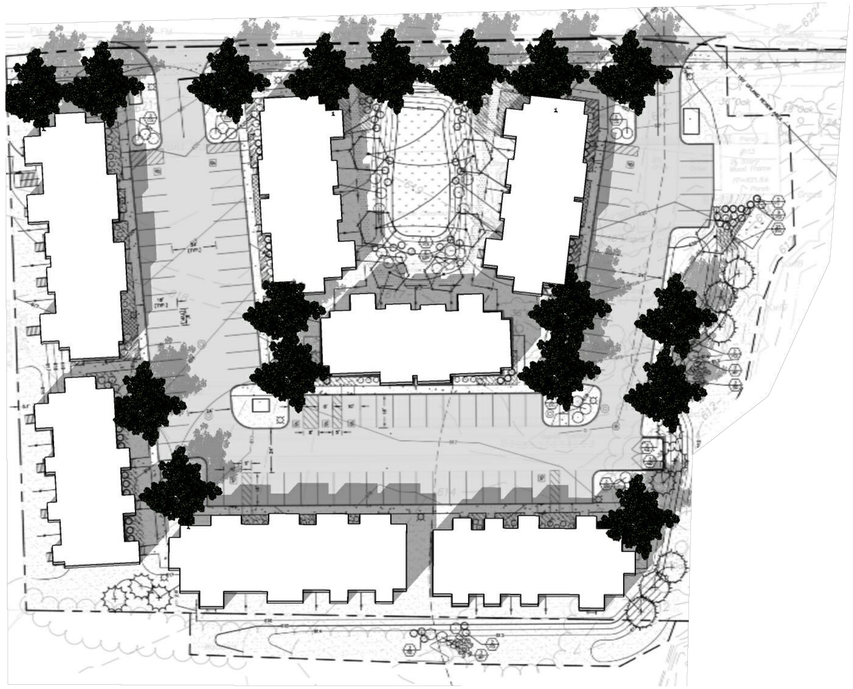
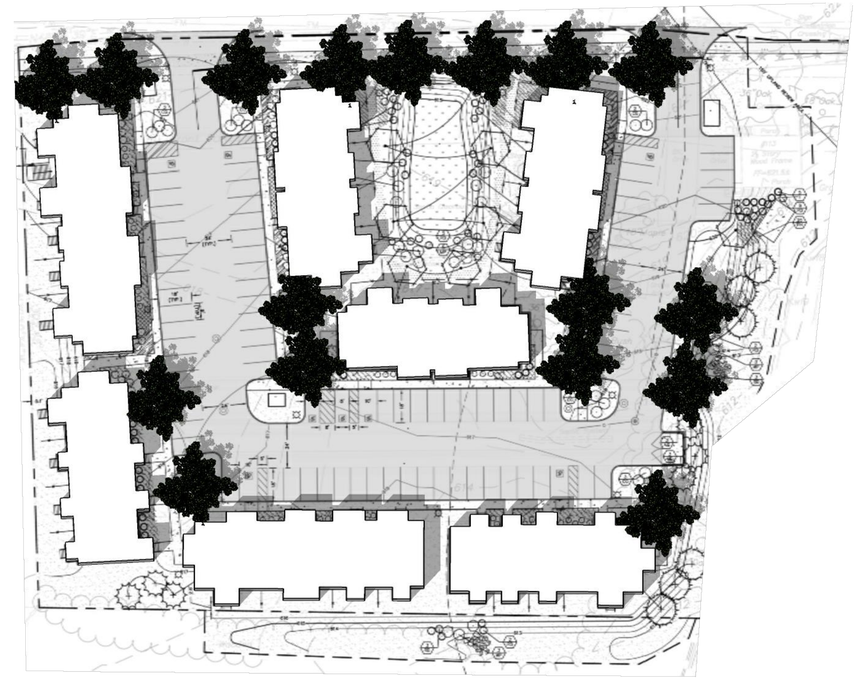
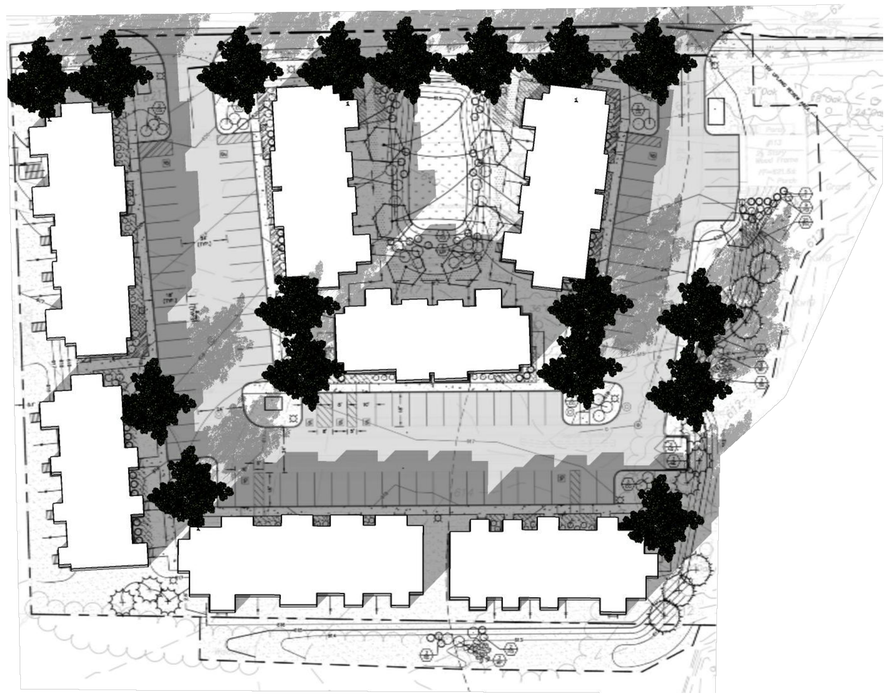


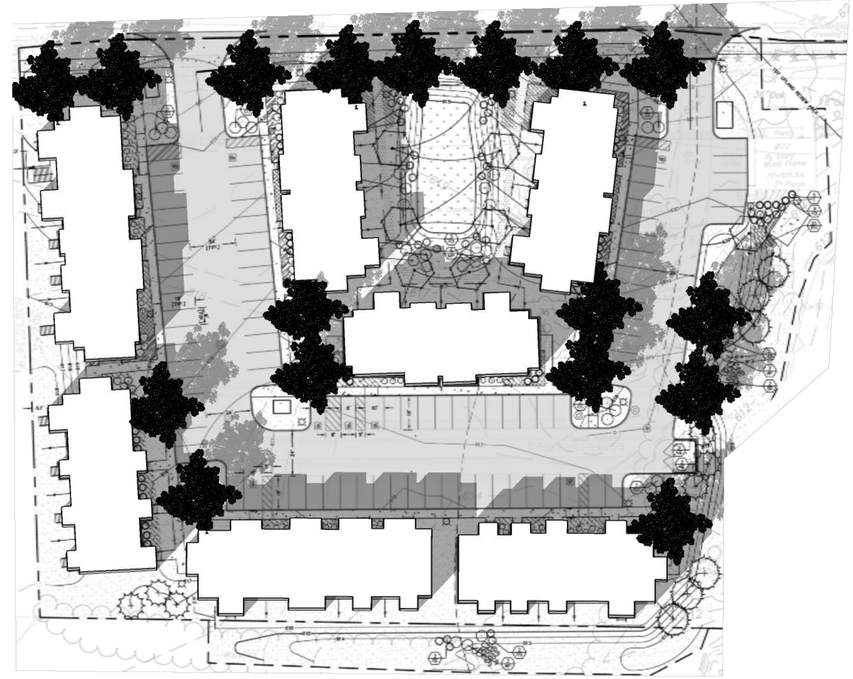
SHADE STUDY - SPRING



SHADE STUDY - SUMMER



SHADE STUDY - FALL



SHADE STUDY - WINTER

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SHADE STUDY

NOVEMBER 25, 2019

REVISIONS:

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SCALE: NONE

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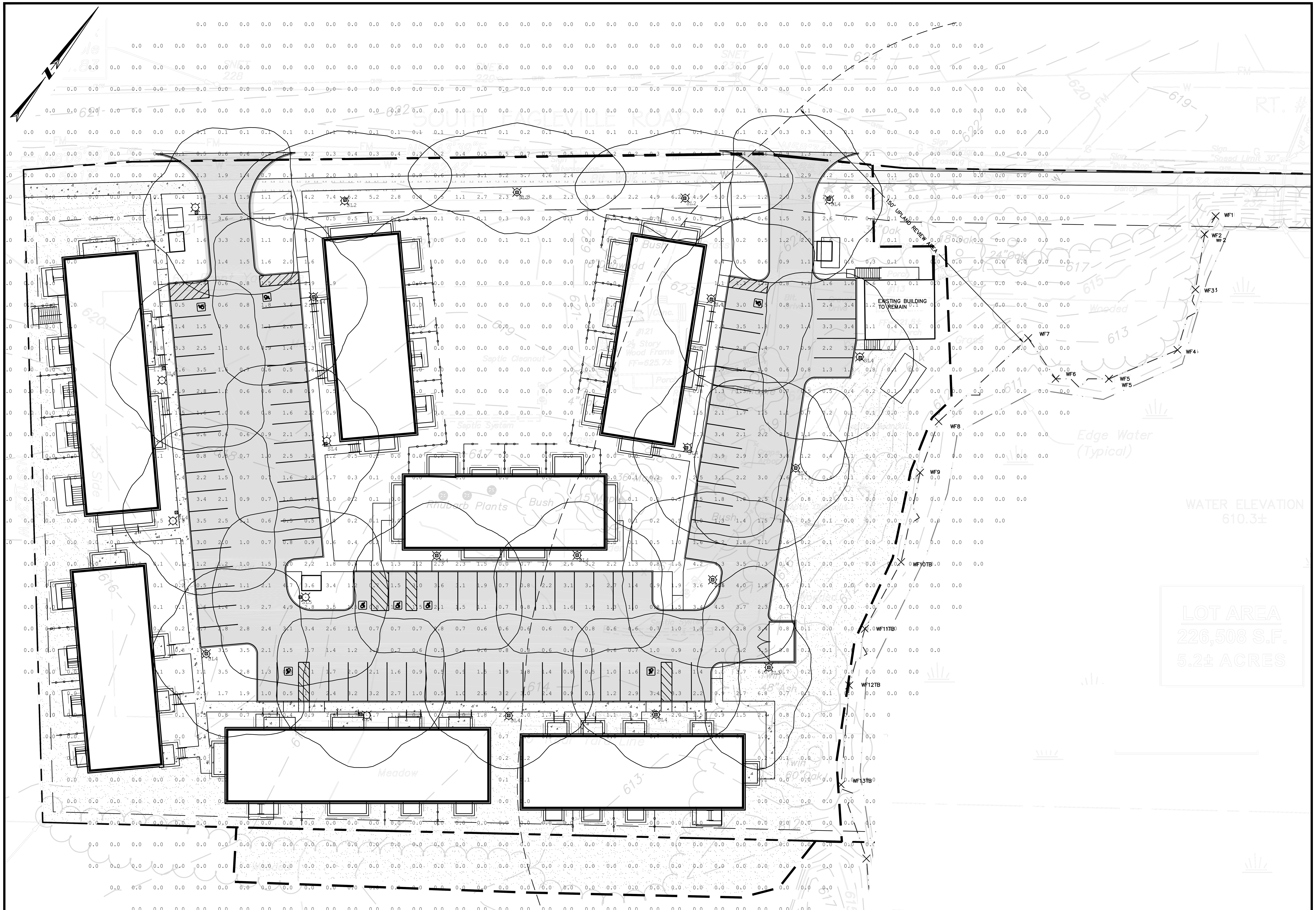
JOB. NO: 83749.00



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CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

PHOTOMETRICS PLAN

NOVEMBER 25, 2019

REVISIONS:

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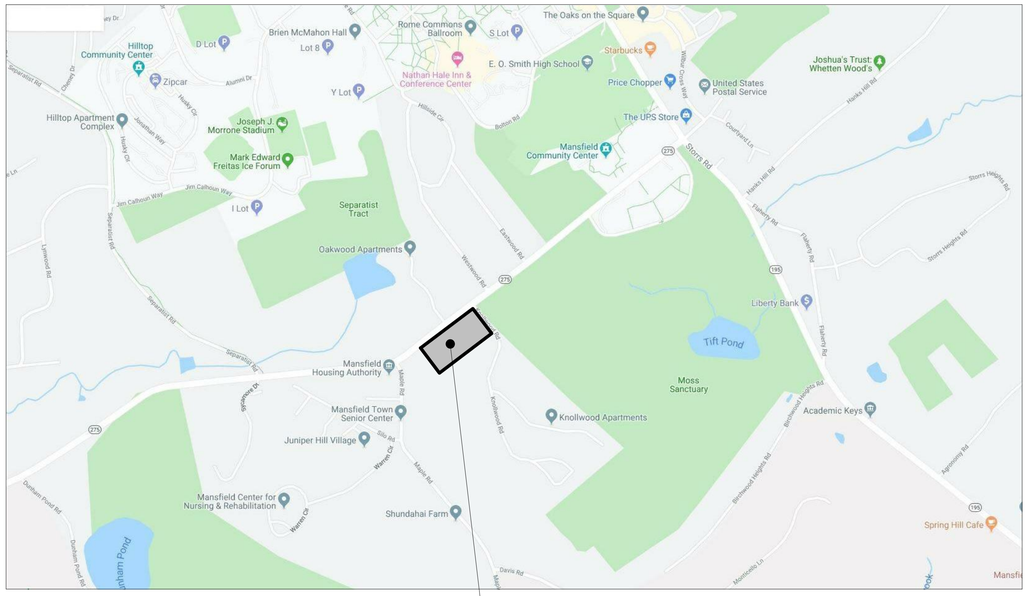
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900–PHOTO.DWG
DWG. NO:
JOB. NO: 83749.00
L-2.0

1 A1.1 CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	dorgan architecture & planning	SHEET TITLE: SITE PLAN
		1 Revision #1 2/11/20	PROJECT NAME: EAGLEVILLE GREEN
		REVISIONS:	PROJECT #: DRAWN BY:
			DATE: 2/6/20
			SHEET NUMBER A1.1



1 A1.1a **LOCATION PLAN**
SCALE: 1" = 1'-0"

PARKING

(79) REGULAR SPACES
(8) ACCESSIBLE SPACES

(87) TOTAL SPACES

87 SPACES/ 42 DWELLING UNITS = 2.07 SPACES/ UNIT

UNITS PER ACRE

PROPERTY AREA = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = +/-3.2 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 13.125

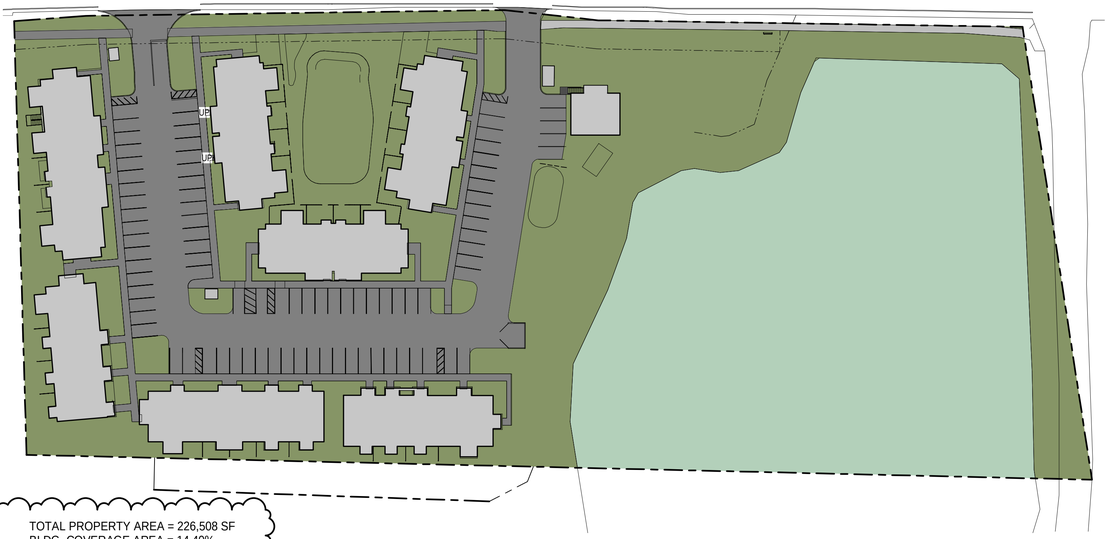
BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNIT BREAKDOWN

UNIT TYPE	UNIT QUANTITY.		AFFORDABLE UNITS*				BEDS		BATHS		1/2 BATHS		NET AREA		COMMENTS
	QTY.	TOTAL	80%	60%	TOTAL	RENT	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	
1 BEDROOM - TYPE #1	6		2	1			1	6	1	6	0	0	706	4,236	Typical 1st floor unit
1 BEDROOM - TYPE #2	8		1	2			1	8	1	8	0	0	780	6,240	Typical 2nd floor unit
1 BEDROOM - TYPE #3	1						1	1	1	1	0	0	780	780	2nd floor - stacked over 3 BR
1 BEDROOM - TYPE #4	1						1	1	1	1	0	0	750	750	2nd floor - stacked over 3 BR
1 BEDROOM - ACCESSIBLE	2						1	2	1	2	0	0	706	1,412	1st floor - accessible
Total 1 BEDROOM UNITS		**18**	3	3	**6**										
2 BEDROOM - TYPE #1	12		2	2			2	24	1	12	1	12	1,045	12,540	Typical 2 story unit
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2						2	4	1	2	0	0	980	1,960	1st floor - accessible
2 BEDROOM - TYPE #3	2		1				2	4	1	2	0	0	1,060	2,120	2nd floor - stacked over 2 BR
2 BEDROOM - EXISTING BUILDING	1						2	2	1	1	1	1	1,200	1,200	Renovated exist. residence
Total 2 BEDROOM UNITS		**17**	3	2	**5**										
3 BEDROOM - TYPE #1	6		1	1			3	18	2	12	0	0	1,260	7,560	Typical 2 story unit
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1						3	3	2	2	0	0	1,400	1,400	1st floor - accessible
Total 3 BEDROOM UNITS		**7**	1	1	**2**										
TOTAL		**42**	7	6	**13 (31%)**			73		49		13		40,198	

*** THIS PLAN ILLUSTRATES A TYPICAL DISTRIBUTION OF AFFORDABLE UNITS. THE LOCATION OF AFFORDABLE UNITS WILL FLOAT DEPENDING ON THE NEEDS AND PREFERENCES OF RESIDENTS.**



TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 14.40%

2 A1.1a **SITE COVERAGE PLAN**
SCALE: 1" = 50'-0"

PROJECT NORTH

3 A1.1a **DWELLING UNIT BREAKDOWN**
SCALE: 1" = 50'-0"

PROJECT NORTH

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

1	Revision #1	2/11/20

REVISIONS:

SHEET TITLE: SITE INFORMATION

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 2/6/20

SHEET NUMBER A1.1a

STORMWATER MANAGEMENT REPORT

Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

October 2019
Revised February 2020

PREPARED FOR:

Mansfield Non-Profit Housing Development Corporation
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TABLE OF CONTENTS

CONTENTS **PAGE**

1.0 INTRODUCTION 1
2.0 EXECUTIVE SUMMARY 1
3.0 PROJECT DESCRIPTION 1
3.1 Characteristics 2
3.2 Soil 2
3.3 Wetlands 2
3.4 Hydrology 3
4.0 STORMWATER MANAGEMENT 3
4.1 Design Objective 3
4.2 Design Criteria 3
4.3 Design Methodology 3
4.4 Existing Conditions 4
4.5 Proposed Conditions 4
4.6 Stormwater Detention 5
4.7 Pre- and Post-Comparison 8
5.0 STORMWATER DRAINAGE SYSTEM 8
5.1 Design Criteria 8
5.2 Design Methodology 8
6.0 STORMWATER QUALITY 9
6.1 Temporary Control of Sediment and Erosion 11
6.2 Permanent Control of Stormwater Quality 12
7.0 OPERATION AND MAINTENANCE PLAN 12
7.1 During Construction 12
7.2 After Construction 14
8.0 CONCLUSION 15

LIST OF DRAWINGS/FIGURES

Figure 1 Site Location Map
Figure 2 Existing Watershed Area Map
Figure 3 Proposed Watershed Area Map
Figure 4 Catchment Area Map

LIST OF APPENDICES

Appendix A Existing Stormwater Discharge Computations
Appendix B Proposed Stormwater Discharge Computations
Appendix C Proposed Hydraulic Sizing Computations
Appendix D Water Quality Computations

1.0 INTRODUCTION

This Stormwater Management Report contains the engineering design of the stormwater management systems for the proposed development of the Eagleville Green, located at 113-121 South Eagleville Road in Mansfield, Connecticut. (Figure 1 – Site Location Map). The development will consist of seven (7) multi-story housing buildings, surface parking for approximately 87 vehicle spaces, and other "typical" site improvements to support the proposed building program. The engineering design and report are prepared in accordance with Town of Mansfield Regulations, the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, the 2004 Connecticut Department of Energy & Environmental Protection (CT DEEP) Water Quality Manual, and the 2000 Connecticut Department of Transportation (ConnDOT) Drainage Manual.

2.0 EXECUTIVE SUMMARY

This report is prepared for Mansfield Housing Authority in support of the Eagleville Green proposed development. It addresses the impacts and drainage mitigation for the increase in site impervious caused by the new building complex and its appurtenances.

The following stormwater management facilities are designed in accordance with the Town of Mansfield in coordination with their engineering department, the Mansfield Zoning Regulations, CT DEEP, and ConnDOT Drainage Standards:

- As part of the construction, total site impervious area has been increased. Therefore, peak flows for the ,2-, 10-, 25-, and 100-year design storms have been mitigated.
- In accordance with the Town of Mansfield Regulations, the peak flow generated during the 2-year design storm has been reduced to 50% of the pre-development rate.
- On-site stormwater collection and conveyance is accomplished by a series of catch basins, manholes, piping, above-ground detention pond, water quality units and underground detention facilities.
- Short-term erosion control is achieved through use of construction entrances, inlet protection, silt fence and hay bale barriers.
- A stormwater treatment train is provided, including parking lot sweeping, catch basins with two (2) foot sumps for sediment collection, hydrodynamic separator, above-ground dry detention basin, and open bottom infiltrating underground detention units. All stormwater runoff from the proposed development will be directed to the proposed site drainage and management system, where it will pass through detention systems before ultimately discharging to the adjacent wetland onsite.
- Stormwater drainage piping has been designed to convey the 10-year design storm in accordance with the 2000 ConnDOT Drainage Manual.

3.0 PROJECT DESCRIPTION

This project involves the construction of a residential development containing 7 residential buildings spread over a 5.2-acre parcel. In addition to the constructed building complex, the site will include access via two driveways, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site. The total area of construction activity (disturbed area) is approximately 3.2 acres.

Storm drainage and runoff control will be accomplished by directing site overland runoff to a series of area drains and catch basins, then via underground piping to either the above-ground detention basin or the underground detention system. The discharge of the collected stormwater from the site will drain

to the east, through outlet protection aprons, and into the adjacent onsite wetland. The roof runoff will be directed to roof leaders, then via underground piping to either the above-ground detention basin or dedicated infiltration units designed to hold and infiltrate the 100-year storm. See Section 4.6 for a more detailed discussion.

EXISTING CONDITIONS

3.1 Characteristics

The project site consists of an approximately 5.2-acre parcel located off of South Eagleville Road in Mansfield, Connecticut, with two (2) existing single-family residential buildings developed at the front of the site with a paved driveway, and grass area/wetlands surrounding. The property is bound by South Eagleville Road to the north, Oakwood Apartments across South Eagleville Road, Knollwood Apartments to the south, Knollwood Road to the east, and an Eversource Natural Gas facility to the west. Existing property access is off South Eagleville Road.

The site generally slopes downward to the southeast throughout the entire property. The highest elevation onsite is at South Eagleville Road at elevation ±622, adjacent to 121 South Eagleville Road, at which point it begins to slope down toward elevation ±612 over approximately 310 feet.

3.2 Soil

Following research of the USDA-NRCS Web-soil Survey online database, approximately 90 percent of the site is recorded as Agawam Fine Sandy Loam, 0 to 3 Percent Slopes. Agawam Fine Sandy Loam is suited for community development. This nearly level, well-drained soil is found in areas of irregular shape. Typically, the surface layer is dark brown fine sandy loam about 7 inches thick. The subsoil is yellowish brown, reddish yellow and light yellowish brown sandy loam 25 inches thick. The substratum extends to a depth of 60 inches or more. It is pale brown sand to a depth of 31 inches and gravelly sand at a depth of more than 31 inches. Slopes of more that 3 percent make up 10 percent of this unit. According to the online database, Agawam Fine Sandy Loam, 0 to 3 percent slopes is generally considered a Hydrologic Soil Group B.

The remaining 10 percent of the site, located along the southeast border of the site, is identified as Sudbury Sandy Loam, 0 to 3 Percent Slope and Timakwa and Natchaug Soils, 0 to 2 Percent Slopes. This complex is identified to have a hydrologic soil group range between B and D. For the purposes of this analysis, the site will be considered hydrologic group B for consistency.

3.3 Wetlands

Upon review of the Mansfield Geographic Information System (GIS) Mapping, there are wetlands located on the property to the east, adjacent to Knollwood Road. The proximity of the wetlands to the project site will put a portion of the site (± 3.41 Ac – 65.5% of the property) located within a designated Upland Review Area. Approximately 1.09 acres of this Upland Review Area will be located within the limits of disturbance for the project. We do not anticipate that the site improvements will have any impact on the regulated areas on or off site. A detailed description of the onsite wetlands can be found in the Wetlands Report, dated September 13, 2019, prepared by BSC Group.

3.4 Hydrology

The existing conditions for the site were modeled as two (2) distinct discharges from the property:

1. Overland sheet flow runoff on the west portion of the site. This area sheet flows offsite before ultimately discharging to the southwest grassy area. The tributary area for this discharge will be modeled as Existing Subwatershed "E1". This area ultimately discharges to the onsite wetland located to the east.

2. Overland sheet flow runoff on the east portion of the site. This area sheet flows offsite before ultimately discharging to the onsite wetland. The tributary area for this discharge will be modeled as Existing Subwatershed "E2".

The Existing Watershed Area Map has been included as Figure 2.

4.0 STORMWATER MANAGEMENT

4.1 Design Objective

The intent of the project hydrologic study is to determine rates of runoff for maximum storm frequencies of two, ten, twenty-five, and one hundred-year intervals under existing and proposed conditions for the designated design points. From this analysis, the proposed stormwater collection and management system is designed to mitigate the post development increase in the peak rates of runoff for the above-mentioned storm events associated with the construction of new buildings, driveways, and sidewalks.

4.2 Design Criteria

This project has been designed in accordance with the Town of Mansfield requirements.

The following rainfall volumes for hydrologic analysis were used for each storm event for a 24-hour Type III distribution Storm:

2-year – 3.33 in
10-year – 5.05 in
25-year – 6.12 in
100-year – 7.78 in

* Source: NOAA Atlas 14 Point Precipitation Frequency/Volume Estimates

4.3 Design Methodology

This study was prepared using methods contained in the USDA Soil Conservation Service Publication TR-55 "Urban Hydrology for Small Watersheds". TR-55 outlines procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs.

The watershed was simulated as a series of contributing subcatchments, and inflow and outflow structures. A value for area, curve number (CN) and time of concentration (Tc) was calculated for each contributing subcatchment.

The curve number is a land sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. Based on the coverage of soil groups and land use in the watershed, an average CN was determined for each subcatchment under existing and proposed conditions.

The time of concentration is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a point of interest. Values for the time of concentration were determined for existing and proposed conditions based on land cover and slope of the flow path using methods described in TR-55.

Values for time of concentration (Tc) and curve numbers (CN) were then entered into the "HydroCAD 10.0" computer program (which is based on TR-20 and TR-55) where subcatchment hydrographs were calculated. The hydrological analysis consists of developing an existing conditions model to first establish existing peak rates of runoff for the various storm events mentioned above. Second, an evaluation is then conducted of the proposed condition to determine the effect of the development on the sites peak rates of runoff.

4.4 Existing Conditions

Area, Curve Number, and Tc of the existing subwatersheds can be seen in the table below:

Watershed	Area (ac)	C	Tc (min.)
E1	0.60	61	15
E2	2.96	59	15.3
TOTAL	**3.56**	**59.3**	**-**

Existing stormwater discharge computations are located in Appendix A.

4.5 Proposed Conditions

The intent of the hydrologic design was to maintain or reduce the peak flow rate exiting the site. To achieve mitigation of the peak flow rates, the proposed site was divided into four (4) subwatersheds.

P1: This subwatershed is composed of the western most exterior portion of the site. Runoff in this subwatershed bypasses the drainage system and discharges via overland sheet flow offsite.

P2-1: This subwatershed is composed of the interior portion of the site. Roof runoff from Buildings 1, 2, and 3, as well as runoff from the land surrounding these buildings is directed to the above ground detention basin. This runoff is directed into the new drainage system, which discharges out of a flared pipe, through a vegetated stabilized outlet, and ultimately to the wetland at the east of the site.

P2-2: This subwatershed comprises of the majority of the developed site and includes the contributing drainage area that is directed to the three underground detention systems. The roof runoff from buildings 4, 5, 6, and 7 drains to either detention 3P or 4P. These systems are infiltration units designed to hold and infiltrate the 100-year storm. The remanding runoff in this subwatershed is directed into

the new drainage system, flows to the underground detention system 2P, out of a flared pipe, through a vegetated stabilized outlet and ultimately off the property to the southeast.

P2-3: This subwatershed is composed of the northern and eastern exterior portions of the site. Runoff in this area bypasses the drainage system and discharges via overland sheet flow offsite.

Cover characteristics of each proposed subwatershed can be seen in the table below:

Subwatershed	Area (ac)	CN	Tc (min.)
P1	0.14	61	6.0
P2-1	0.60	79	6.0
P2-2	1.14	89	6.0
P2-3	1.26	56	6.0
BLDG 4	0.099	89	6.0
BLDG 5	0.118	89	6.0
BLDG 6	0.090	89	6.0
BLDG 7	0.120	89	6.0
Total	**3.56**	**63.9**	**-**

Proposed stormwater discharge computations are represented in Appendix A. The proposed subwatershed areas are depicted in Figure 3.

4.6 Stormwater Detention

Following completion of the analysis, the cumulative storage shall be ±22,600 cubic feet of available storage. A combination of above-ground and underground storage systems will be utilized to create this storage volume. Below is a detailed description of each system:

Detention P1

- Type: Above-ground dry pond
- Bottom Elevation: 613.00
- Observed Restrictive Layer: 611.83’
- Top of Berm Elevation: 616.50
- Design Storm: 100-Year
- Design Stage Elevation: 615.83
- Maximum Mounding Elevation: 612.80
- Required WQV: 788 cf

- Storage Provided Below Outlet: 1,664 cf
- Outlets: Low flow 6" orifice @ 614.30, high flow 15" pipe @ 616.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 614.30
  - Depth of Stored Water = 614.30 – 613.00 = 1.30 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 1.30 ft / 1.02 in/hr x 12 in/ft = 15.3 hrs
- Description: The above-ground pond receives flow from Subcatchment Area P2-1, which includes Buildings 4 – 7, as well as the surrounding "inner" portion of the site. The discharge from the pond is controlled by Outlet Control Structure #1, which has a vertical riser pipe for high flows and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils in the pond are mostly find sands with little silt. Pond routing calculations do not account for infiltration, however it is anticipated that the pond will drain within a 24-hour period. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

<u>Detention P2</u>

- Type: 36" Perforated Corrugated HDPE Pipe
- Bottom of Stone Elevation: 613.25
- Observed Restrictive Layer: 611.75'
- Invert Elevation: 613.75
- Top of Pipe Elevation: 616.75
- Design Storm: 100-Year
- Design Stage Elevation: 617.06
- Maximum Mounding Elevation: 613.68
- Required WQV: 2,246 cf
- Storage Provided Below Outlet: 2,541 cf
- Outlets: Low flow 6" orifice @ 614.72, high flow 8" orifice @ 615.33, overflow 10" pipe @ 617.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 614.72
  - Depth of Stored Water = 614.72 – 613.25 = 1.47 ft
  - Soil Type: Gray Glacial Till (Hydrologic Soil Group C)
  - Rawl's Rate: 0.27 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 1.47 ft / 0.27 in/hr x 12 in/ft = 65.33 hrs
- Description: The below-ground pipe storage receives flow from Subcatchment Area P2-2, which includes the site driveway, parking, and lawn areas. The discharge from the system is controlled by Outlet Control Structure #2, which has a vertical riser pipe for high flows, an orifice cored into the side for medium flows, and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-B, see Plan Sheet G-1.0) and an effective infiltration rate of 6 in/hr was measured. A Rawl's Rate for the given soil type of 0.27 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

<u>Detention P3</u>

- Type: 90"W x 60"H open-bottom plastic arch chambers

- Bottom of Stone Elevation: 611.50
- Observed Restrictive Layer: 609.50'
- Invert Elevation: 610.75
- Top of Chamber Elevation: 617.25
- Top of Stone Elevation: 618.25
- Design Storm: 100-Year
- Design Stage Elevation: 617.59
- Maximum Mounding Elevation: 610.53
- Required WQV: None
- Outlets: 8" overflow pipe @ 617.50
- Drawdown Computations:
  - Lowest Outlet Elevation = 617.50
  - Depth of Stored Water = 617.50 – 611.50 = 6.00 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 6.00 ft / 1.02 in/hr x 12 in/ft = 70.6 hrs
- Description: The open-bottom plastic arch chamber storage receives flow from Building #4 Roof via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-C, see Plan Sheet G-1.0) and an effective infiltration rate of 7.5 in/hr was measured. A Rawl's Rate for the given soil type of 1.02 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. A maintenance access manhole to grade will be provided for periodic cleaning at the end of every row. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

<u>Detention P4</u>

- Type: 90"W x 60"H open-bottom plastic arch chambers
- Bottom of Stone Elevation: 612.17
- Observed Restrictive Layer: 610.67'
- Invert Elevation: 617.00
- Top of Chamber Elevation: 617.92
- Top of Stone Elevation: 618.92
- Design Storm: 100-Year
- Design Stage Elevation: 617.26
- Maximum Mounding Elevation: 613.03
- Required WQV: None
- Outlets: 8" overflow @ 617.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 617.00
  - Depth of Stored Water = 617.00 – 612.17 = 4.83 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 4.83 ft / 1.02 in/hr x 12 in/ft = 56.8 hrs
- Description: The open-bottom plastic arch chamber storage receives flow from Building #5, 6, 7, and 8 roofs via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-A, see Plan Sheet G-1.0) and an effective infiltration rate of 30 in/hr

was measured. A Rawl's Rate for the given soil type of 1.02 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period.
A maintenance access manhole to grade will be provided for periodic cleaning at the end of every row. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

Pre- and Post-Development Comparison

Peak flows at the off-site analysis point are shown in the following table:

STORMWATER DISCHARGE COMPARISON				
Design Point	Storm Event	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1 (Off-Site Flow, West)	2-year	0.18	0.05	-0.13
	10-year	0.67	0.21	-0.46
	25-year	1.05	0.33	-0.72
	100-year	1.71	0.53	-1.18
2 (Flow to On-Site Wetland)	2-year	0.66	0.34	-0.32
	10-year	2.87	2.27	-0.60
	25-year	4.65	3.99	-0.66
	100-year	7.76	6.97	-0.79
Total Site	2-year	0.83	0.34	-0.49
	10-year	3.54	2.37	-1.17
	25-year	5.70	4.27	-1.43
	100-year	9.47	7.49	-1.98

The data summarized above indicates that the total peak stormwater discharge offsite will be reduced from the existing condition to the proposed conditions for all design storms. The 2-year discharge has been reduced to 50% of the pre-development rate.

5.0 STORMWATER DRAINAGE SYSTEM

5.1 Design Criteria

Design of the storm drainage system was performed in accordance with the standards and procedures specified in the 2000 ConnDOT Drainage Manual. The capacity within the site driveways and parking lots were designed to safely accommodate the 10-year, 24-hour design storm.

5.2 Design Methodology

The storm drain collection system was analyzed using the Rational Method for estimating runoff for a 10-year design storm. The project site was divided into catchment areas, with each contributing runoff to an individual catch basin or area drain inlet. A value for acreage area, time of concentration, and a runoff coefficient was calculated for each contributing catchment area.

Values for time of concentration were chosen based on land cover and slope of the flow path from the hydraulically most distant point in the sub-area to the appropriate inlet. Per Rational Method, the minimum time of concentration value is assumed to be 5 minutes for paved surfaces and 10 minutes for unpaved surfaces. Using the time of concentration, rainfall intensities were determined using the Rainfall-Duration-Frequency Relationships for Connecticut (NOAA Atlas 14 Precipitation Frequency Estimates).

The average runoff coefficient, which is the ratio of peak runoff rate to the average rainfall rate for the period known as the time of concentration, was chosen using the following values:

Condition	C
Grass/Landscaped Areas	0.30
Pavement/Impervious Areas	0.90

Storm drainage pipes were then sized based upon calculated flows using Manning's Equation and the pipe sizes verified by solving for the hydraulic grade line. The drainage pipe materials proposed for this project are high density polyethylene pipe (HDPE) and reinforced concrete pipe (RCP).

Per the ConnDOT Drainage Manual (Table 6.C.1), the friction factor (n) utilized in the design is 0.011 for HDPE pipe and 0.013 for RCP.

Detailed calculations for the on-site stormwater sizing are included in this report in Appendix C. A Catchment Area Map has also been included (Figure 4) to detail the tributary area for each drainage structure.

6.0 STORMWATER QUALITY

The project has been designed to address both the short-term and long-term storm water quality. During construction, stormwater runoff is a concern due to the excess amount of exposed areas that do not have vegetation or other cover to prevent the removal and transportation of sediment to resource areas. The project addresses the short-term concerns by providing erosion control measures in the form of Erosion & Sediment Control Plans and a "During Construction" Operation and Maintenance Plan (Section 8.0).

The primary function of erosion and sediment control, as defined by the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control is to "absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area." The short-term project erosion measures were designed per the 2002 manual.

After construction, stormwater runoff is a concern because it may contain contaminants such as suspended solids, petroleum hydrocarbons, nutrients, heavy metals, and salts that may have adverse effects on water quality. The sources of the pollutants are generally associated with urban land use, including automobile exhaust, mechanical wear of vehicles, leaf litter, deicing salts and atmospheric deposition. The pollutants accumulate on the land surfaces and are washed off during storm events into the receiving waterways and wetlands.

The objective of the stormwater management system designed for the proposed development is to effectively remove the contaminant loading from the site runoff and to provide long-term protection of the quality and use of downstream water resources. The long-term stormwater quality measures were designed per the 2004 Connecticut Stormwater Quality Manual.

6.1 Temporary Control of Sediment and Erosion

The objective of temporary erosion control during construction is to minimize the area of exposed soil, control runoff rate and direction, and provide for rapid stabilization of exposed areas. Prior to any construction activity, trenched silt fence and/or staked hay bales will be placed down gradient of the proposed work areas. The fence/barrier will provide some sediment control, as well as provide a limit of construction activity.

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Any excavated and stockpiled topsoil will be contained within staked silt fence. Erosion-prone areas left exposed for extended periods (>30 days) will be mulched and seeded for temporary vegetative cover. After construction, all exposed areas will be graded, mulched and re-vegetated with appropriate ground cover. The silt fence and/or hay bales will remain in place until groundcover is established.

Catch basin filter inserts will be used to collect sediment that may be carried in the storm runoff during construction. Filter inserts will be placed in each existing catch basin, yard drain, and in each new catch basin, during construction and until all disturbed areas of the site have been stabilized. Replacement of the filter inserts shall be as often as necessary to prevent excessive ponding due to clogged fabric.

Dewatering settling basins will be utilized where groundwater is encountered in trenching, foundation excavation, or any other excavation. The dewatering wastewaters will be infiltrated into the ground or discharged, after filtration into the nearest catch basin.

Throughout all phases of construction, the erosion control measures will be routinely inspected and cleaned, repaired, and replaced as necessary by the Contractor. See Section 8.0 entitled “Operation and Maintenance Plan” for more details.

Throughout the construction process, extra stocks of hay bales and silt fence will be kept on-site to replace those that become damaged and/or deteriorated.

Any erosion and sediment control measures, which upon inspection are found to be damaged, deteriorated, or not functioning properly, will be repaired, replaced, and corrected immediately after inspection.

Areas mulched or seeded for temporary vegetative cover will be inspected for proper cover at the end of each workday if precipitation is forecast and also prior to weekends. Additional seeding or mulch will be placed as necessary.

The temporary erosion and sediment control systems will not be removed until all stormwater drainage system components are in place, cleaned and working properly and until permanent vegetative cover and other stabilization measures are established.

6.2 Permanent Control of Stormwater Quality

The design intent of the 2004 Connecticut Stormwater Quality Manual is to provide a "stormwater treatment train," where stormwater quality is achieved through a series of treatment measures. Harmful pollutants, such as sediment, pathogens, organic material, hydrocarbons, metals, synthetic organic chemicals and deicing compounds, are carried by the low-flow storms. Many of these pollutants are associated with vehicular exhaust, engine leaks and deicing, therefore key areas of on-site treatment include parking lots and access drives. Since pollutants typically attach themselves to solid particles, treatment practices are designed to remove suspended solids.

The treatment train for this site includes:

- Parking lot sweeping
- Catch basins with two (2) foot sumps
- Hydrodynamic Separator prior to the underground detention system.
- Stormwater infiltration within the open-bottom detention galleries

The hydrodynamic separator unit will be designed to treat the Water Quality Flow in accordance with the 2004 manual, effectively removing floatables, captured sediment solids, and hydrocarbons to achieve a TSS removal rate of 80% (and often 90% or better).

7.0 OPERATION AND MAINTENANCE PLAN

7.1 During Construction

The following maintenance procedures shall be followed by the Contractor for temporary and permanent erosion and sedimentation measures and stormwater treatment systems installed during the construction period:

a. Dust Control: Moisten disturbed soil areas with water periodically, or use a non-asphaltic soil tacifier to minimize dust.

b. Temporary Seeding: Inspect weekly and within 24 hours of a storm generating a discharge. Continue inspection until vegetation is firmly established.

c. Permanent Seeding: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge. Continue inspection until vegetation is firmly established.

d. Temporary Soil Protection: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge.

e. Temporary Erosion Control Mat: Inspect mats weekly and within 24 hours after a storm generating a discharge.

f. Catch Basin Filter Inserts: Inspect the fabric at least once a week and within 24 hours after the end of a storm generating a discharge. Check the fabric for structural soundness (i.e. tears), proper anchoring/alignment within the grate and ability to drain runoff (i.e. percent of clogging by sediment). Remove the sediment every week, or sooner if ponding is excessive. Each time the sediment is removed, replace the section of fabric removed with a new section. Do not remove the sediment and reuse the same section of fabric.

g. Hay Bale/ Silt Fence Barrier: Inspect the barrier at least once a week and within 24 hours after the end of a storm generating a discharge. For dewatering operations, inspect frequently before, during and after pumping operations. Remove the sediment deposits when the depth reaches one half the barrier heights. Repair or replace a barrier within 24 hours of observed failure. Maintain the barrier until the contributing disturbed area is stabilized.

h. Construction Entrance/Exit Pad: Maintain the pad in a condition that will prevent tracking and washing of sediment onto paved surfaces. Place additional clean gravel on top of gravel that has become silted, or remove the silted gravel and replace the gravel to the depth removed with clean gravel, as conditions warrant. Remove immediately all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to the construction site shall be cleaned at the end of each day by hand sweeping or sweeper truck.

i. Dewatering Settling Basin (if used): Inspect the basin at least every two hours during periods of use. Remove accumulated sediments when the volume equals one half the provided storage volume.

j. Existing Catch Basins and Sumps: Inspect the sediment traps as specified in "f" above. After final removal of the sediment traps at the end of construction, clean the sump of all silt and debris.

k. New Catch Basins and Sumps: As new catch basins are constructed, a filter insert shall be installed in the unit and a sediment barrier installed around the grate. Inspect the filter and barrier weekly and within 24 hours after a storm generating a discharge. After stabilization of the drainage area entering the catch basin, remove the filter and barrier and clean the basin sump of all silt and debris.

l. Stone or Hay Bale Check Dams: Inspect the check dam at least once a week and within 24 hours after the end of a storm generating a discharge. Remove the sediment deposits when the depth reaches one half the check dam heights. Repair or replace a check dam within 24 hours of observed failure. Maintain the check dam until the contributing disturbed area is stabilized.

m. Temporary Stockpiles: Inspect temporary stockpiles at the end of each workday to ensure that tarps are in place and secured. Temporary stockpiles that are expected to be inactive for more than 30 days should be temporarily seeded (see above).

n. Temporary Sediment Traps: Inspect monthly and within 24 hours after a storm generating a discharge. Sediment and oil shall be removed when the storage volume is reduced by one half, or at least every 6 months during construction.

During construction, the Contractor shall be required to remove accumulated sediment from sediment control measures and water quality measures. Sediment shall be disposed of off-site in a manner and location approved by local and state agencies. Temporary storage of sediment on-site is permissible if it is protected from erosion and stockpiled in a manner that will prevent it from being carried by erosion into adjacent properties or resource areas.

Temporary sediment traps may be removed if the contributing drainage area is stabilized. The area shall be re-graded to match original grades or proposed grades as shown on the plans. The disturbed area shall be temporarily, or permanently seeded and mulched if the area is not to be paved.

Upon the stabilization of the contributing drainage area, silt fence shall be inspected for sediment accumulation prior to removal. For sediment depths greater than 6", the sediment shall be re-graded or removed. The silt fence shall be removed by pulling the support posts and cutting the geotextile at the ground level. Re-grade or remove the sediment as necessary and stabilize the disturbed soils by placing temporary or permanent seeding and mulch.

When dewatering has been completed, remove the hay bale barrier, sediment and stone, as appropriate, and re-grade the area to original or proposed grade. Stabilize the disturbed area with temporary or permanent seed and mulch.

After the drainage areas to the new and existing catch basins have been stabilized, the Contractor shall be required to clean all sumps and hoods of debris and silt. In addition, within the limits of work, the Contractor shall clean all storm drain piping of collected silt and debris by flushing with water. If the storm system discharges to ground, a hay bale and silt fence barrier must remain in place at each outfall to capture any sediment or debris carried down by the flushing. If the storm drain system discharges into a public or private drainage collection system, the Contractor must install a means of collecting debris and filtering the sediment from the flushing water in the on-site storm system before discharge to the existing storm system.

7.2 After Construction

After construction is completed and accepted by the Owner, it shall be the responsibility of the Owner to maintain all drainage structures. In addition, the following inspection and maintenance guidelines shall be the responsibility of the Owner, or the Owner's representative, beginning the first year period following construction completion and acceptance, and shall be followed each year thereafter:

a) Parking Lot and Site Cleanup: Inspect on a regular basis not to exceed weekly for litter and debris.

b) Parking Lot and Driveway Sweeping: At least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.

c) Catch Basin Sumps: Shall be inspected semi-annually and cleaned when the sump is one half full of silt and / or debris.

d) Hydrodynamic Separator: Shall be inspected and cleaned annually.

e) Landscaped Areas: Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.

f) Above-ground Detention Basin: Shall be inspected semi-annually and cleaned of any sediment and/or debris. Shall be mowed annually.

g) Underground Detention Systems: Shall be inspected semi-annually and cleaned of any sediment and/or debris.

8.0 CONCLUSION

The project has been designed to meet Town and State requirements for stormwater management, drainage sizing, and stormwater quality. Peak flows generated by the site for the 2-, 10-, 25-, and 100-year design storms have been mitigated to less than peak flows under existing conditions. The drainage system has been designed to convey the 10-year design storm and stormwater quality has been provided which meets both the State erosion sedimentation guidelines and the State stormwater quality requirements. There are no anticipated negative impacts on any of the upland review areas identified on this property.

LIST OF FIGURES/DRAWINGS

Figure 1 – Site Location Map

Figure 2 – Existing Watershed Area Map

Figure 3 – Proposed Watershed Area Map

Figure 4 – Catchment Area Map

FIGURE 1
Site Location Map

Figure 1 – Site Location Map

Eagleville Green

113-121 South Eagleville Road

Mansfield, Connecticut

Scale = 1:24,000

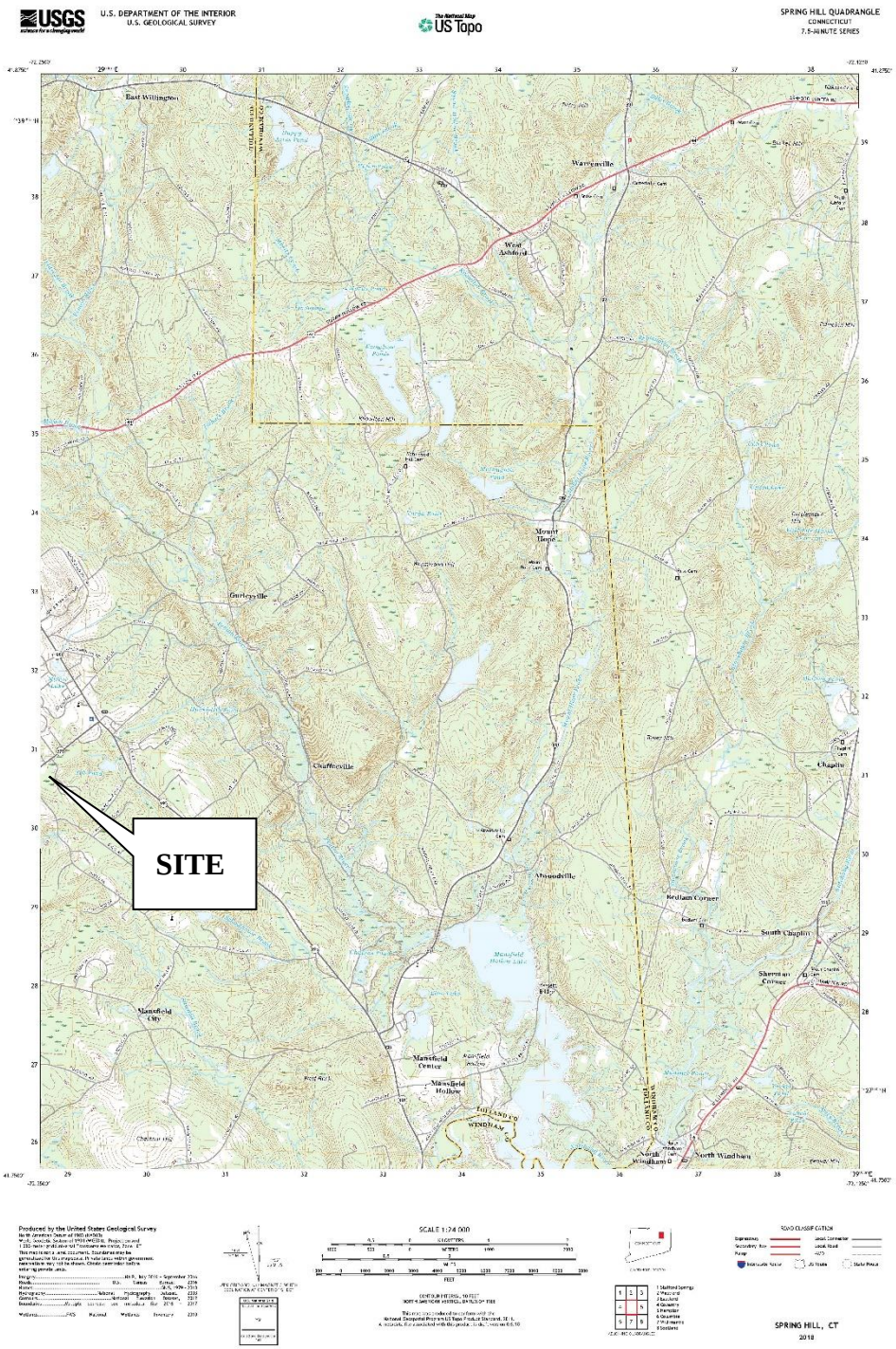
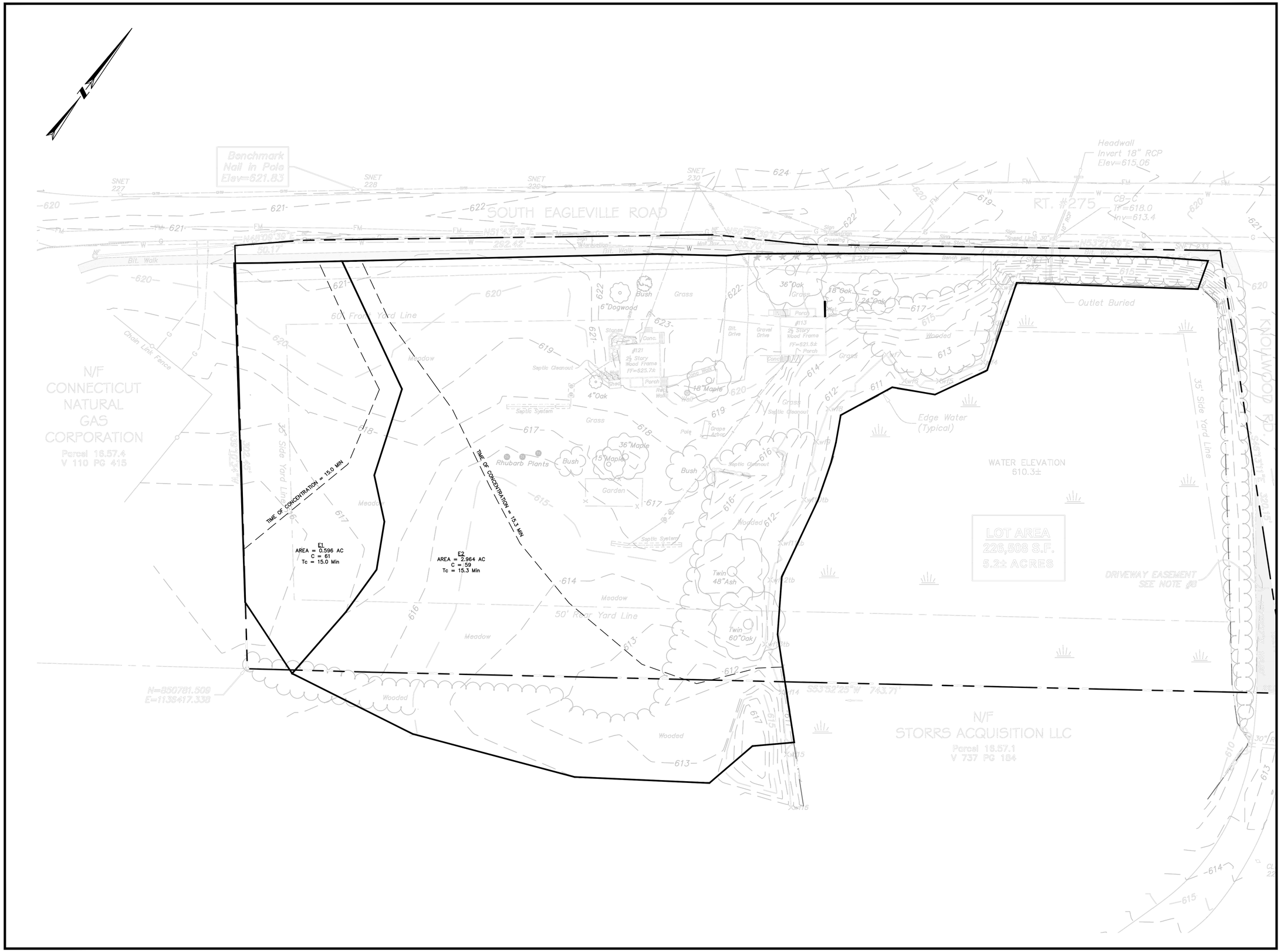


FIGURE 2
Existing Watershed Area Map



EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING WATERSHED AREA MAP

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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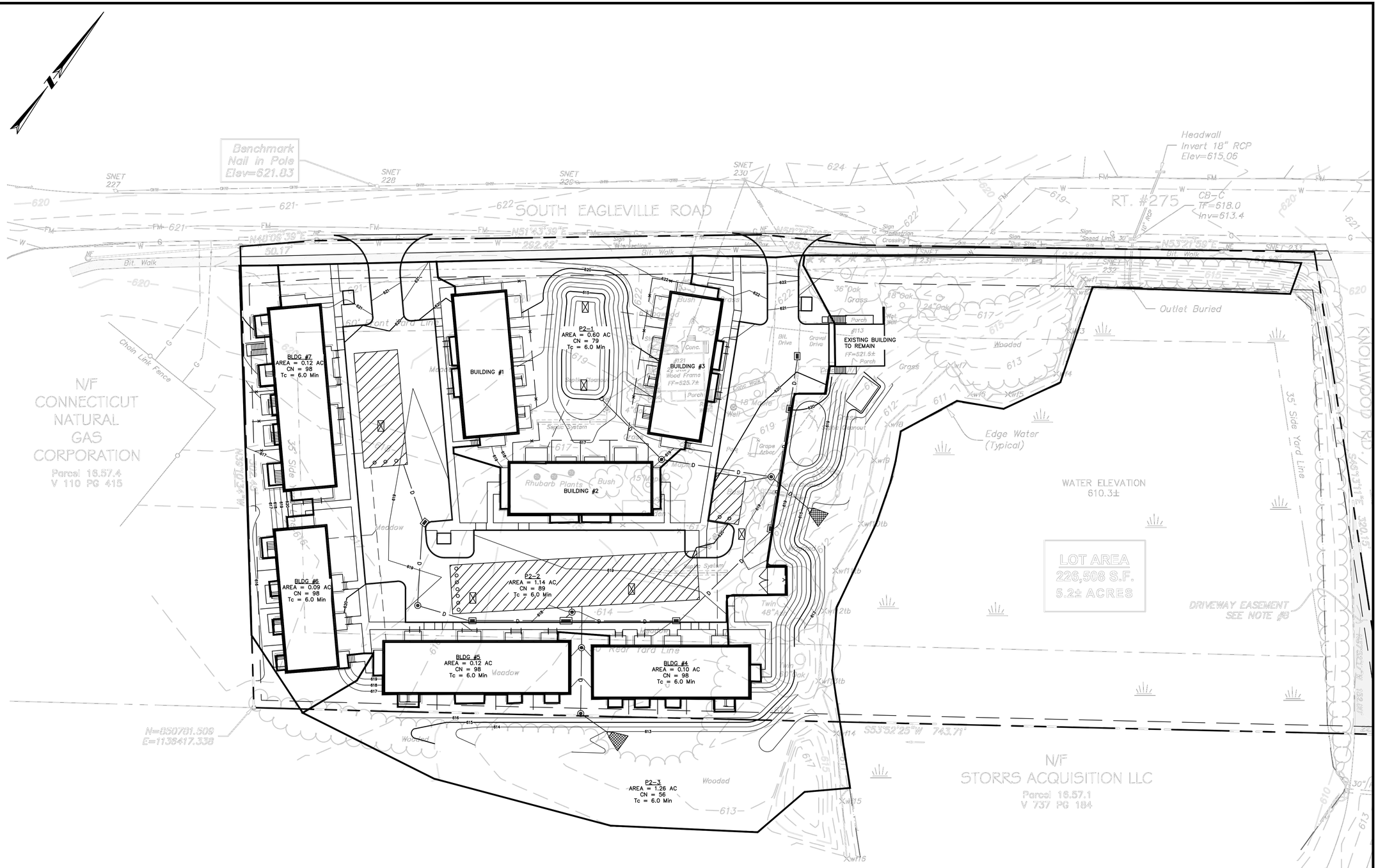
SCALE: 1" = 30'

0 15 30 60 FEET

FILE: 8374900-EWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 2

FIGURE 3
Proposed Watershed Area Map



EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PROPOSED WATERSHED
AREA MAP

FEBRUARY 12, 2020

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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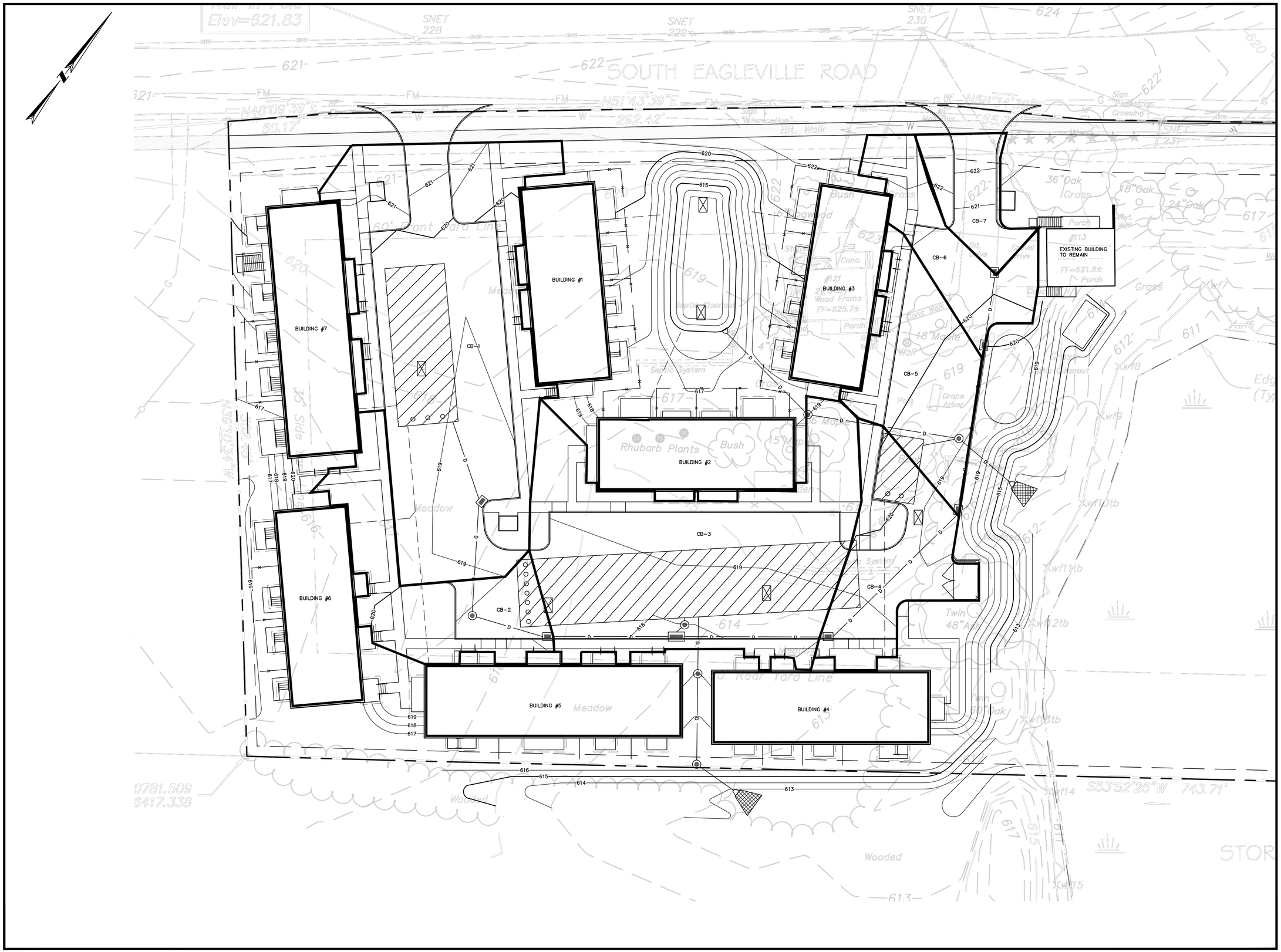
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-PWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 3

FIGURE 4
Catchment Area Map



EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

CATCHMENT AREA MAP

FEBRUARY 12, 2020

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'

0 10 20 40 FEET

FILE: 8374900-CAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 4

LIST OF APPENDICES

Appendix A – Existing Stormwater Discharge Computations

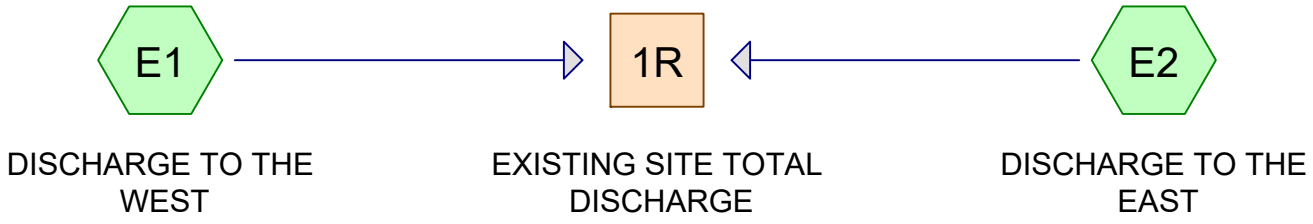
Appendix B – Proposed Stormwater Discharge Computations

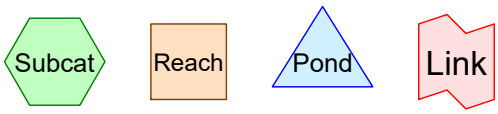
Appendix C – Proposed Hydraulic Sizing Computations

Appendix D – Water Quality Computations

APPENDIX A

Existing Stormwater Discharge Computations





Routing Diagram for 8374900-HYDRO
Prepared by {enter your company name here}, Printed 11/25/2019
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.580	61	>75% Grass cover, Good, HSG B (E1, E2)
0.870	48	Brush, Good, HSG B (E2)
0.110	98	Paved parking, HSG B (E2)
3.560	**59**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.560	HSG B	E1, E2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.560		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.580	0.000	0.000	0.000	2.580	>75% Grass cover, Good	E1, E2
0.000	0.870	0.000	0.000	0.000	0.870	Brush, Good	E2
0.000	0.110	0.000	0.000	0.000	0.110	Paved parking	E2
0.000	**3.560**	**0.000**	**0.000**	**0.000**	**3.560**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>0.50"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.18 cfs 0.025 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>0.42"
Flow Length=457' Tc=15.3 min CN=59 Runoff=0.66 cfs 0.104 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=0.83 cfs 0.129 af
Outflow=0.83 cfs 0.129 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.129 af Average Runoff Depth = 0.43"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

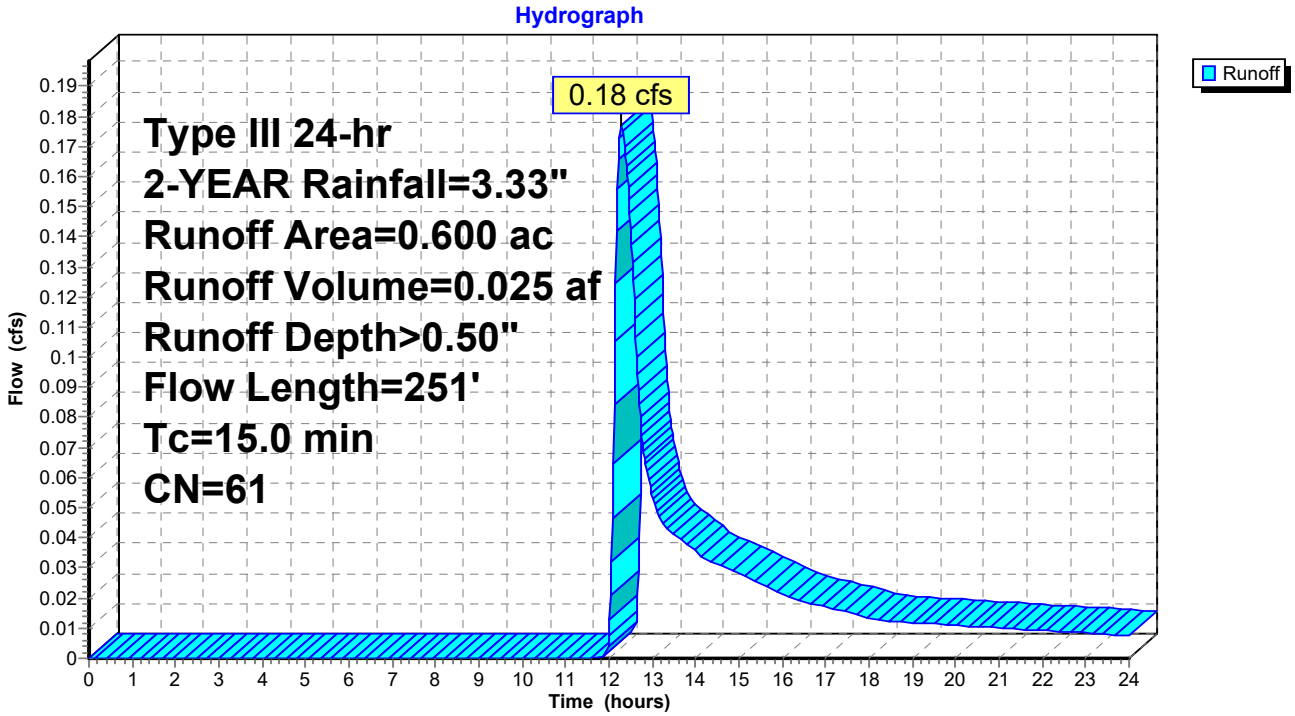
Runoff = 0.18 cfs @ 12.28 hrs, Volume= 0.025 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

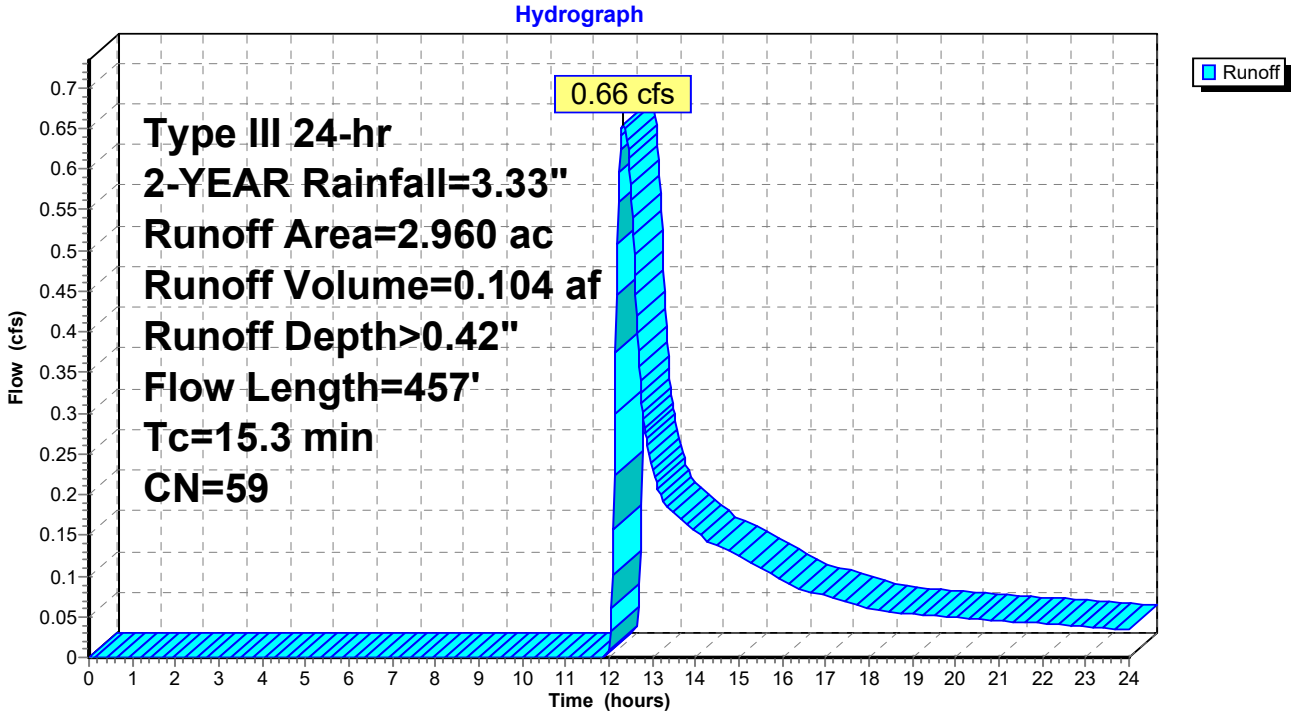
Runoff = 0.66 cfs @ 12.33 hrs, Volume= 0.104 af, Depth> 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



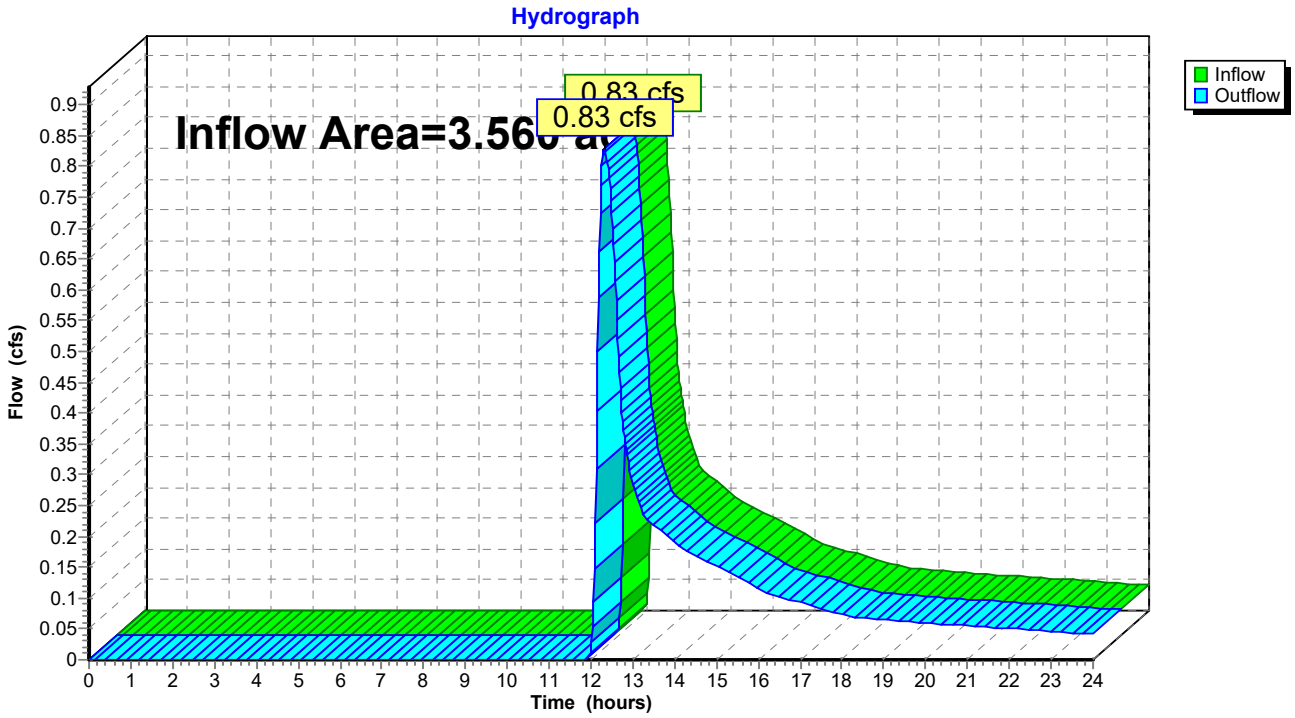
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 0.43" for 2-YEAR event
Inflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af
Outflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>1.39"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.67 cfs 0.070 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.26"
Flow Length=457' Tc=15.3 min CN=59 Runoff=2.87 cfs 0.310 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=3.54 cfs 0.380 af
Outflow=3.54 cfs 0.380 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.380 af Average Runoff Depth = 1.28"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

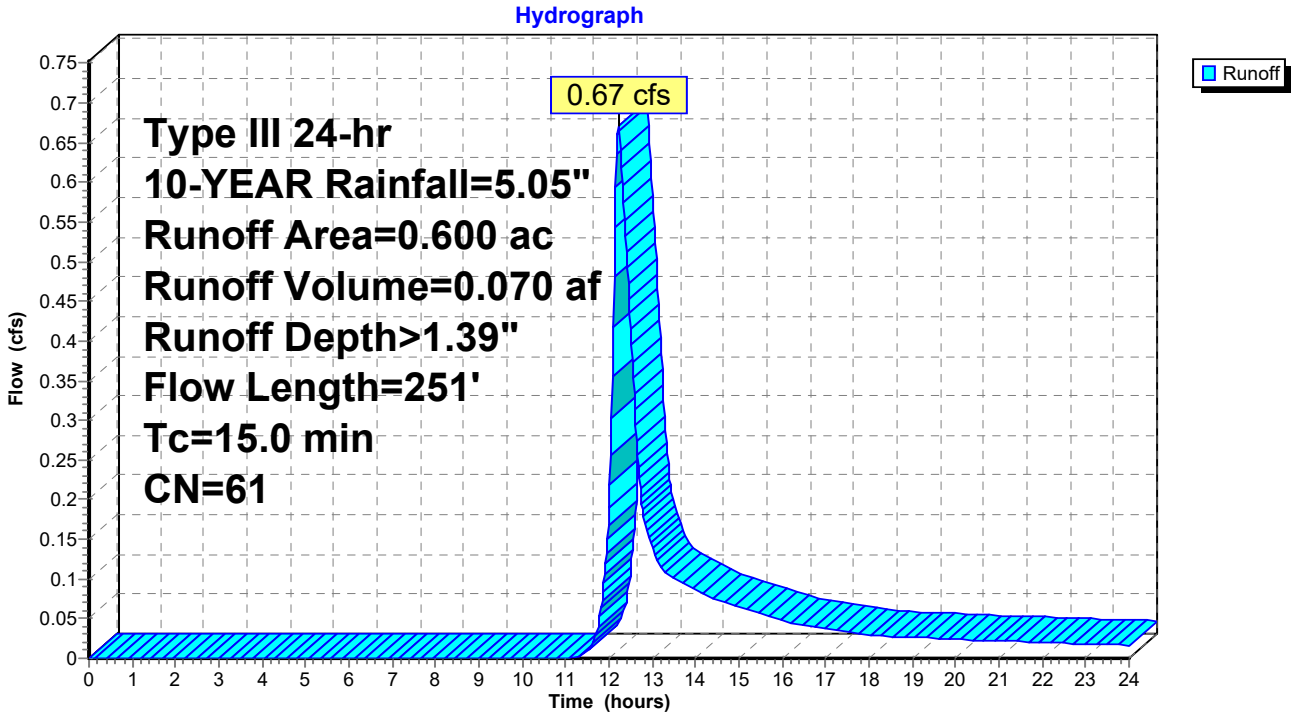
Runoff = 0.67 cfs @ 12.23 hrs, Volume= 0.070 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

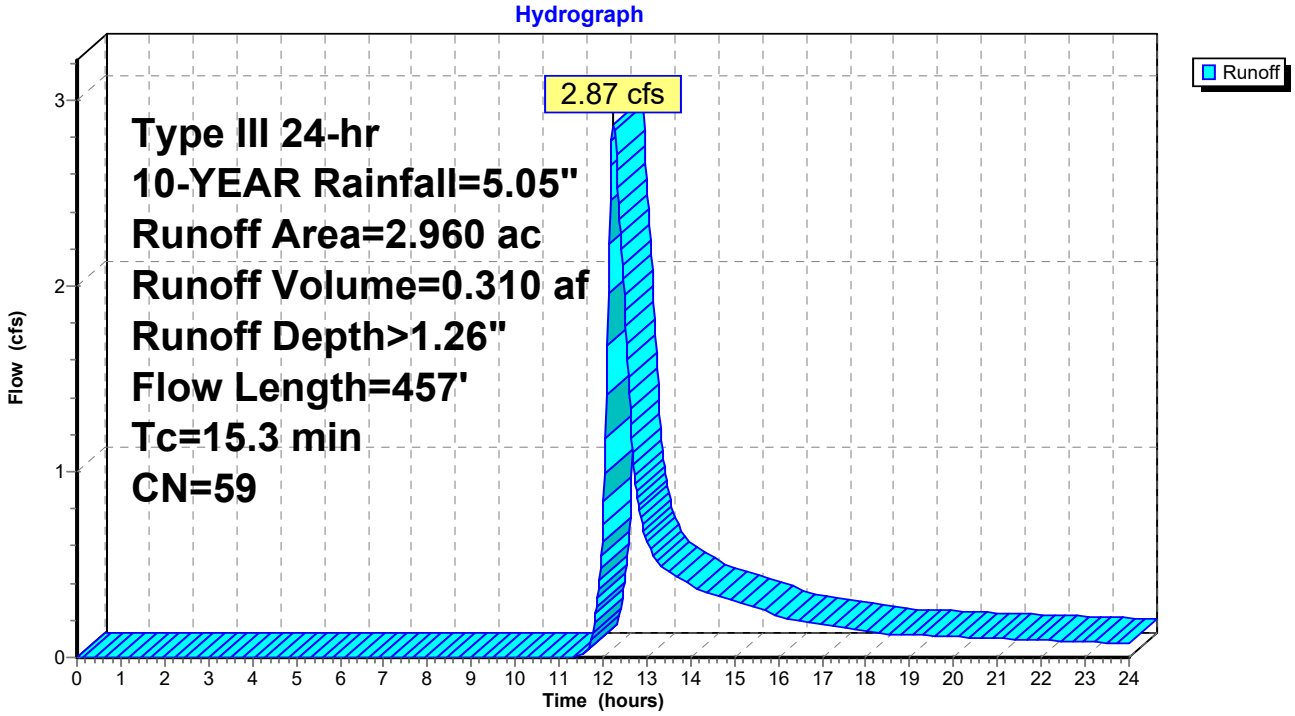
Runoff = 2.87 cfs @ 12.24 hrs, Volume= 0.310 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



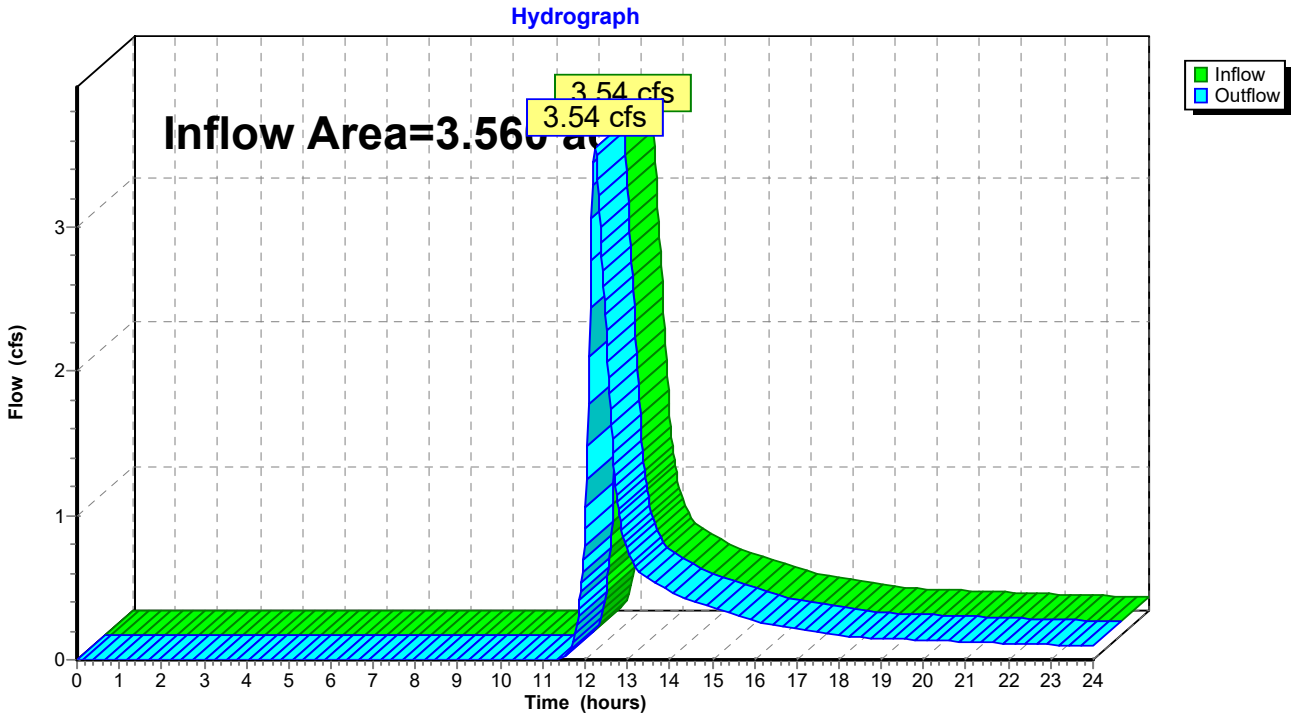
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.28" for 10-YEAR event
Inflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af
Outflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>2.08"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.05 cfs 0.104 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.91"
Flow Length=457' Tc=15.3 min CN=59 Runoff=4.65 cfs 0.471 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=5.70 cfs 0.575 af
Outflow=5.70 cfs 0.575 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.575 af Average Runoff Depth = 1.94"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

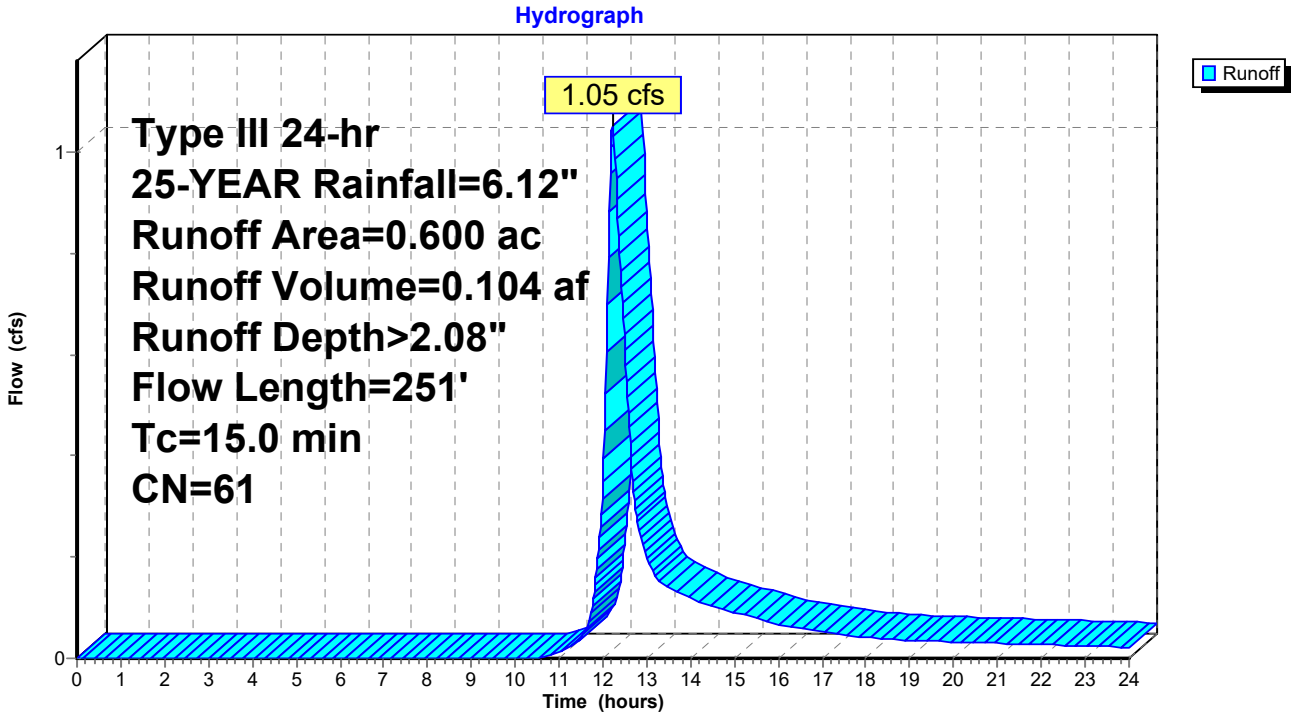
Runoff = 1.05 cfs @ 12.22 hrs, Volume= 0.104 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

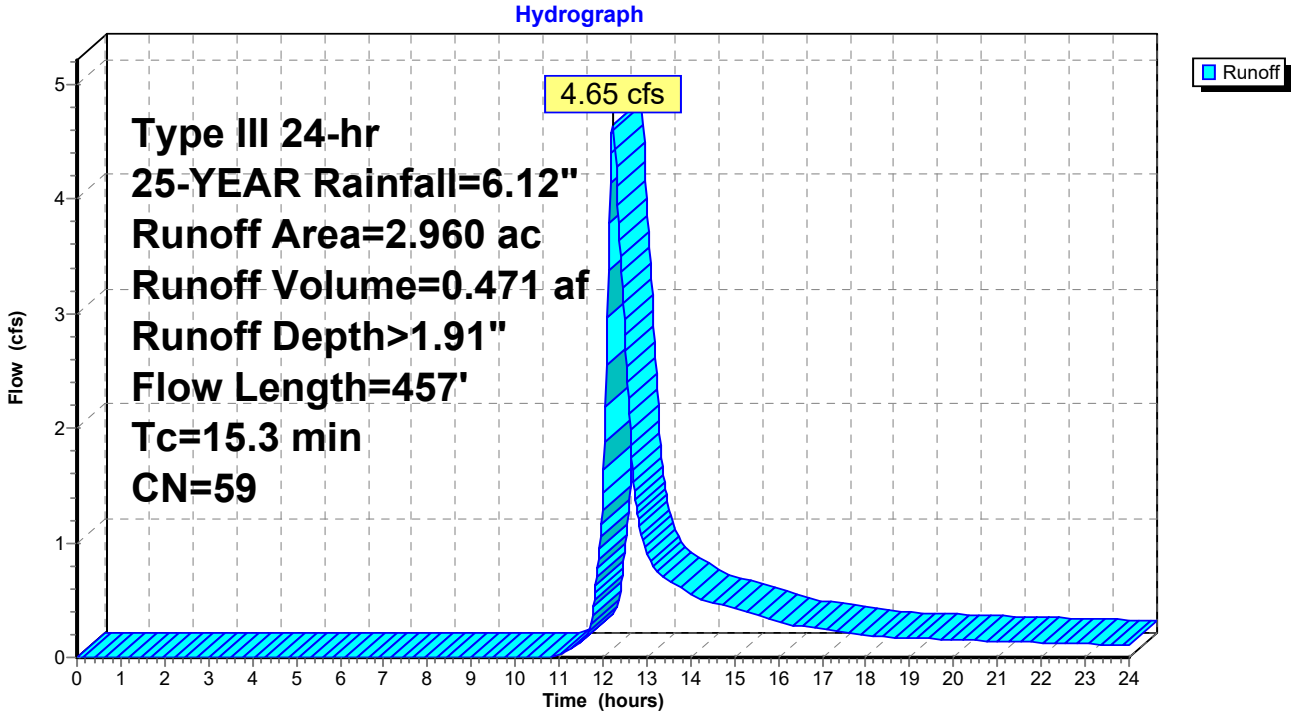
Runoff = 4.65 cfs @ 12.23 hrs, Volume= 0.471 af, Depth> 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



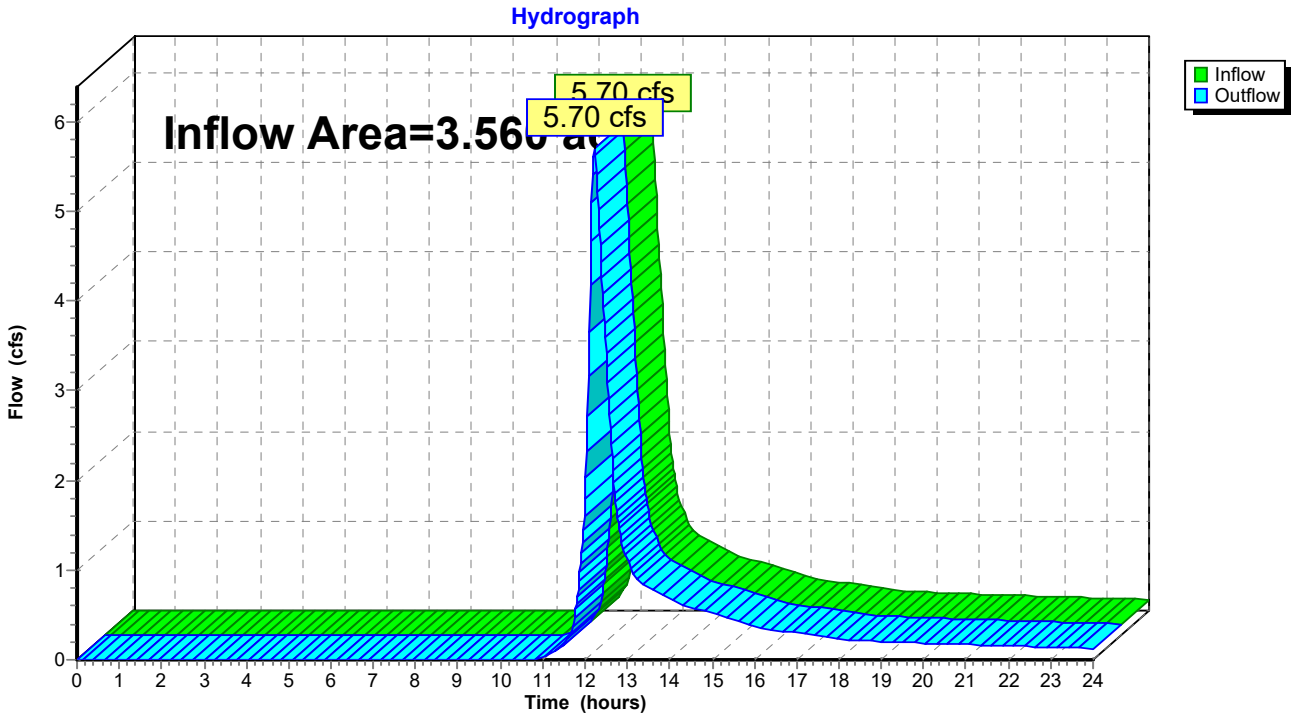
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.94" for 25-YEAR event
Inflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af
Outflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>3.27"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.71 cfs 0.163 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>3.05"
Flow Length=457' Tc=15.3 min CN=59 Runoff=7.76 cfs 0.752 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=9.47 cfs 0.916 af
Outflow=9.47 cfs 0.916 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.916 af Average Runoff Depth = 3.09"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

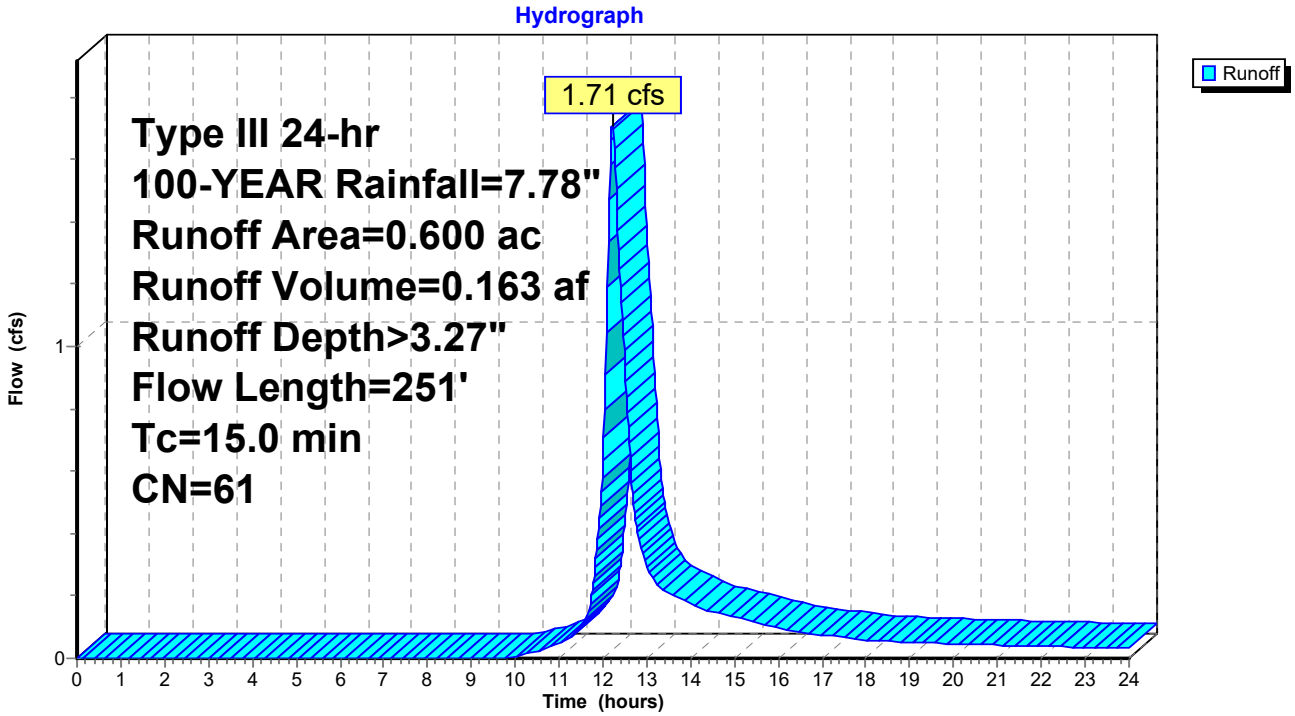
Runoff = 1.71 cfs @ 12.21 hrs, Volume= 0.163 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

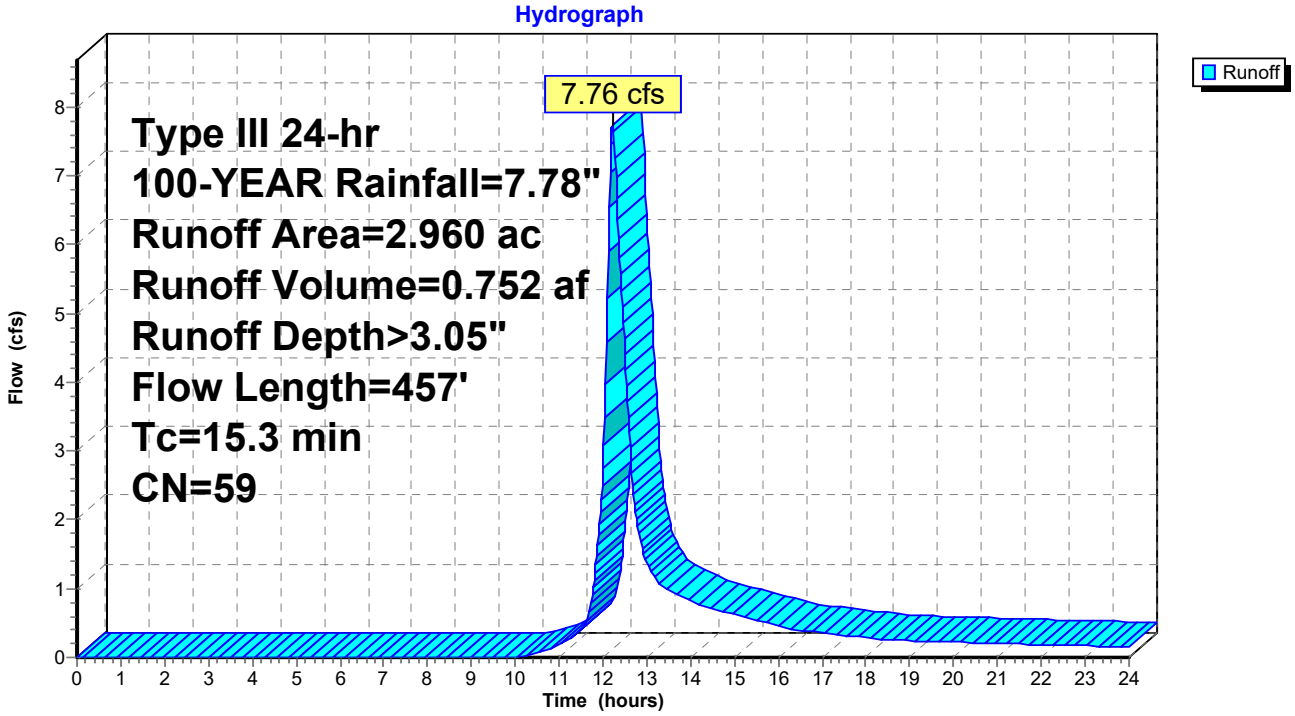
Runoff = 7.76 cfs @ 12.22 hrs, Volume= 0.752 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



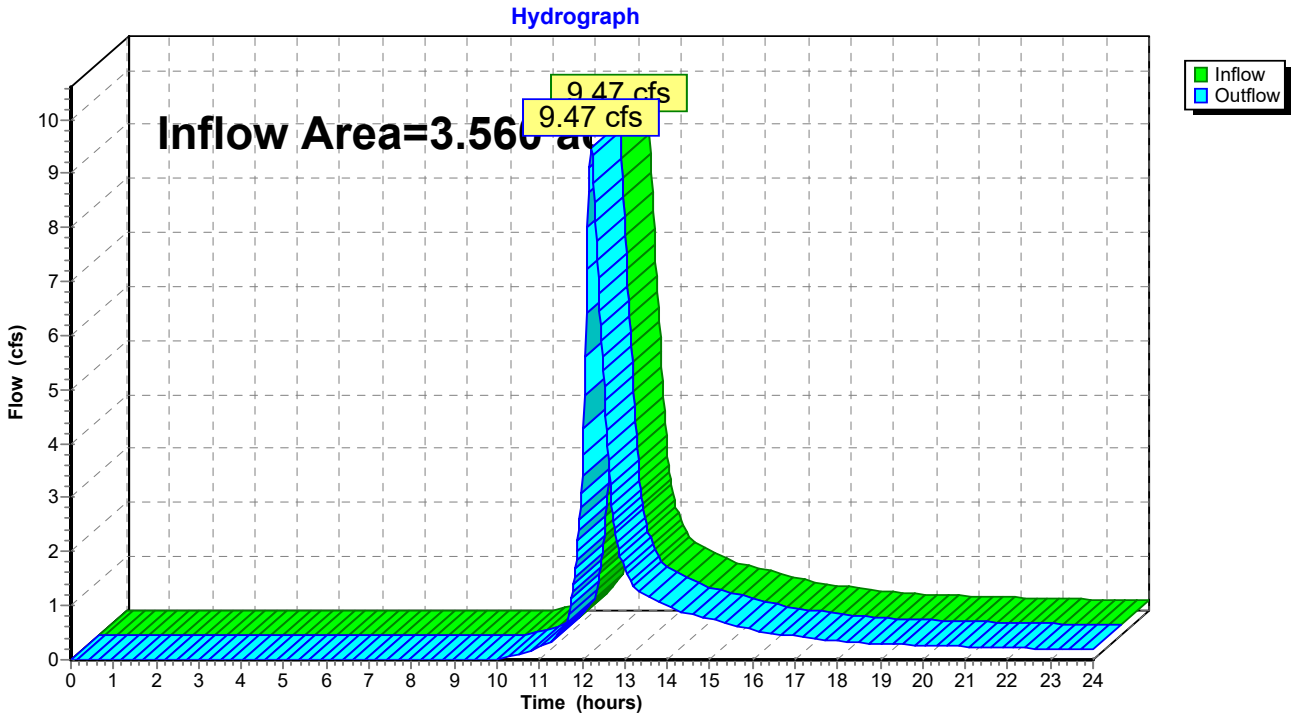
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.560 ac,	3.09% Impervious,	Inflow Depth >	3.09"	for 100-YEAR event
Inflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af	
Outflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af,	Atten= 0%, Lag= 0.0 min

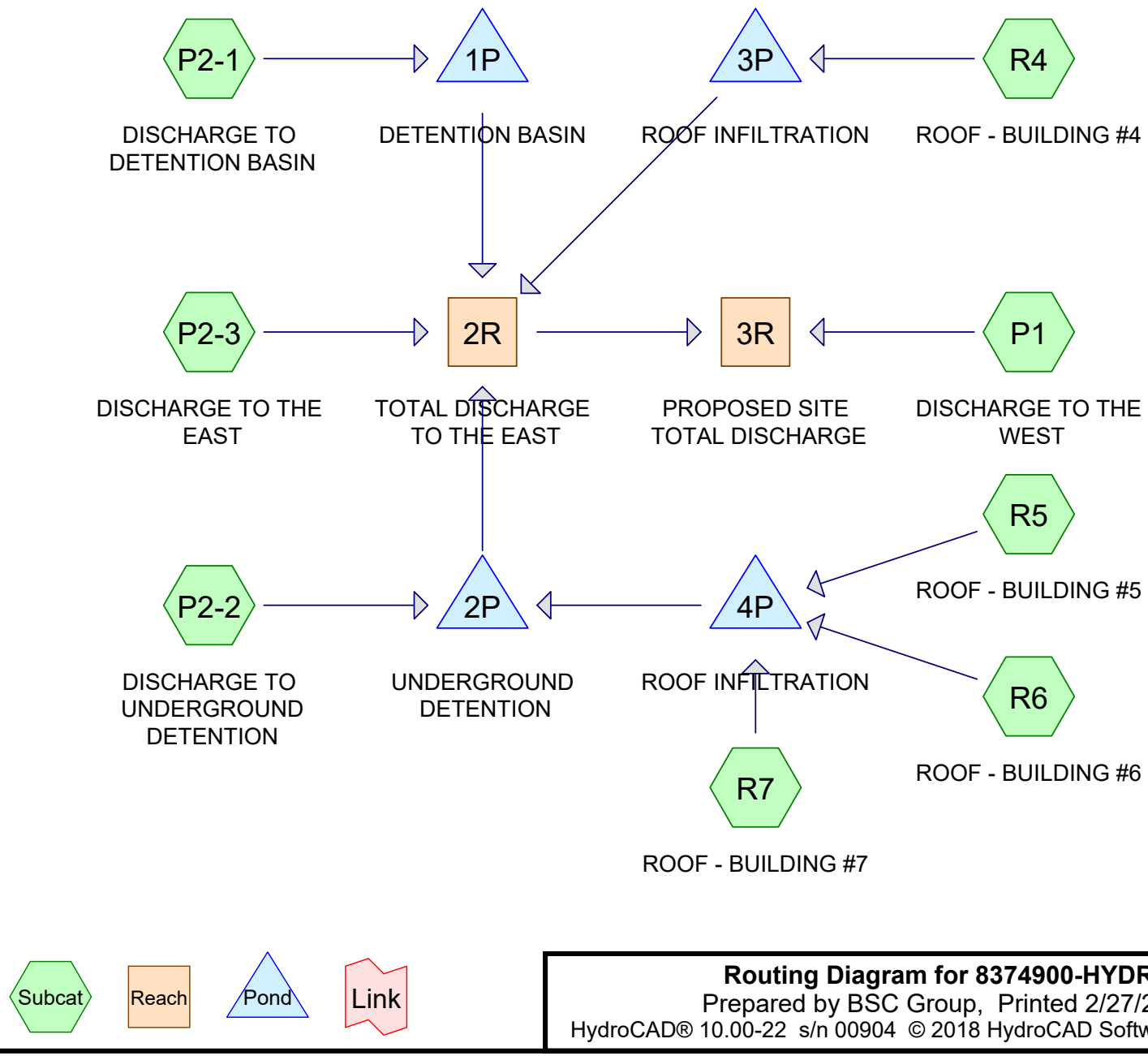
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



APPENDIX B

Proposed Stormwater Discharge Computations



Routing Diagram for 8374900-HYDRO2
Prepared by BSC Group, Printed 2/27/2020
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.400	61	>75% Grass cover, Good, HSG B (P1, P2-1, P2-2, P2-3)
0.550	48	Brush, Good, HSG B (P2-3)
1.180	98	Paved parking, HSG B (P2-1, P2-2, P2-3)
0.427	98	Unconnected roofs, HSG B (R4, R5, R6, R7)
3.557	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.557	HSG B	P1, P2-1, P2-2, P2-3, R4, R5, R6, R7
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.557		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.400	0.000	0.000	0.000	1.400	>75% Grass cover, Good	P1, P2-1, P2-2, P2-3
0.000	0.550	0.000	0.000	0.000	0.550	Brush, Good	P2-3
0.000	1.180	0.000	0.000	0.000	1.180	Paved parking	P2-1, P2-2, P2-3
0.000	0.427	0.000	0.000	0.000	0.427	Unconnected roofs	R4, R5, R6, R7
0.000	**3.557**	**0.000**	**0.000**	**0.000**	**3.557**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	614.05	613.00	105.0	0.0100	0.011	15.0	0.0	0.0
2	2P	613.25	613.75	18.0	-0.0278	0.011	15.0	0.0	0.0
3	3P	617.50	616.00	15.0	0.1000	0.010	8.0	0.0	0.0
4	4P	617.00	617.00	33.0	0.0000	0.010	8.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>0.50"
Tc=6.0 min CN=61 Runoff=0.05 cfs 0.006 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>1.43"
Tc=6.0 min CN=79 Runoff=1.00 cfs 0.072 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>2.20"
Tc=6.0 min CN=89 Runoff=2.91 cfs 0.209 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=56 Runoff=0.19 cfs 0.033 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.026 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.031 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=0.34 cfs 0.181 af
Outflow=0.34 cfs 0.181 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=0.37 cfs 0.187 af
Outflow=0.37 cfs 0.187 af

Pond 1P: DETENTION BASIN Peak Elev=614.45' Storage=1,915 cf Inflow=1.00 cfs 0.072 af
Outflow=0.07 cfs 0.031 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.31' Storage=5,415 cf Inflow=2.91 cfs 0.209 af
Outflow=0.22 cfs 0.117 af

Pond 3P: ROOF INFILTRATION Peak Elev=614.22' Storage=1,112 cf Inflow=0.32 cfs 0.026 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=615.12' Storage=0.085 af Inflow=1.06 cfs 0.085 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.430 af Average Runoff Depth = 1.45"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

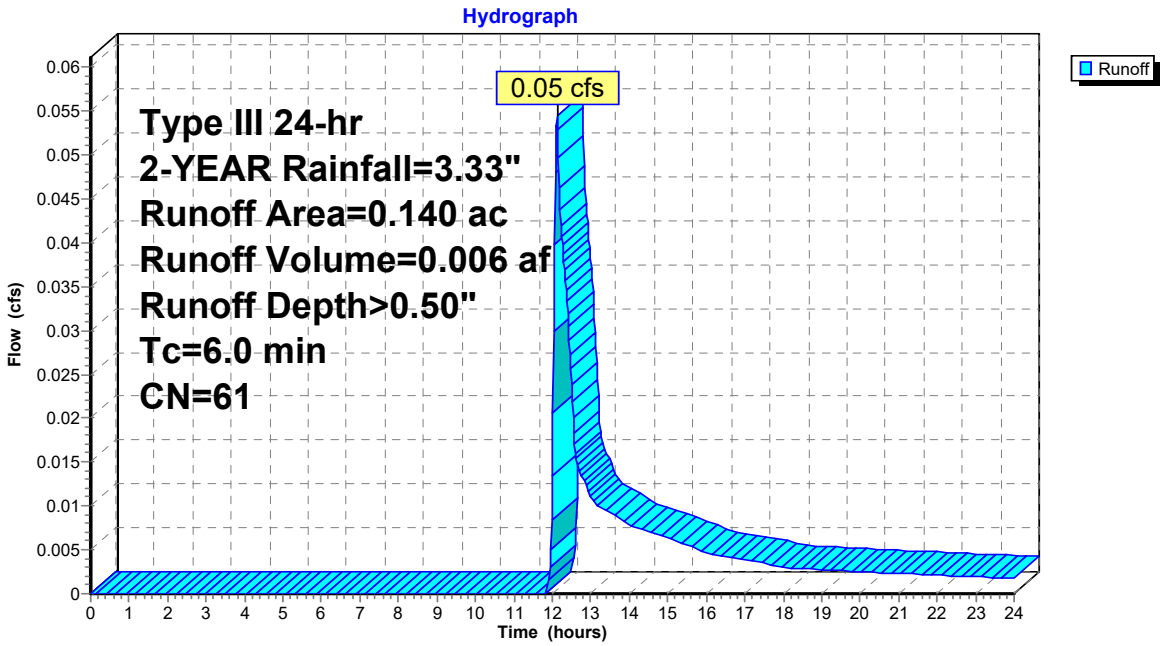
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.006 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

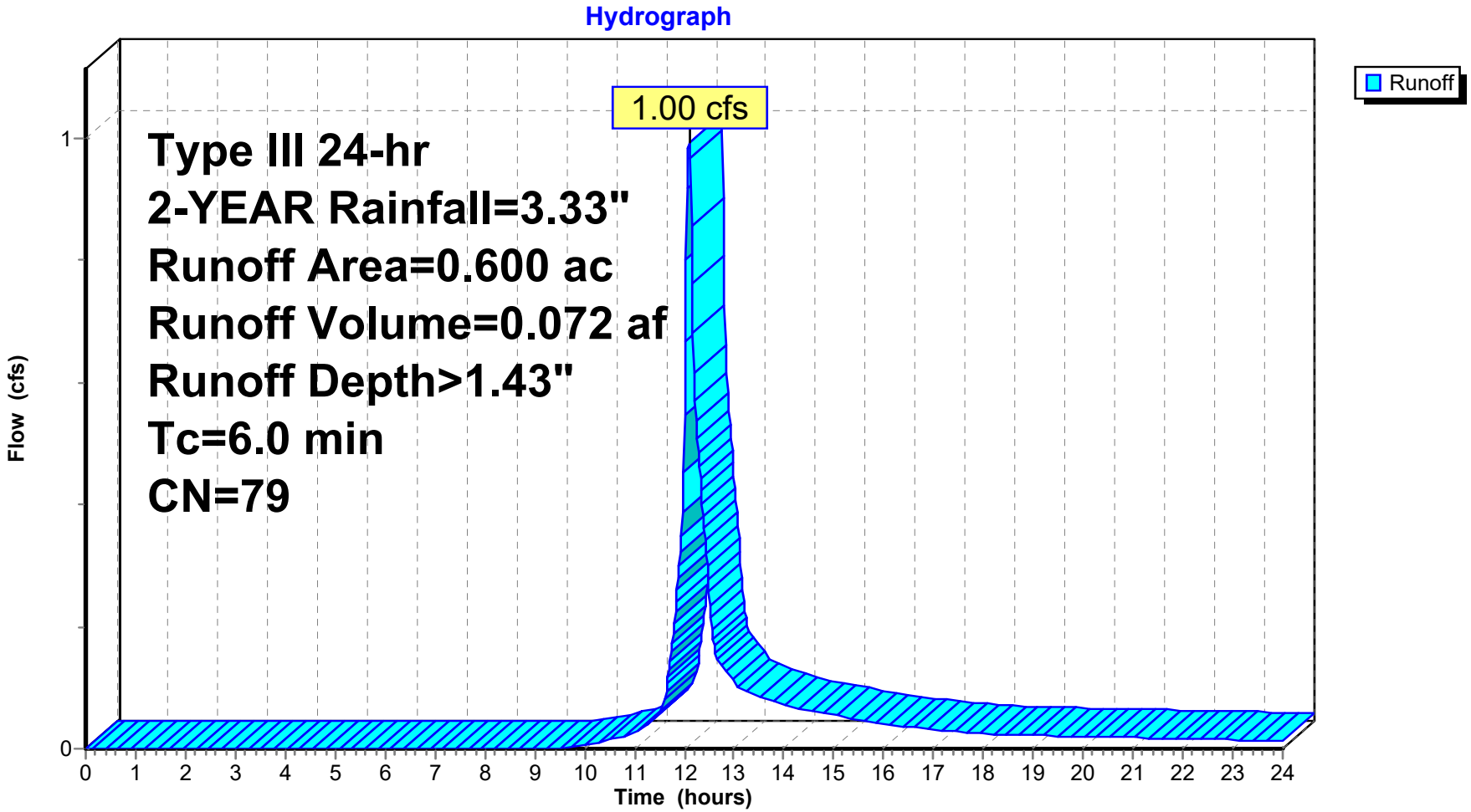
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

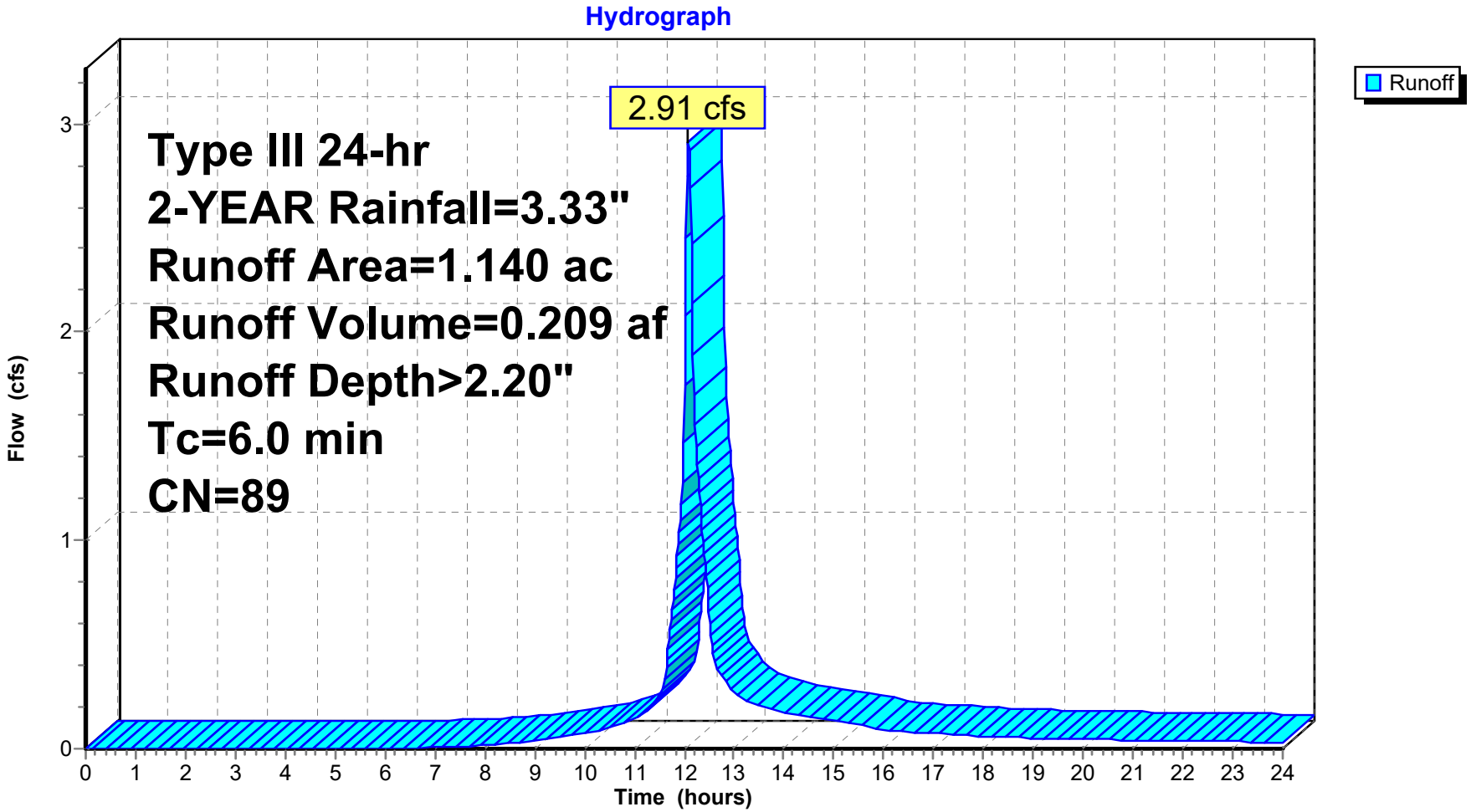
Runoff = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

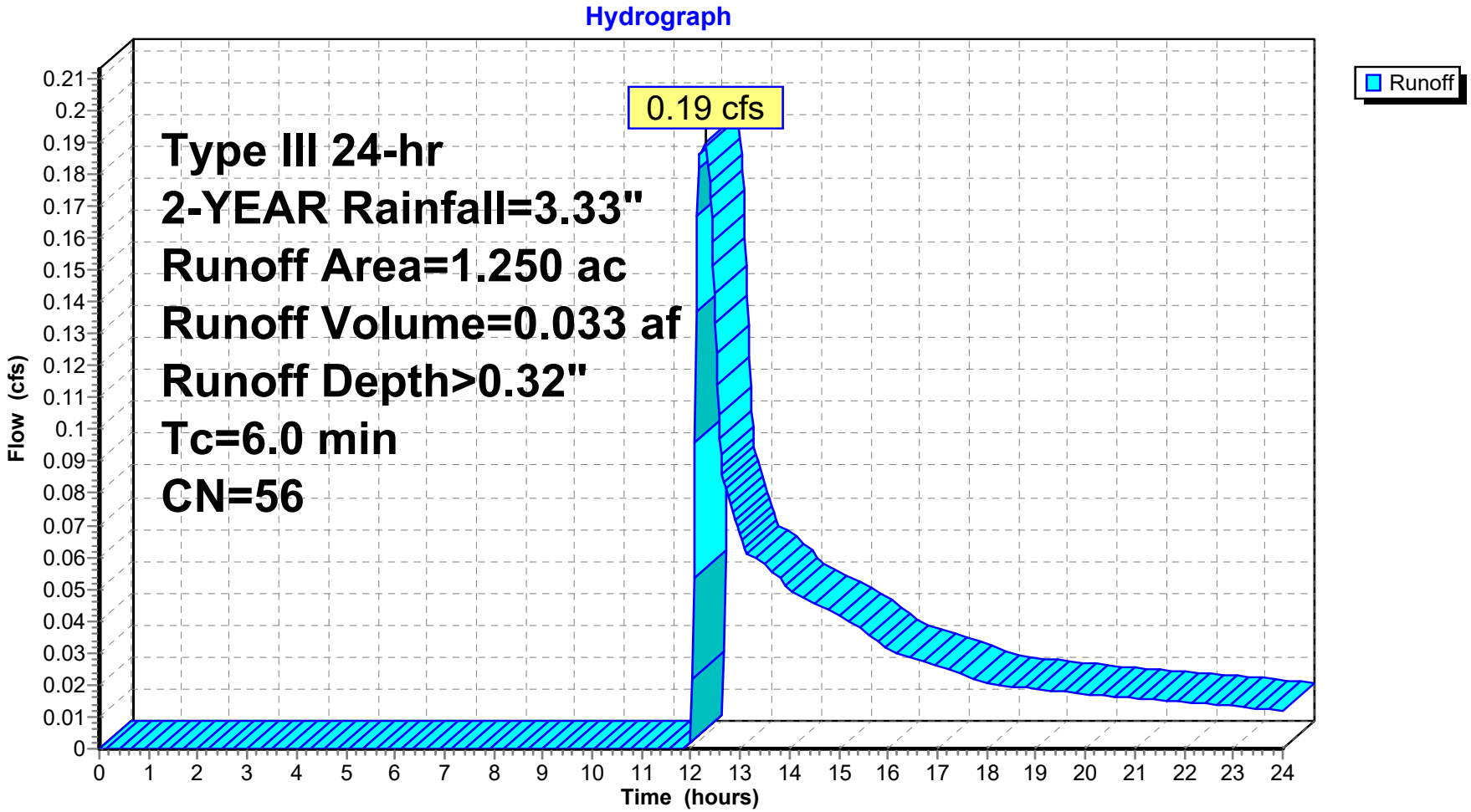
Runoff = 0.19 cfs @ 12.28 hrs, Volume= 0.033 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

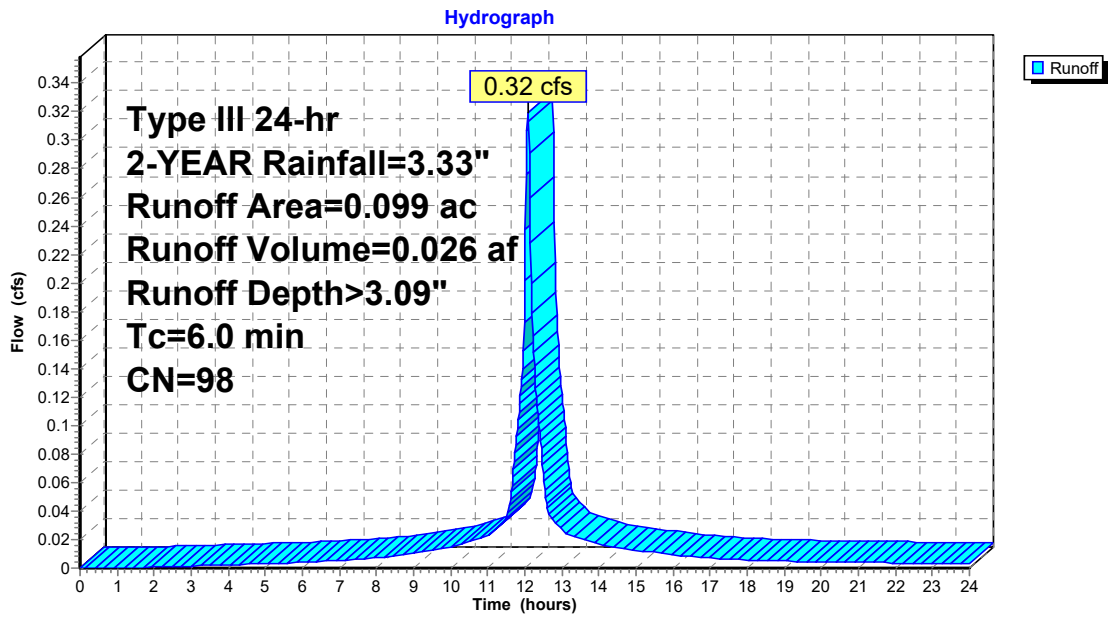
Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

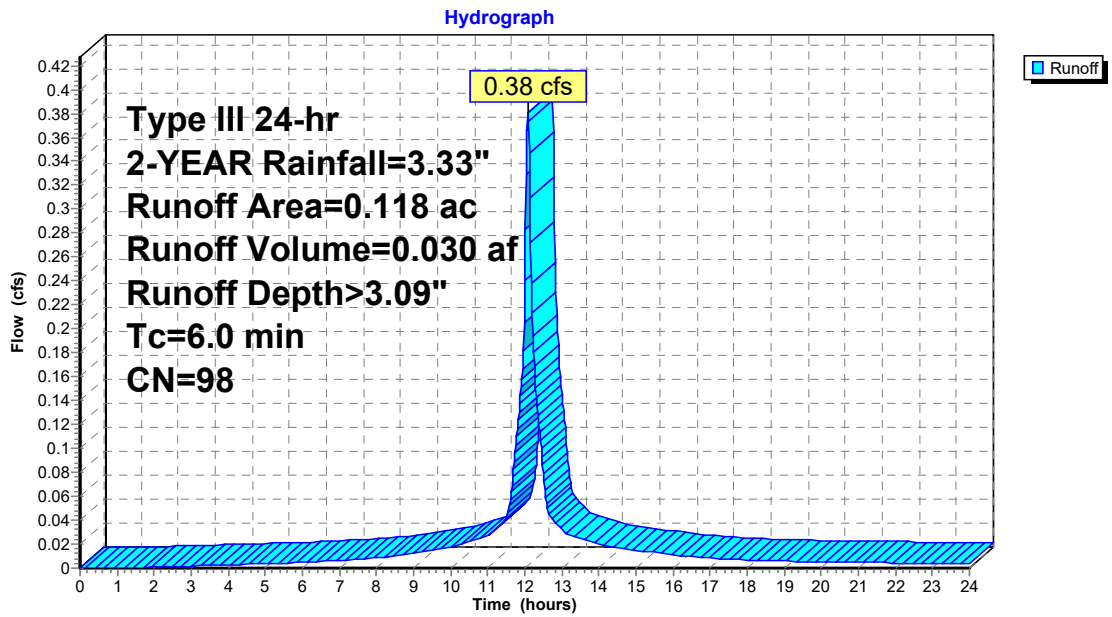
Runoff = 0.38 cfs @ 12.08 hrs, Volume= 0.030 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

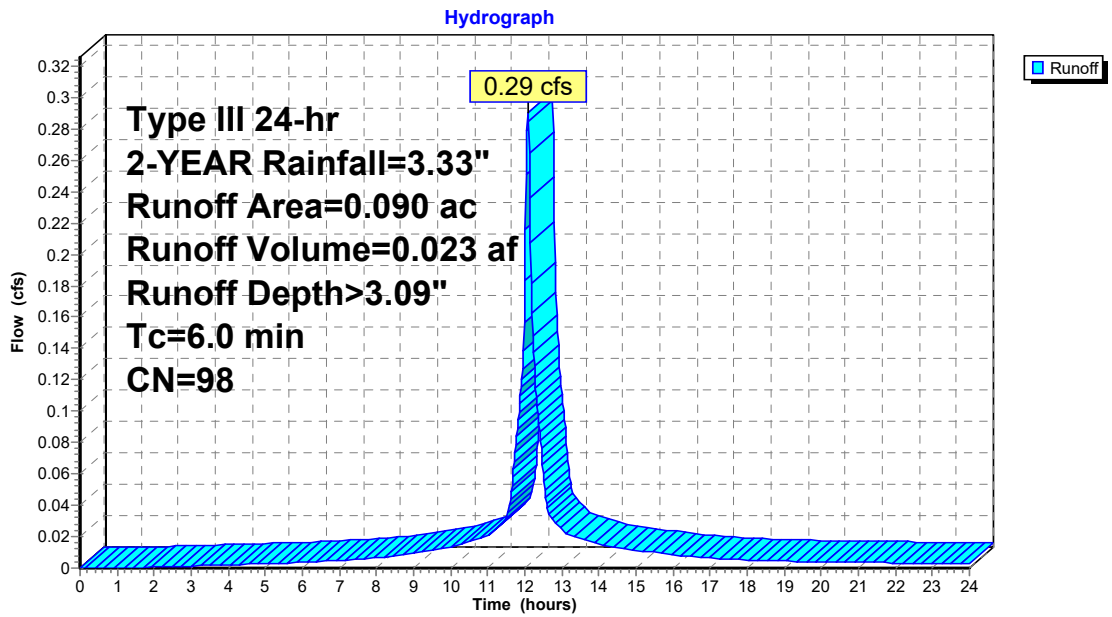
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

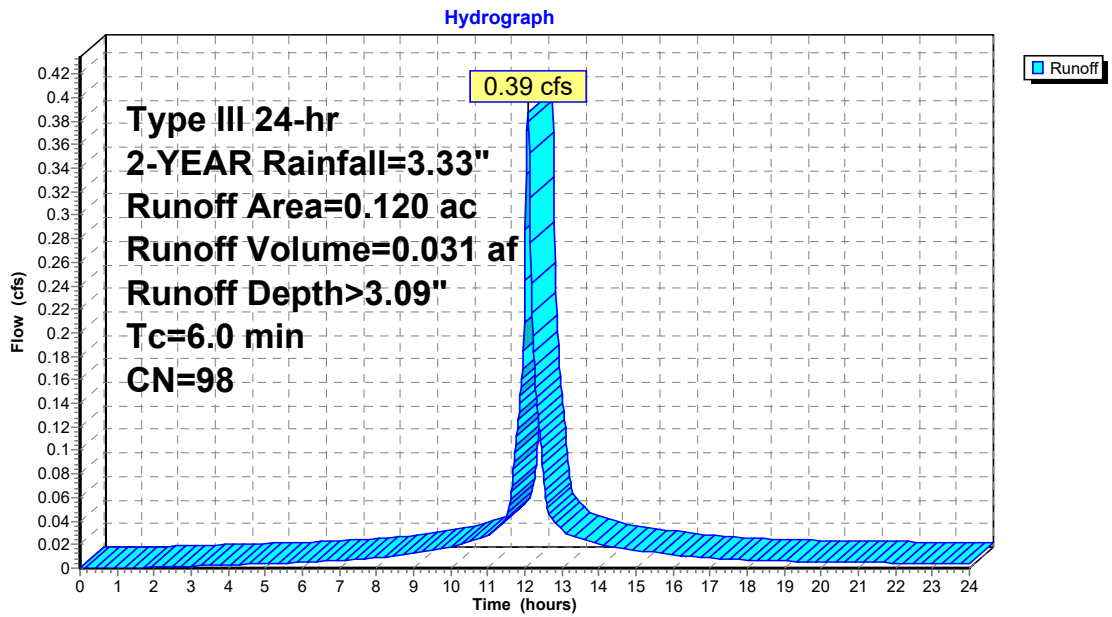
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.031 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



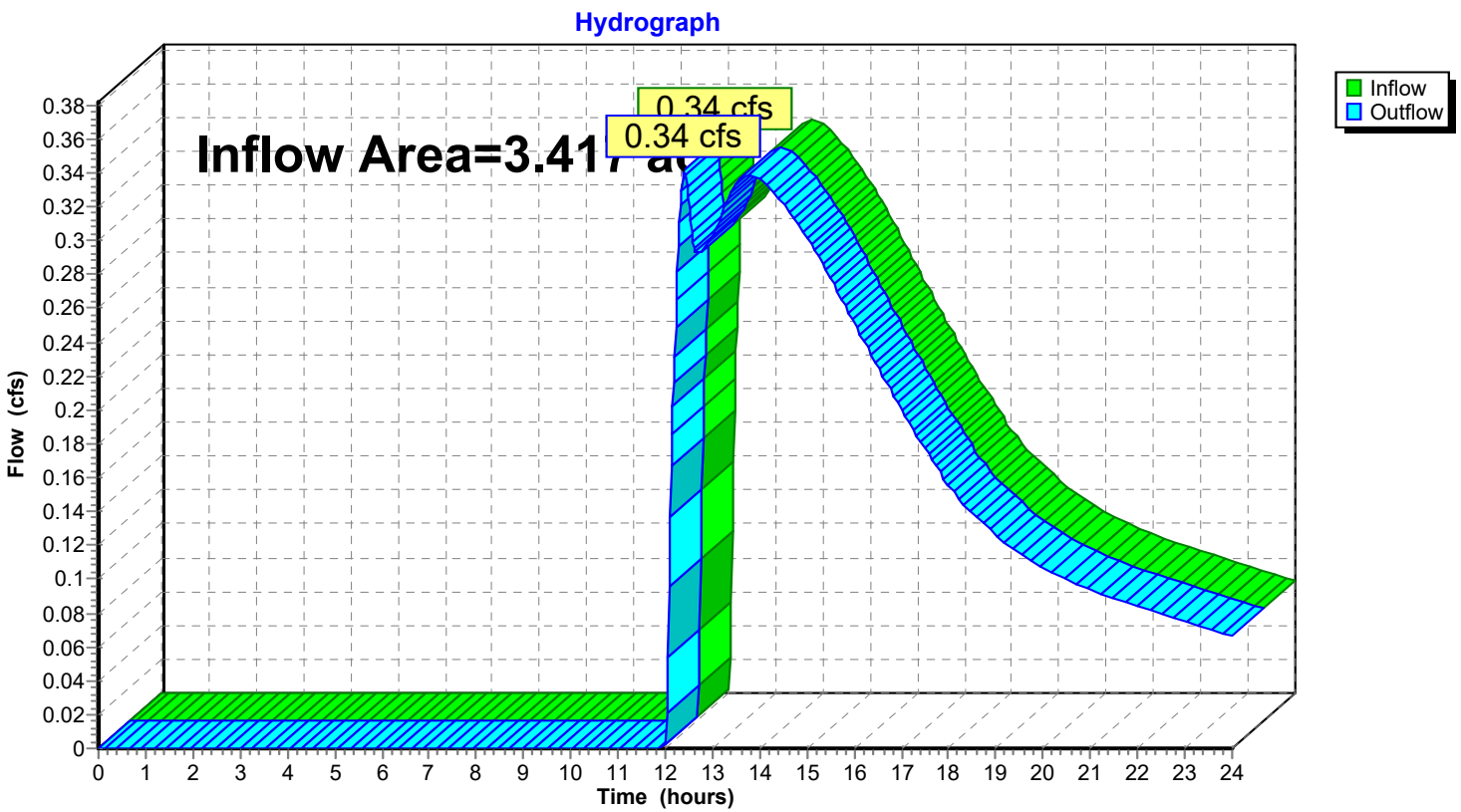
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 0.64" for 2-YEAR event
Inflow = 0.34 cfs @ 12.40 hrs, Volume= 0.181 af
Outflow = 0.34 cfs @ 12.40 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



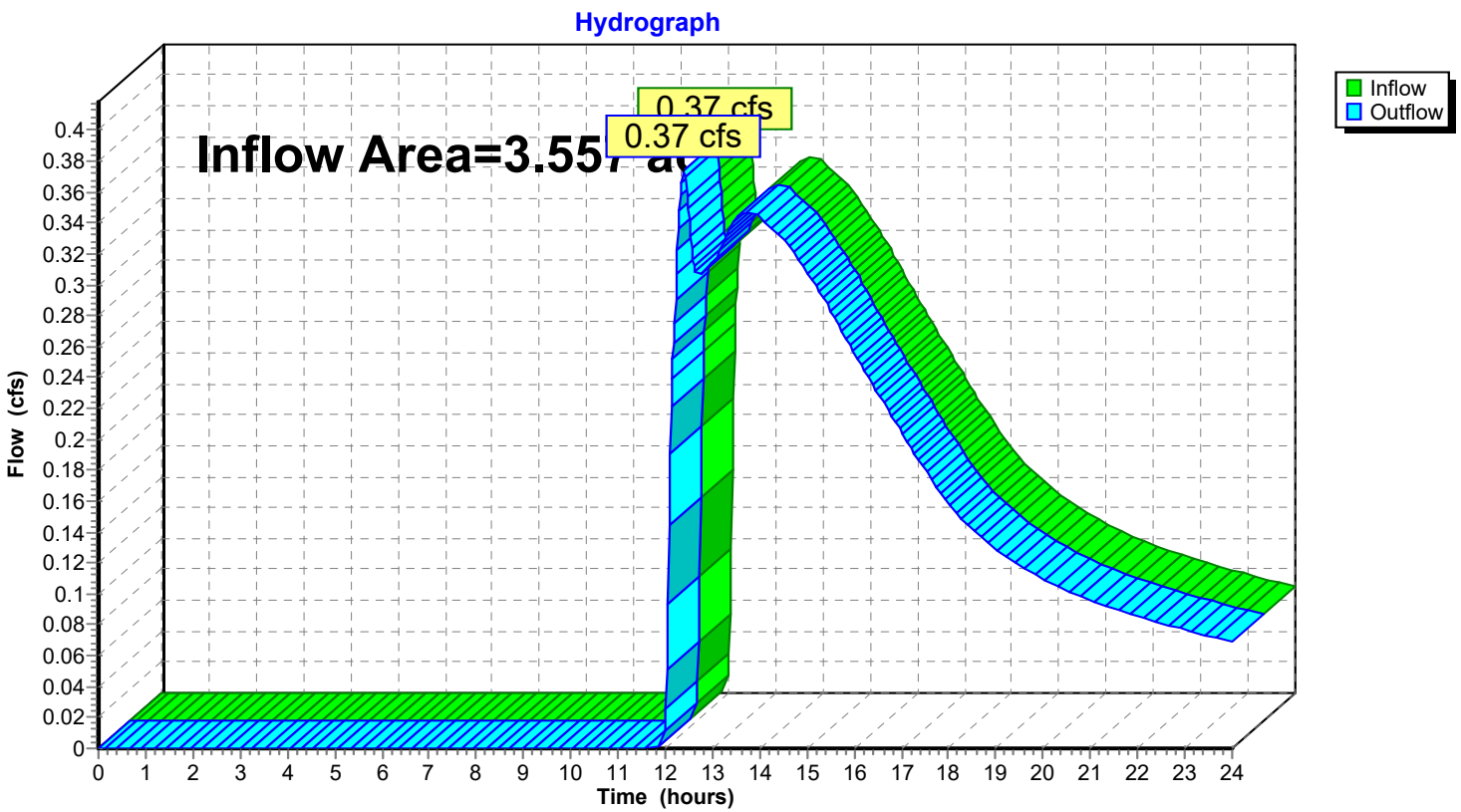
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 0.63" for 2-YEAR event
Inflow = 0.37 cfs @ 12.39 hrs, Volume= 0.187 af
Outflow = 0.37 cfs @ 12.39 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 1.43" for 2-YEAR event
Inflow = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af
Outflow = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af, Atten= 93%, Lag= 122.0 min
Primary = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.45' @ 14.13 hrs Surf.Area= 1,679 sf Storage= 1,915 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 306.2 min calculated for 0.031 af (43% of inflow)
Center-of-Mass det. time= 180.6 min (1,023.7 - 843.1)

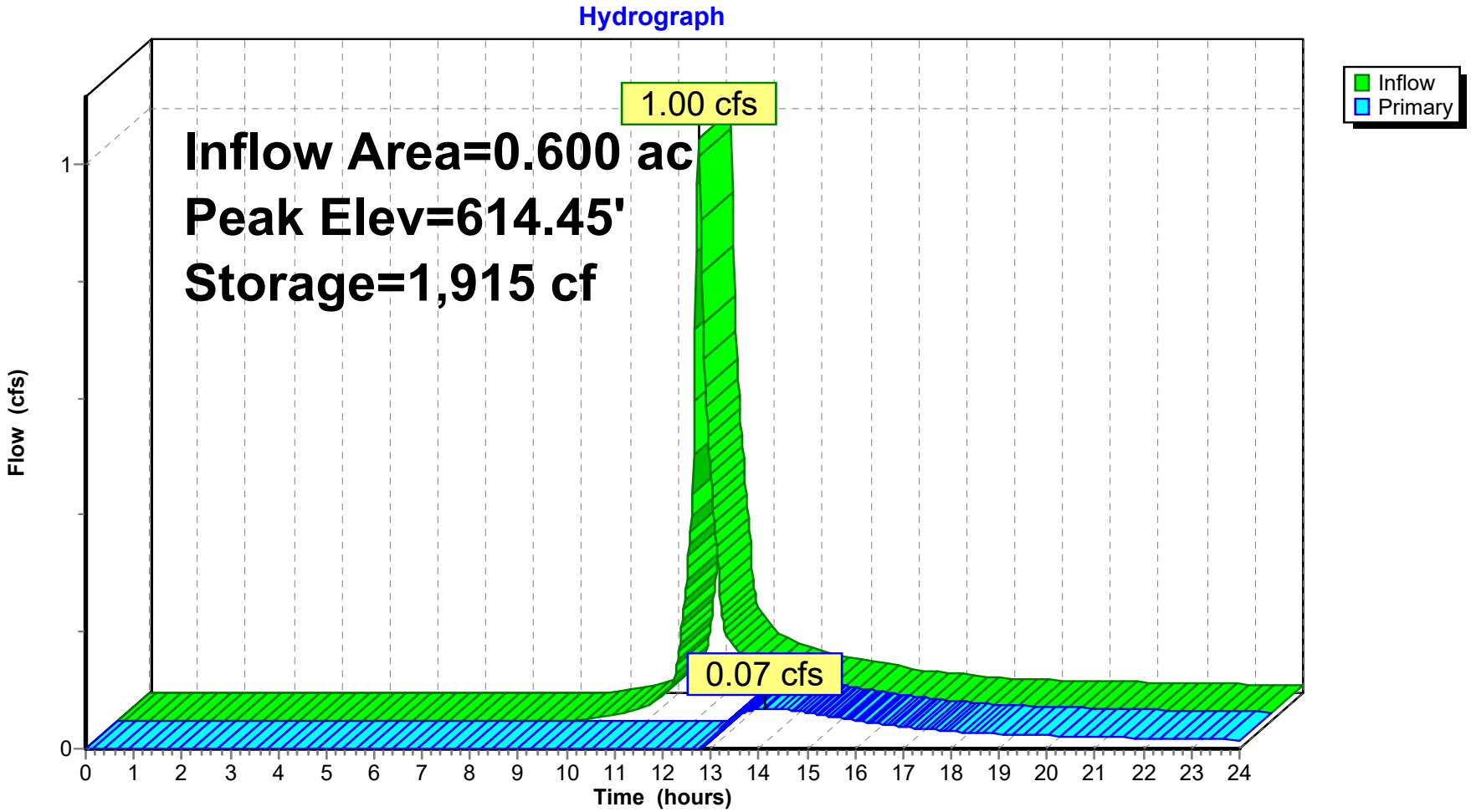
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

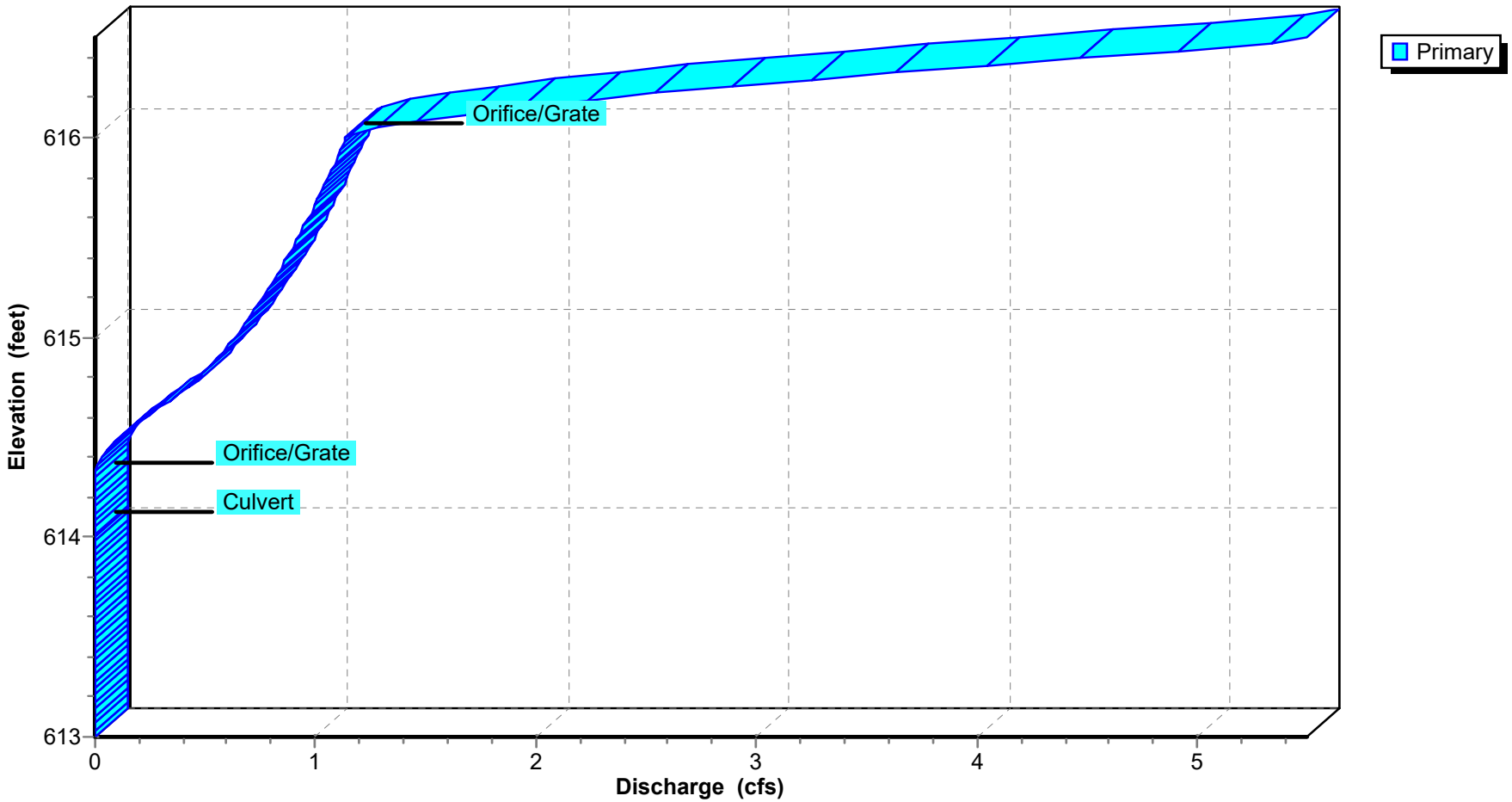
Primary OutFlow Max=0.07 cfs @ 14.13 hrs HW=614.45' (Free Discharge)
└─**1=Culvert** (Passes 0.07 cfs of 0.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.33 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

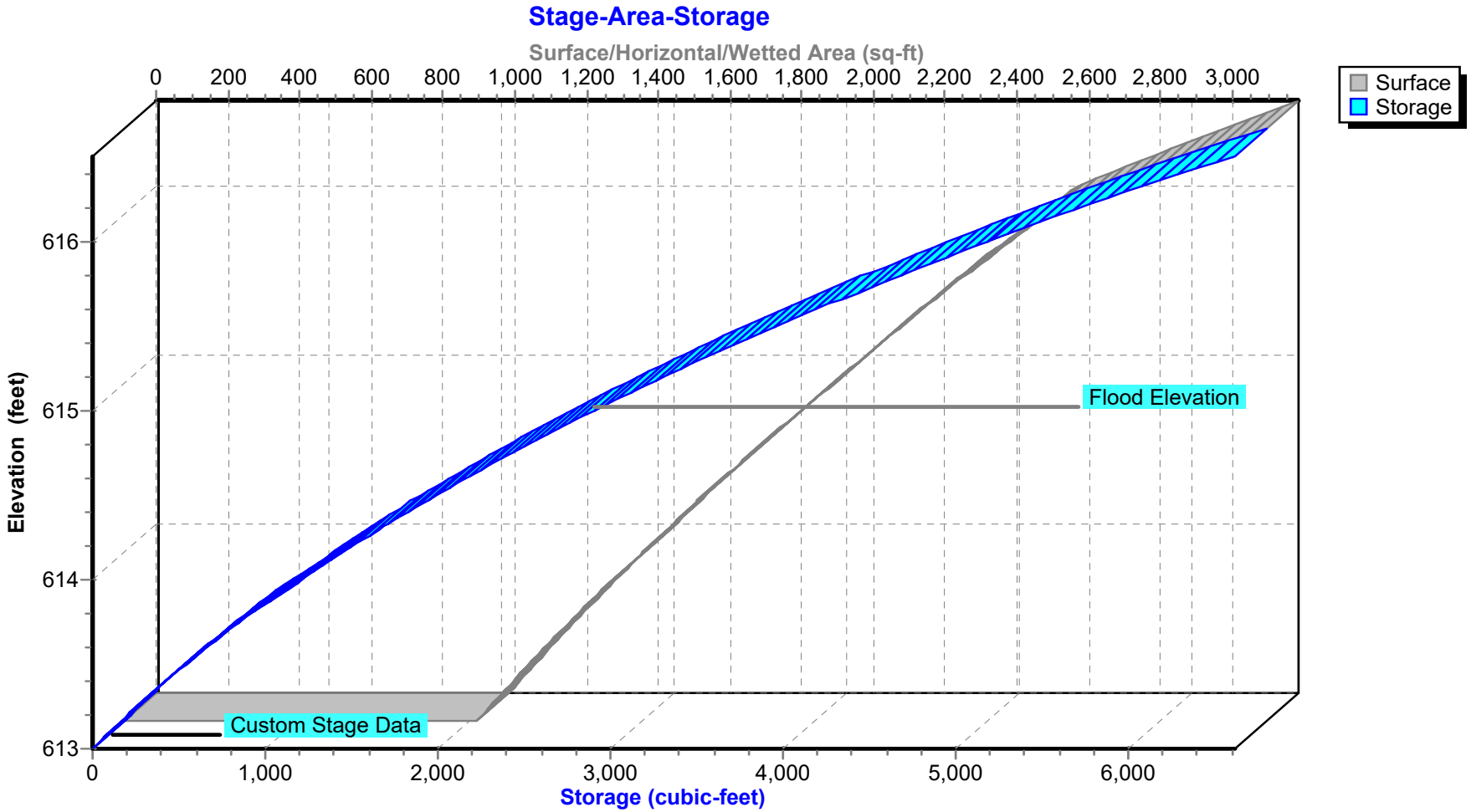


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 1.71" for 2-YEAR event
Inflow = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 0.22 cfs @ 13.38 hrs, Volume= 0.117 af, Atten= 92%, Lag= 77.6 min
Primary = 0.22 cfs @ 13.38 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.31' @ 13.38 hrs Surf.Area= 5,936 sf Storage= 5,415 cf

Plug-Flow detention time= 278.9 min calculated for 0.117 af (56% of inflow)
Center-of-Mass det. time= 171.8 min (980.7 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 13.38 hrs HW=615.31' (Free Discharge)
└─**1=Culvert** (Passes 0.22 cfs of 5.70 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 2.55 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

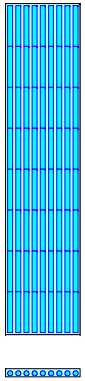
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

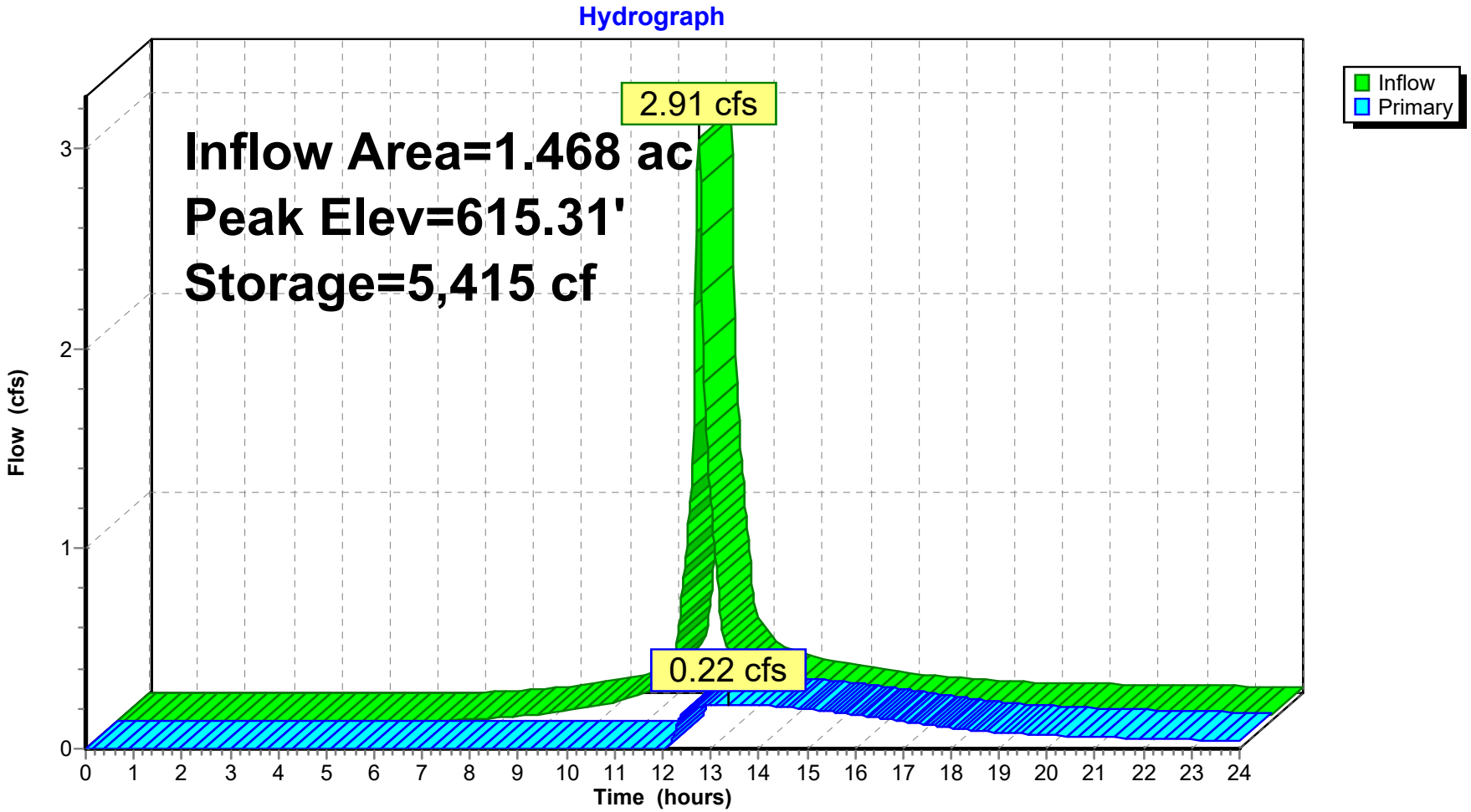
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

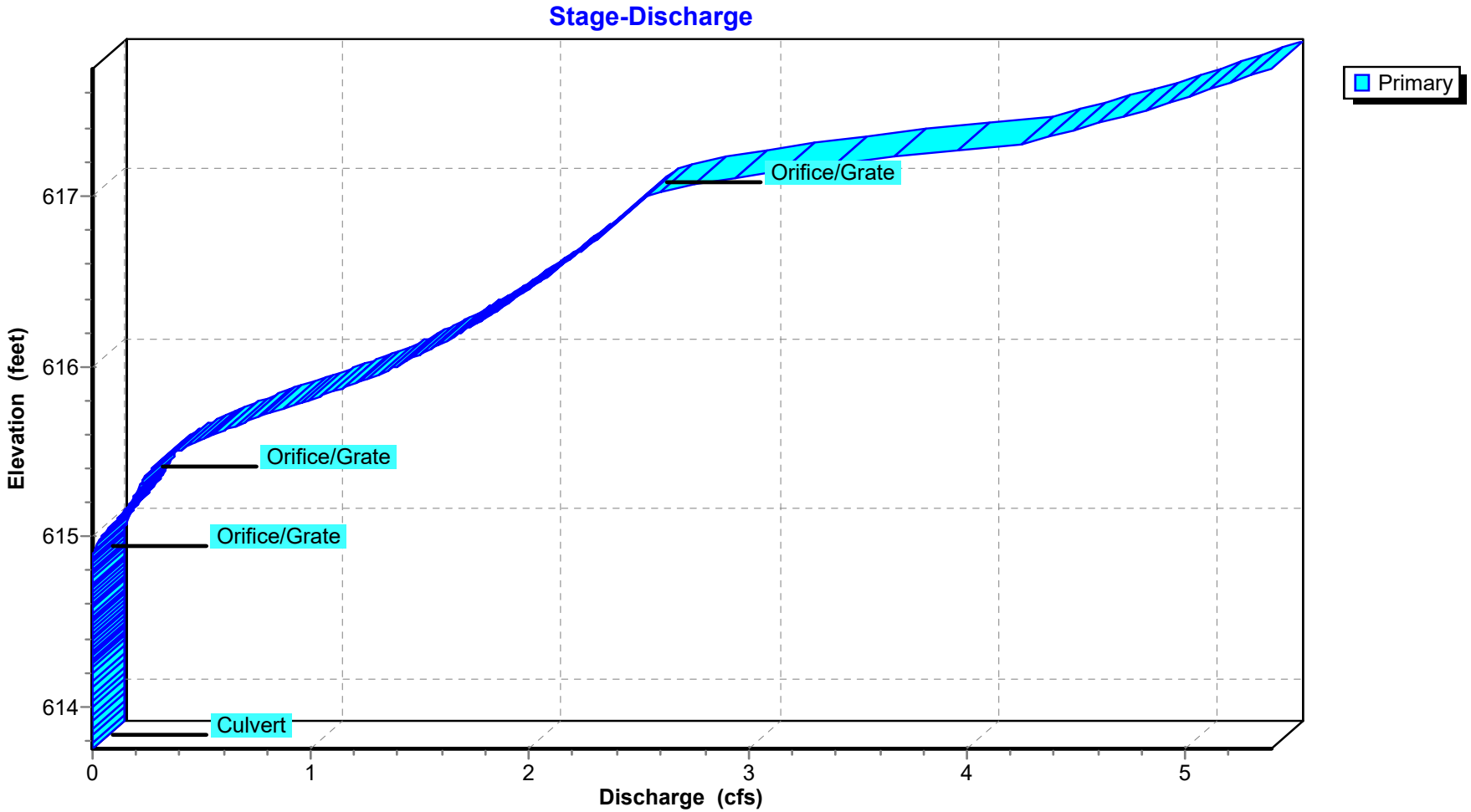
72 Chambers
876.0 cy Field
614.2 cy Stone



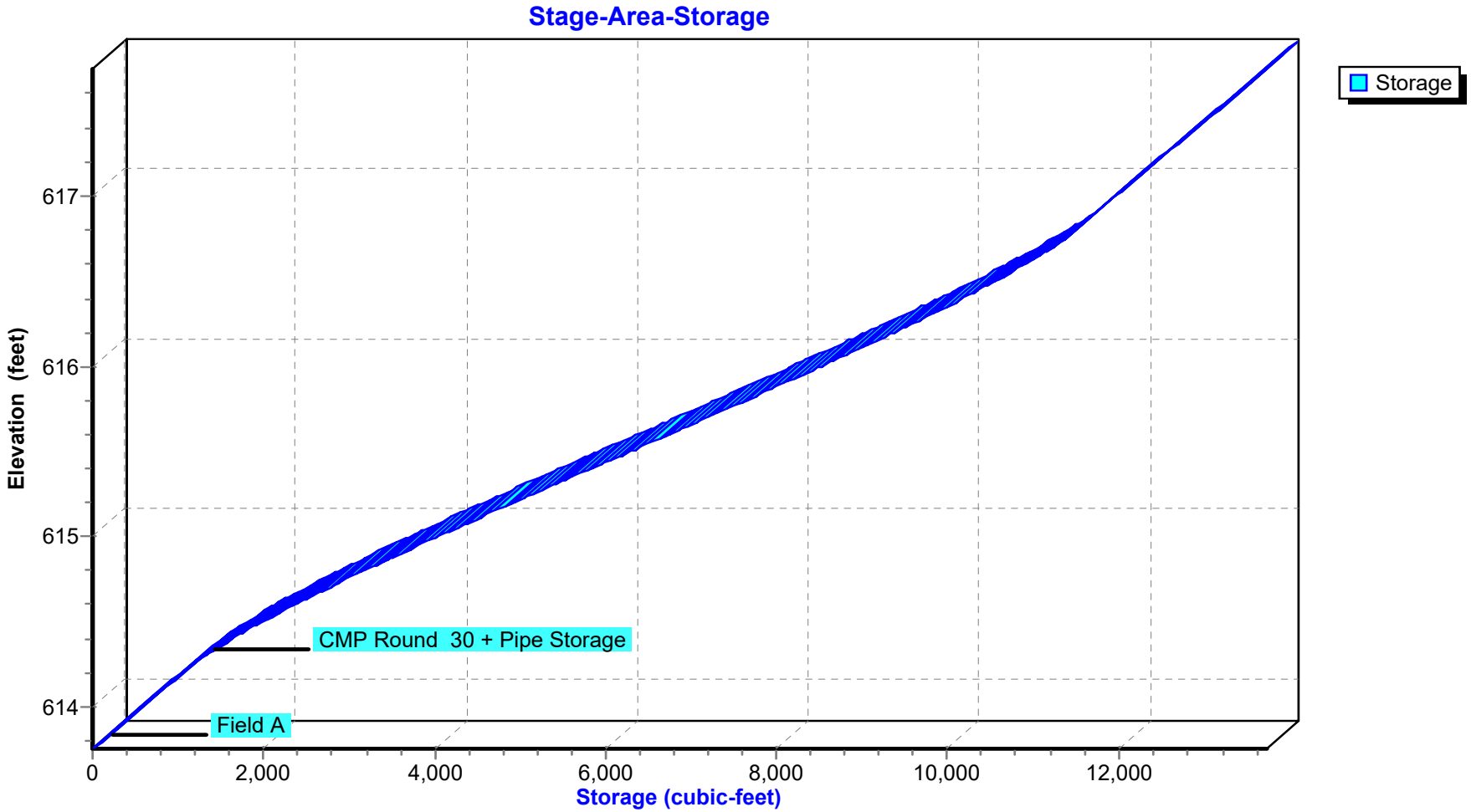
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.22' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

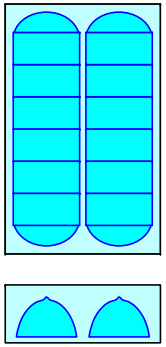
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

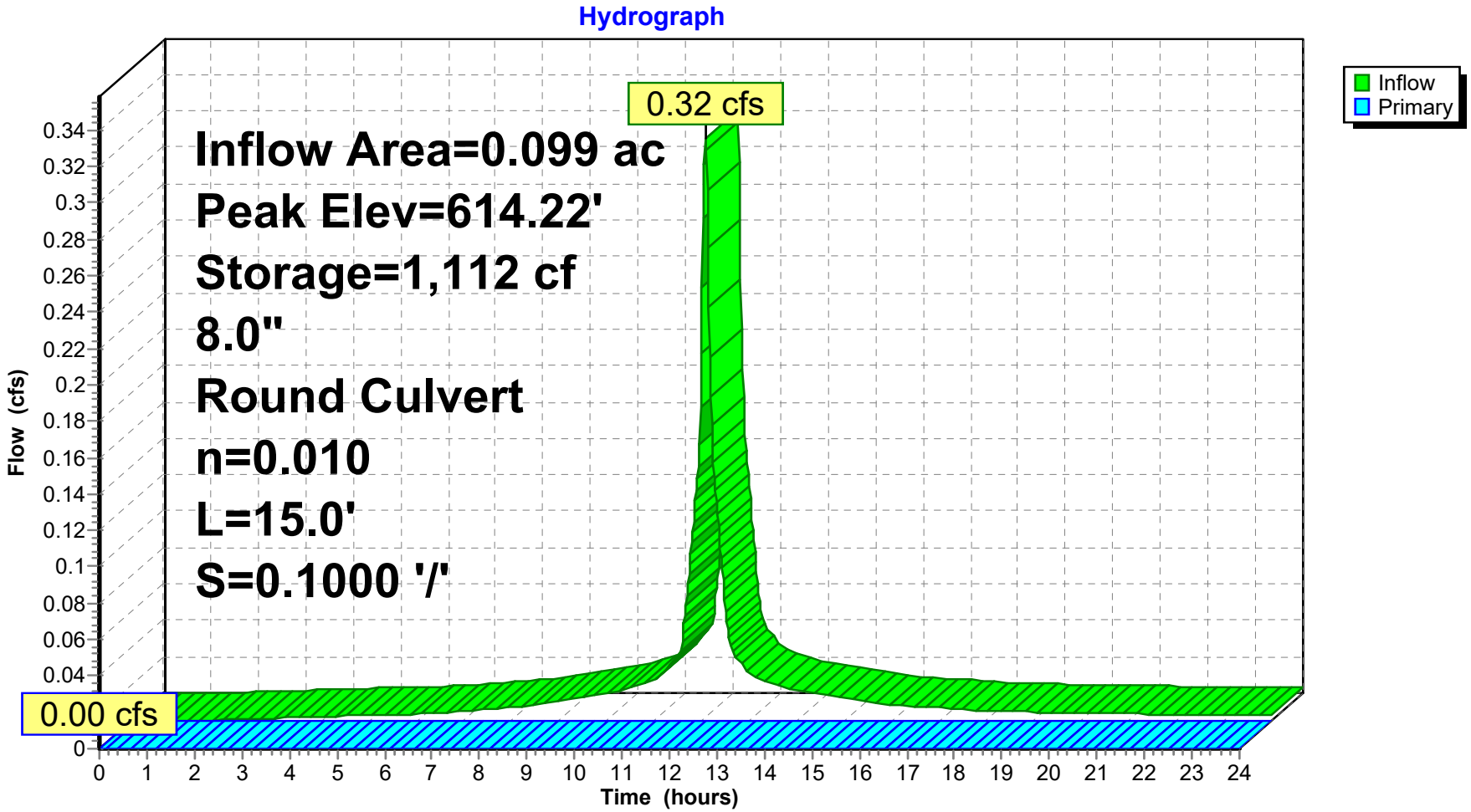
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

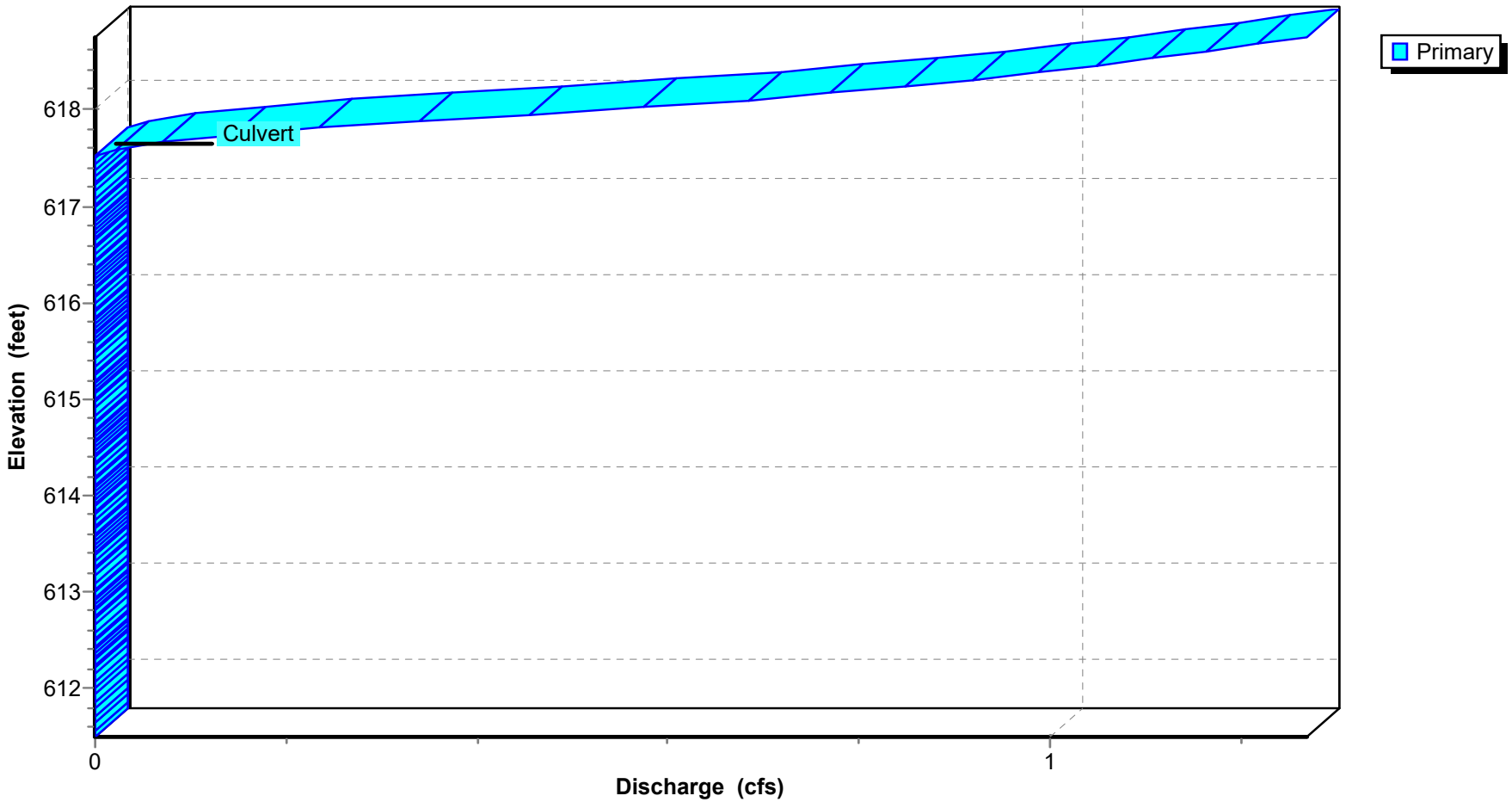


Pond 3P: ROOF INFILTRATION

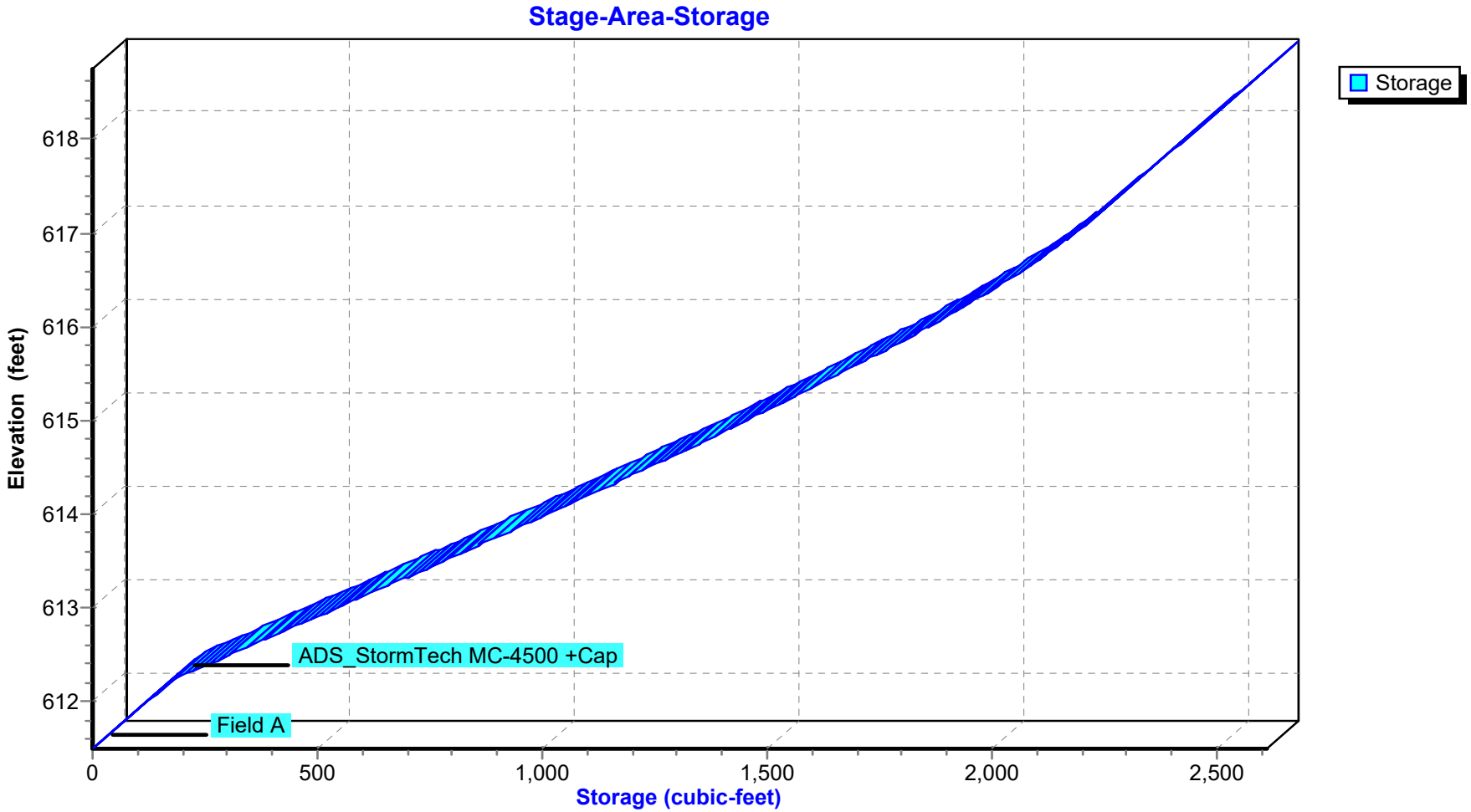


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 1.06 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.12' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.085 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

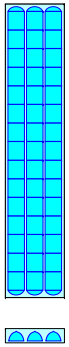
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

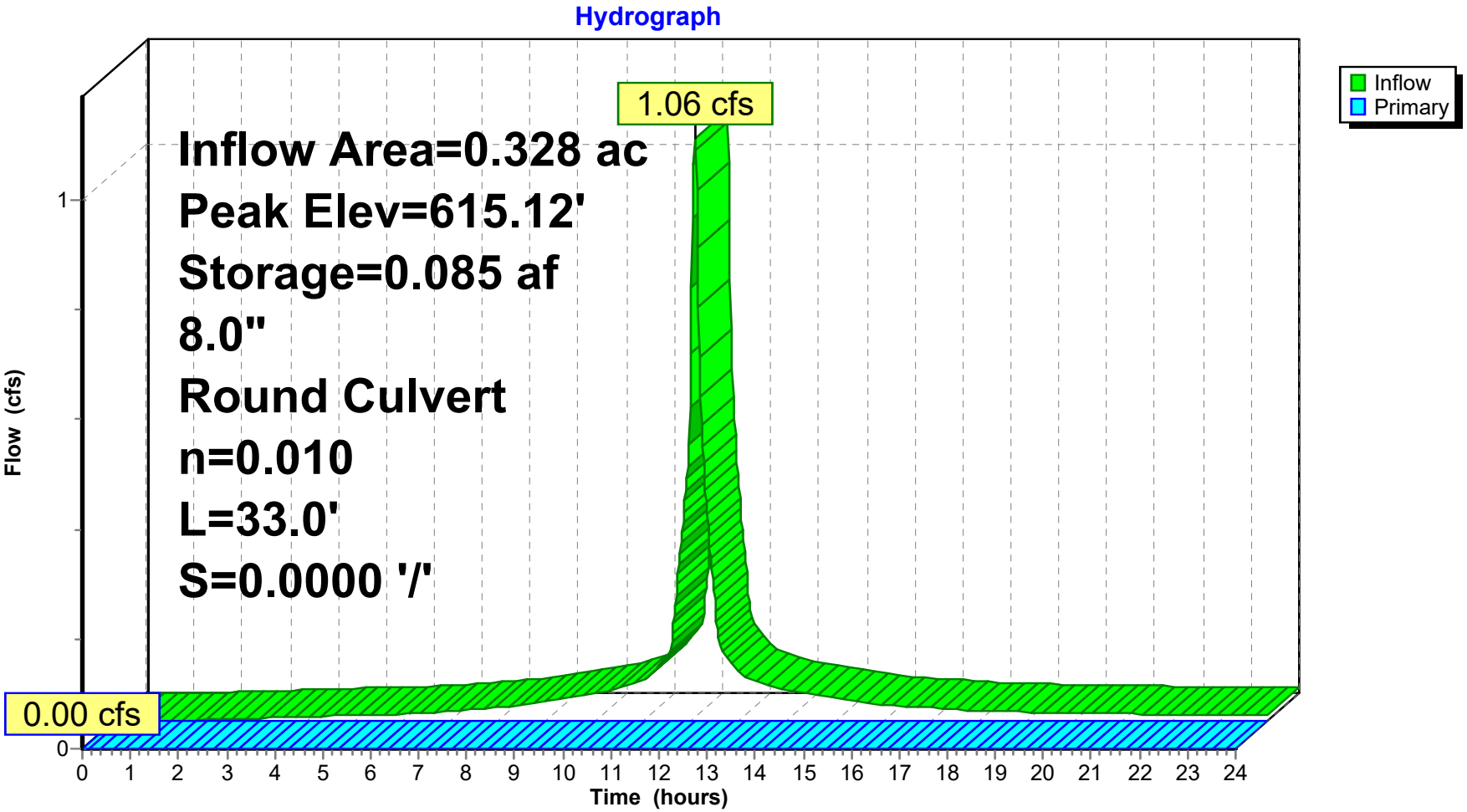
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

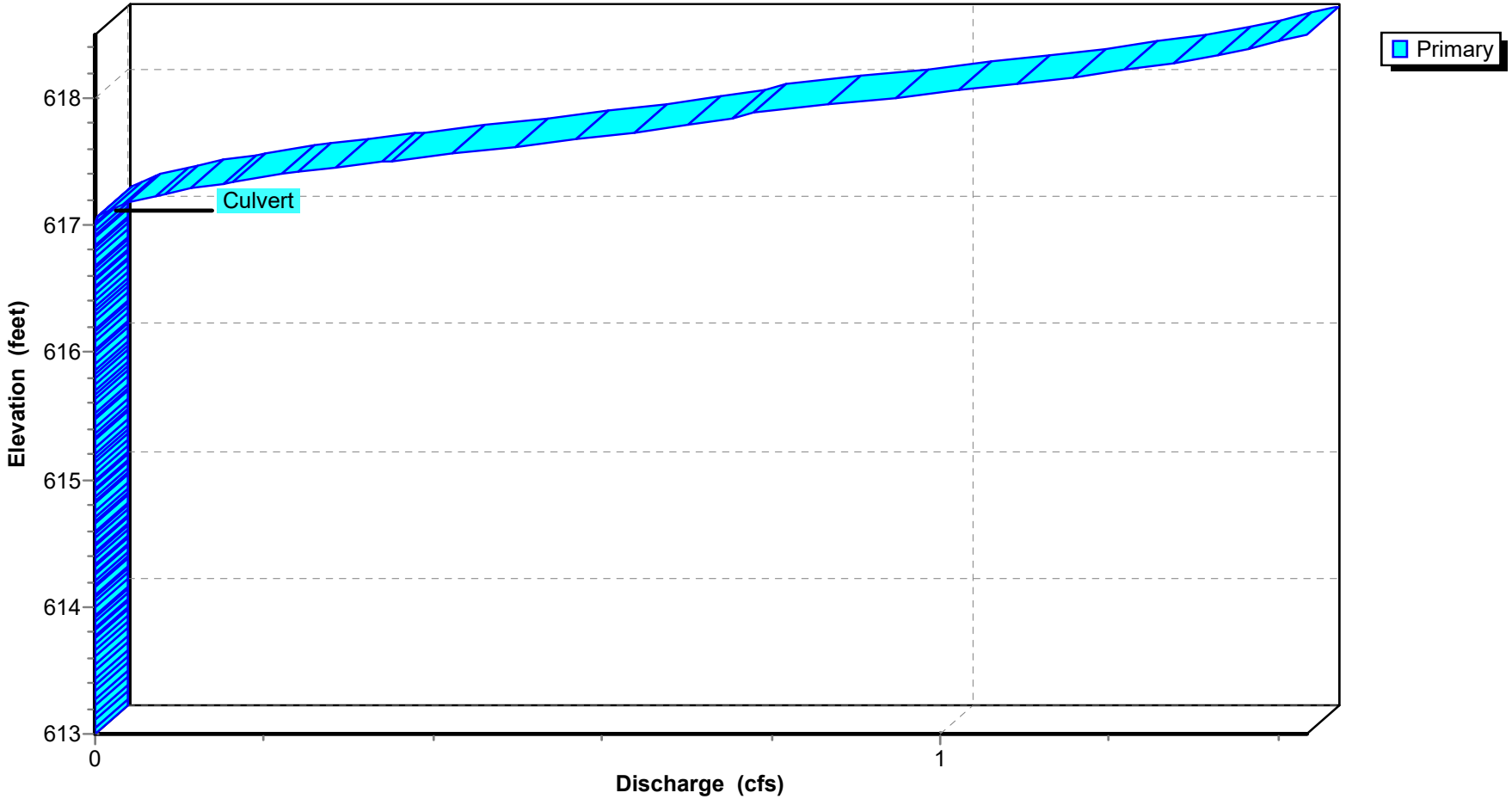


Pond 4P: ROOF INFILTRATION

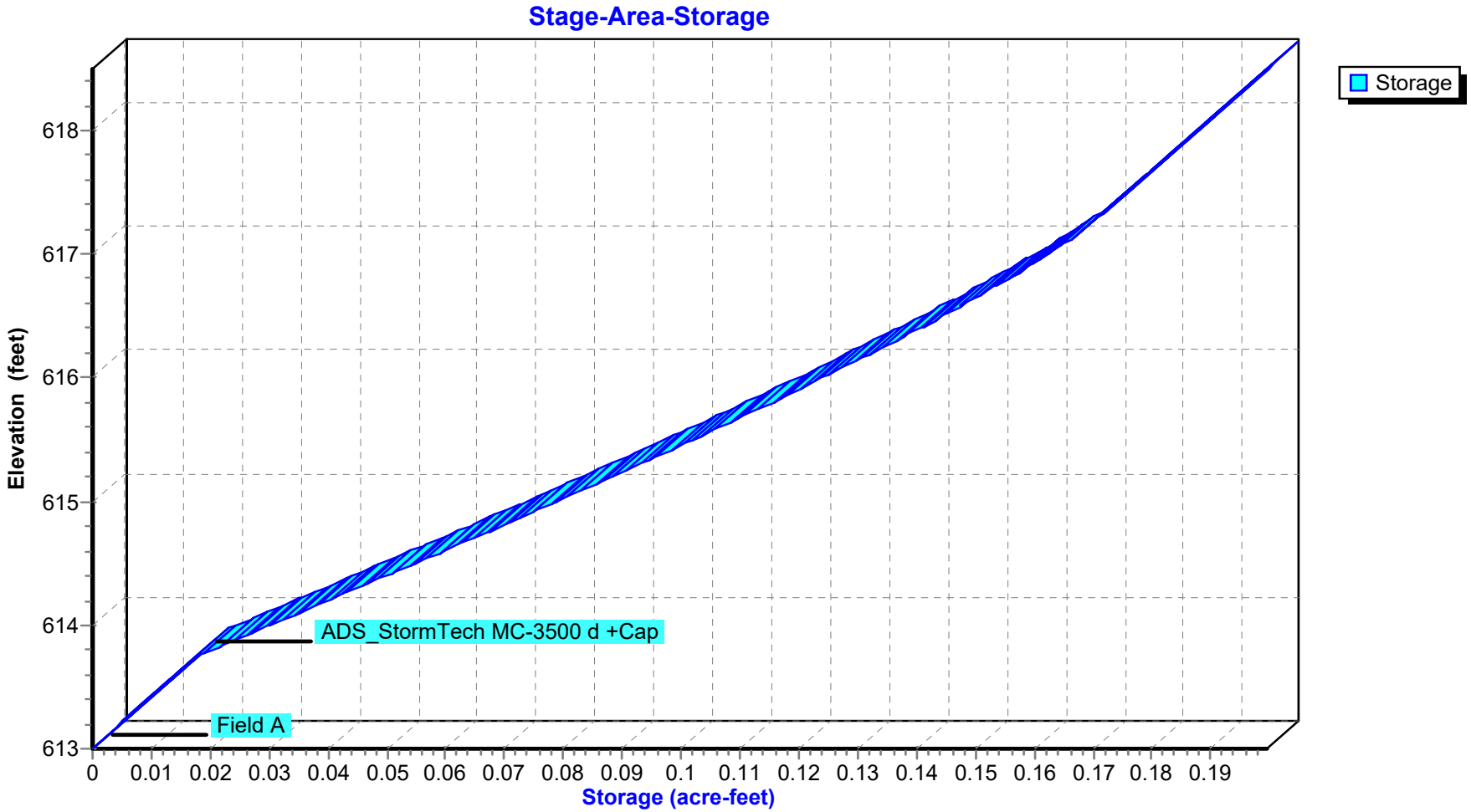


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>1.40"
Tc=6.0 min CN=61 Runoff=0.21 cfs 0.016 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>2.84"
Tc=6.0 min CN=79 Runoff=2.00 cfs 0.142 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>3.82"
Tc=6.0 min CN=89 Runoff=4.95 cfs 0.363 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.07"
Tc=6.0 min CN=56 Runoff=1.29 cfs 0.111 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.49 cfs 0.040 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.047 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=2.37 cfs 0.478 af
Outflow=2.37 cfs 0.478 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=2.47 cfs 0.495 af
Outflow=2.47 cfs 0.495 af

Pond 1P: DETENTION BASIN Peak Elev=614.89' Storage=2,704 cf Inflow=2.00 cfs 0.142 af
Outflow=0.55 cfs 0.101 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.90' Storage=8,102 cf Inflow=4.95 cfs 0.363 af
Outflow=1.22 cfs 0.267 af

Pond 3P: ROOF INFILTRATION Peak Elev=615.66' Storage=1,728 cf Inflow=0.49 cfs 0.040 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.18' Storage=0.131 af Inflow=1.62 cfs 0.131 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.803 af Average Runoff Depth = 2.71"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

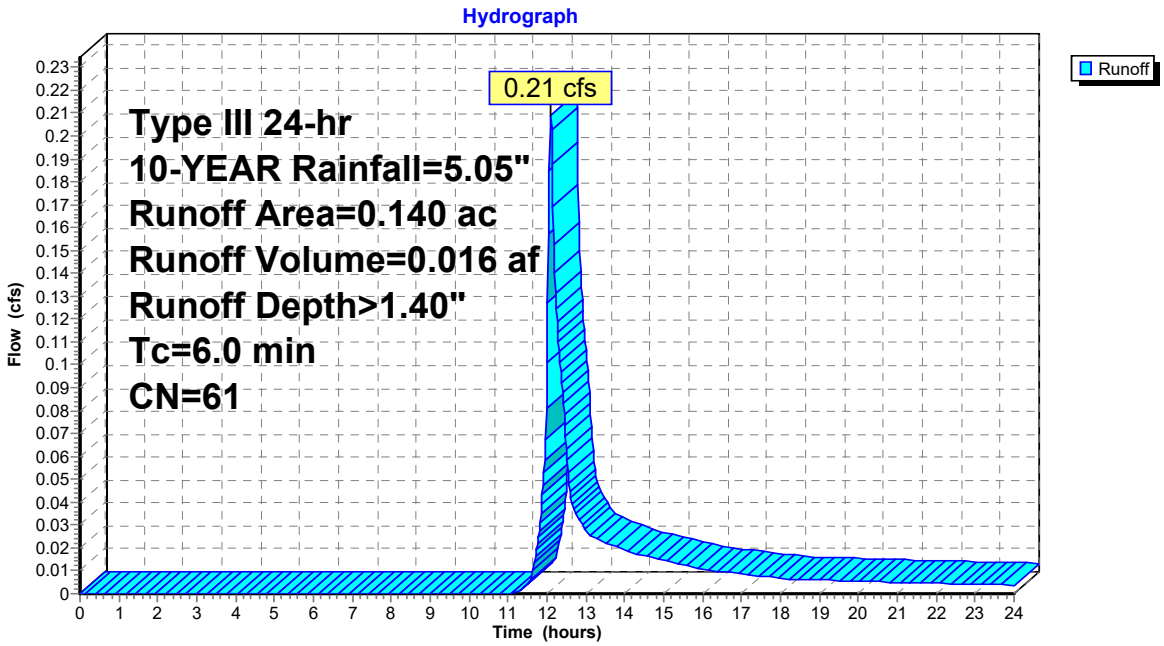
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

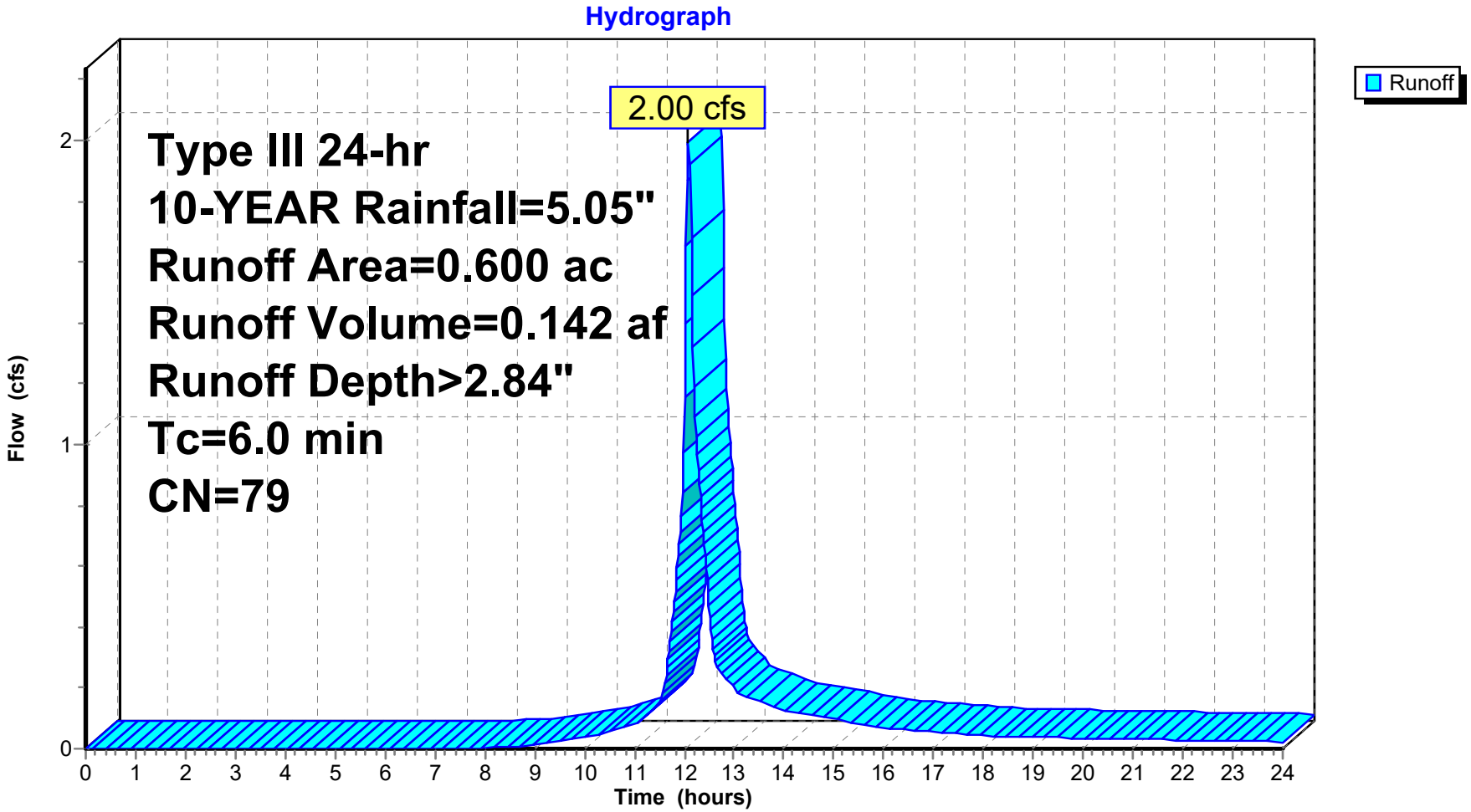
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

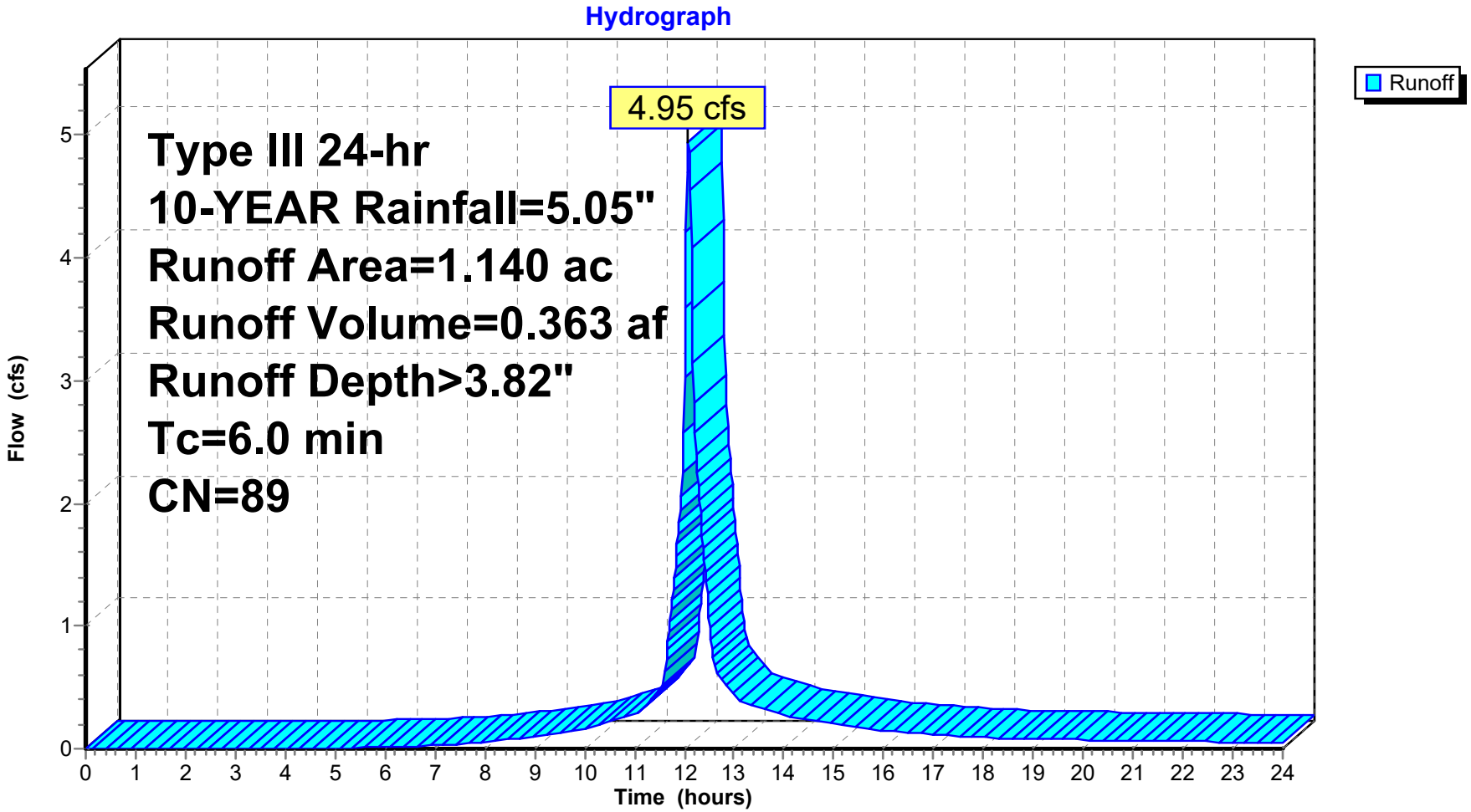
Runoff = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

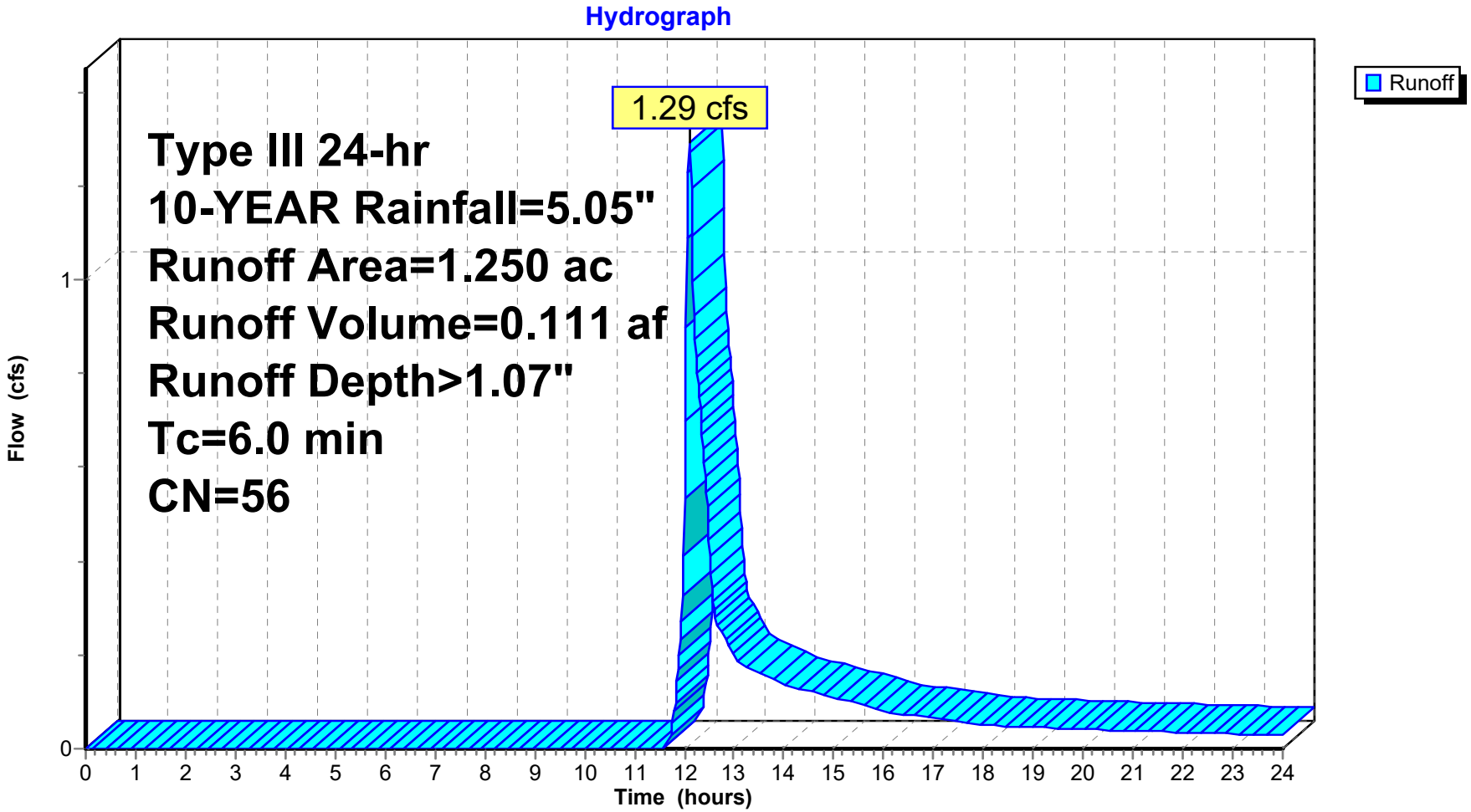
Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.111 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

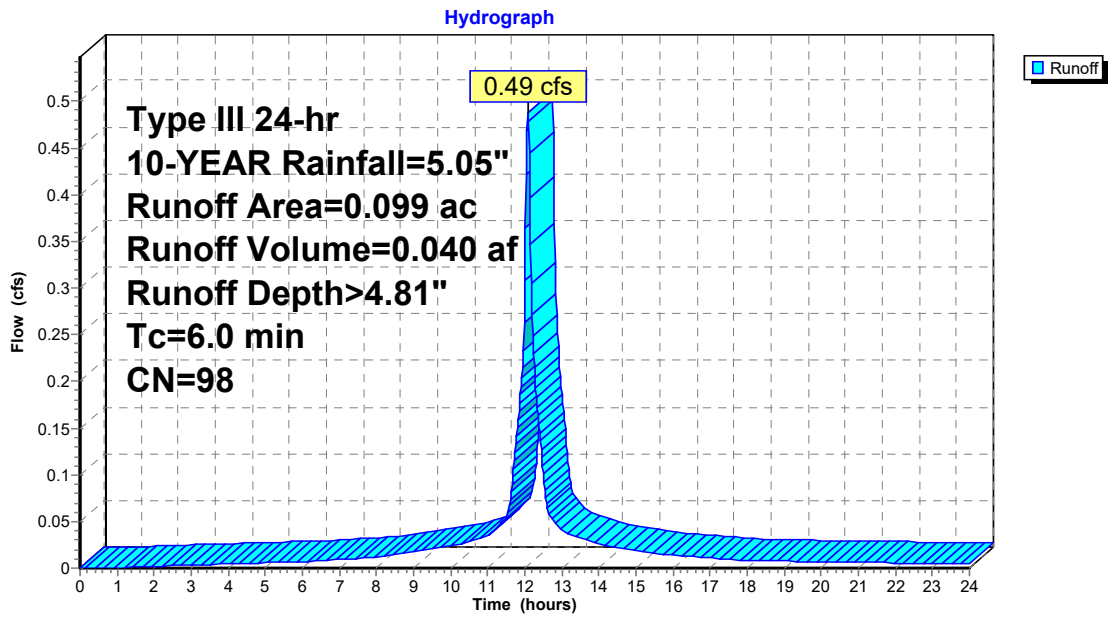
Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

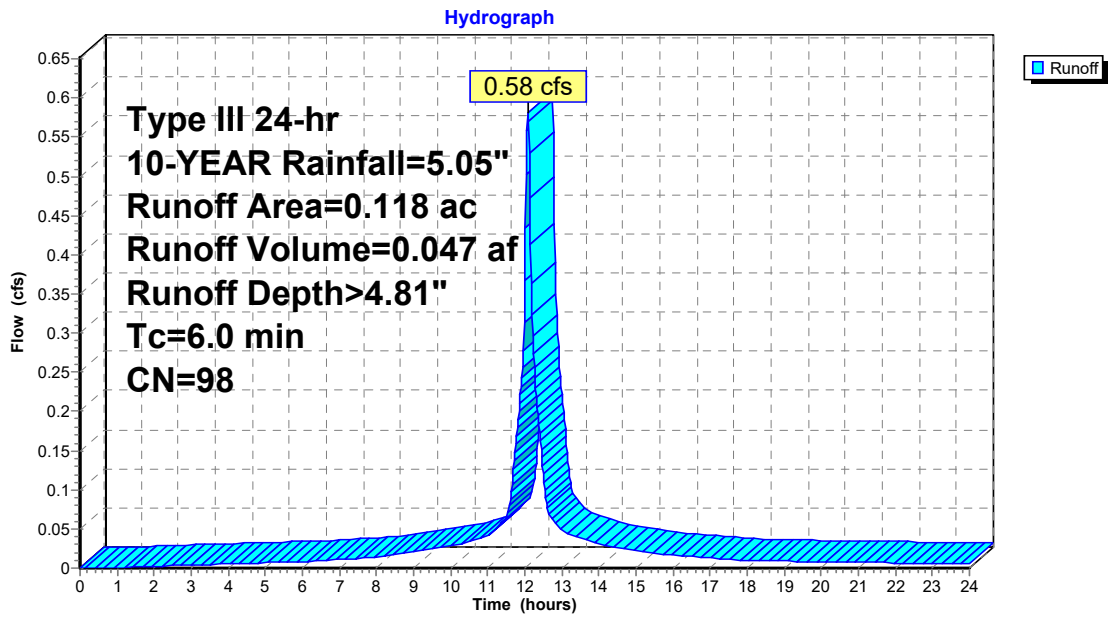
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

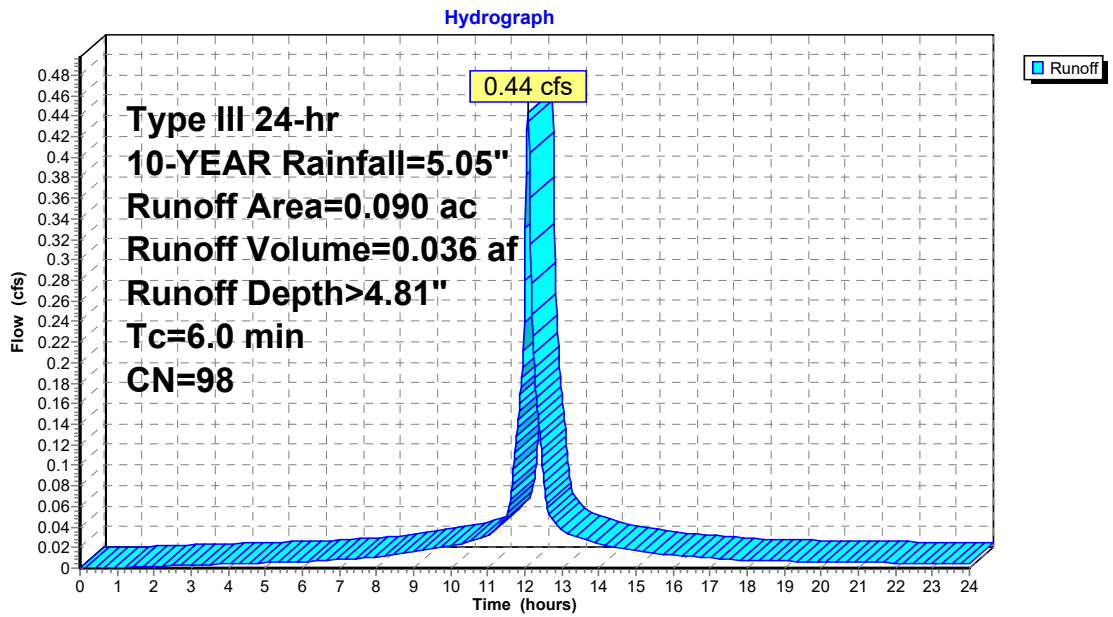
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

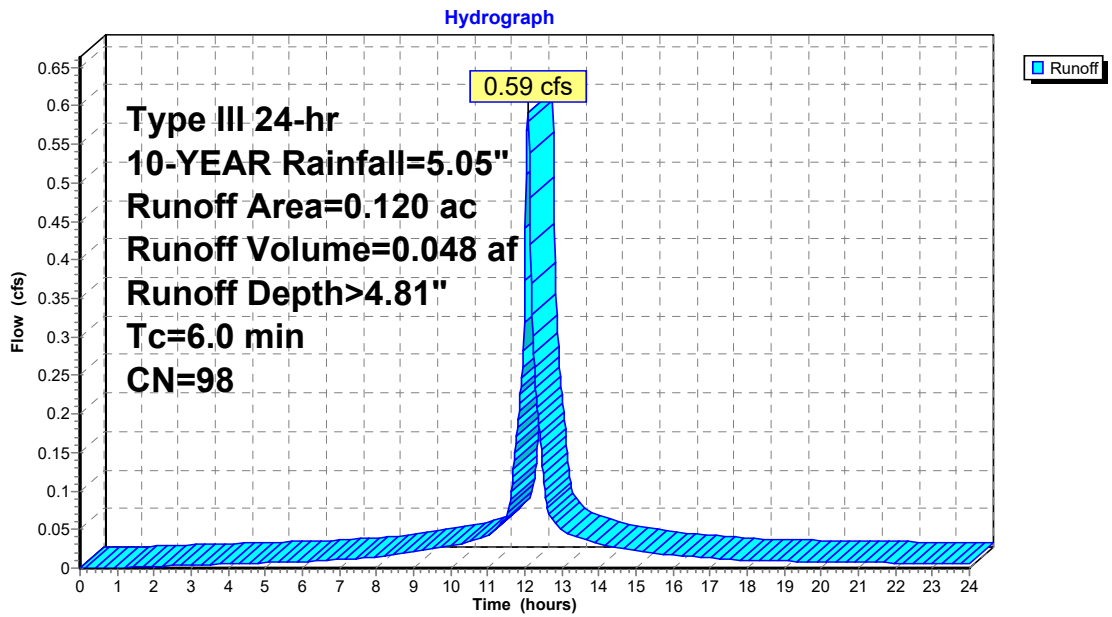
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



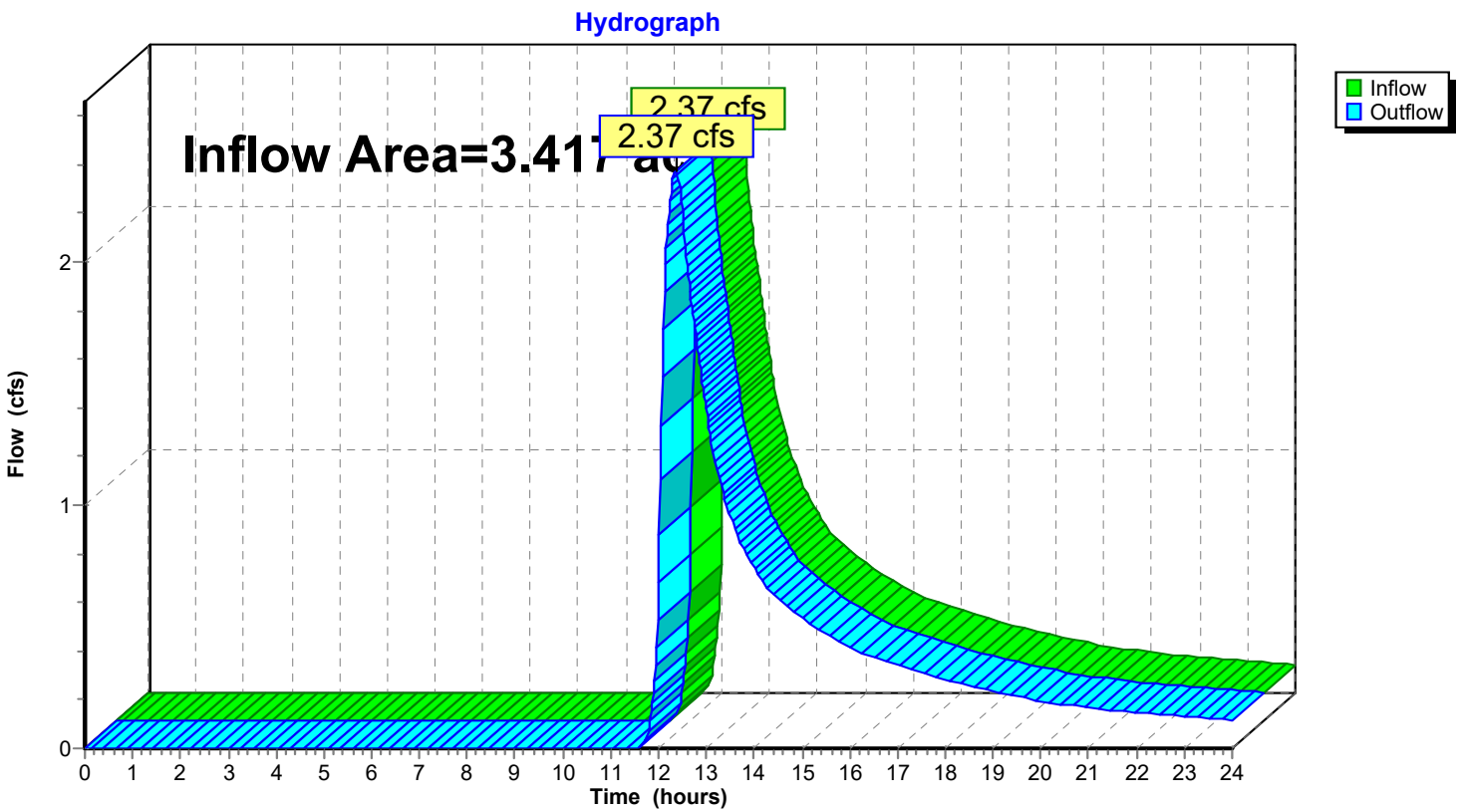
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 1.68" for 10-YEAR event
Inflow = 2.37 cfs @ 12.36 hrs, Volume= 0.478 af
Outflow = 2.37 cfs @ 12.36 hrs, Volume= 0.478 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



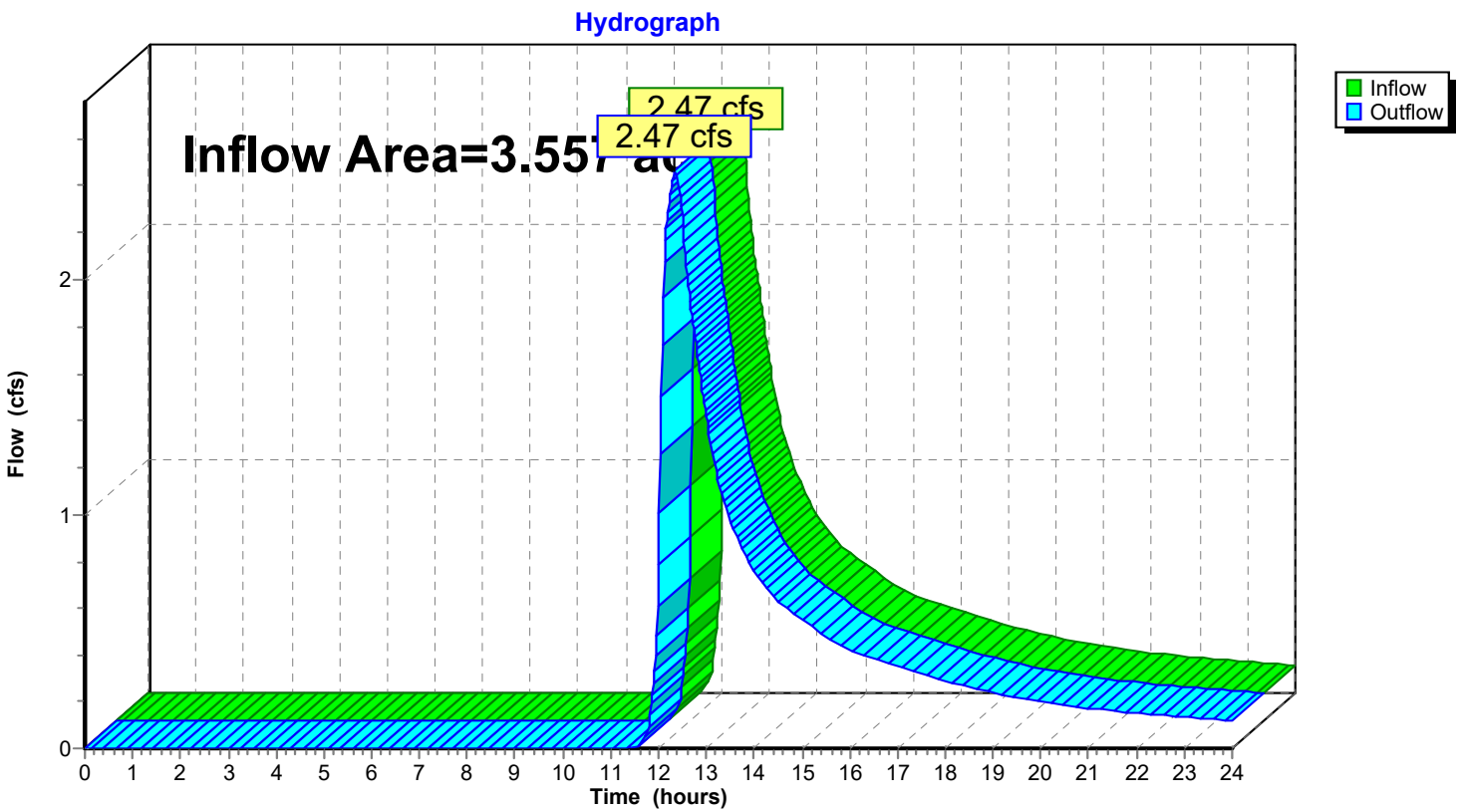
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 1.67" for 10-YEAR event
Inflow = 2.47 cfs @ 12.35 hrs, Volume= 0.495 af
Outflow = 2.47 cfs @ 12.35 hrs, Volume= 0.495 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 2.84" for 10-YEAR event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af, Atten= 72%, Lag= 22.3 min
Primary = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.89' @ 12.46 hrs Surf.Area= 1,921 sf Storage= 2,704 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 172.5 min calculated for 0.101 af (71% of inflow)
Center-of-Mass det. time= 78.2 min (901.5 - 823.4)

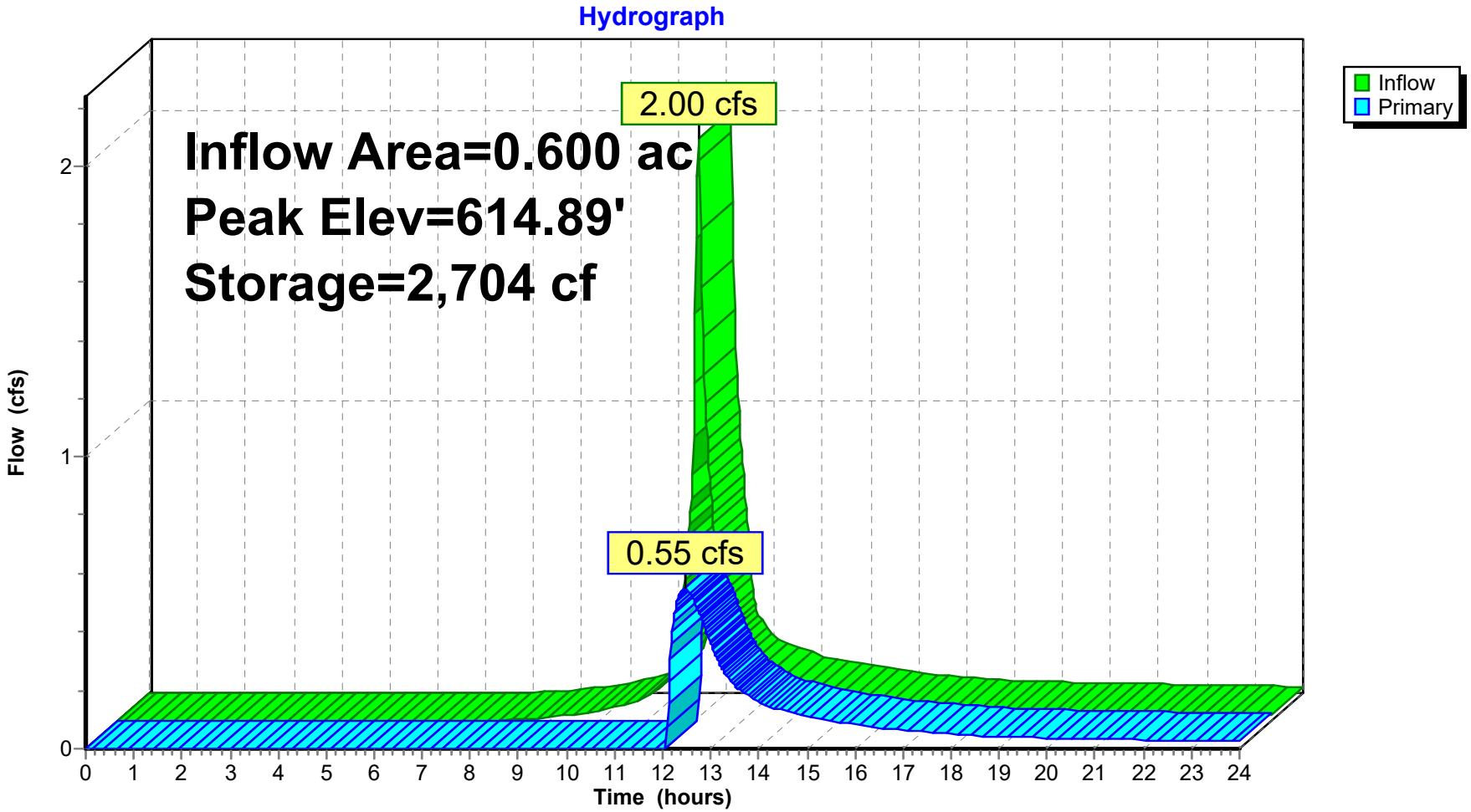
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

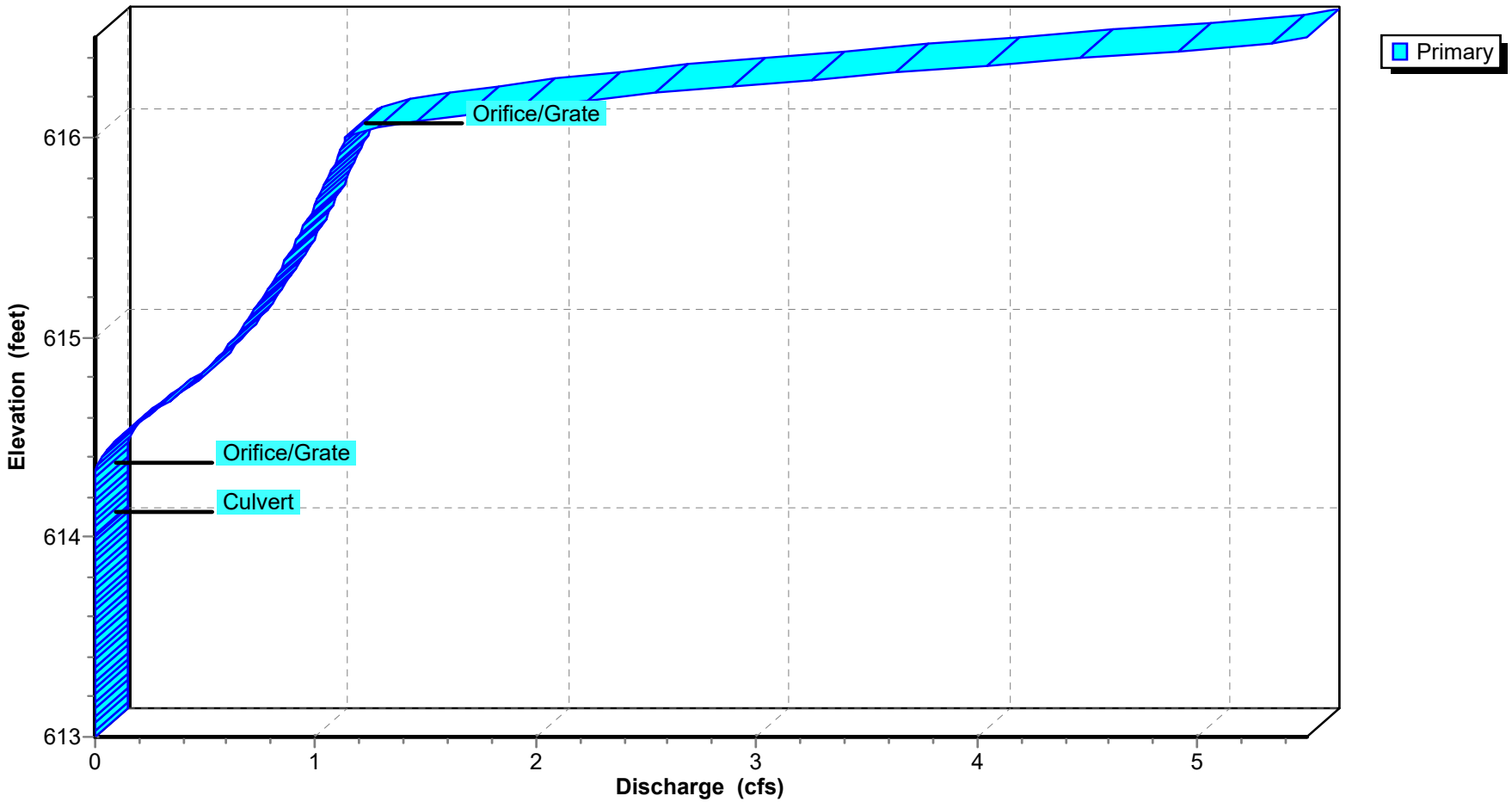
Primary OutFlow Max=0.55 cfs @ 12.46 hrs HW=614.89' (Free Discharge)
└─**1=Culvert** (Passes 0.55 cfs of 2.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.55 cfs @ 2.81 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

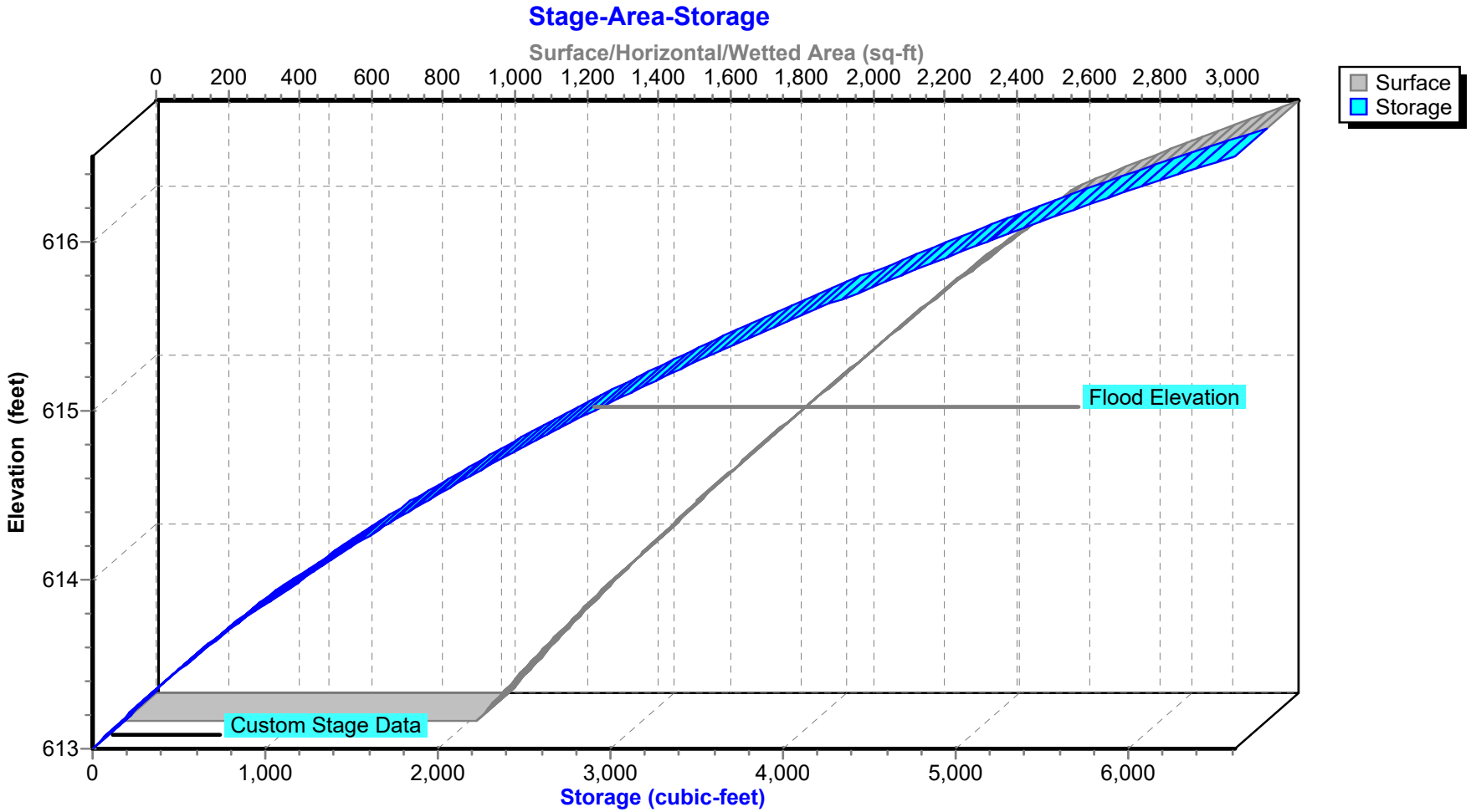


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 2.96" for 10-YEAR event
Inflow = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af
Outflow = 1.22 cfs @ 12.47 hrs, Volume= 0.267 af, Atten= 75%, Lag= 23.0 min
Primary = 1.22 cfs @ 12.47 hrs, Volume= 0.267 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.90' @ 12.47 hrs Surf.Area= 5,913 sf Storage= 8,102 cf

Plug-Flow detention time= 210.8 min calculated for 0.267 af (74% of inflow)
Center-of-Mass det. time= 124.6 min (918.1 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.22 cfs @ 12.47 hrs HW=615.90' (Free Discharge)
└─**1=Culvert** (Passes 1.22 cfs of 7.31 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 4.51 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.82 cfs @ 2.58 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

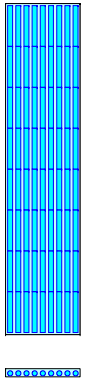
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

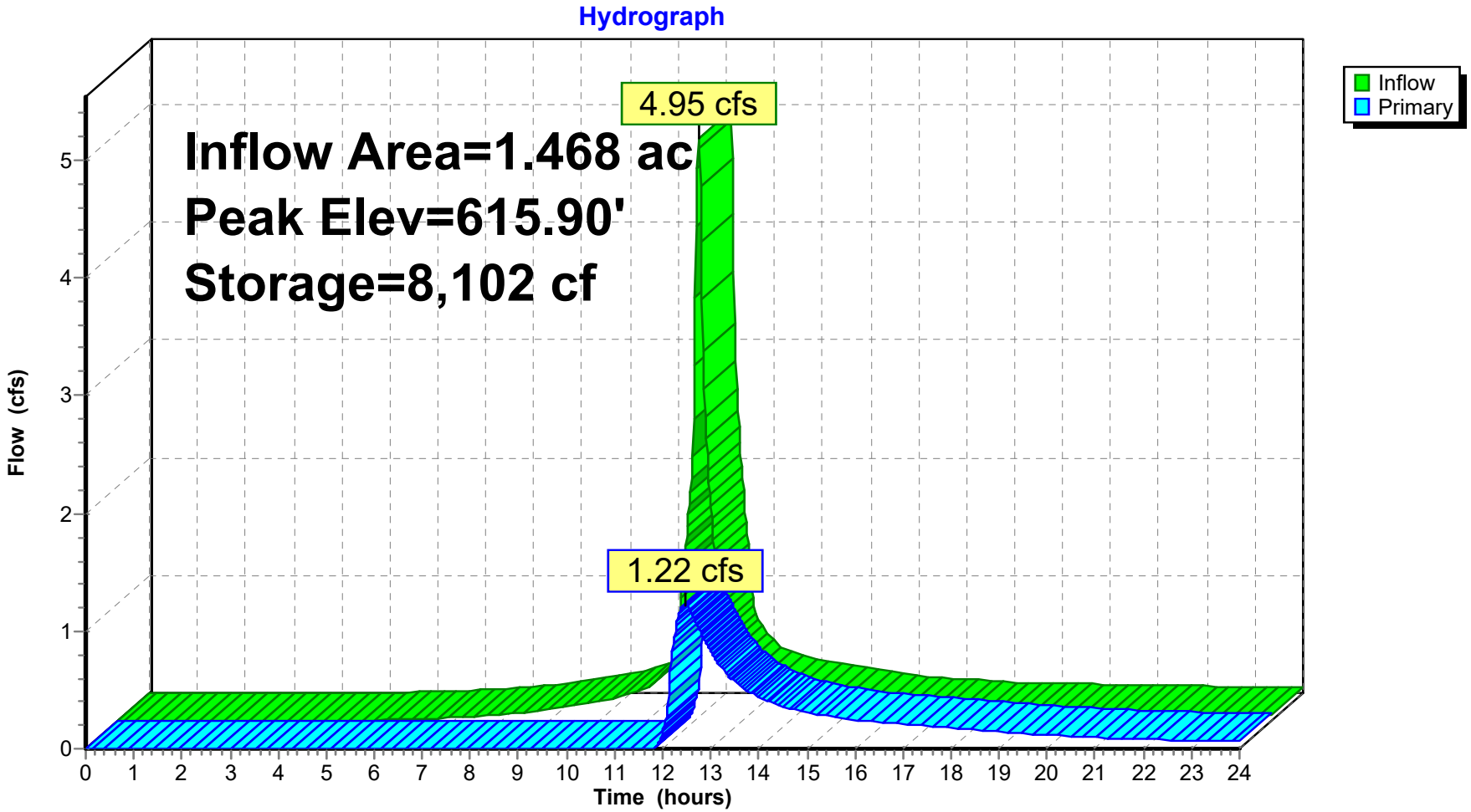
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

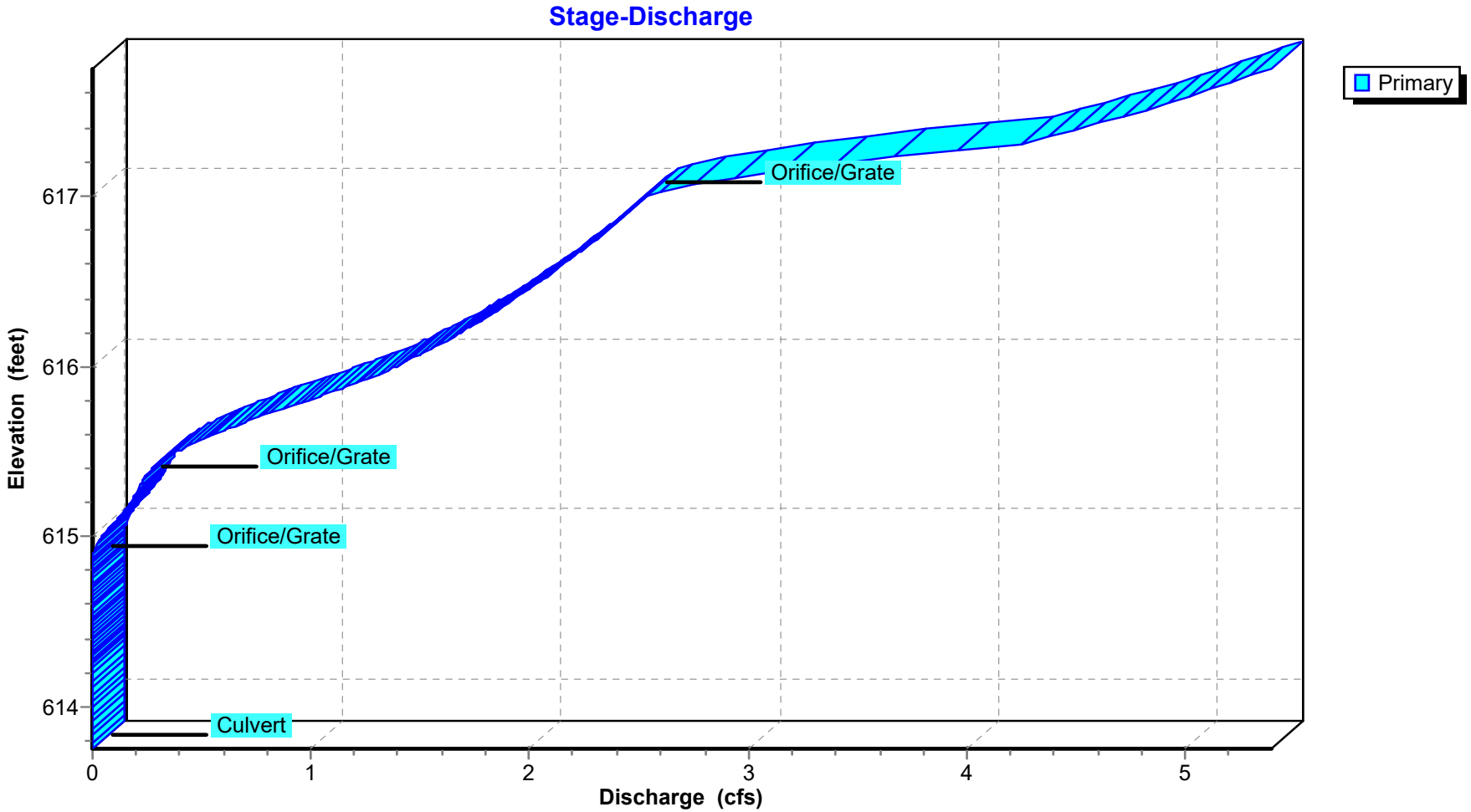
72 Chambers
876.0 cy Field
614.2 cy Stone



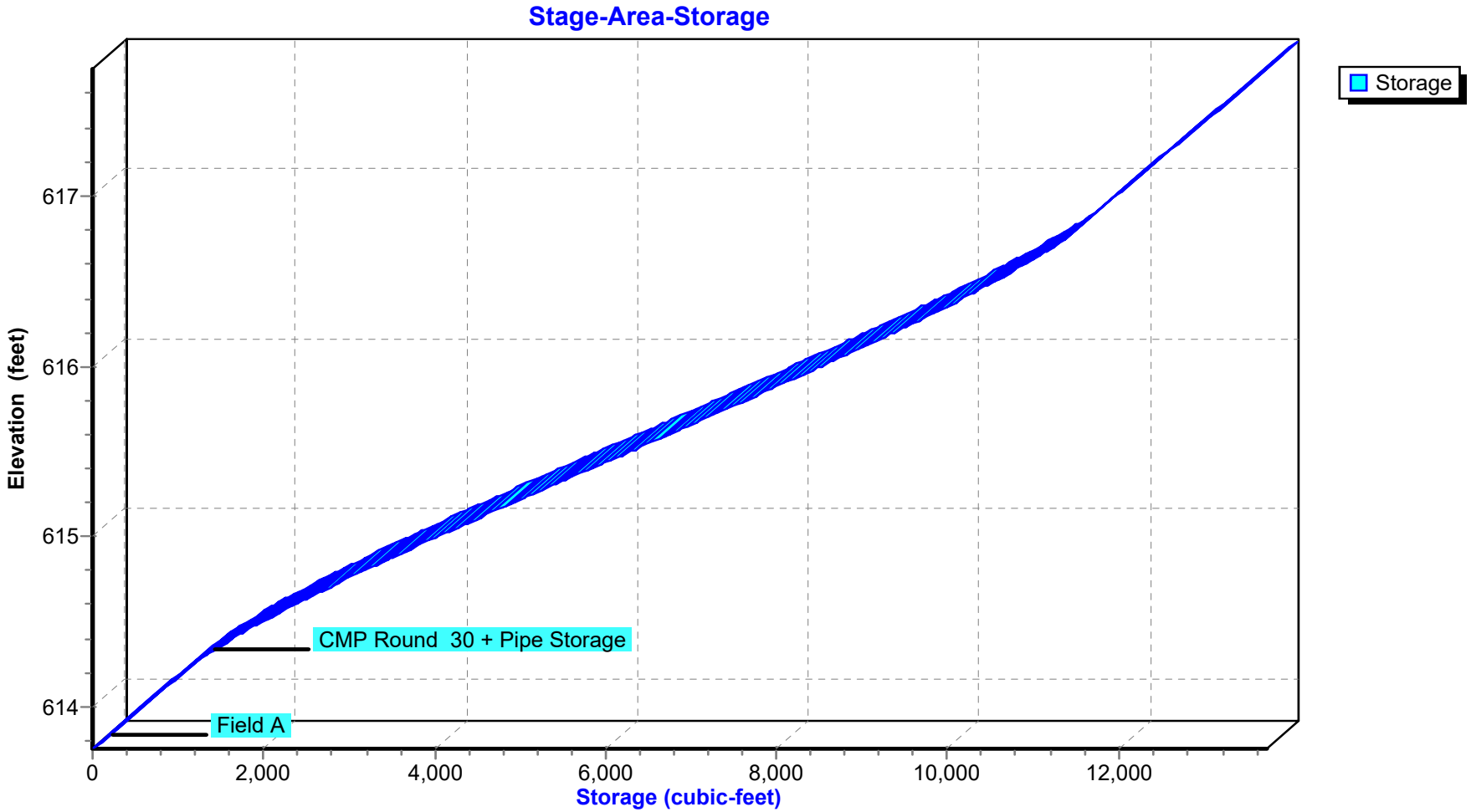
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.66' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,728 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

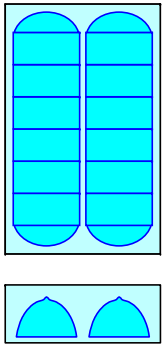
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

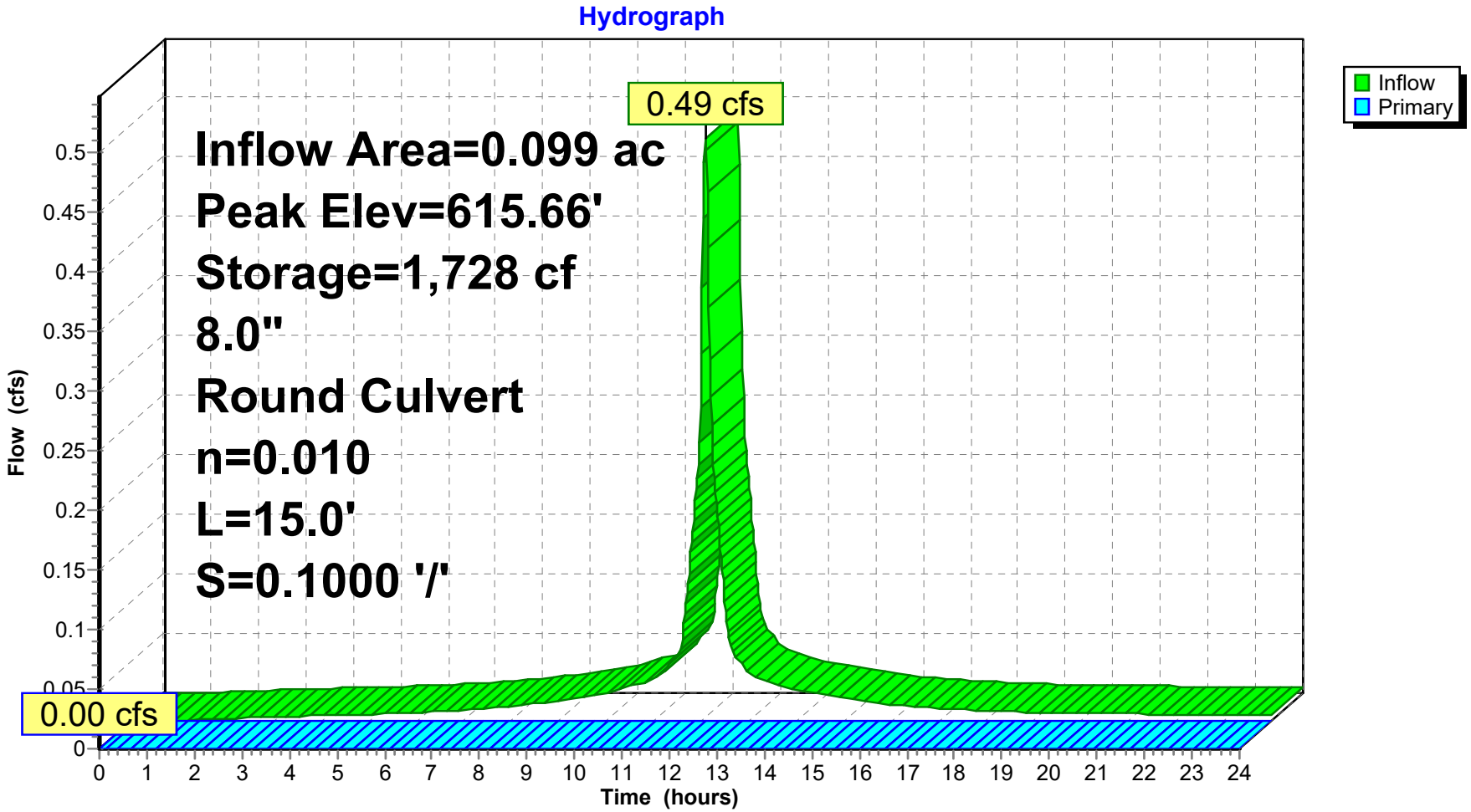
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

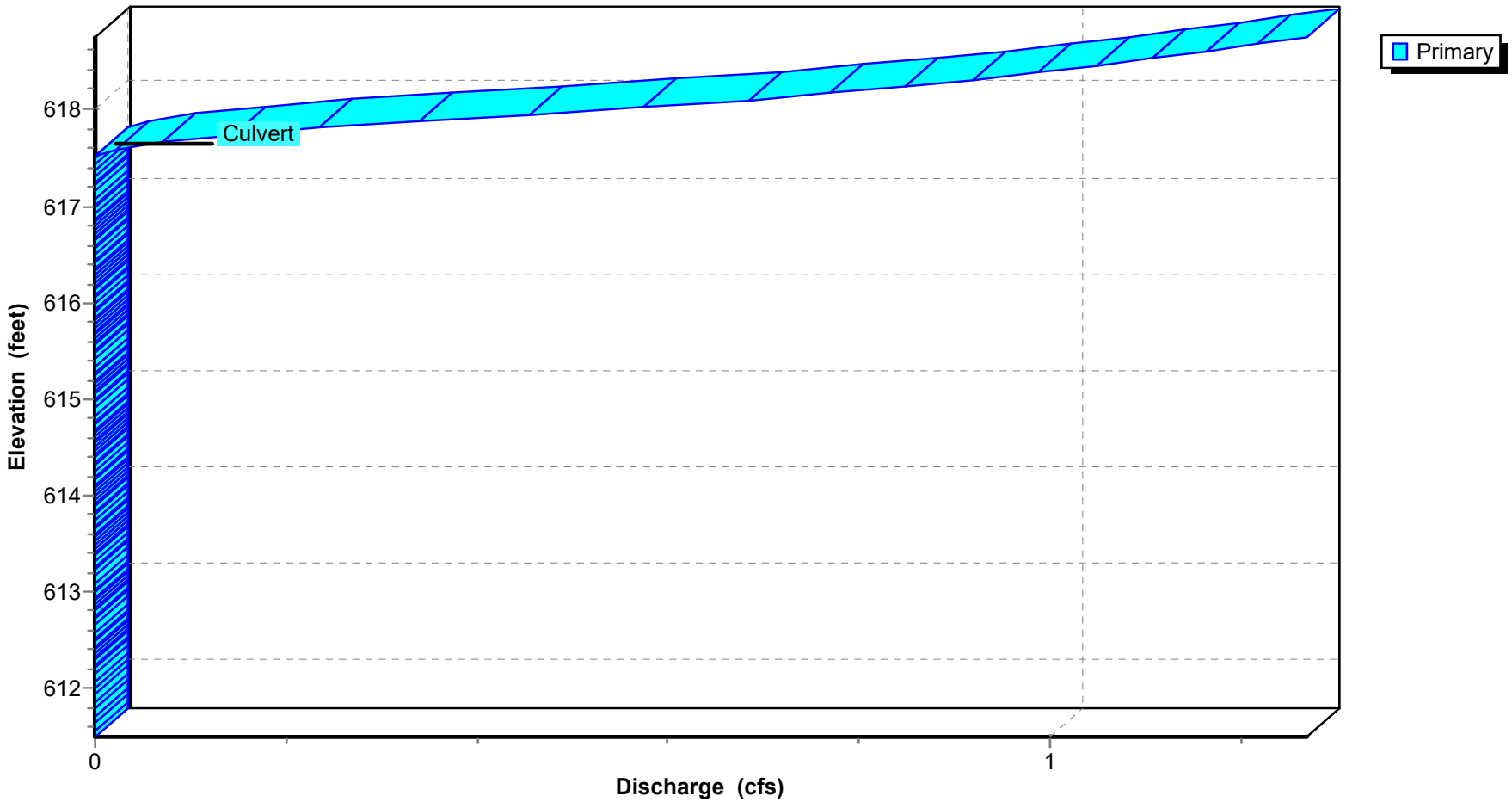


Pond 3P: ROOF INFILTRATION

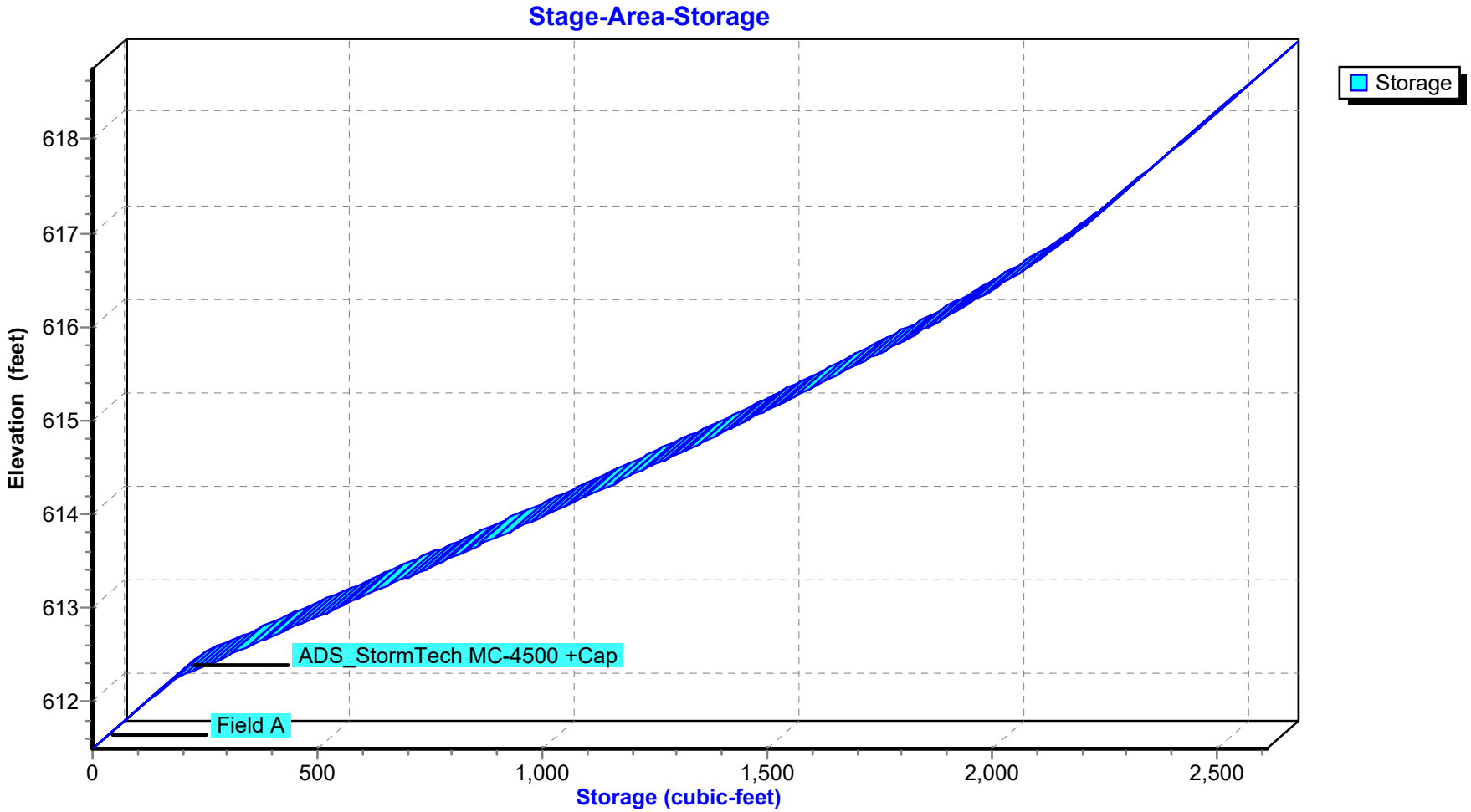


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.18' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.131 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

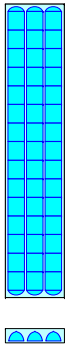
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

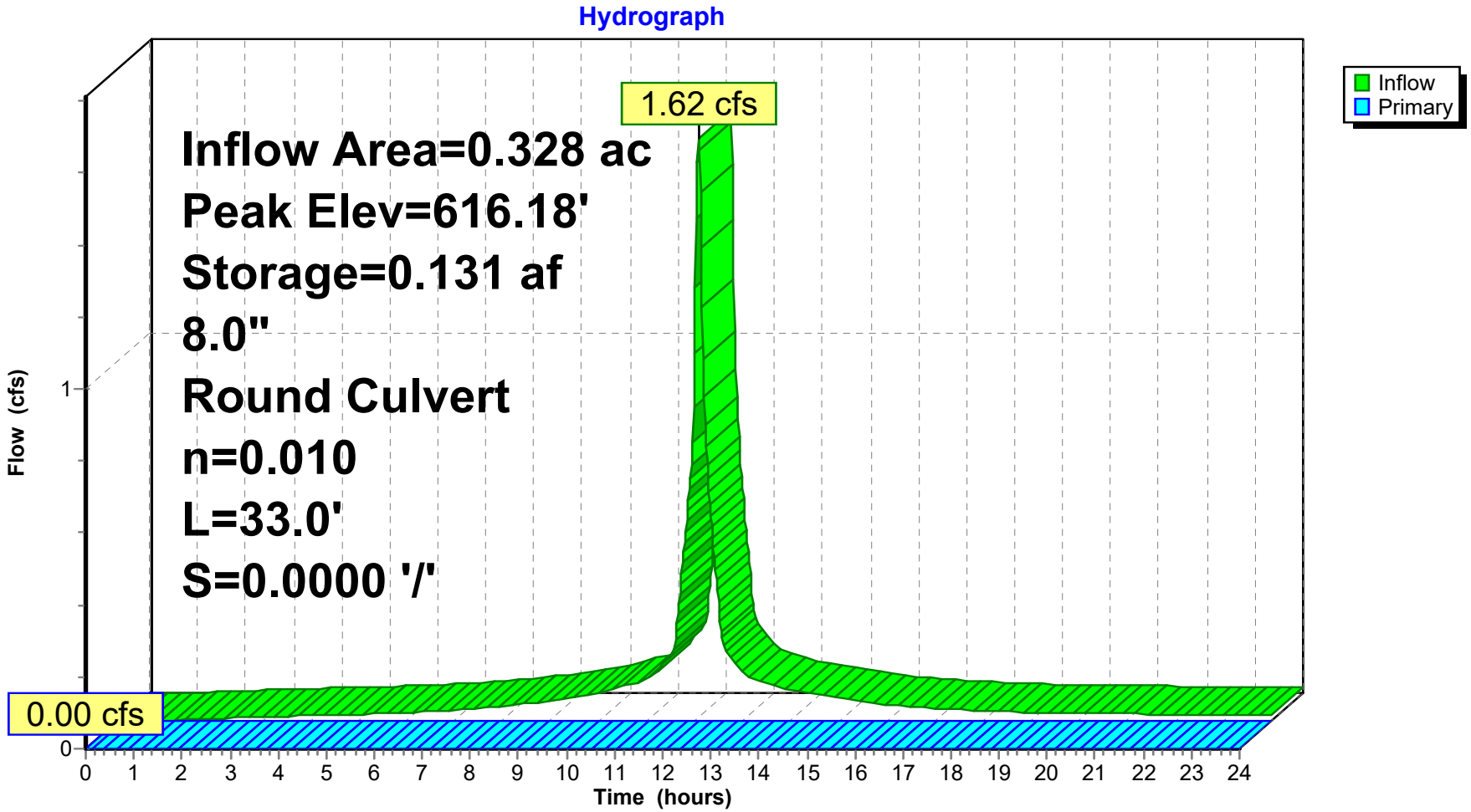
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

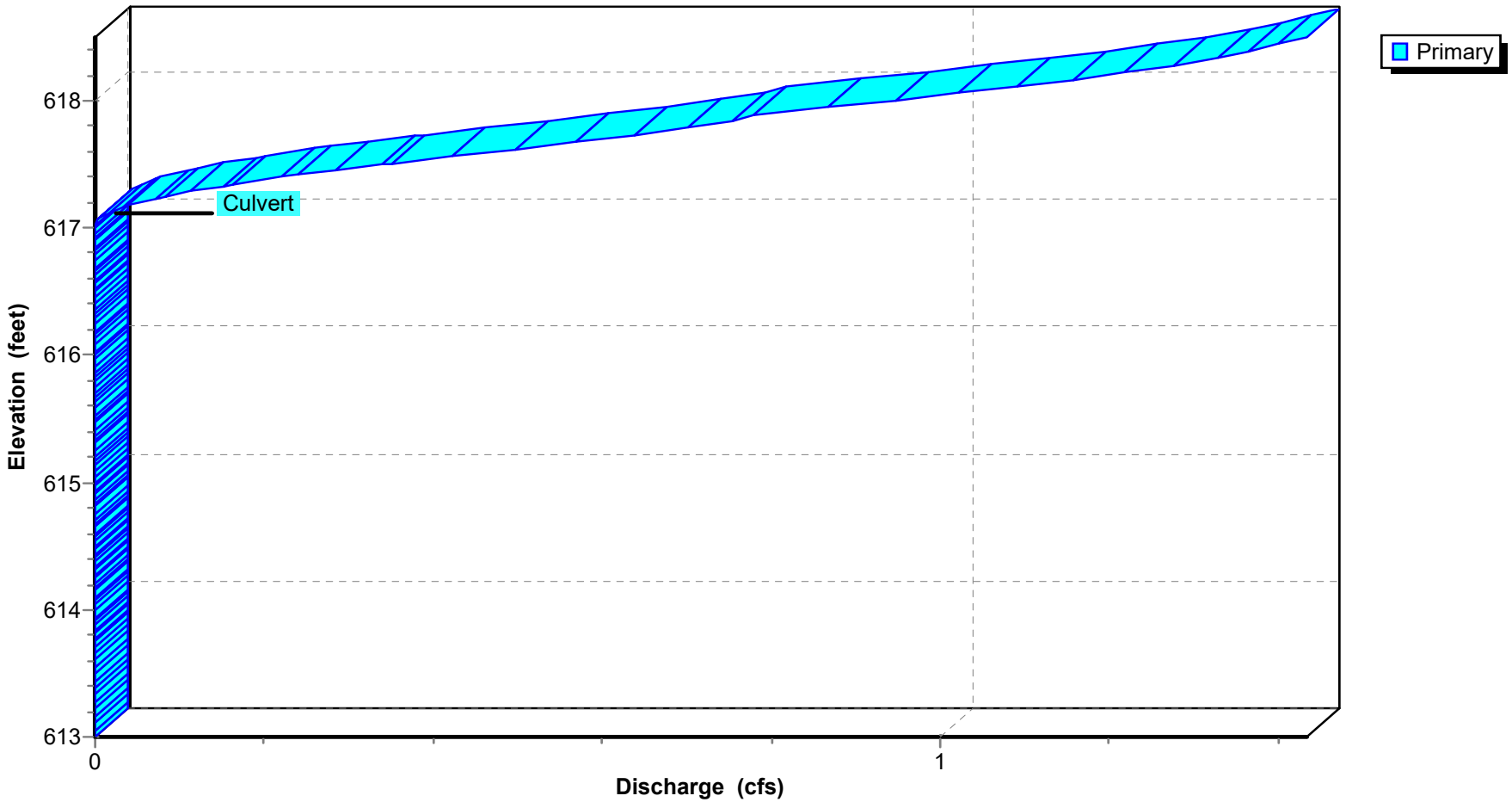


Pond 4P: ROOF INFILTRATION

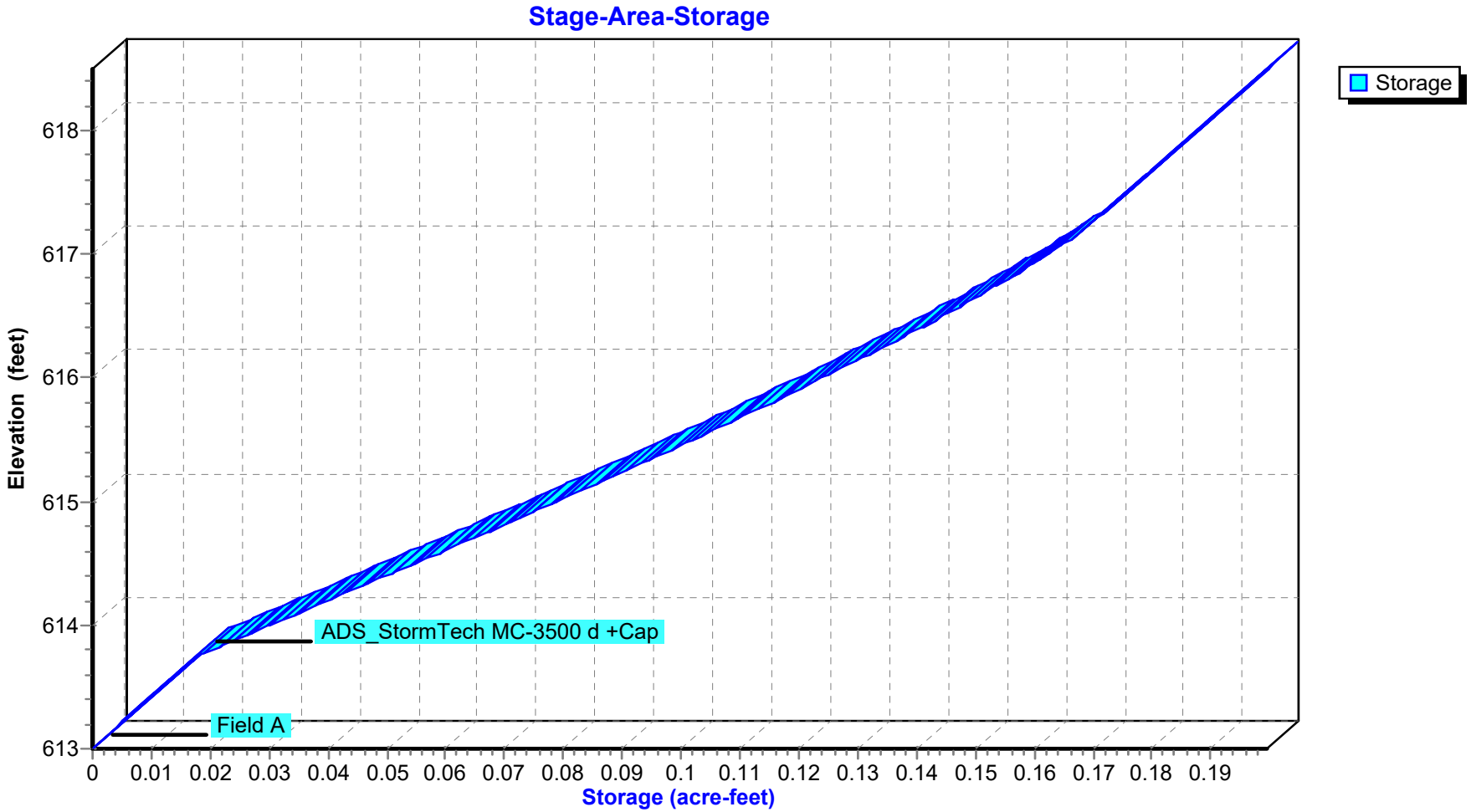


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=61 Runoff=0.33 cfs 0.024 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=79 Runoff=2.65 cfs 0.189 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=89 Runoff=6.21 cfs 0.461 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.67"
Tc=6.0 min CN=56 Runoff=2.22 cfs 0.173 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.044 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.059 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=4.02 cfs 0.683 af
Outflow=4.02 cfs 0.683 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=4.33 cfs 0.708 af
Outflow=4.33 cfs 0.708 af

Pond 1P: DETENTION BASIN Peak Elev=615.27' Storage=3,461 cf Inflow=2.65 cfs 0.189 af
Outflow=0.80 cfs 0.147 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=616.28' Storage=9,705 cf Inflow=6.21 cfs 0.461 af
Outflow=1.79 cfs 0.363 af

Pond 3P: ROOF INFILTRATION Peak Elev=616.73' Storage=2,112 cf Inflow=0.59 cfs 0.048 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.95' Storage=0.161 af Inflow=1.96 cfs 0.161 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.057 af Average Runoff Depth = 3.56"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

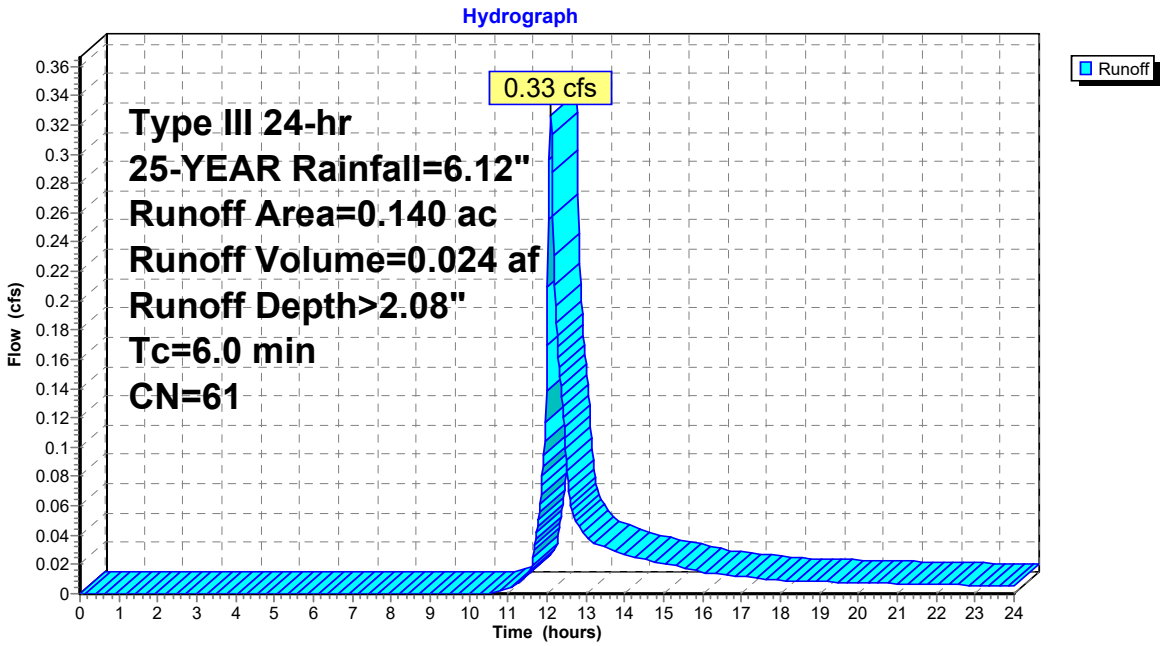
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

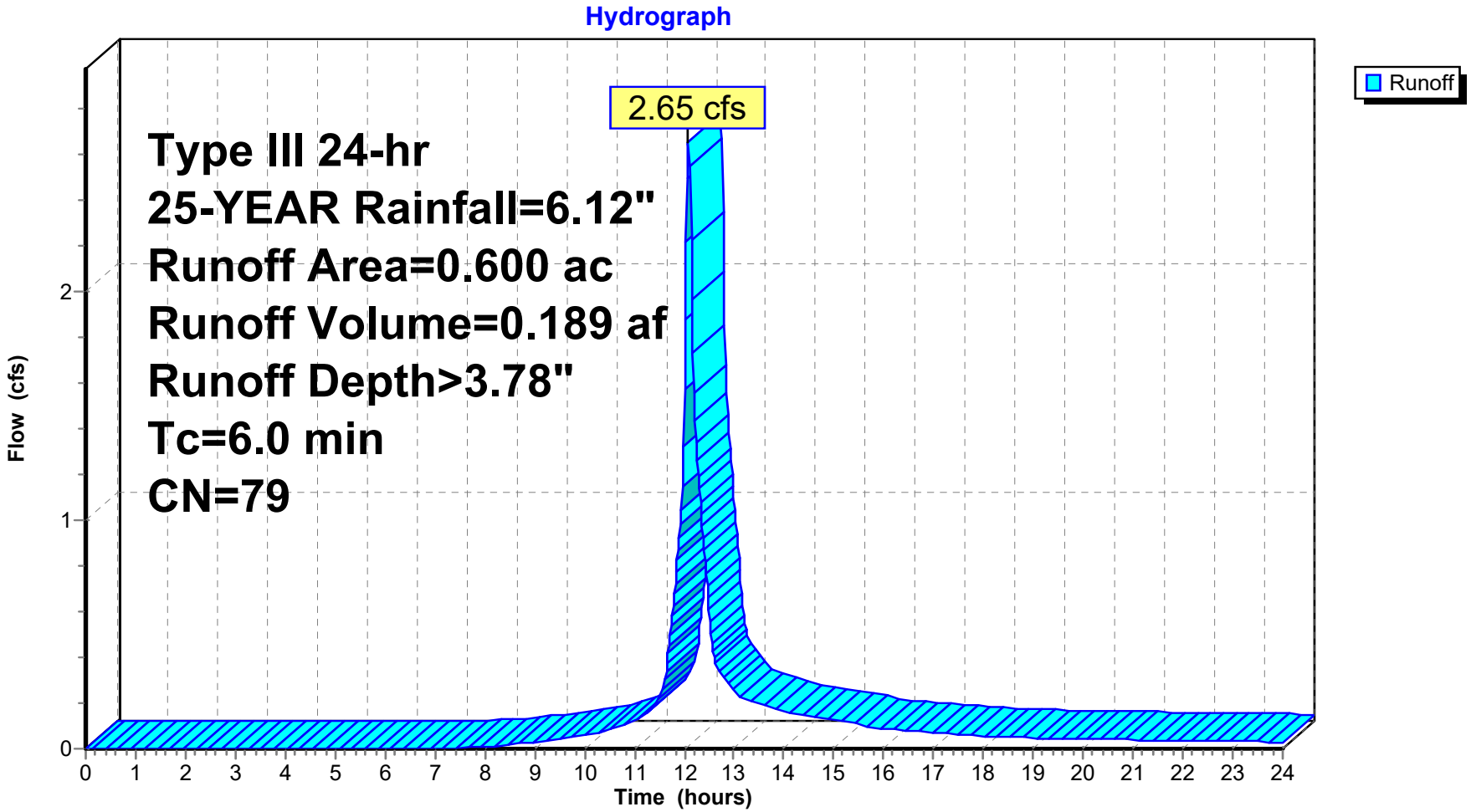
Runoff = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

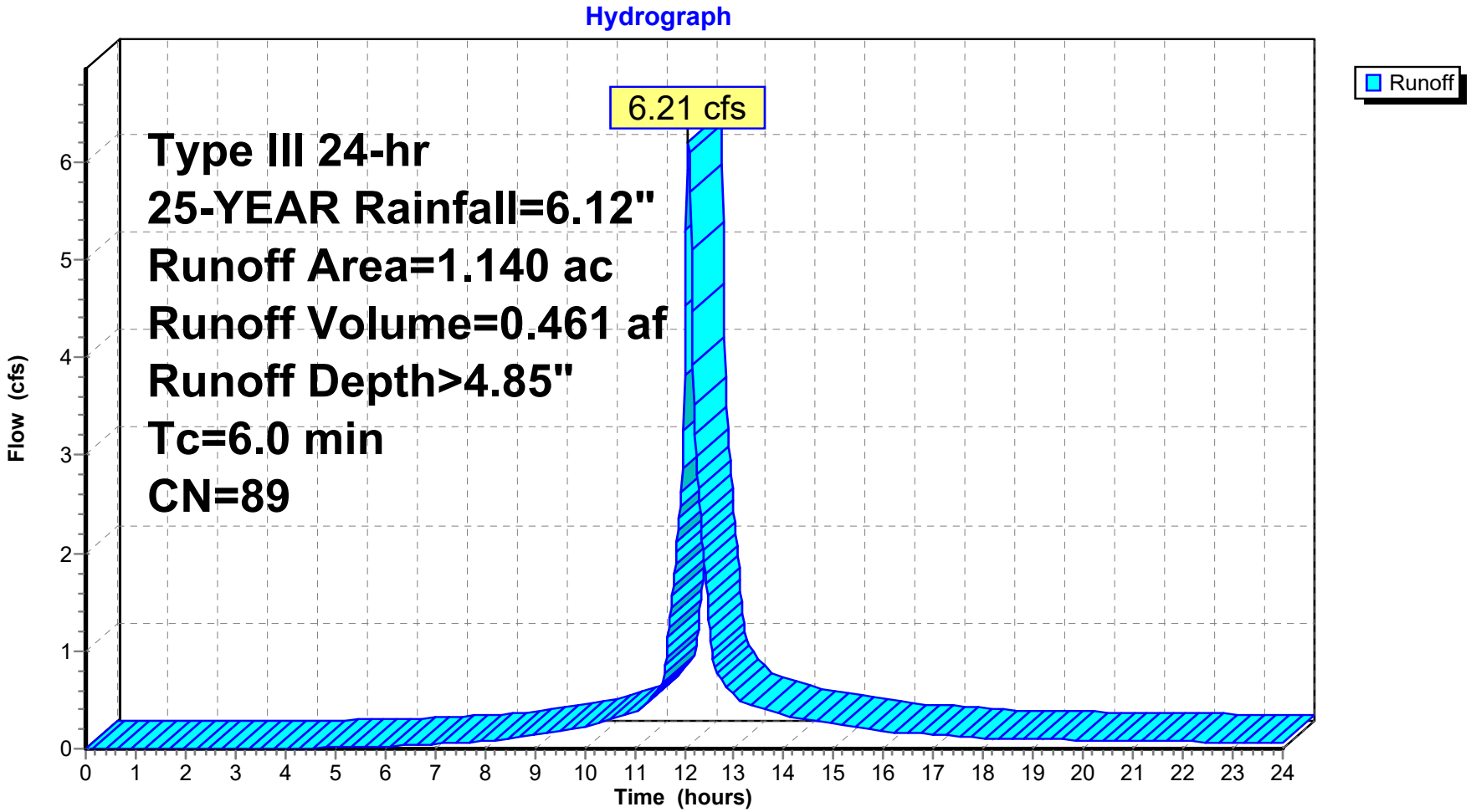
Runoff = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

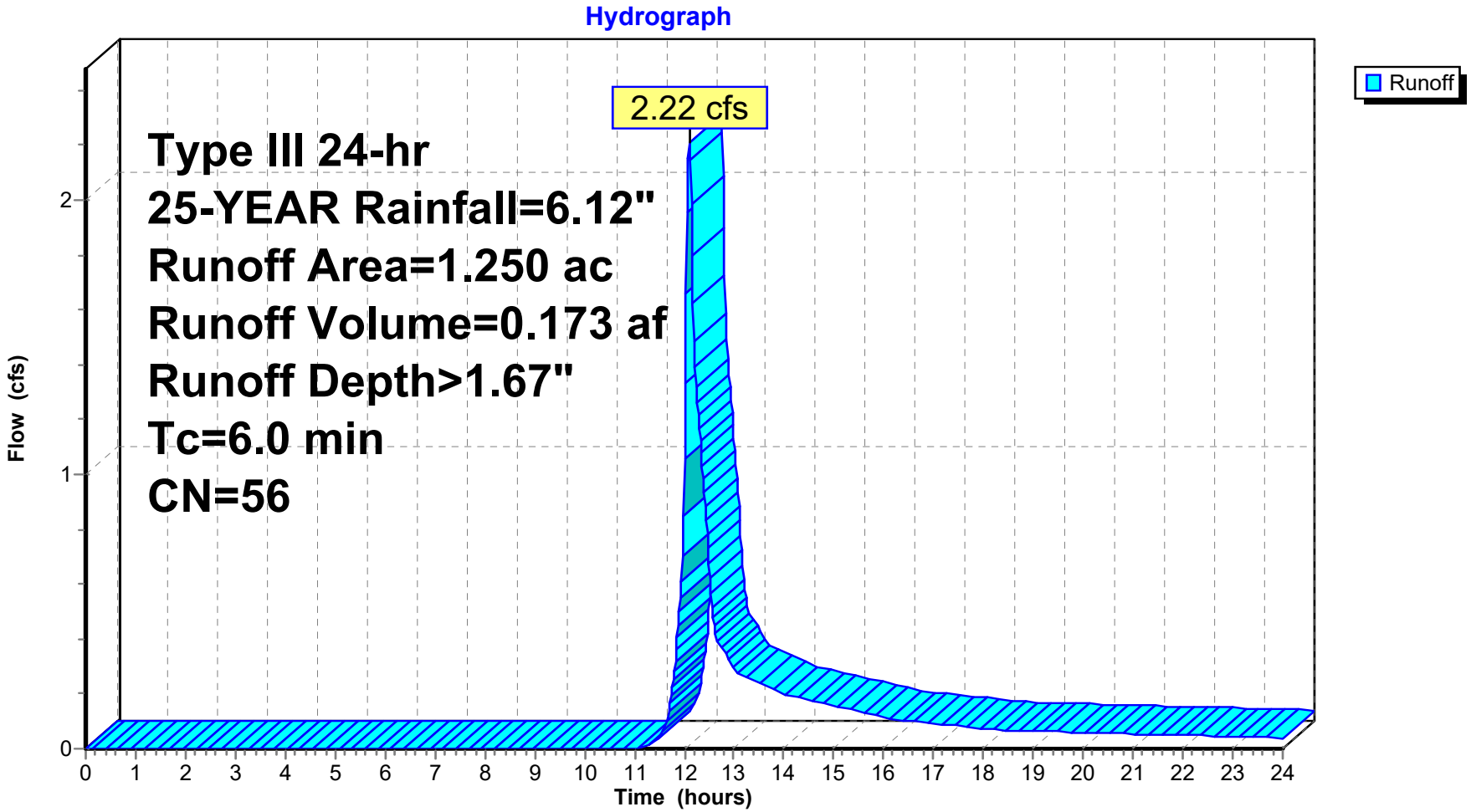
Runoff = 2.22 cfs @ 12.10 hrs, Volume= 0.173 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

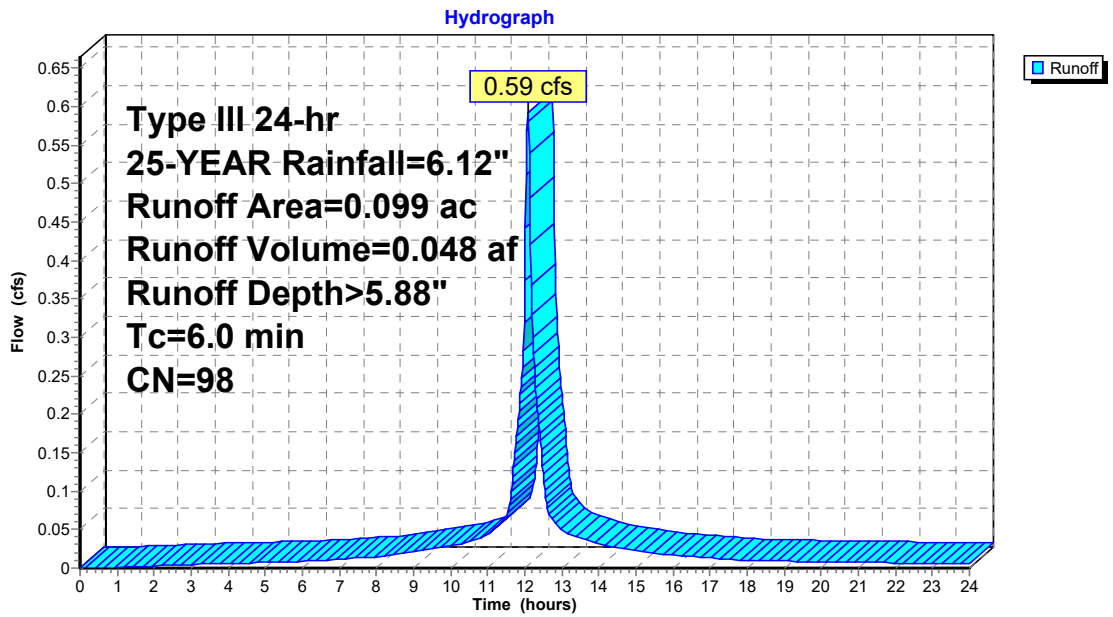
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

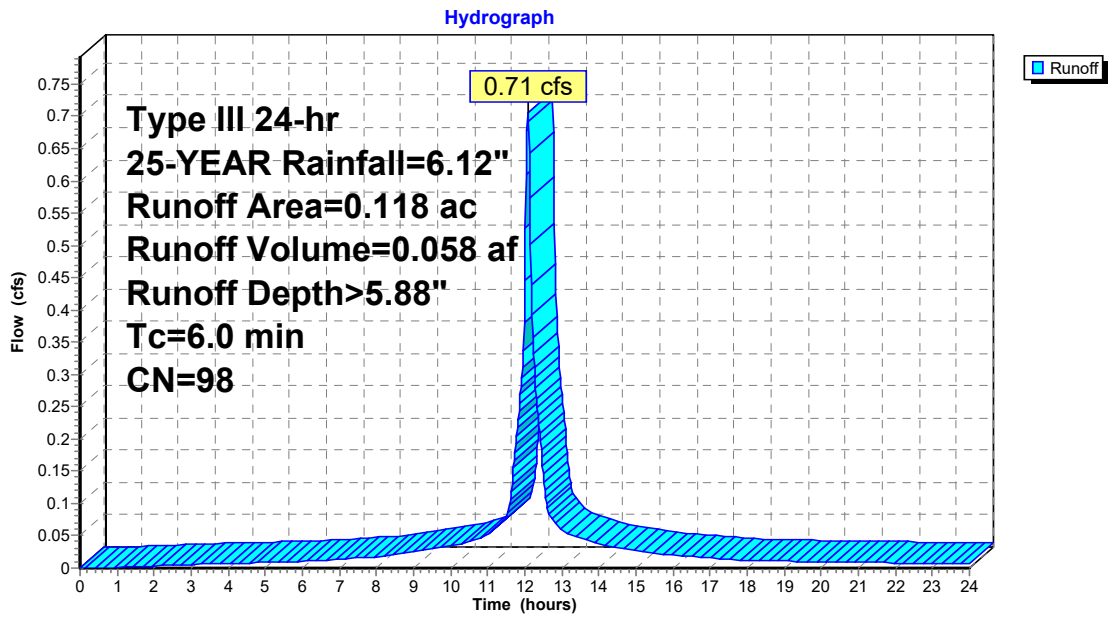
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.058 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

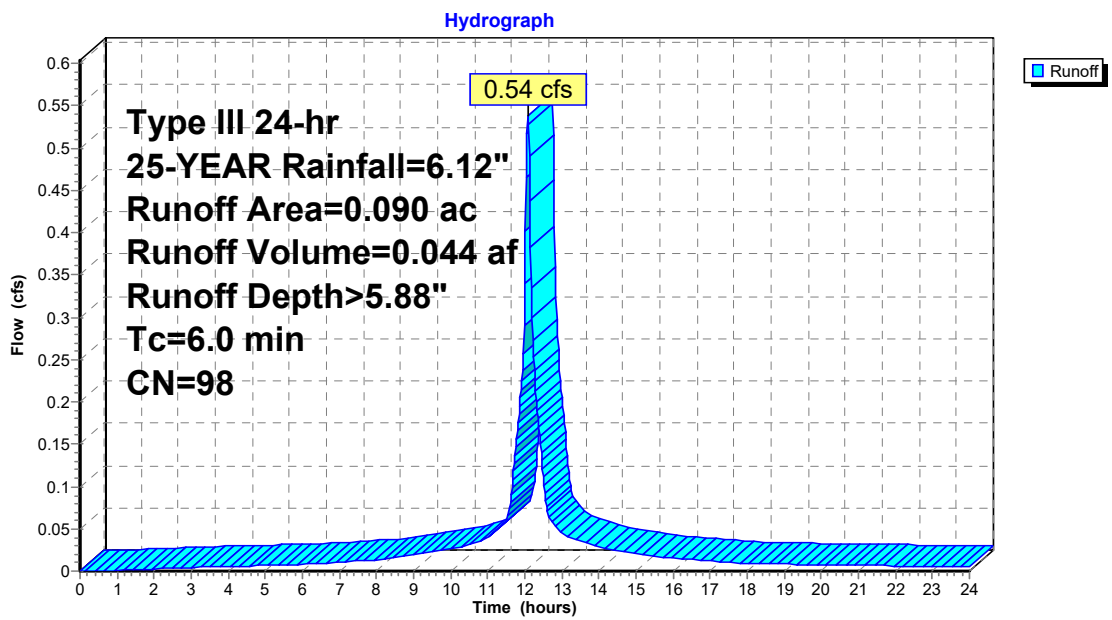
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

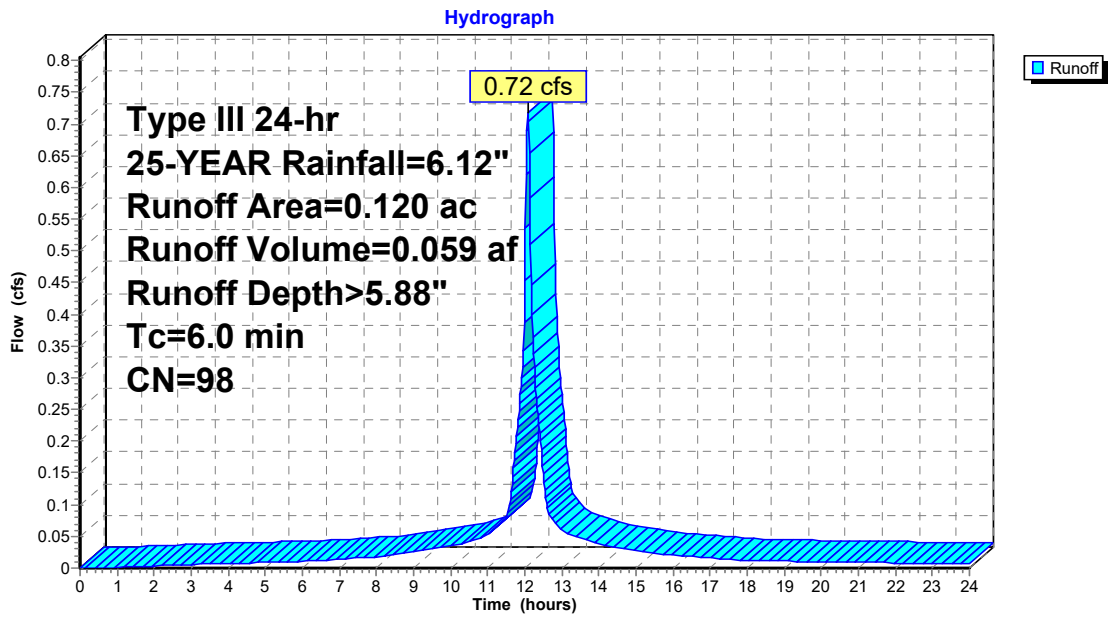
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



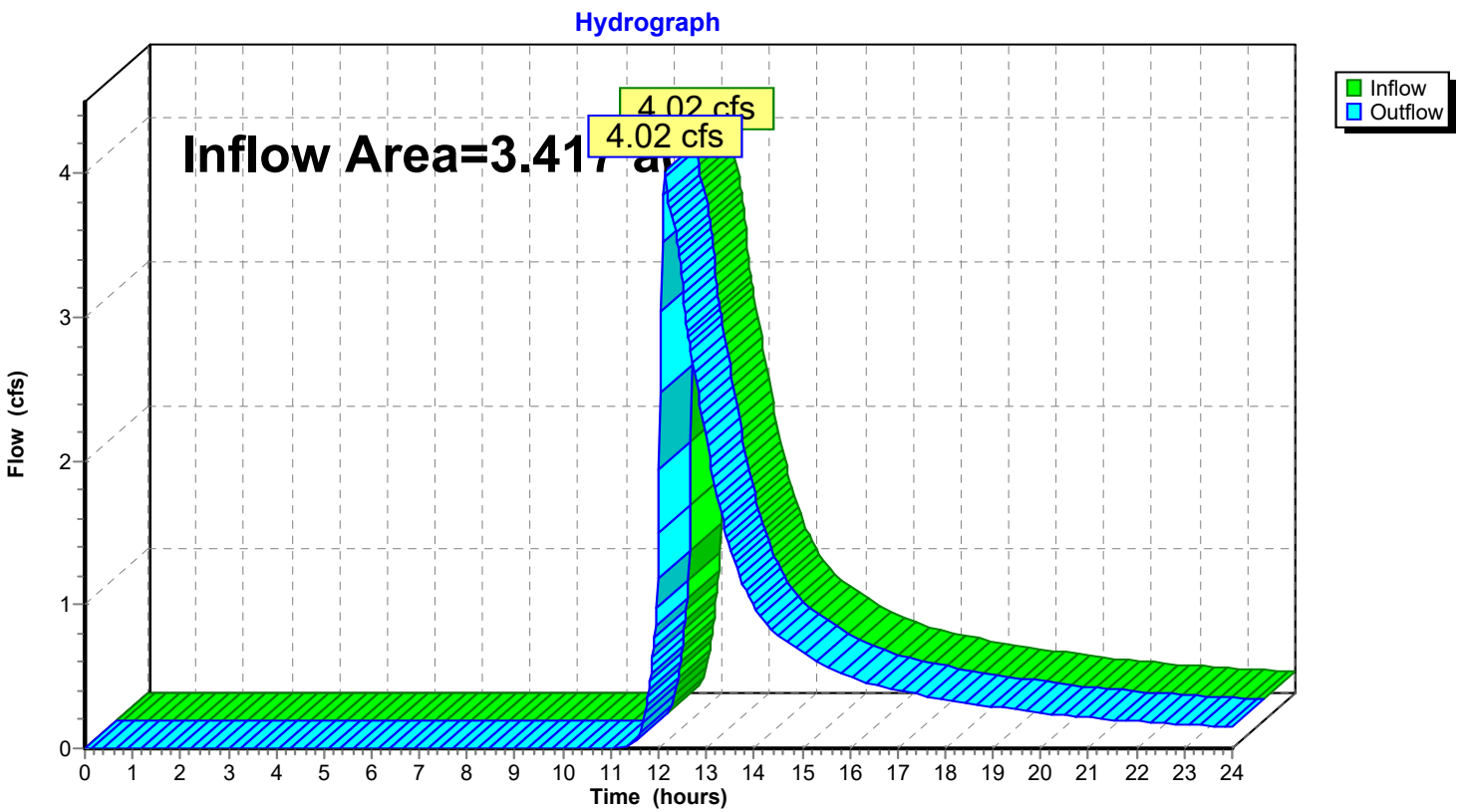
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 2.40" for 25-YEAR event
Inflow = 4.02 cfs @ 12.13 hrs, Volume= 0.683 af
Outflow = 4.02 cfs @ 12.13 hrs, Volume= 0.683 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



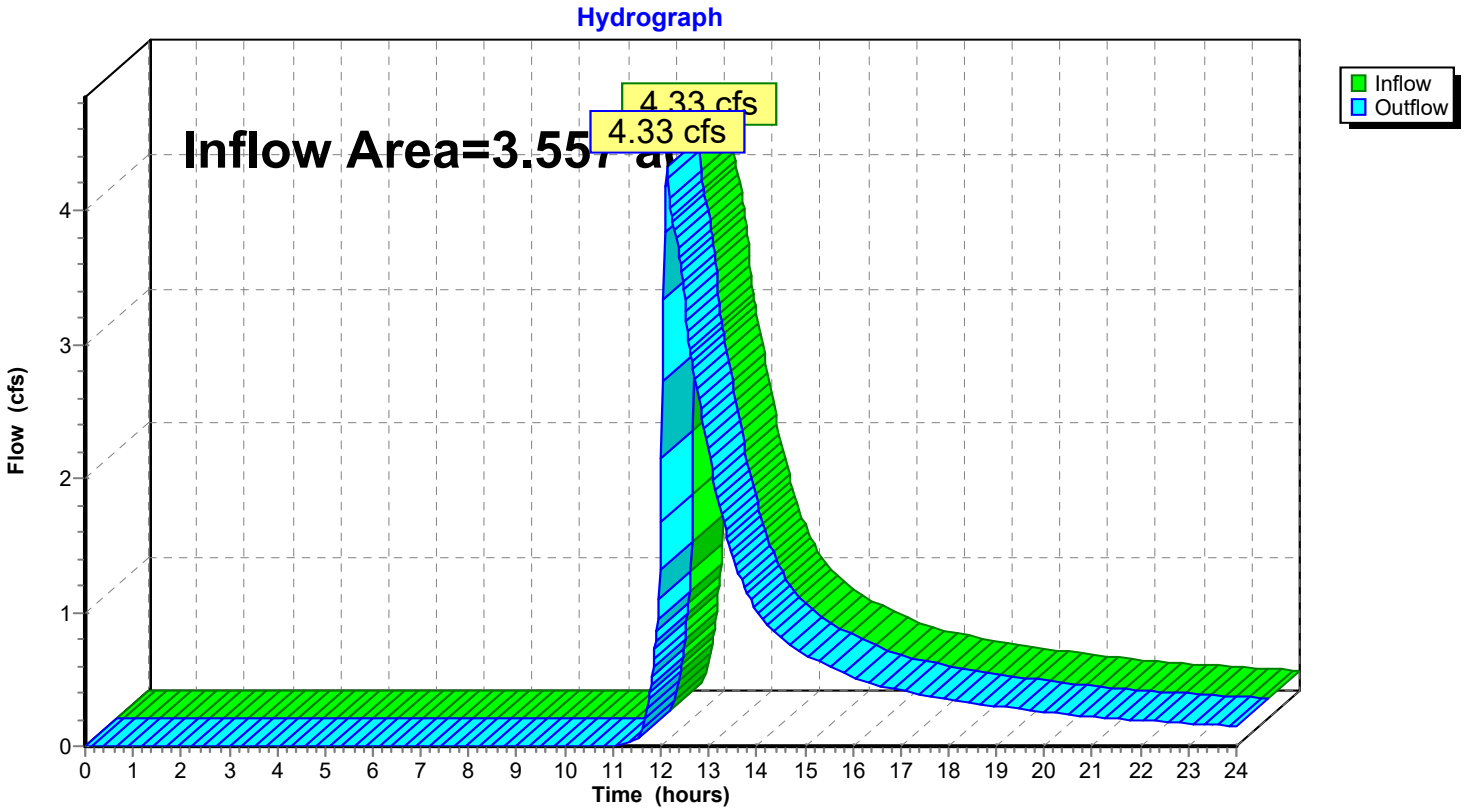
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 2.39" for 25-YEAR event
Inflow = 4.33 cfs @ 12.13 hrs, Volume= 0.708 af
Outflow = 4.33 cfs @ 12.13 hrs, Volume= 0.708 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.33' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 3.78" for 25-YEAR event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af
Outflow = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af, Atten= 70%, Lag= 20.4 min
Primary = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.27' @ 12.43 hrs Surf.Area= 2,131 sf Storage= 3,461 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 147.6 min calculated for 0.147 af (78% of inflow)
Center-of-Mass det. time= 66.7 min (881.9 - 815.2)

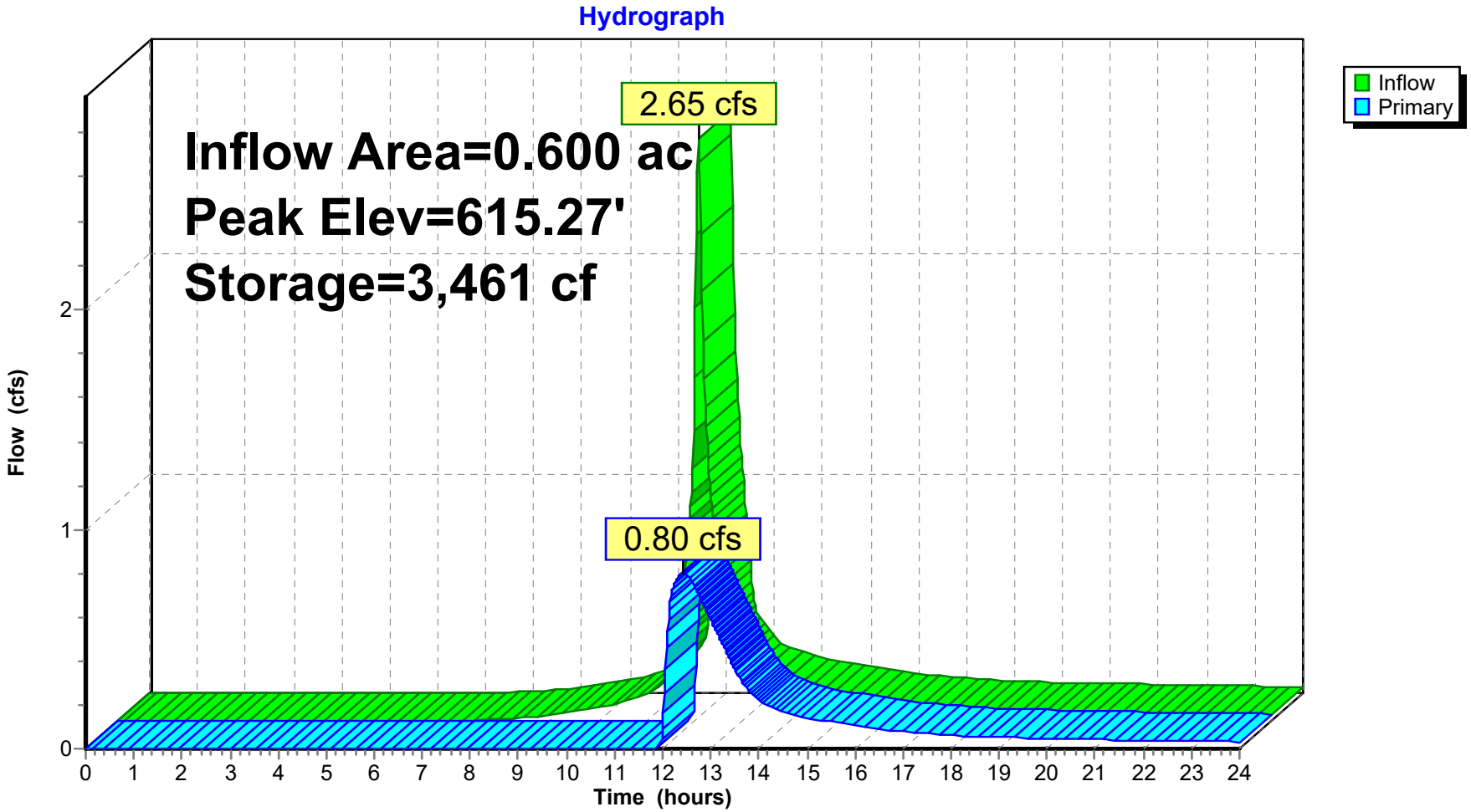
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

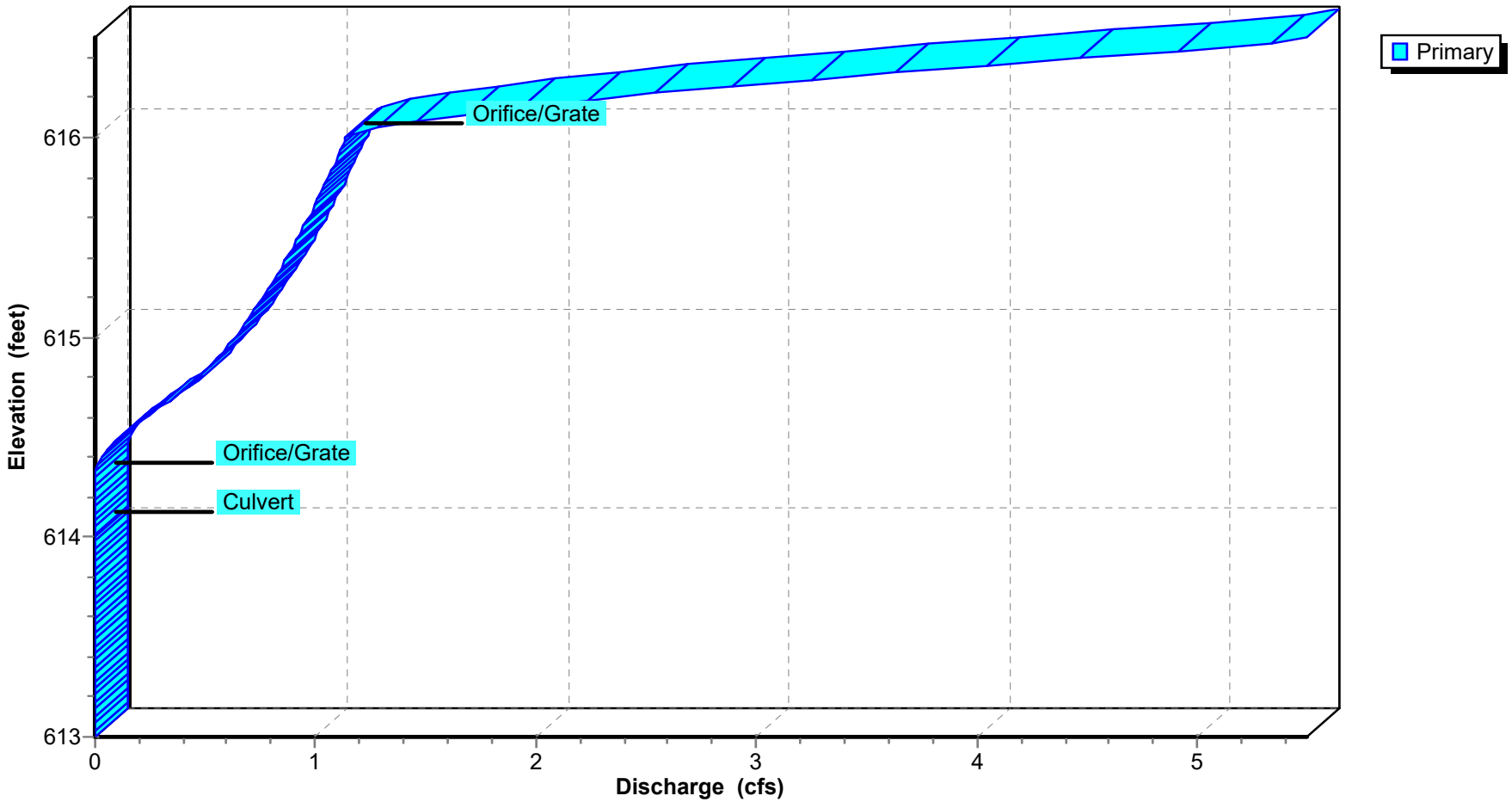
Primary OutFlow Max=0.80 cfs @ 12.43 hrs HW=615.27' (Free Discharge)
└─**1=Culvert** (Passes 0.80 cfs of 4.57 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

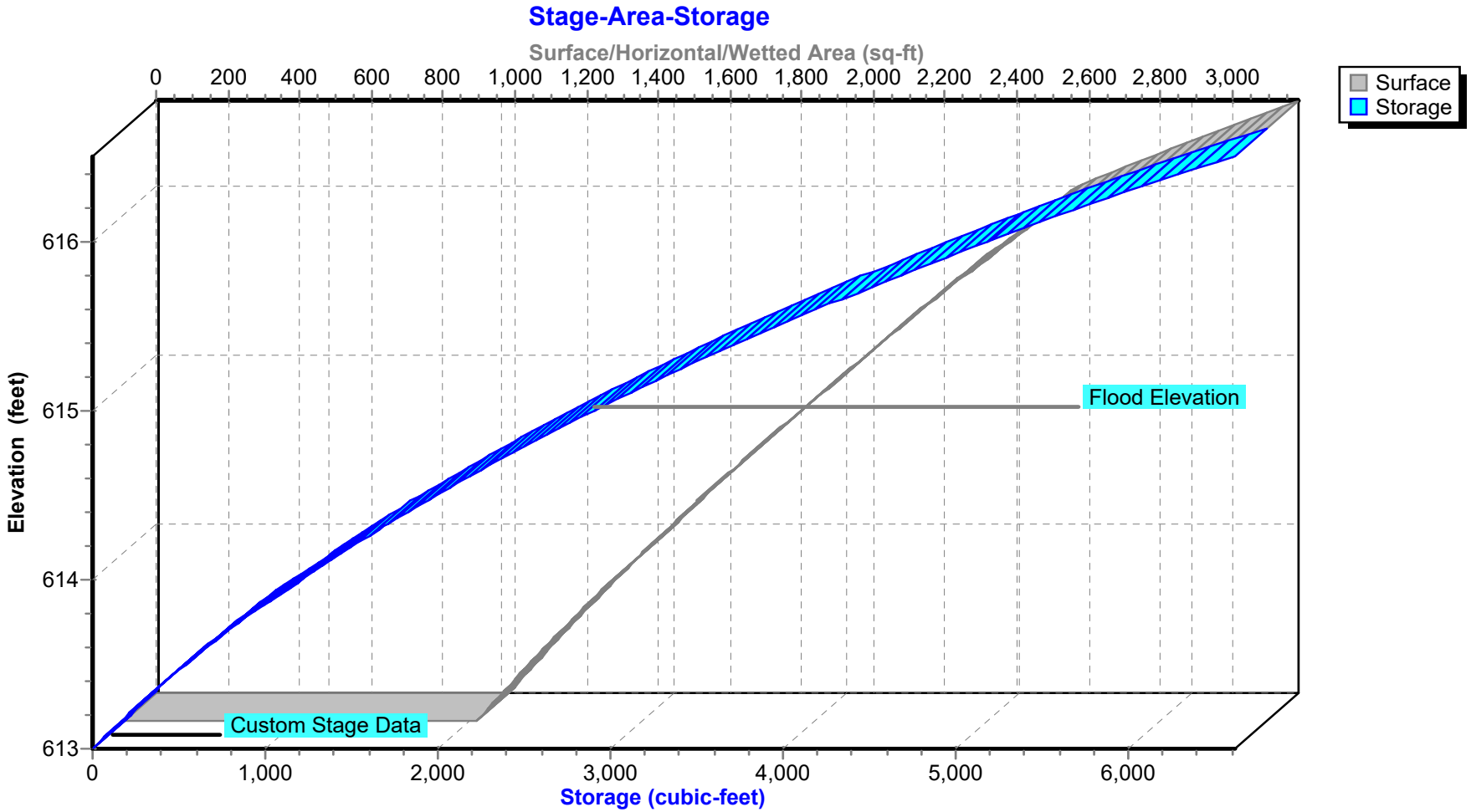


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 3.76" for 25-YEAR event
Inflow = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af
Outflow = 1.79 cfs @ 12.42 hrs, Volume= 0.363 af, Atten= 71%, Lag= 20.1 min
Primary = 1.79 cfs @ 12.42 hrs, Volume= 0.363 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.28' @ 12.42 hrs Surf.Area= 5,913 sf Storage= 9,705 cf

Plug-Flow detention time= 187.5 min calculated for 0.362 af (79% of inflow)
Center-of-Mass det. time= 110.6 min (897.5 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.79 cfs @ 12.42 hrs HW=616.28' (Free Discharge)
└─**1=Culvert** (Passes 1.79 cfs of 8.16 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.32 cfs @ 3.78 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

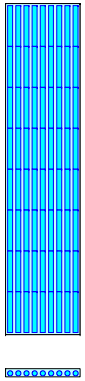
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

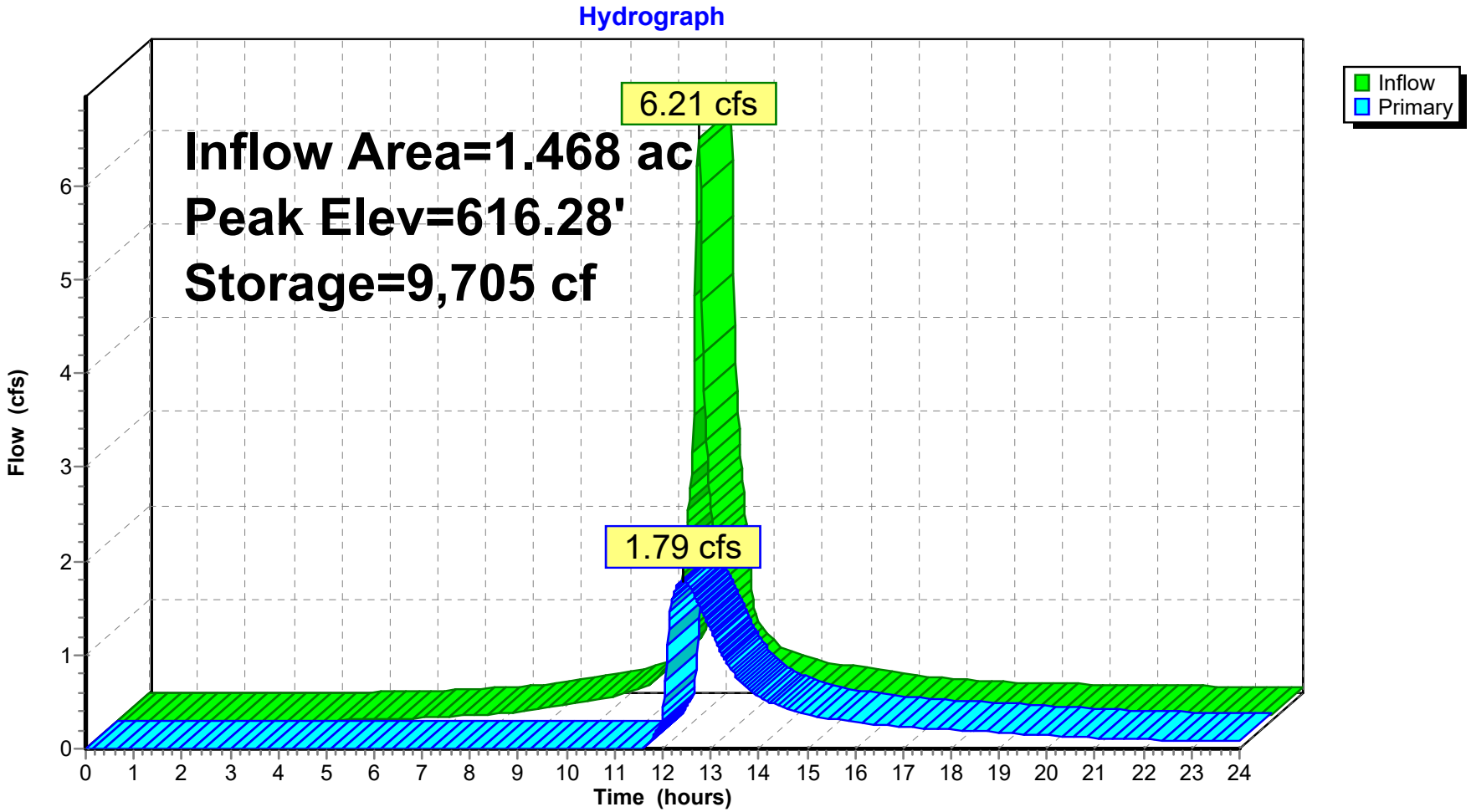
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

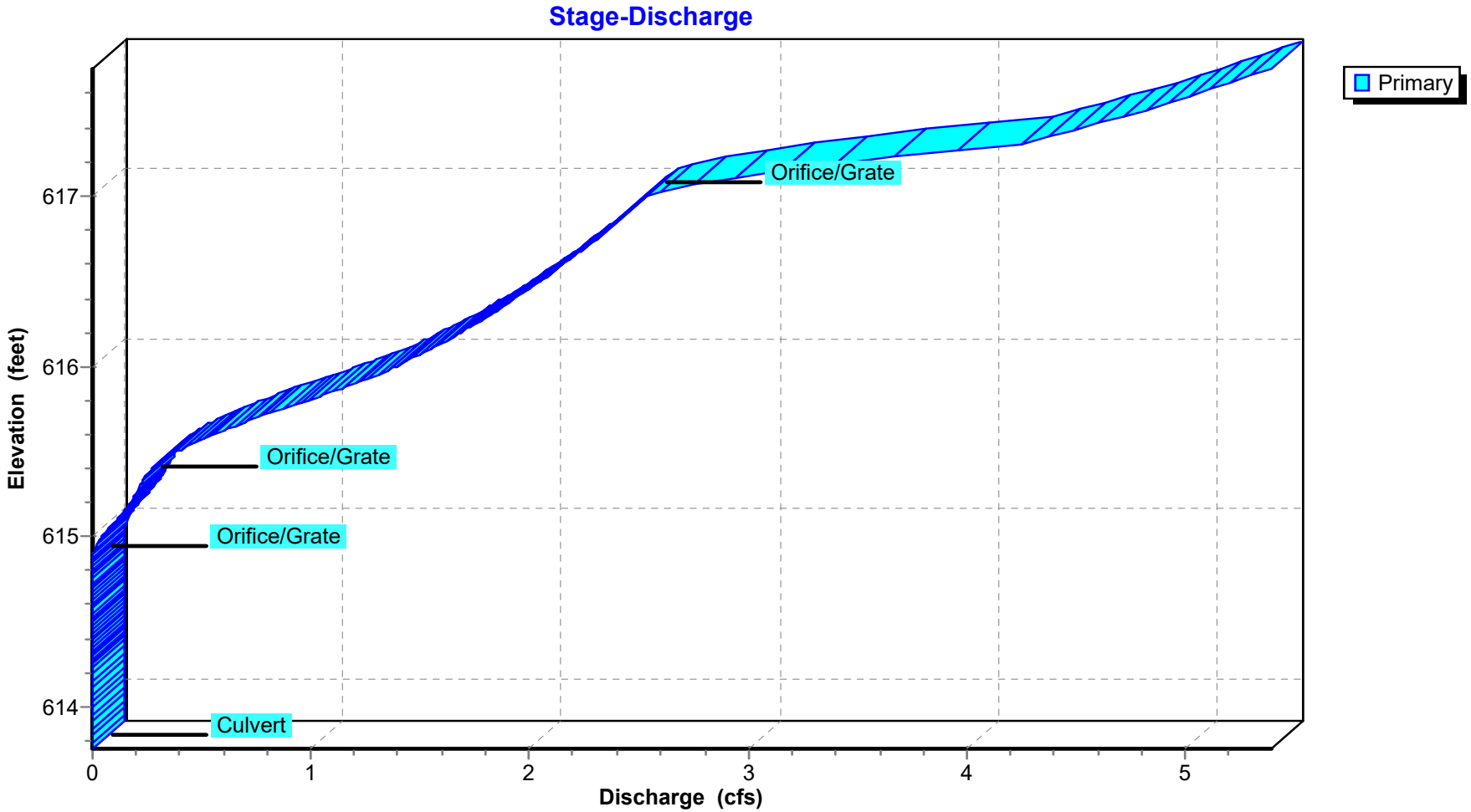
72 Chambers
876.0 cy Field
614.2 cy Stone



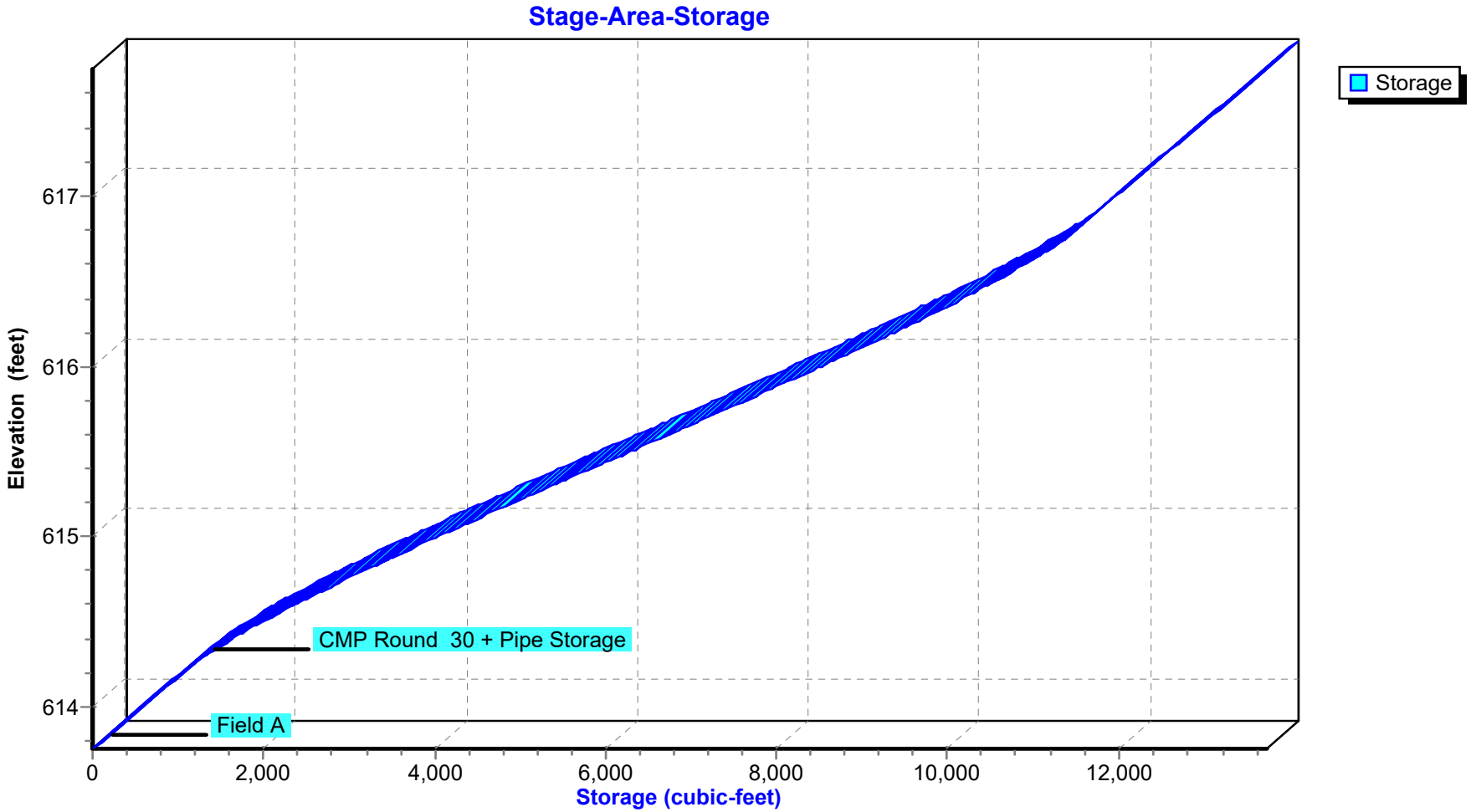
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.73' @ 24.00 hrs Surf.Area= 607 sf Storage= 2,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

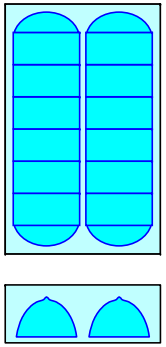
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

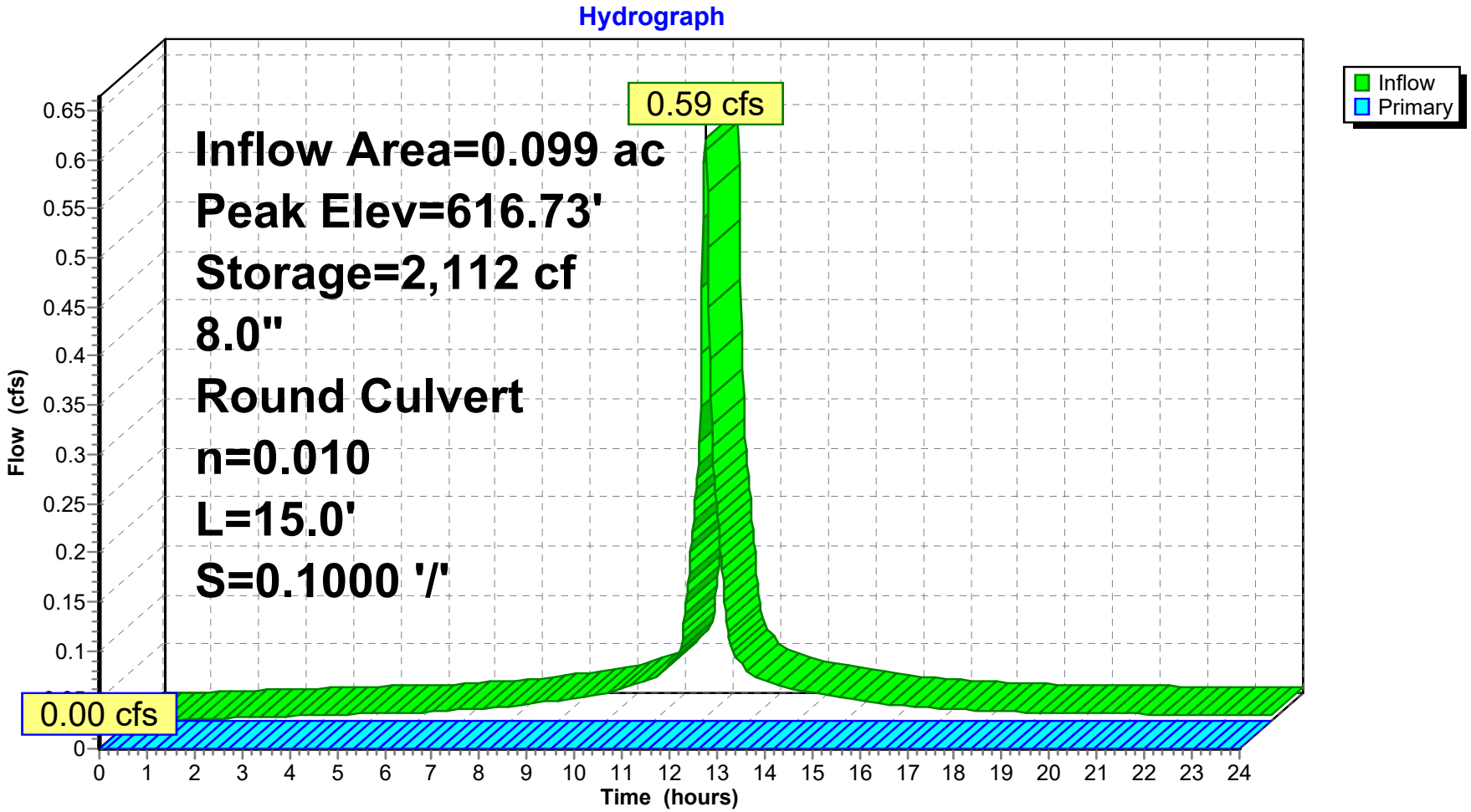
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

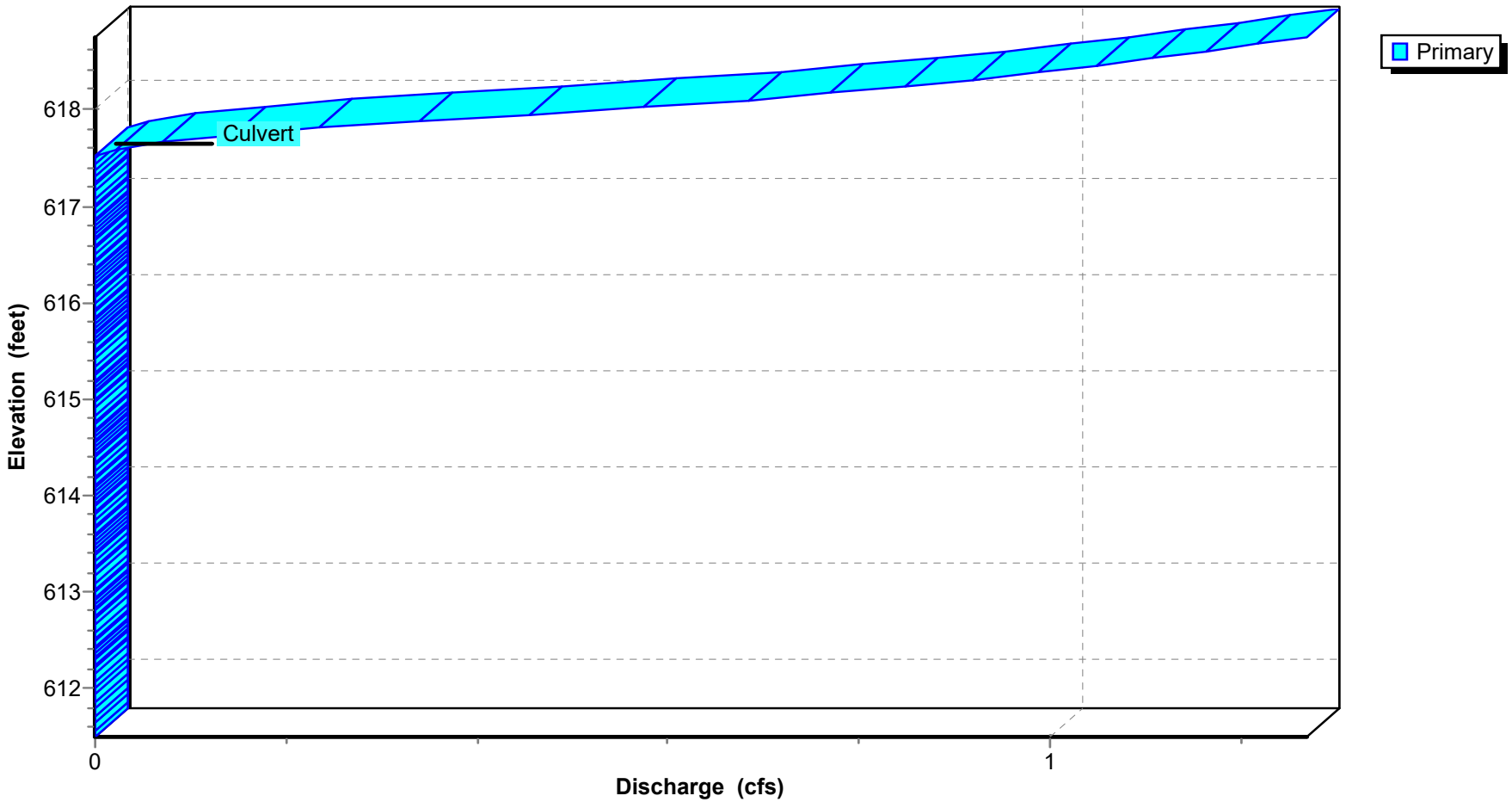


Pond 3P: ROOF INFILTRATION

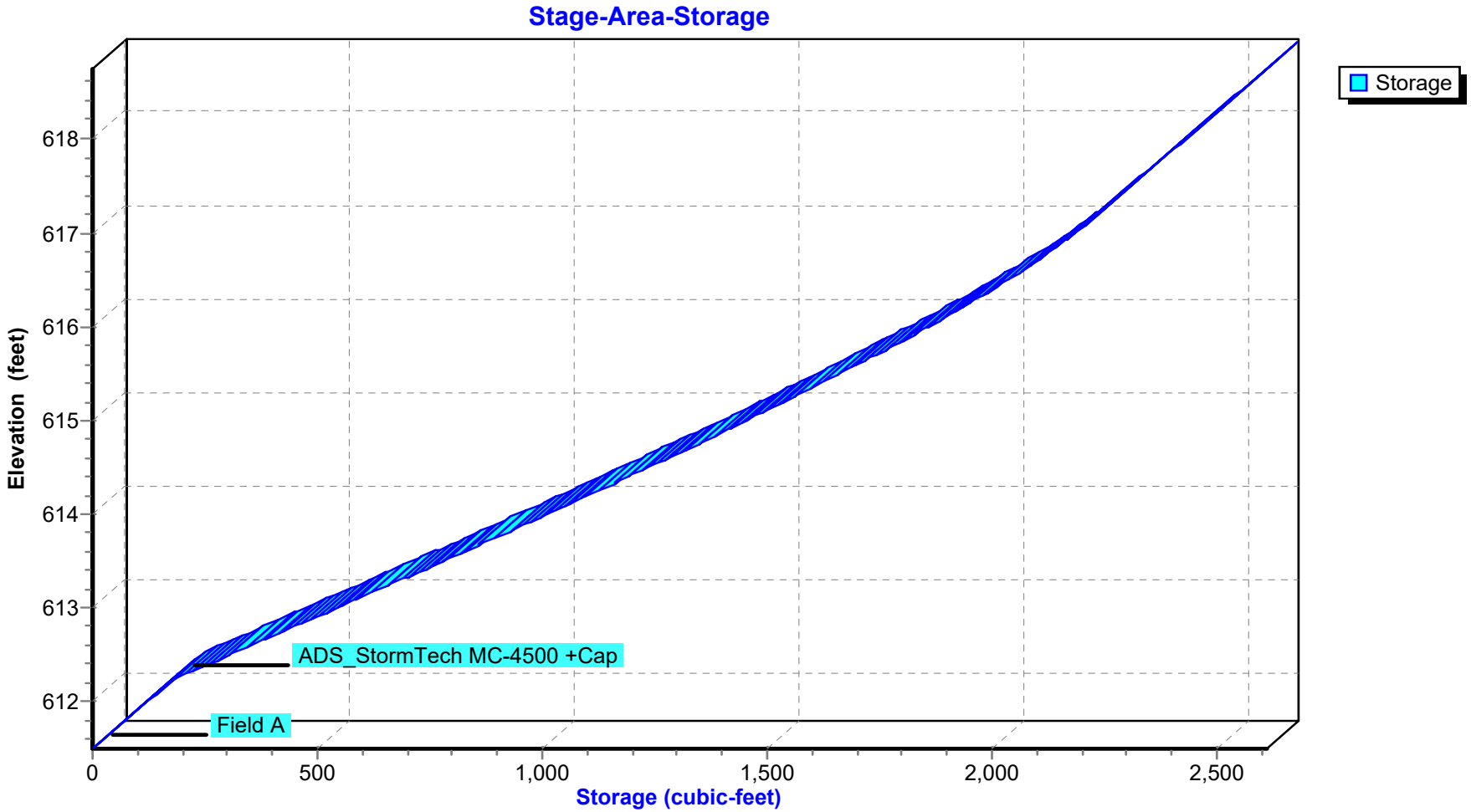


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.95' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.161 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

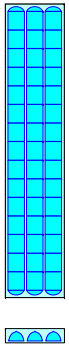
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

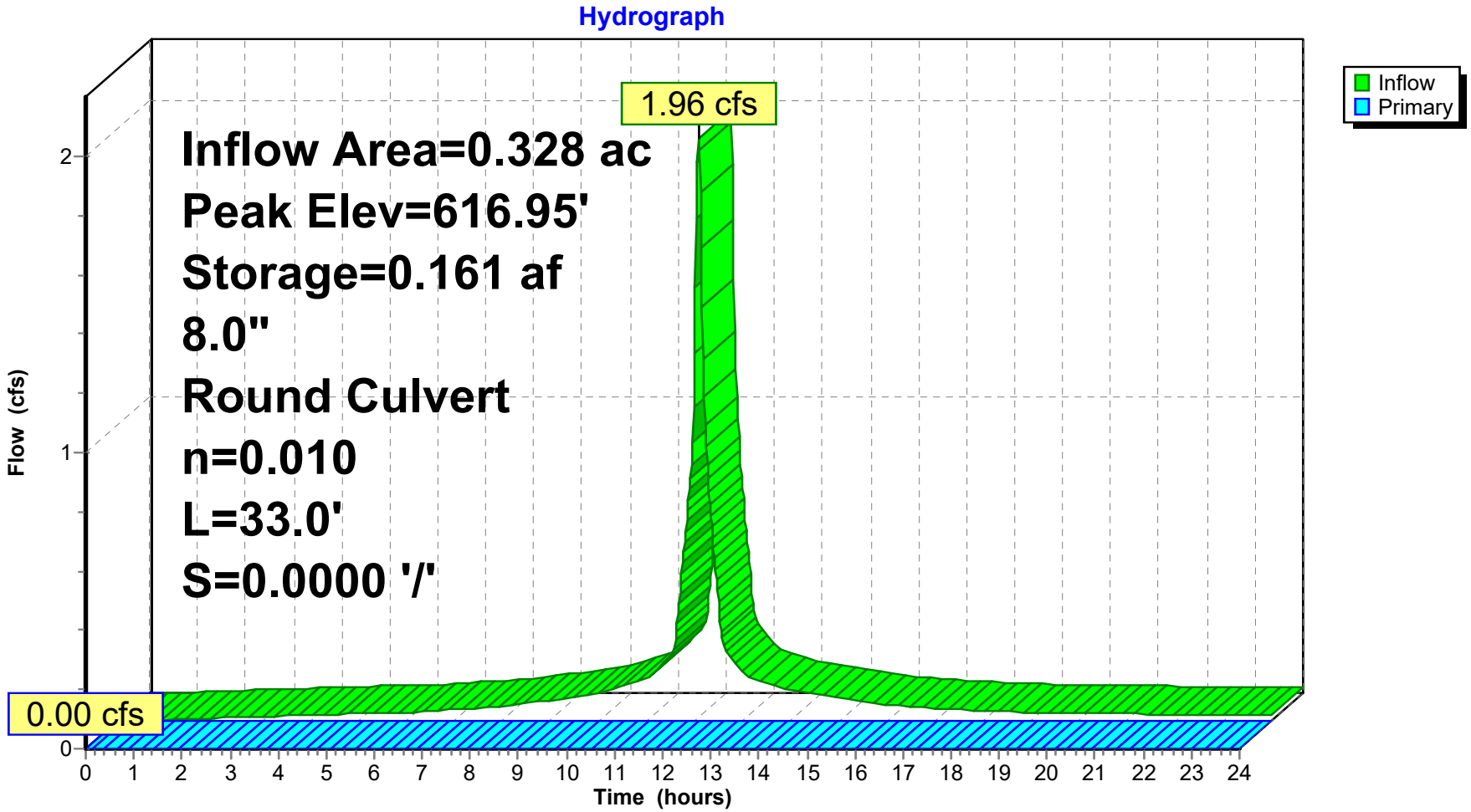
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

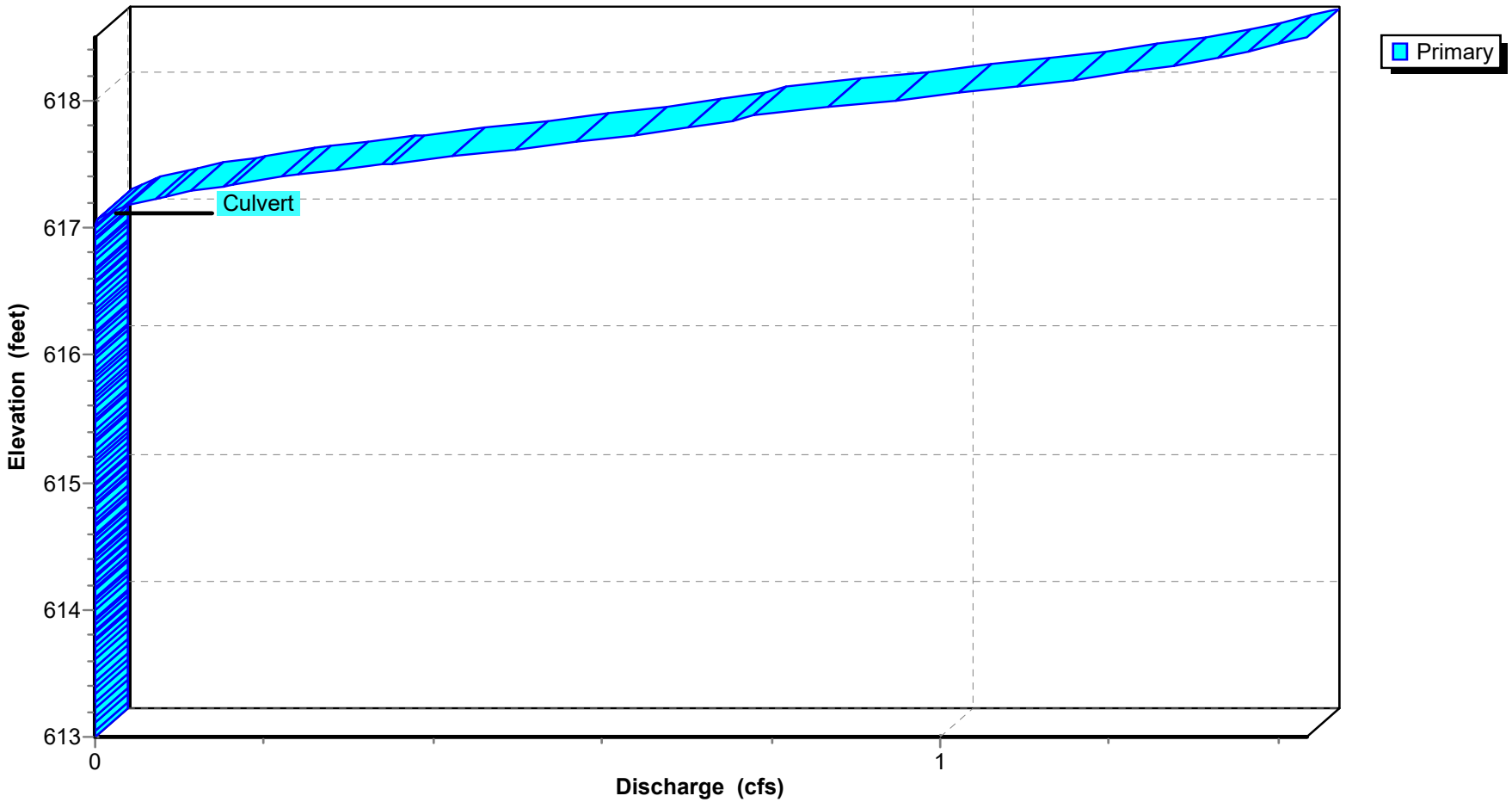


Pond 4P: ROOF INFILTRATION

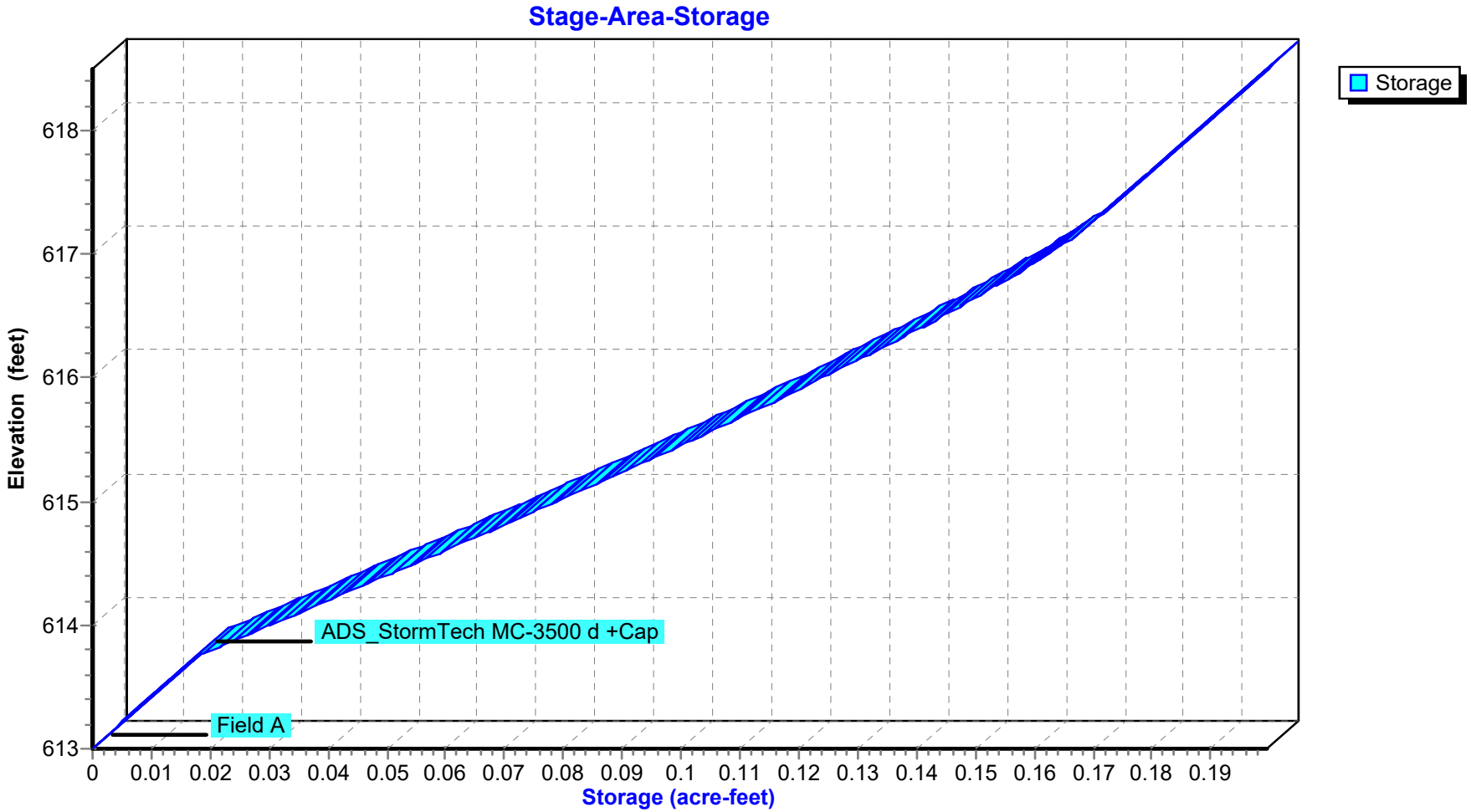


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=61 Runoff=0.53 cfs 0.038 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>5.30"
Tc=6.0 min CN=79 Runoff=3.68 cfs 0.265 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>6.47"
Tc=6.0 min CN=89 Runoff=8.15 cfs 0.614 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>2.74"
Tc=6.0 min CN=56 Runoff=3.86 cfs 0.285 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.062 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.074 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.057 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.92 cfs 0.075 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=6.62 cfs 1.064 af
Outflow=6.62 cfs 1.064 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=7.15 cfs 1.102 af
Outflow=7.15 cfs 1.102 af

Pond 1P: DETENTION BASIN Peak Elev=615.83' Storage=4,750 cf Inflow=3.68 cfs 0.265 af
Outflow=1.07 cfs 0.222 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=617.06' Storage=12,093 cf Inflow=8.15 cfs 0.653 af
Outflow=2.70 cfs 0.547 af

Pond 3P: ROOF INFILTRATION Peak Elev=617.59' Storage=2,331 cf Inflow=0.76 cfs 0.062 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.02 cfs 0.009 af

Pond 4P: ROOF INFILTRATION Peak Elev=617.26' Storage=0.170 af Inflow=2.50 cfs 0.206 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.09 cfs 0.039 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.471 af Average Runoff Depth = 4.96"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

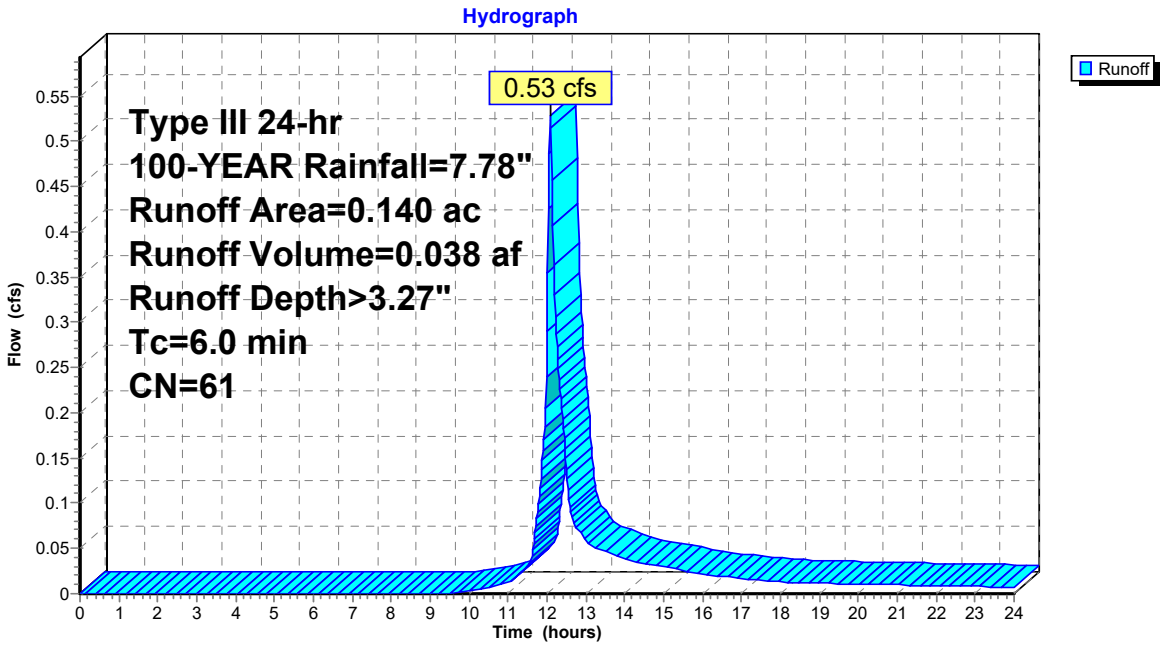
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

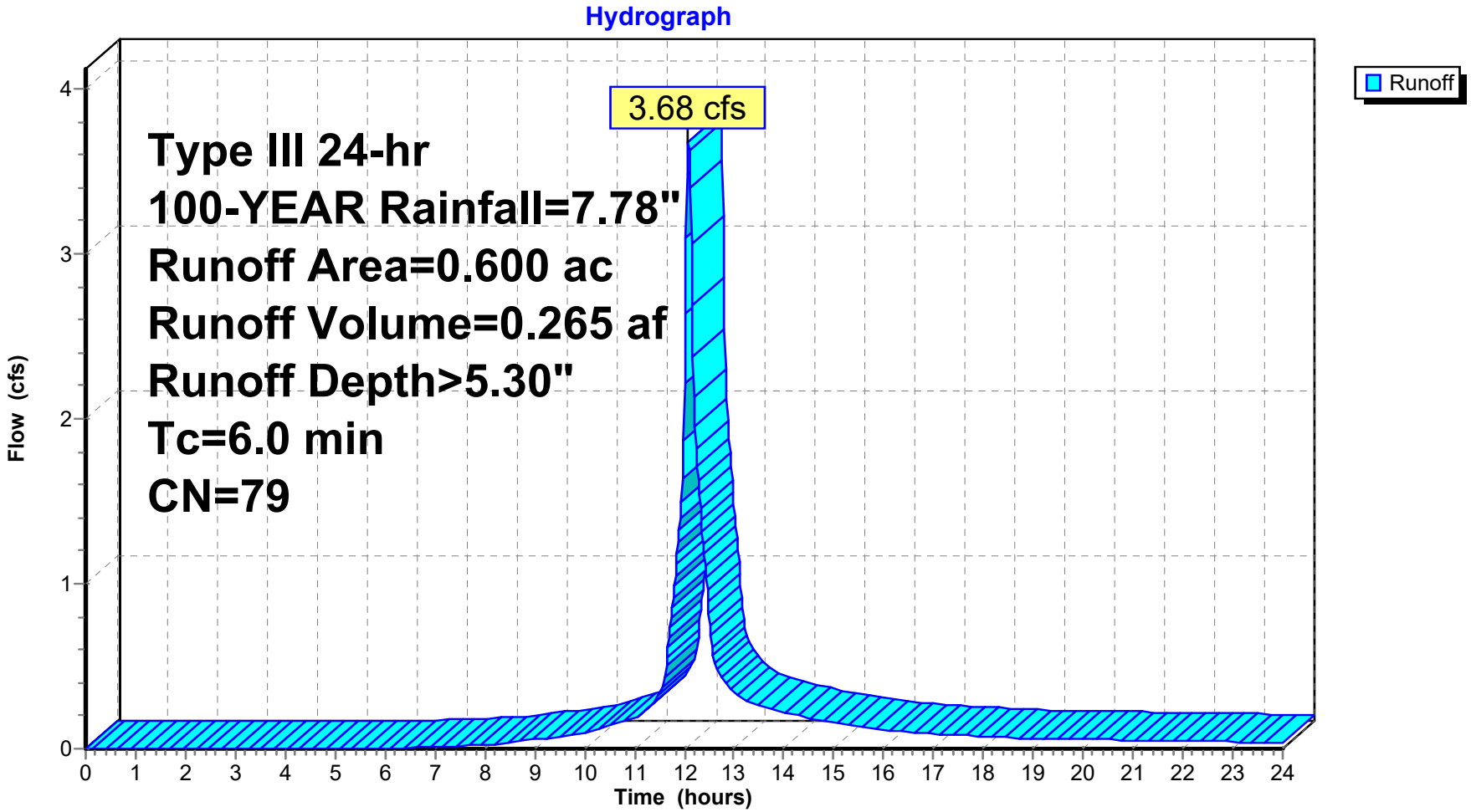
Runoff = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

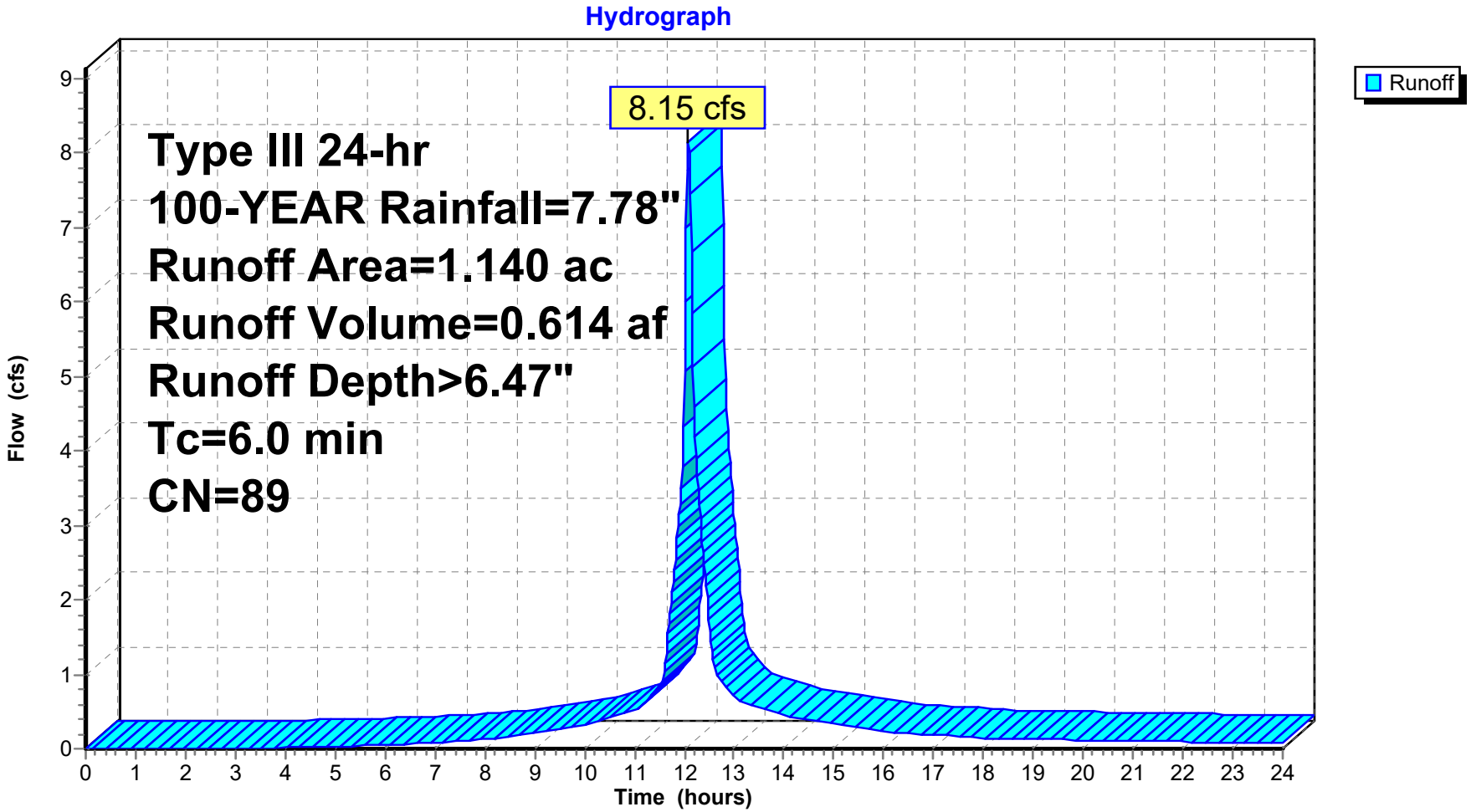
Runoff = 8.15 cfs @ 12.08 hrs, Volume= 0.614 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

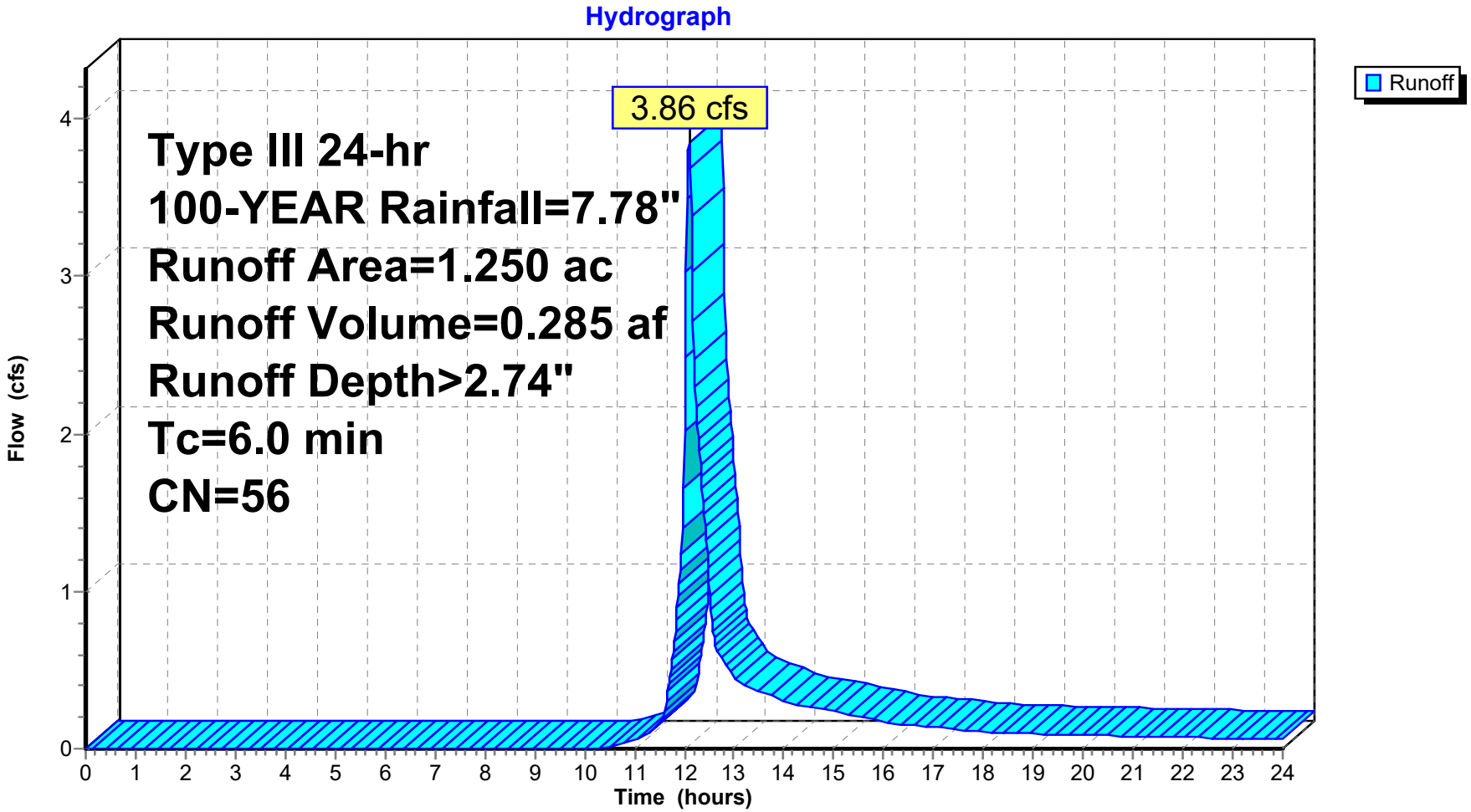
Runoff = 3.86 cfs @ 12.09 hrs, Volume= 0.285 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

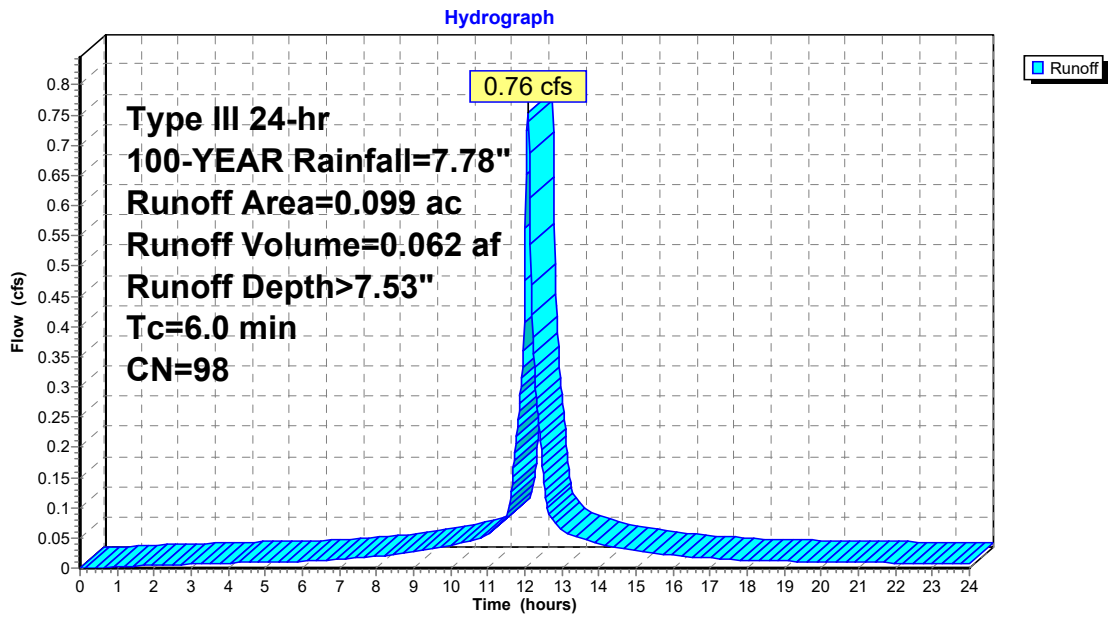
Runoff = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

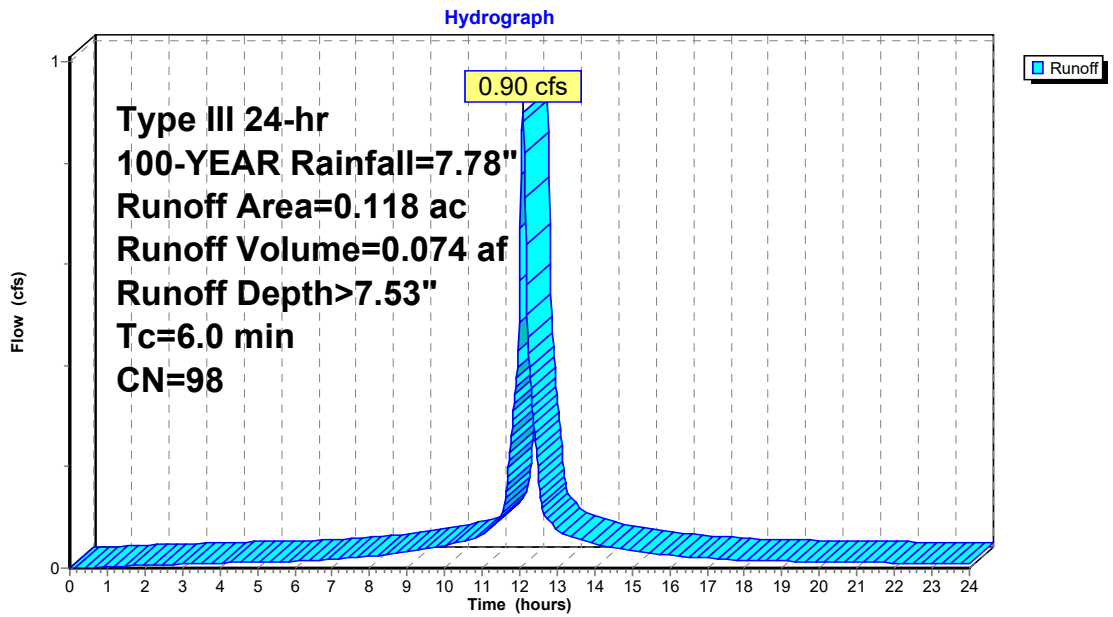
Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.074 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

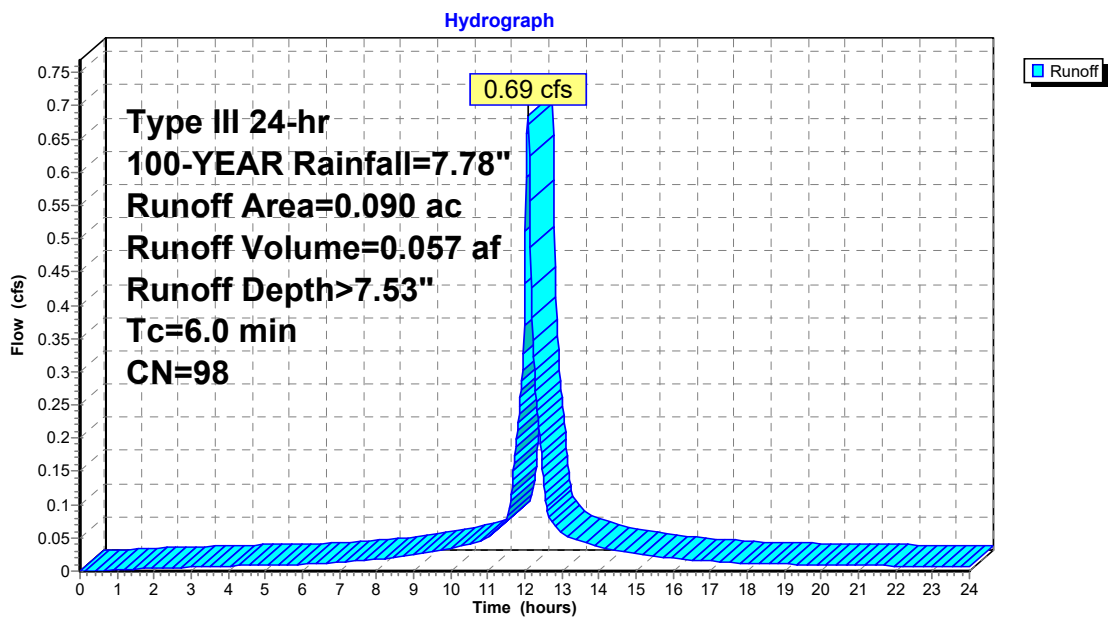
Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.057 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

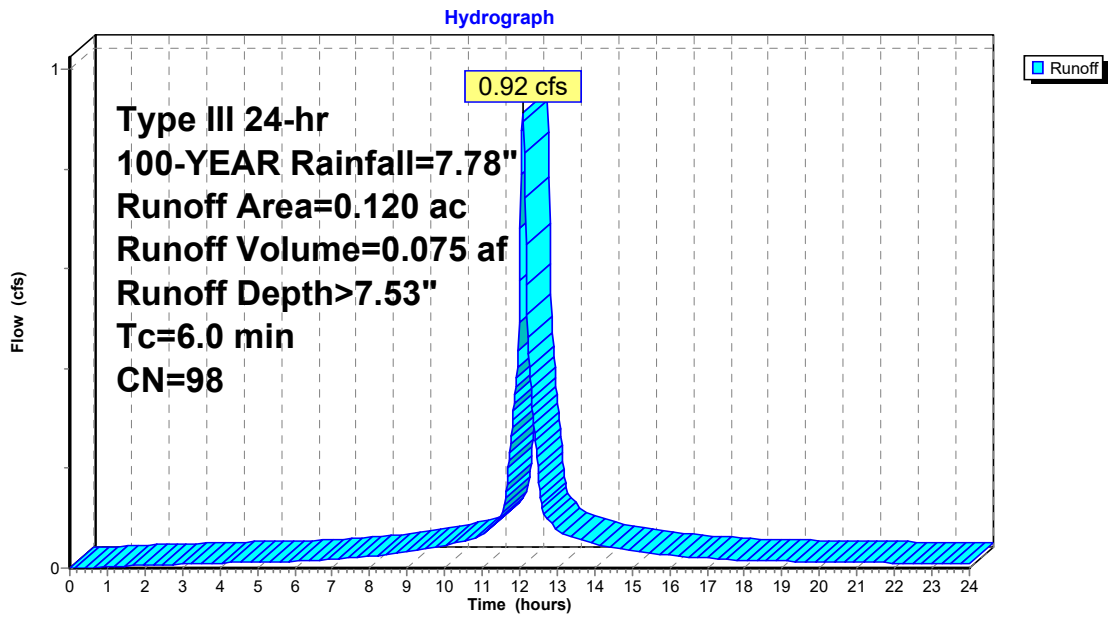
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 0.075 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



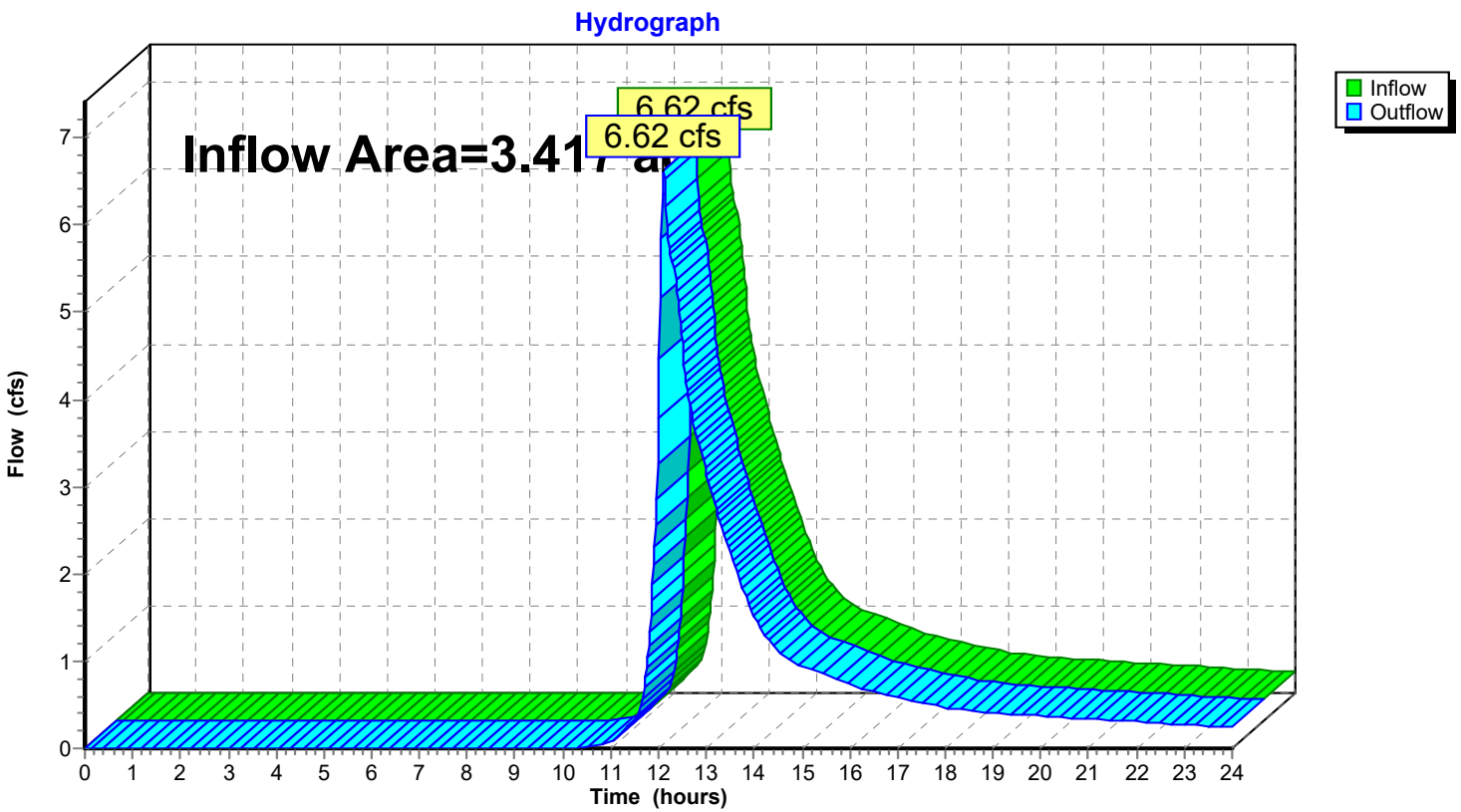
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 3.74" for 100-YEAR event
Inflow = 6.62 cfs @ 12.11 hrs, Volume= 1.064 af
Outflow = 6.62 cfs @ 12.11 hrs, Volume= 1.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



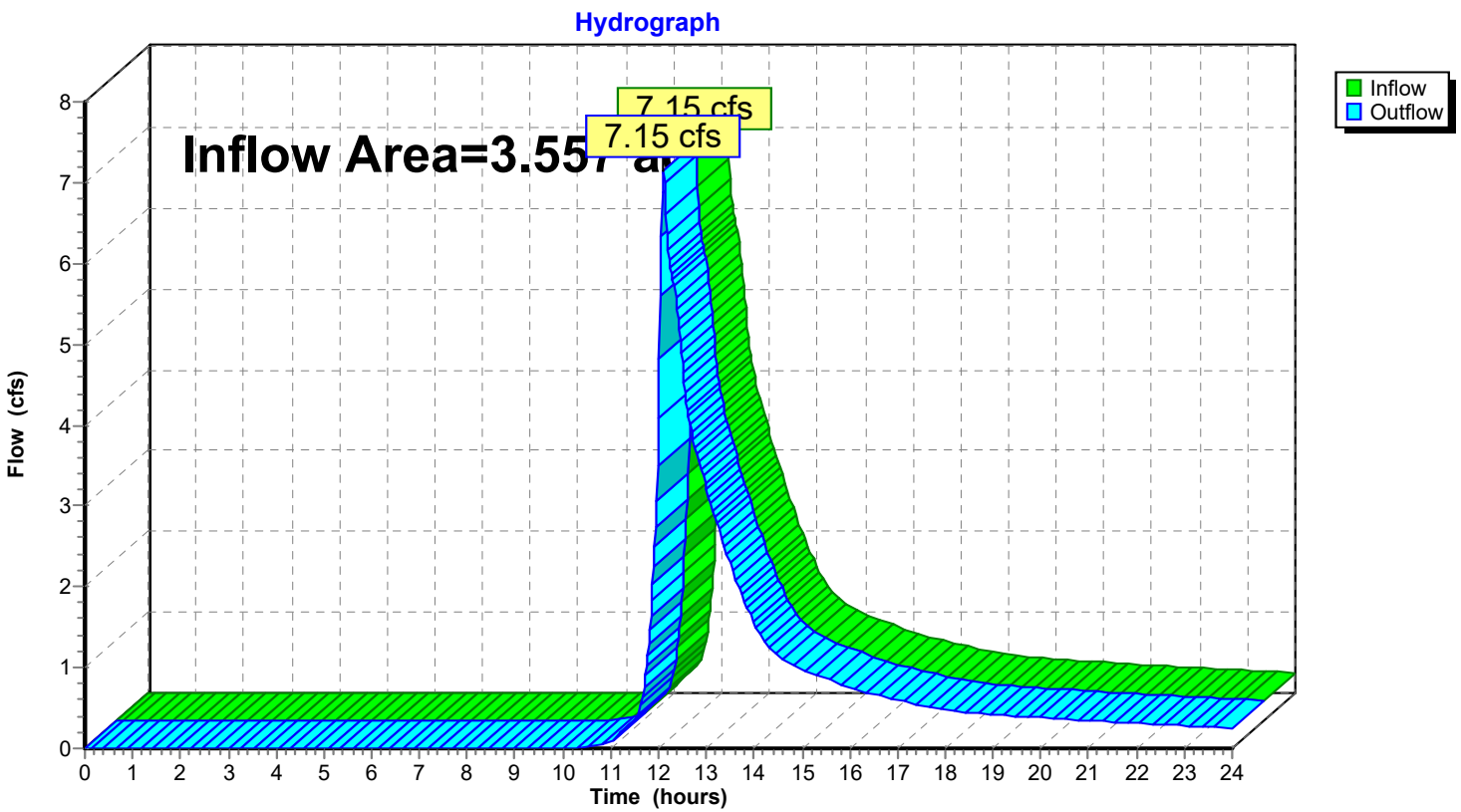
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 3.72" for 100-YEAR event
Inflow = 7.15 cfs @ 12.11 hrs, Volume= 1.102 af
Outflow = 7.15 cfs @ 12.11 hrs, Volume= 1.102 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.89' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 5.30" for 100-YEAR event
Inflow = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af
Outflow = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af, Atten= 71%, Lag= 20.7 min
Primary = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.83' @ 12.43 hrs Surf.Area= 2,463 sf Storage= 4,750 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 128.9 min calculated for 0.222 af (84% of inflow)
Center-of-Mass det. time= 62.8 min (868.5 - 805.7)

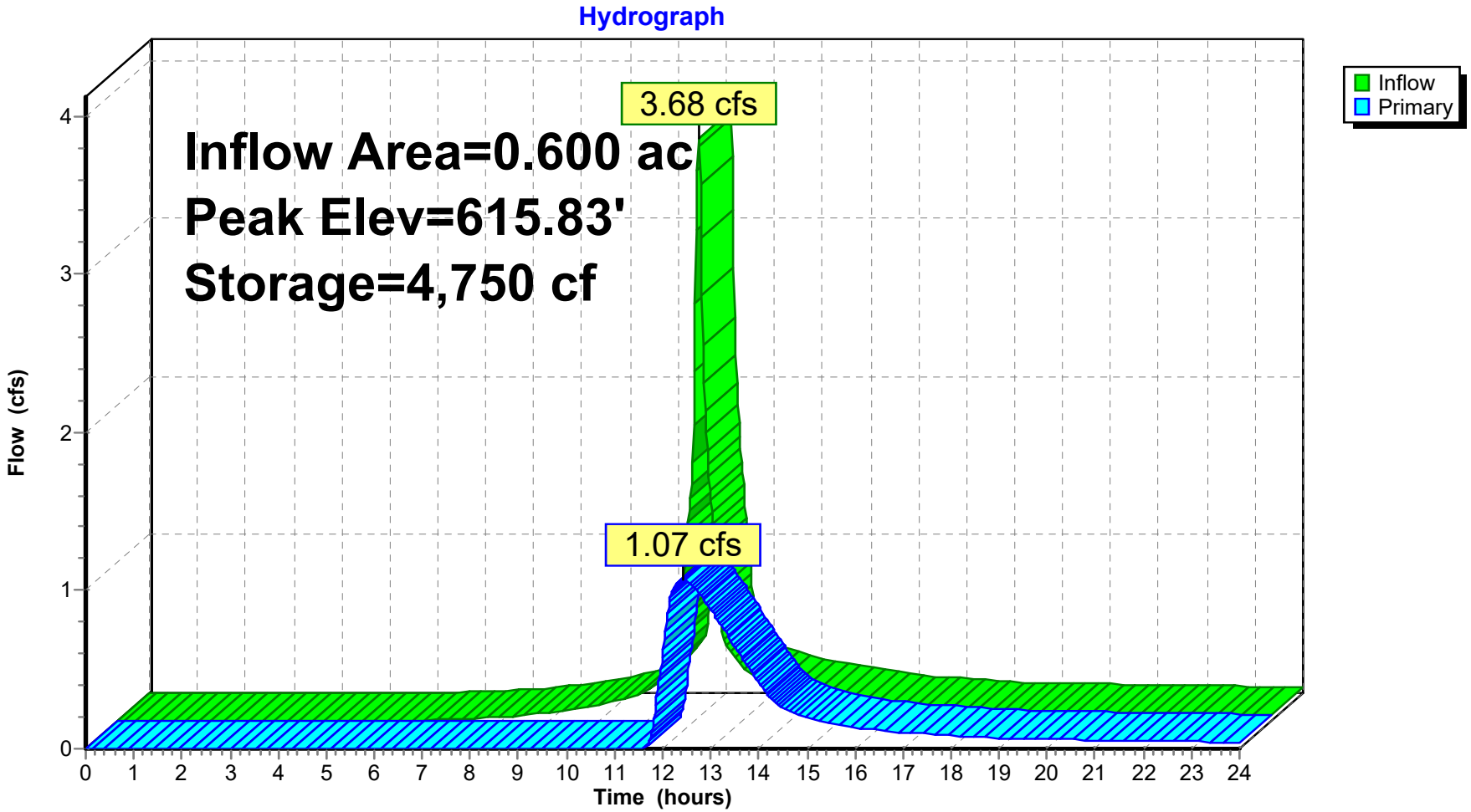
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

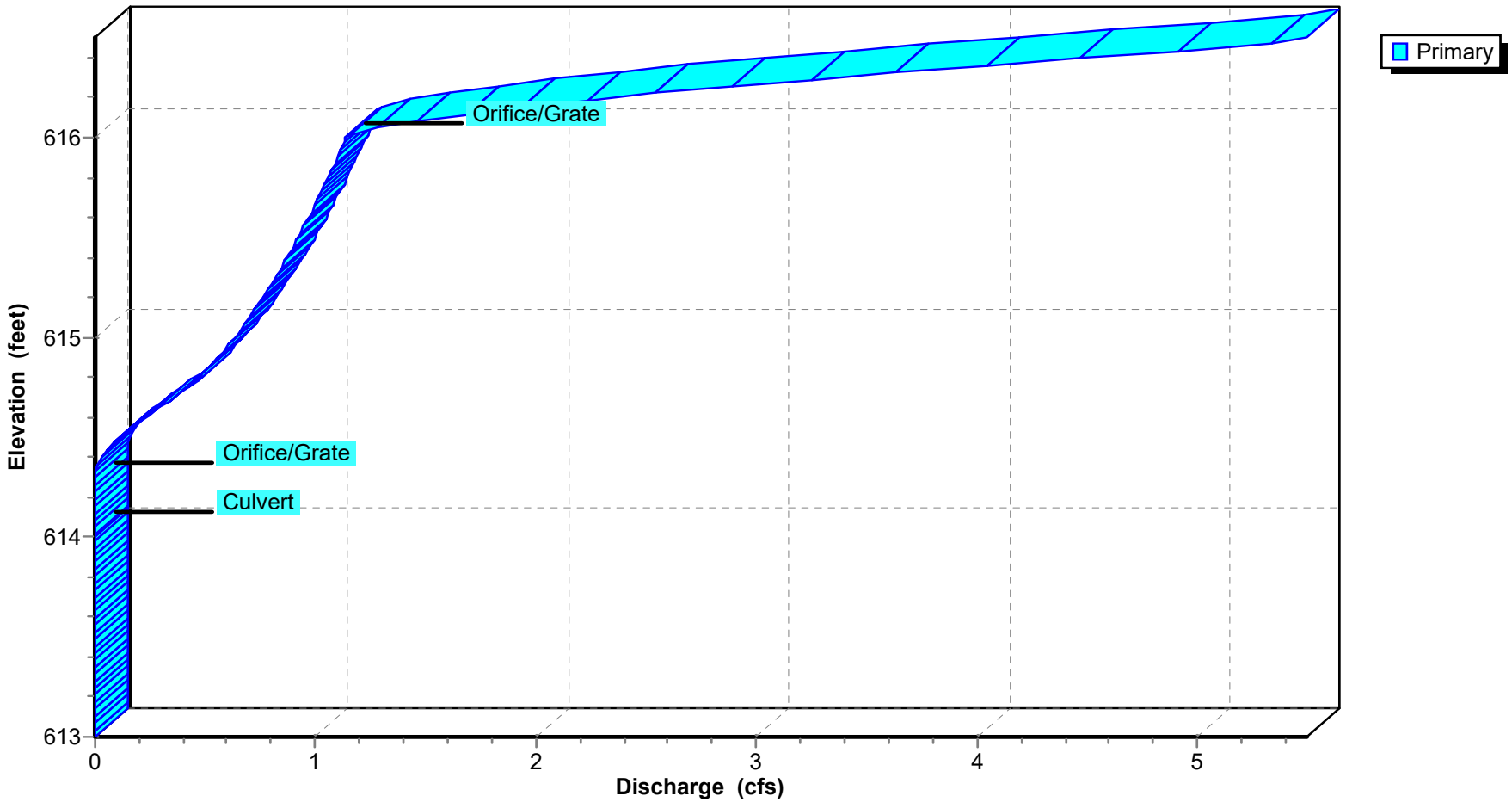
Primary OutFlow Max=1.07 cfs @ 12.43 hrs HW=615.83' (Free Discharge)
└─**1=Culvert** (Passes 1.07 cfs of 6.34 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.07 cfs @ 5.44 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

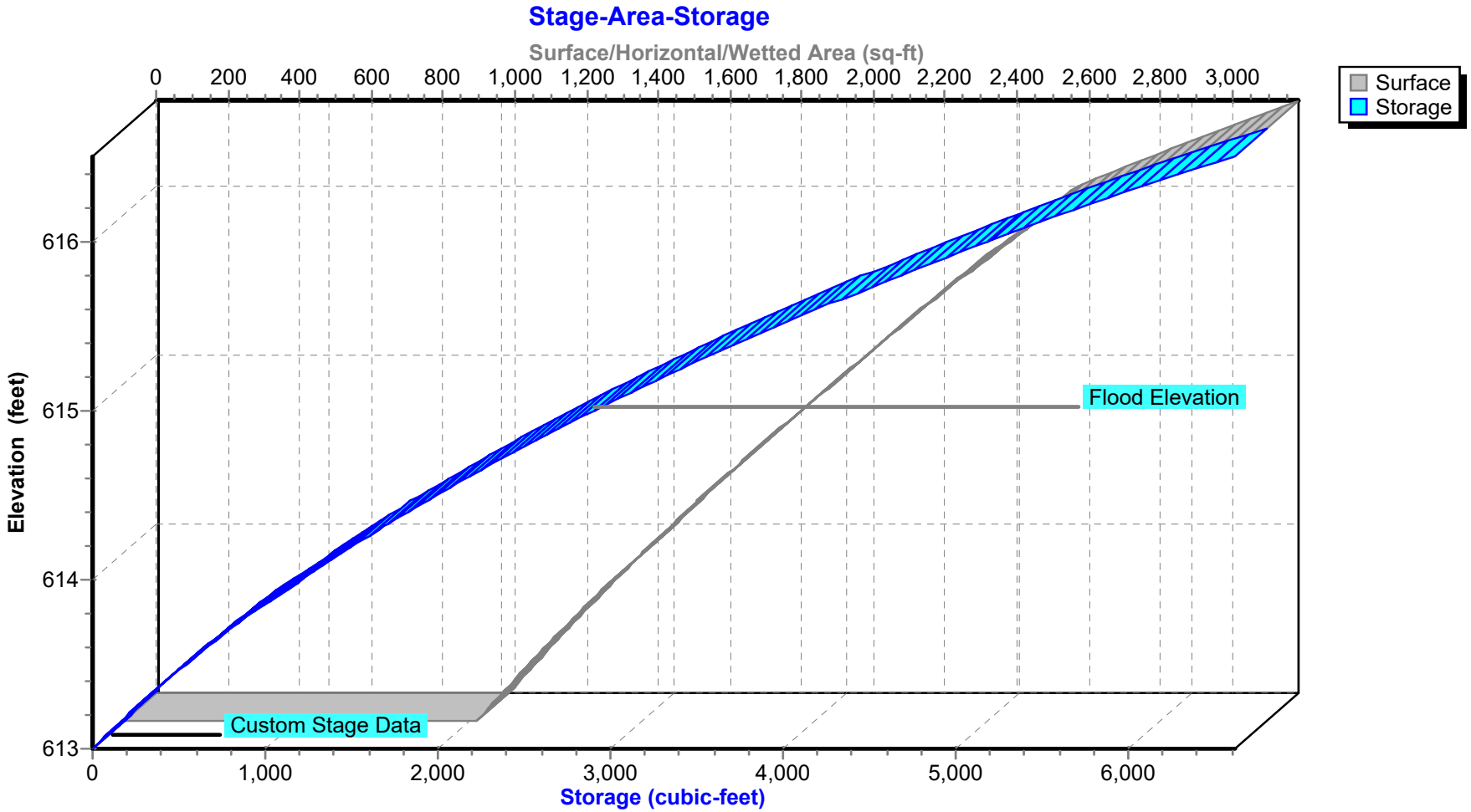


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[81] Warning: Exceeded Pond 4P by 0.95' @ 12.30 hrs

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 5.34" for 100-YEAR event
Inflow = 8.15 cfs @ 12.08 hrs, Volume= 0.653 af
Outflow = 2.70 cfs @ 12.37 hrs, Volume= 0.547 af, Atten= 67%, Lag= 17.2 min
Primary = 2.70 cfs @ 12.37 hrs, Volume= 0.547 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.06' @ 12.37 hrs Surf.Area= 5,913 sf Storage= 12,093 cf

Plug-Flow detention time= 168.4 min calculated for 0.547 af (84% of inflow)
Center-of-Mass det. time= 97.4 min (894.9 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.70 cfs @ 12.37 hrs HW=617.06' (Free Discharge)
└─**1=Culvert** (Passes 2.70 cfs of 9.68 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.86 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.98 cfs @ 5.68 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.11 cfs @ 0.78 fps)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

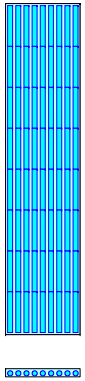
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

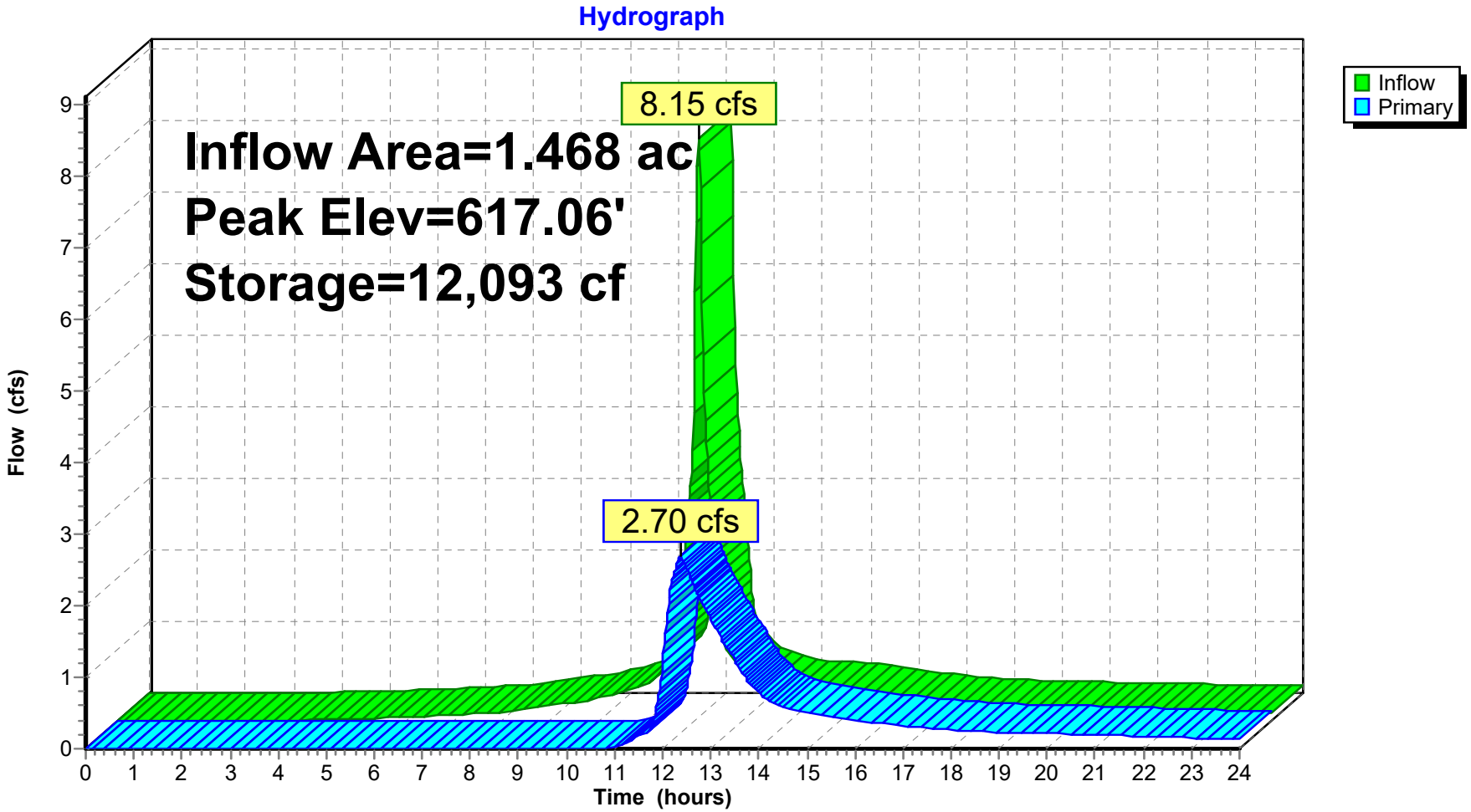
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

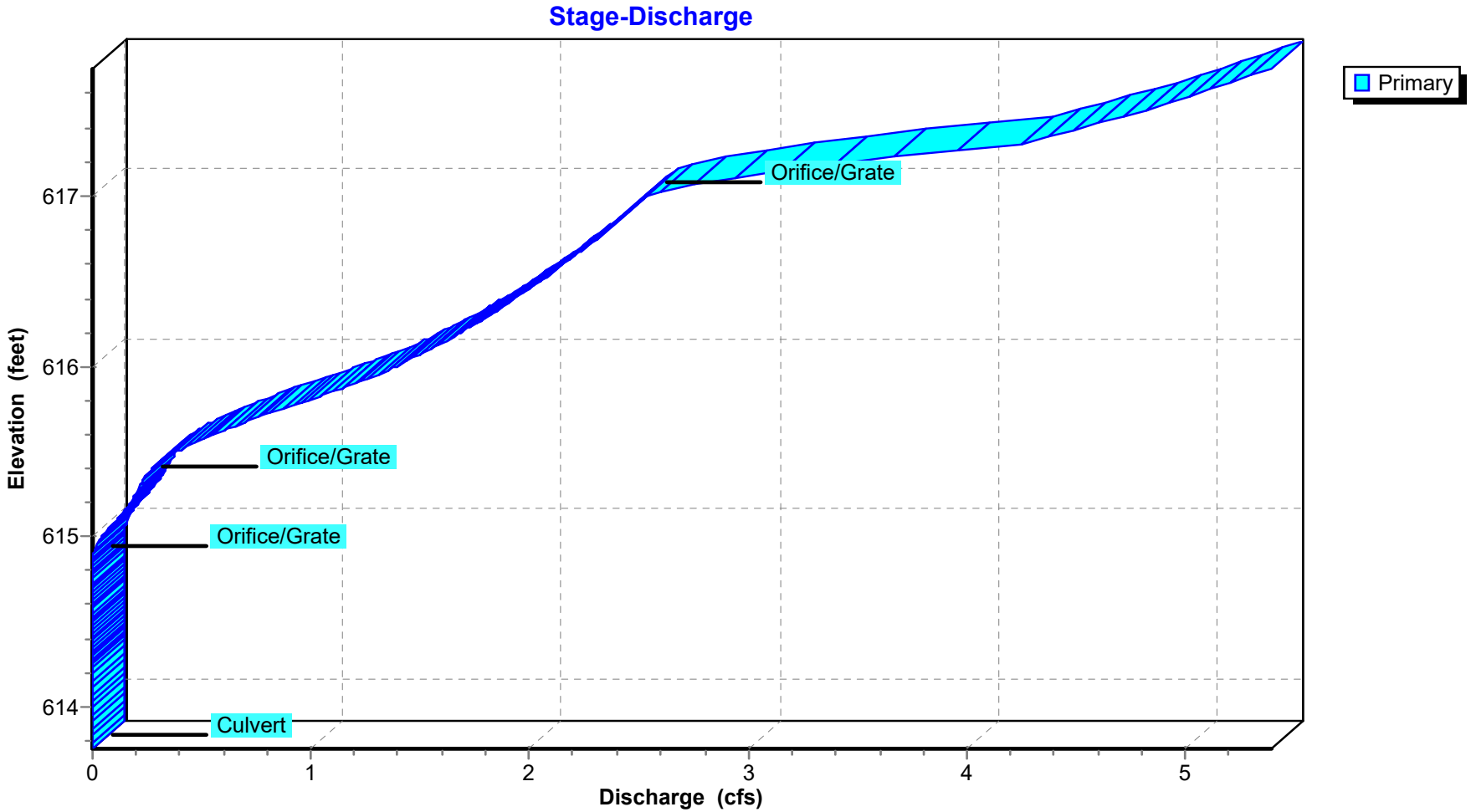
72 Chambers
876.0 cy Field
614.2 cy Stone



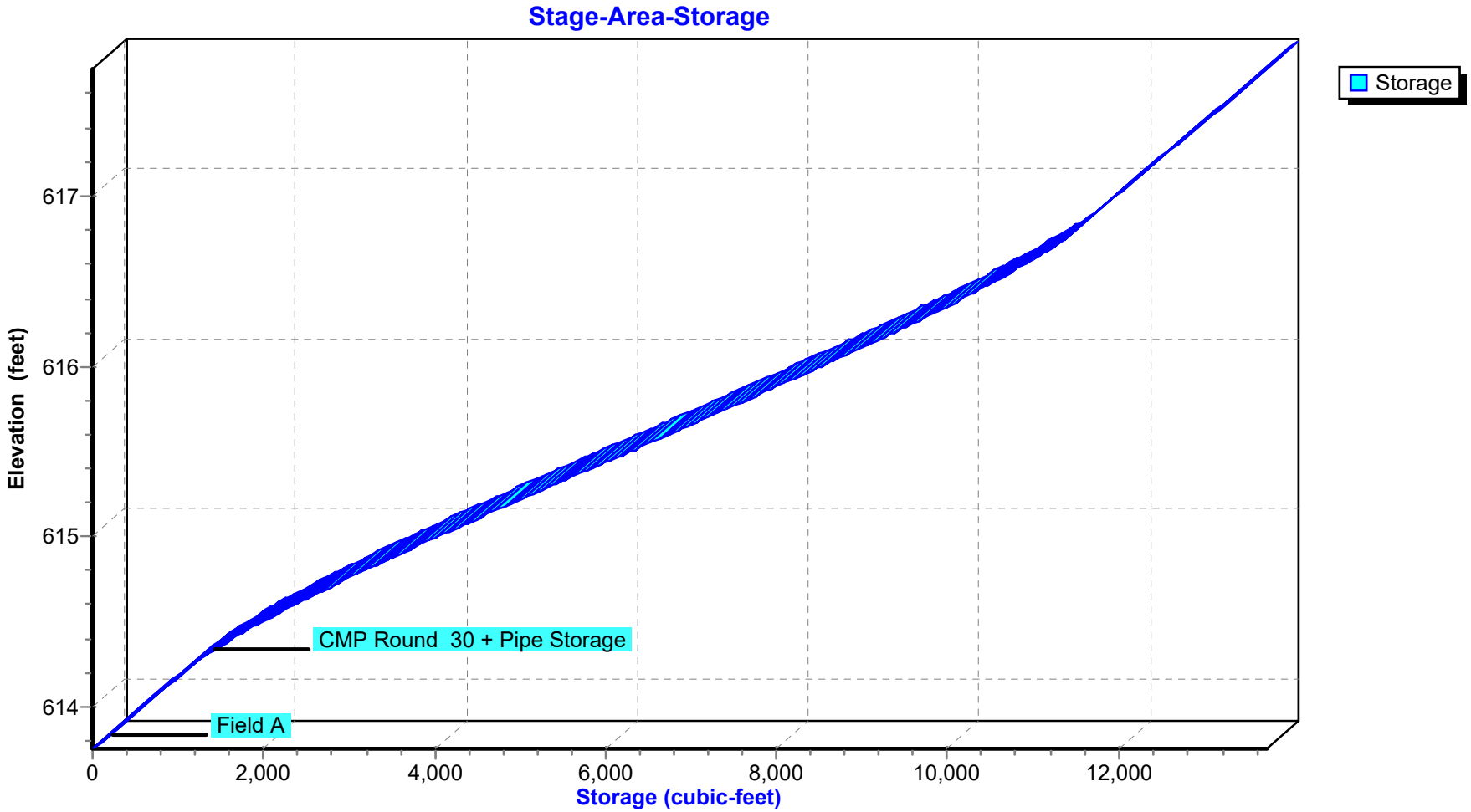
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af, Atten= 97%, Lag= 222.9 min
Primary = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.59' @ 15.80 hrs Surf.Area= 607 sf Storage= 2,331 cf

Plug-Flow detention time= 721.0 min calculated for 0.009 af (14% of inflow)
Center-of-Mass det. time= 385.3 min (1,126.3 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.02 cfs @ 15.80 hrs HW=617.59' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.02 cfs @ 0.81 fps)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

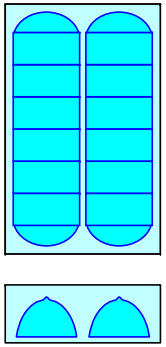
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

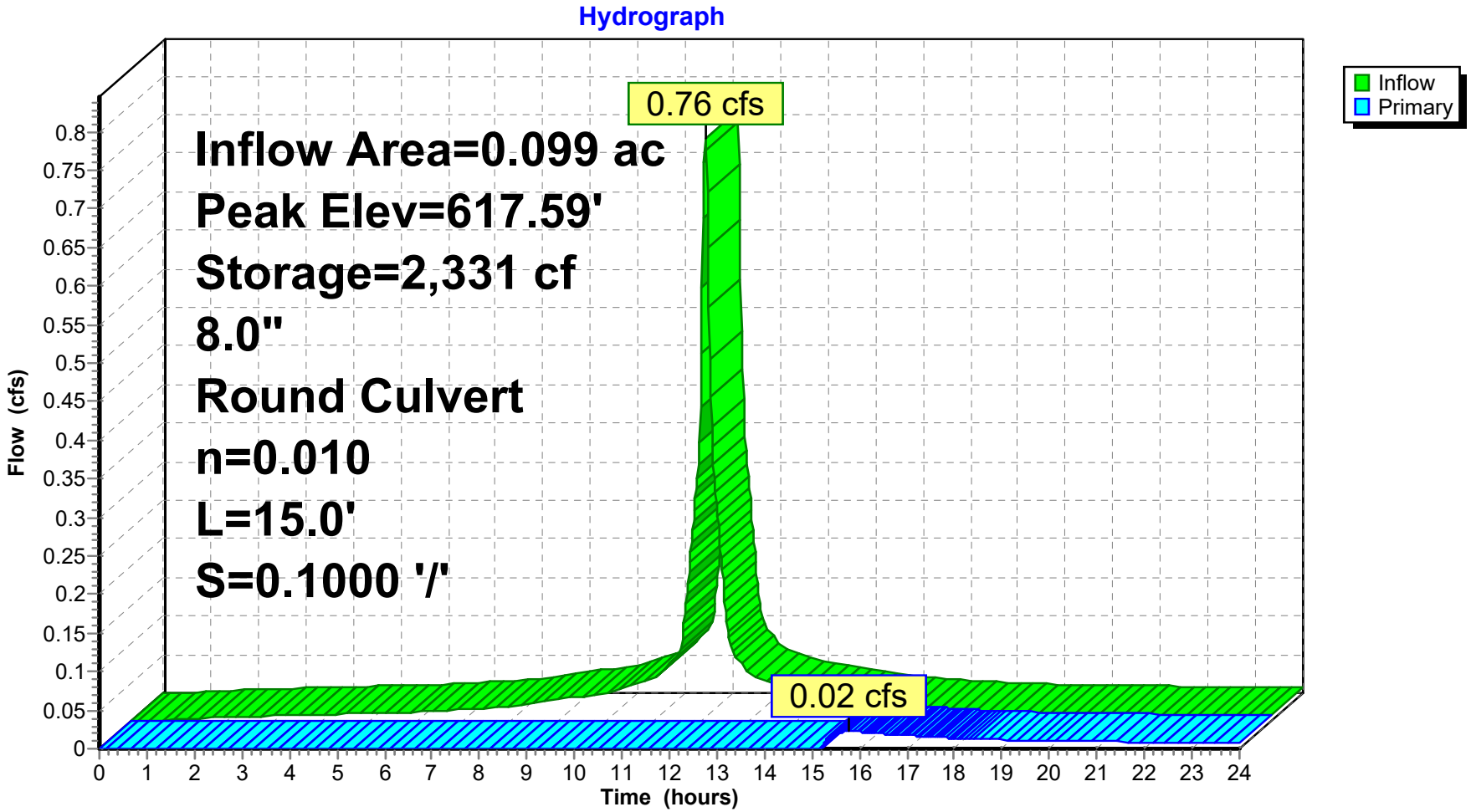
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

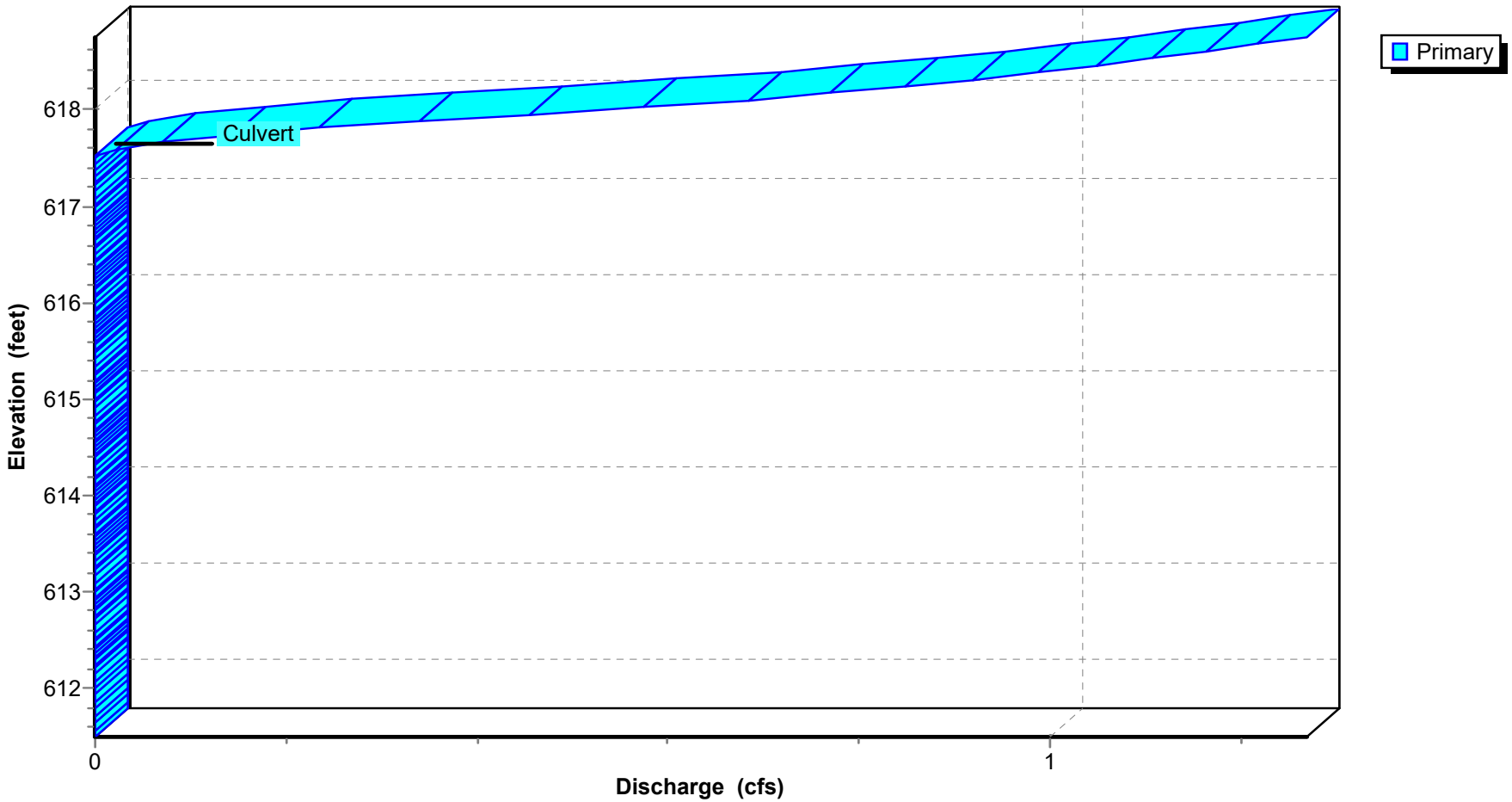


Pond 3P: ROOF INFILTRATION

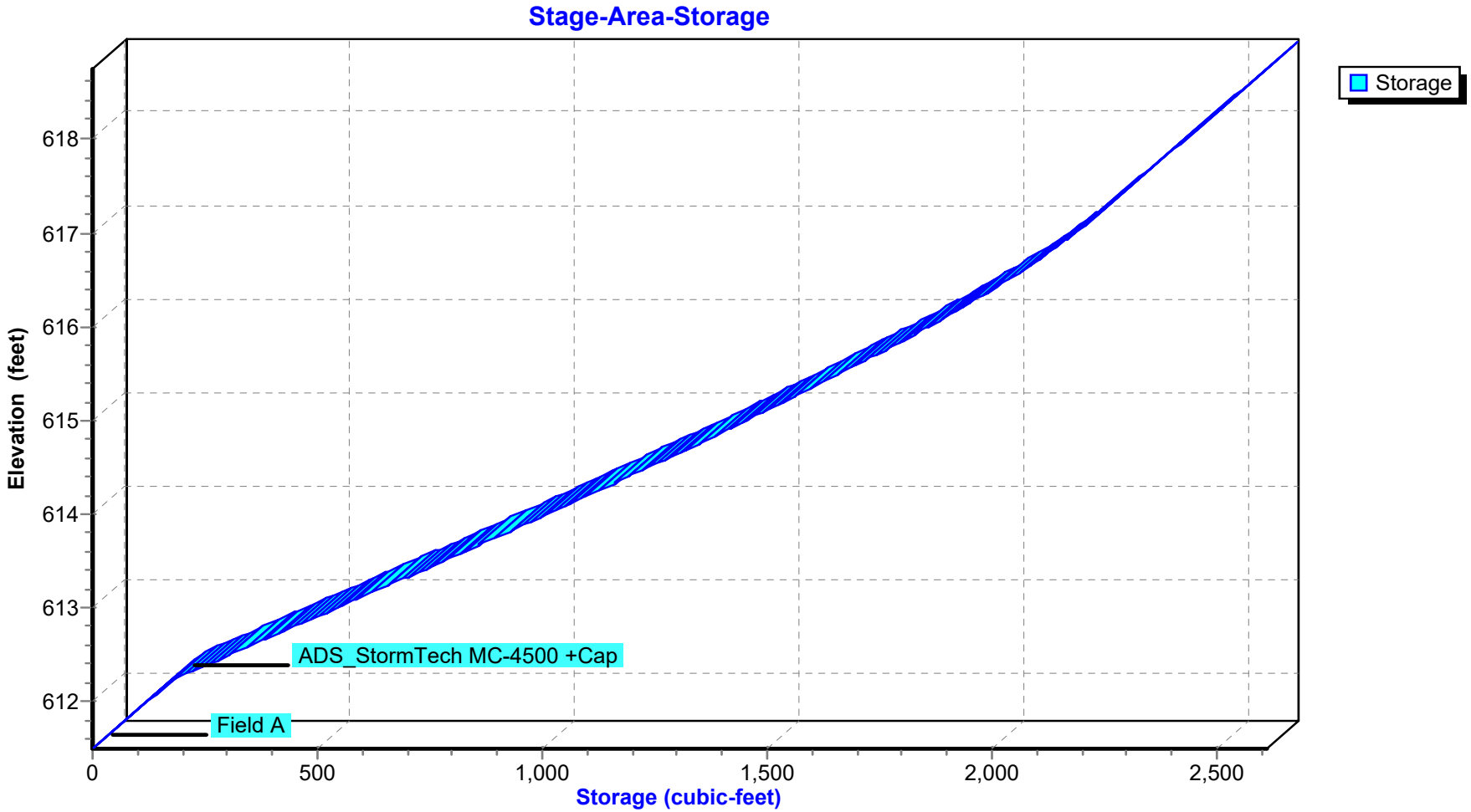


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 2.50 cfs @ 12.08 hrs, Volume= 0.206 af
Outflow = 0.09 cfs @ 15.24 hrs, Volume= 0.039 af, Atten= 96%, Lag= 189.1 min
Primary = 0.09 cfs @ 15.24 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.26' @ 15.24 hrs Surf.Area= 0.059 ac Storage= 0.170 af

Plug-Flow detention time= 626.1 min calculated for 0.039 af (19% of inflow)
Center-of-Mass det. time= 339.7 min (1,080.8 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 15.24 hrs HW=617.26' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.09 cfs @ 1.07 fps)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

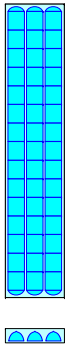
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

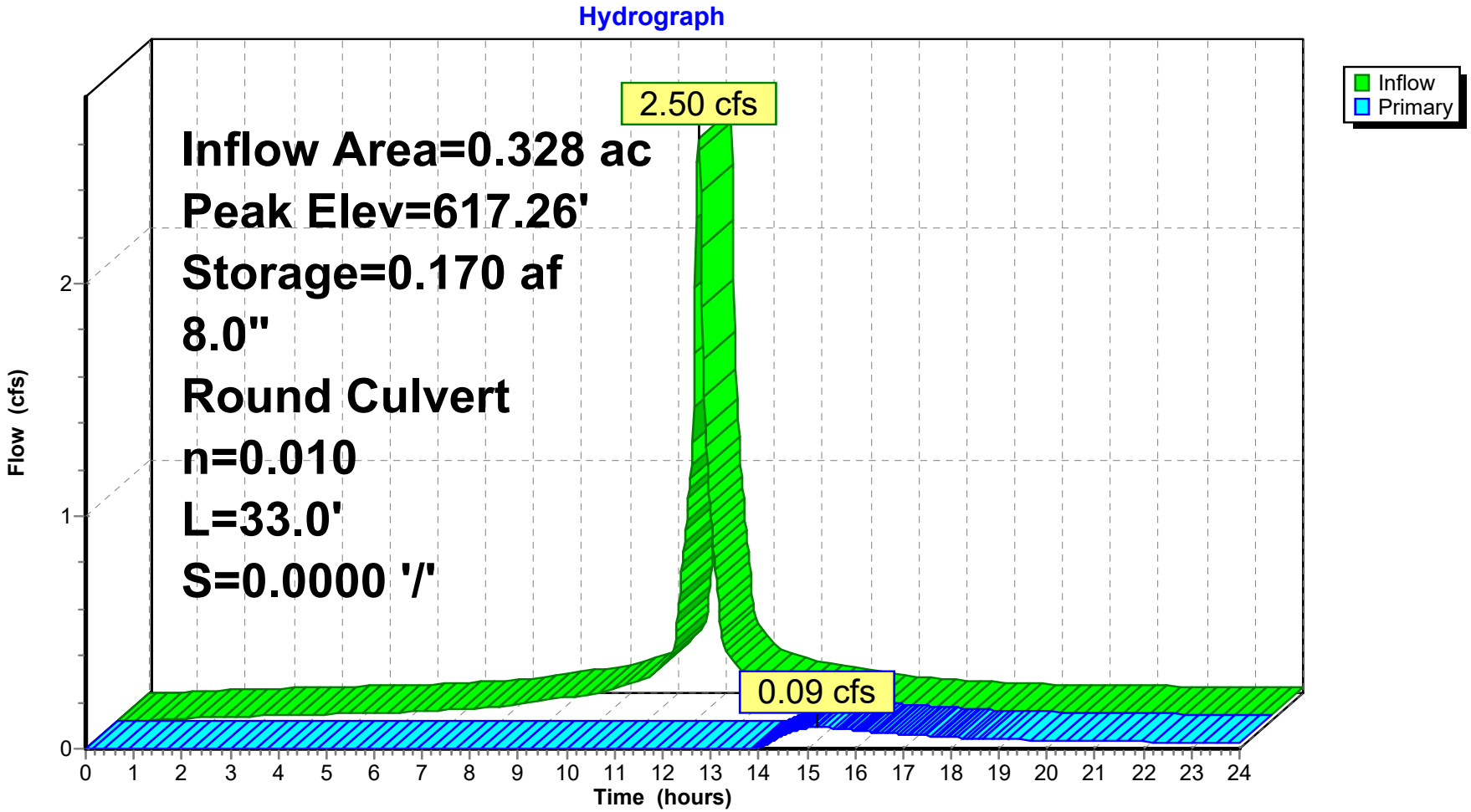
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

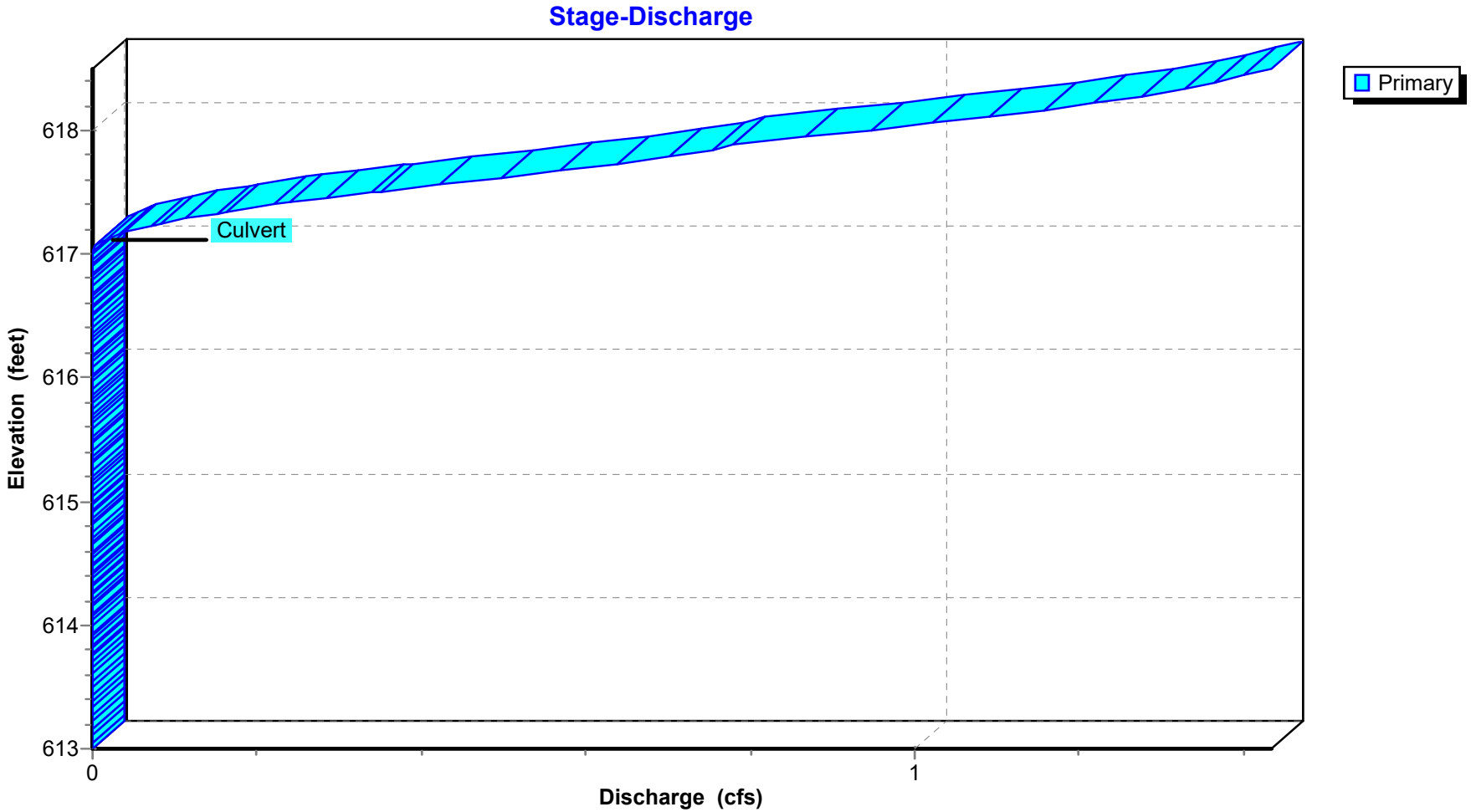
45 Chambers
524.8 cy Field
338.3 cy Stone



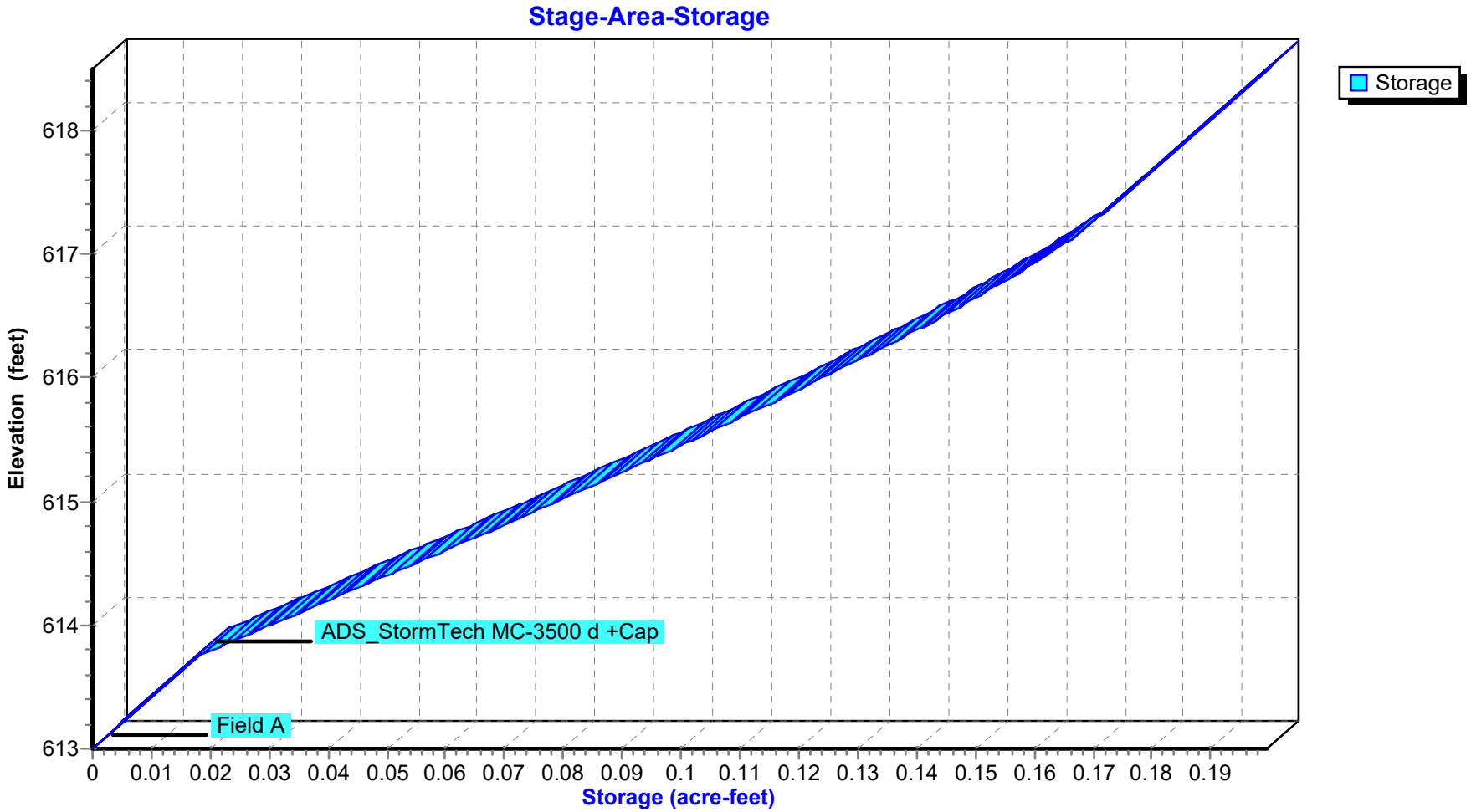
Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



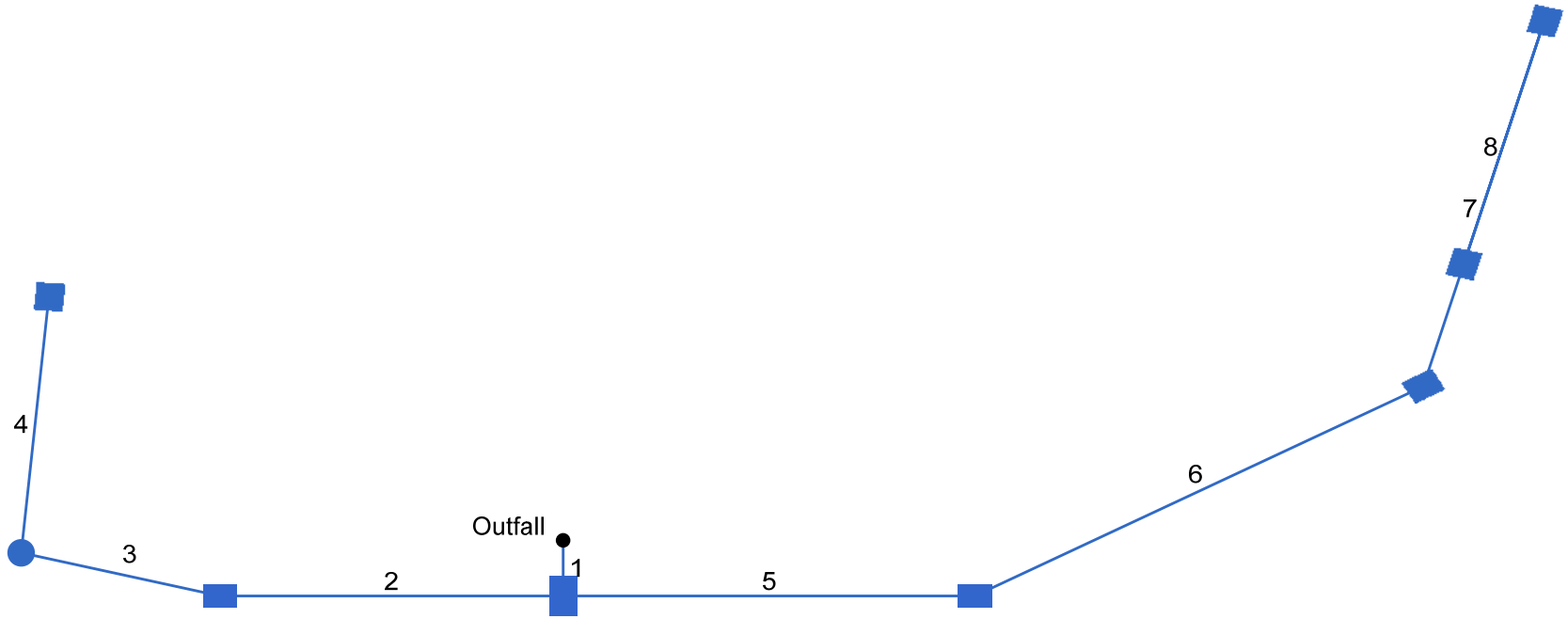
Pond 4P: ROOF INFILTRATION



APPENDIX C

Proposed Hydraulic Sizing Computations

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: HydraFlow.stm	Number of lines: 8	Date: 2/12/2020

Storm Sewers v10.514

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	CB-3	4.26	15	Cir	11.000	615.54	615.65	1.000	616.28	616.48	0.84	616.48	End	Combination
2	CB-2	2.45	12	Cir	55.000	615.75	616.16	0.745	616.48	616.83	n/a	616.98 j	1	Combination
3	DMH	1.96	12	Cir	33.000	616.16	616.41	0.758	616.82	616.94	n/a	616.94	2	Manhole
4	CB-1	2.02	12	Cir	51.000	616.41	616.85	0.863	616.94	617.39	n/a	617.39	3	Combination
5	CB-4	1.34	12	Cir	66.000	615.75	616.41	1.000	615.36	615.54	n/a	615.54	1	Combination
6	CB-5	0.93	12	Cir	83.000	615.41	616.24	1.000	614.48	614.90	n/a	614.90	5	Combination
7	CB-6	0.54	12	Cir	75.000	616.34	617.50	1.547	614.90	615.64	n/a	615.64	6	Combination
8	CB-7	0.27	12	Cir	50.000	617.60	617.90	0.600	615.64	617.80	n/a	617.80	7	Grate

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	11.000	0.30	1.12	0.76	0.23	0.85	5.0	10.4	5.0	4.26	6.46	5.25	15	1.00	615.54	615.65	616.28	616.48	0.00	617.75	CB-3
2	1	55.000	0.11	0.49	0.70	0.08	0.36	5.0	5.6	6.8	2.45	3.07	4.16	12	0.75	615.75	616.16	616.48	616.83	617.75	618.60	CB-2
3	2	33.000	0.00	0.38	0.00	0.00	0.29	0.0	5.3	6.9	1.96	0.00	3.25	12	0.76	616.16	616.41	616.82	616.94	618.60	618.97	DMH
4	3	51.000	0.38	0.38	0.75	0.29	0.29	5.0	5.0	7.1	2.02	0.00	3.76	12	0.86	616.41	616.85	616.94	617.39	618.97	618.85	CB-1
5	1	66.000	0.11	0.33	0.80	0.09	0.26	5.0	9.9	5.1	1.34	0.00	3.74	12	1.00	615.75	616.41	615.36	615.54	617.75	618.54	CB-4
6	5	83.000	0.10	0.22	0.82	0.08	0.17	5.0	9.0	5.4	0.93	0.00	2.84	12	1.00	615.41	616.24	614.48	614.90	618.54	618.50	CB-5
7	6	75.000	0.07	0.12	0.74	0.05	0.09	5.0	7.4	5.9	0.54	0.00	2.79	12	1.55	616.34	617.50	614.90	615.64	618.50	619.50	CB-6
8	7	50.000	0.05	0.05	0.77	0.04	0.04	5.0	5.0	7.1	0.27	0.00	2.66	12	0.60	617.60	617.90	615.64	617.80	619.50	620.24	CB-7

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES:Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period =Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	CB-3	1.61	0.00	1.61	0.00	Comb	5.0	2.73	6.24	4.62	1.35	Sag	12.00	0.023	0.023	0.000	0.10	8.00	0.35	8.00	3.0	Off
2	CB-2	0.54	0.00	0.54	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.013	0.013	0.013	0.09	6.95	0.25	0.01	3.0	1
3	DMH	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	CB-1	2.02	0.00	2.02	0.00	Comb	5.0	2.73	3.12	2.31	1.35	Sag	12.00	0.017	0.017	0.000	-0.02	6.11	0.23	6.11	3.0	Off
5	CB-4	0.62	0.00	0.62	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.016	0.016	0.013	0.10	6.42	0.25	0.01	3.0	1
6	CB-5	0.58	0.00	0.58	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.009	12.00	0.024	0.024	0.013	0.12	4.95	0.25	0.00	3.0	5
7	CB-6	0.37	0.13	0.49	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.027	12.00	0.010	0.010	0.013	0.07	6.56	0.25	0.01	3.0	6
8	CB-7	0.27	0.00	0.14	0.13	Grate	0.0	0.00	0.00	2.31	1.35	0.010	12.00	0.011	0.011	0.013	0.07	5.95	0.30	4.48	3.0	7

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES: Inlet N-Values = 0.016; Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

APPENDIX D
Water Quality Computations

PROJECT NAME: EAGLEVILLE GREEN
DATE: 11/25/2019
CALCS BY: MS
CHECKED BY: RN

P2-1

WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.29
IMPERVIOUS AREA (%) =	48.35%
TOTAL AREA (ac) =	0.60
R =	0.49
WQV (ac-ft) =	0.024
WQV (cf) =	1,049

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.48
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	0.60
GRV (ac-ft) =	0.01
GRV (cf) =	261

EFFECTIVE WQV = 788 cf
0.018 ac-ft

WATER QUALITY VOLUME PROVIDED IN POND = 1,664 cf

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.364
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	91
I_a (in) =	0.198
I_a/P =	0.2
T_c (min) =	
T_c (hr) =	0.0
q_u (cfs/mi^2/in) =	
A (mi^2) =	0.00093
WQF (cfs) =	0.00

P2-2

WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.86
IMPERVIOUS AREA (%) =	75.71%
TOTAL AREA (ac) =	1.14
R =	0.73
WQV (ac-ft) =	0.070
WQV (cf) =	3,030

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.76
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	1.14
GRV (ac-ft) =	0.02
GRV (cf) =	784

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.542
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	95
I_a (in) =	0.105
I_a/P =	0.1
T_c (min) =	6.0
T_c (hr) =	0.1
q_u (cfs/mi^2/in) =	650
A (mi^2) =	0.00178
WQF (cfs) =	0.63

EFFECTIVE WQV =	2,246 cf 0.052 ac-ft

WATER QUALITY VOLUME PROVIDED IN DETENTION = 2,541 cf

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

NOVEMBER 25, 2019

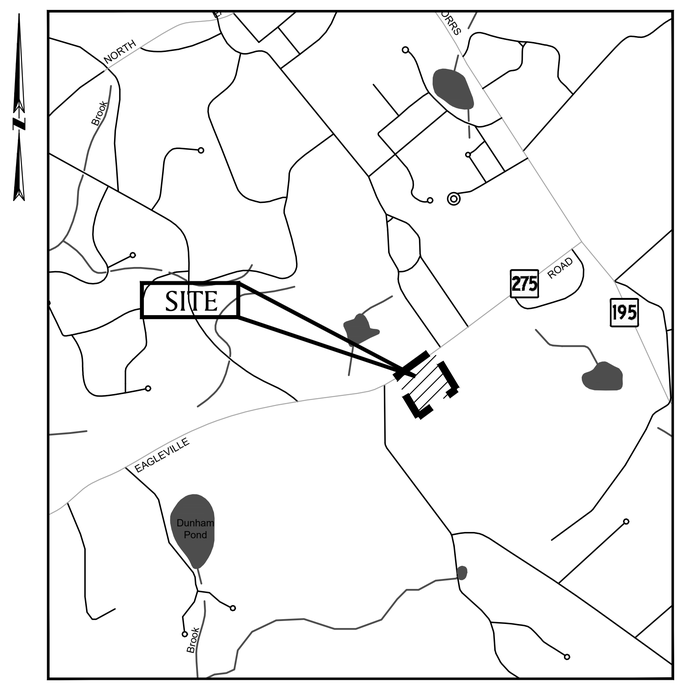
REVISED: FEBRUARY 12, 2020

WETLAND DISTURBANCE = 0
UPLAND DISTANCE = 47,518 SF

ZONING TABLE

ZONE: SER–HO	REQUIRED	EXISTING	PROVIDED
MINIMUM LOT AREA/ACRES	5	5.2	5.2
MINIMUM LOT FRONTAGE (FT)	300	704	704
MINIMUM FRONT SETBACK[1] (FT)	25	44	30
MINIMUM SIDE SETBACK (FT)	5	272	16
MINIMUM STAIR SETBACK (FT)	2	48	2
MINIMUM REAR SETBACK (FT)	5	214	6
MAXIMUM HEIGHT (FT)	45	N/A	33 (WITHOUT CUPOLA) 38'–6" (WITH CUPOLA)
MAXIMUM BUILDING GROUND COVERAGE (%)	20	0.7	14.40
OFF–STREET PARKING	1/UNIT * 42 = 42	N/A	87
ACCESSIBLE PARKING SPACES	4	N/A	8
BUILDABLE AREA (AC)	N/A	N/A	3.2
DWELLING UNITS	–	N/A	42
RESIDENTIAL DENSITY	15	N/A	42/3.2 = 13.125
GROSS FLOOR AREA (SF)	–	N/A	40,198
OPEN SPACE (SF)	–	N/A	103,689

1. MEASURED FROM 30–FOOT HIGHWAY CLEARANCE SETBACK



SITE MAP

500 0 1000 2000 3000 feet

SCALE: 1"=1000'

ISSUED FOR PERMITTING

INDEX OF DRAWINGS

T-1.0	TITLE SHEET
1, 1-2	SITE SURVEYS
EC-1.0	EXISTING CONDITIONS PLAN
OV-1.0	OVERALL SITE IMPROVEMENTS
G-1.0	GENERAL NOTES
C-1.0	EROSION & SEDIMENTATION CONTROL PLAN
C-2.0	SITE PREPARATION PLAN
C-3.0	LAYOUT & MATERIALS PLAN
C-3.1	UCONN FIRE TRUCK TURNING MOVEMENT PLAN
C-4.0	GRADING & DRAINAGE PLAN
C-5.0	UTILITY PLAN
C-5.1	SANITARY SEWER PLAN & PROFILE
C-6.0-6.5	DETAILS
C-7.0	INTERSECTION SIGHT DISTANCE PLAN
L-1.0	PLANTING PLAN
L-1.1	PLANTING RATIO
L-1.2	SHADE STUDY
L-2.0	PHOTOMETRICS PLAN
A1.1	SITE PLAN
A1.1a	SITE INFORMATION

PREPARED FOR:

MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

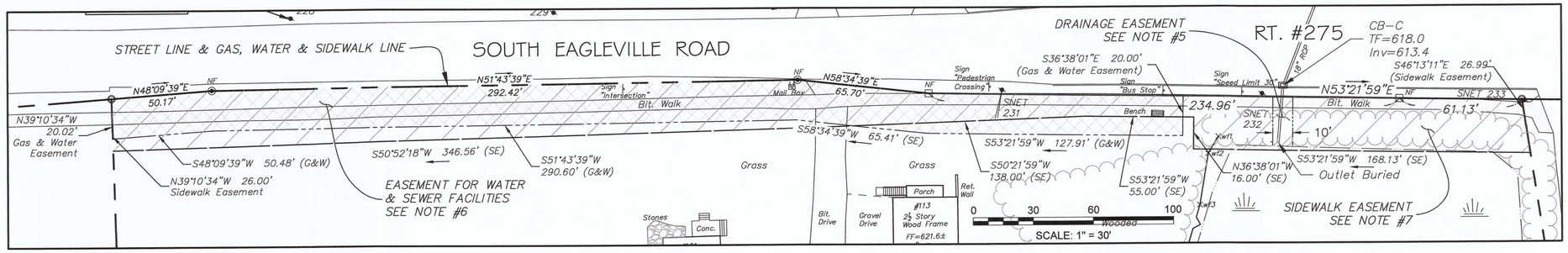
PREPARED BY:

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

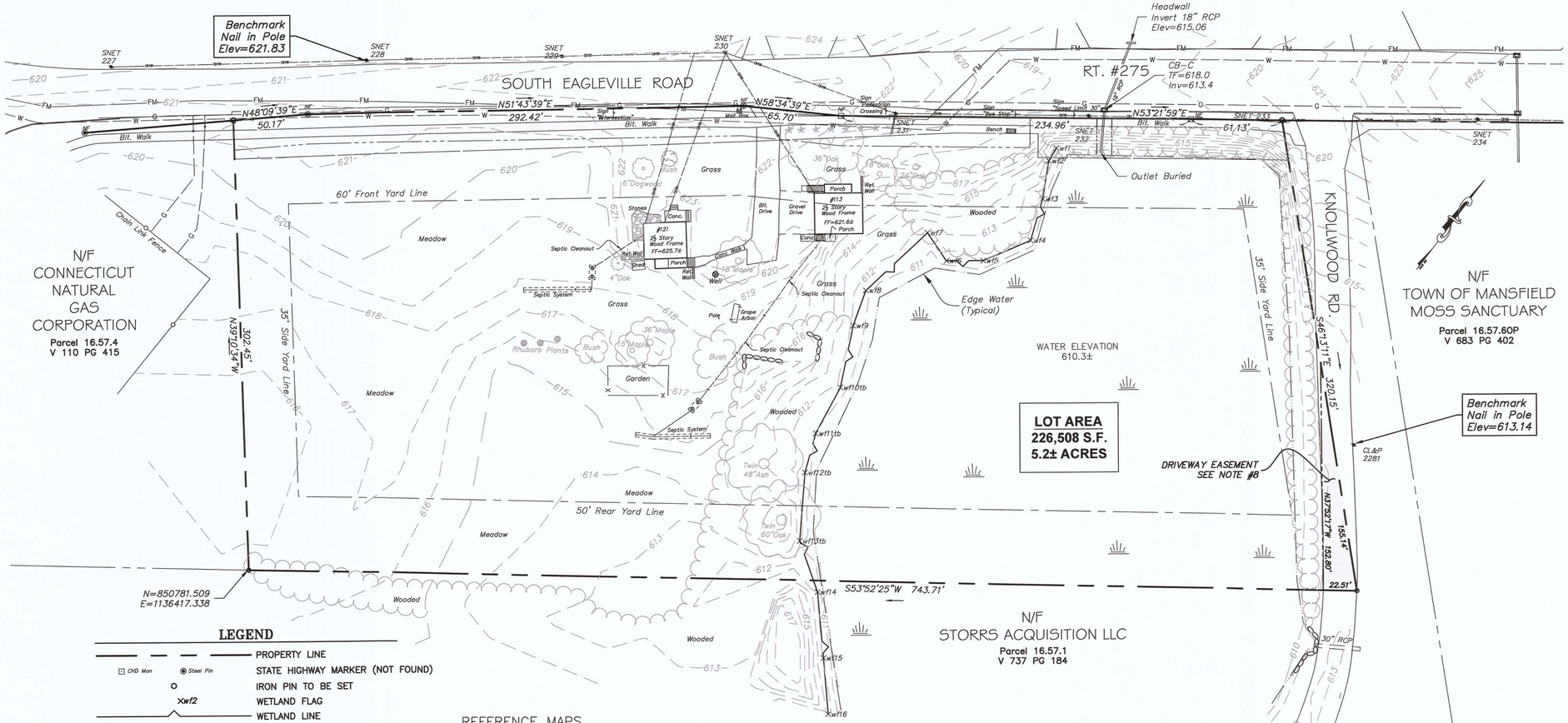
CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

JOB NO: 83749.00 DWG NO: SHEET T–1.0



DETAIL DEPICTING EASEMENTS

Scale 1"=30'



LEGEND

- PROPERTY LINE
- CHD Mon / Steel Pin — STATE HIGHWAY MARKER (NOT FOUND)
- IRON PIN TO BE SET
- Xwf2 — WETLAND FLAG
- WETLAND LINE
- 616 — EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G — GAS MAIN
- W — WATER MAIN
- FM — SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW — OVERHEAD ELECTRIC WIRE
- WELL

REFERENCE MAPS

1. Connecticut State Highway Department Town of Mansfield Route 275 Plan showing highway line on the south side of the South Eagleville Road, between Maple Road and Knollwood Road. July 1969 Scale 1"=40' Furnished by CDOT District 2 Office NOTE: Monumentation set at the time of this survey has apparently been destroyed by subsequent construction projects.

2. Algonquin Gas Transmission Company Boston, Massachusetts Map Showing Land to be Acquired By Connecticut Natural Gas Corp. July 16, 1969 Scale 1"=40' Nathan Rossman, RLS 4797 Book 9 P 14 Mansfield Land Records

3. Town of Mansfield Map Showing Land & Easement Acquired From J. Alfred Warren South Eagleville Road Scale 1"=40' Date: May 1955 Map #318 Mansfield Land Records

4. Map Showing Easement to be Acquired From Elsie Warren, Mildred Chak and Patricia Chak by the Town of Mansfield Scale: 1"=40' October 1979 Grant Meitzler, RLS Map Book 12 Page 92 Mansfield Land Records

5. Map Showing Easement to be Acquired From Mildred Chak and Patricia Chak by the Town of Mansfield Scale 1"=40' Date Feb. 1988 Rev. May 1988 Lenard Engineering, Inc. Map Book 18 Page 23 Mansfield Land Records

6. ALTA/ACSM Land Title Survey Plan Prepared For Knollwood Apartments LLC Of Knollwood Apartment Complex Mansfield, Ct. Scale 1"=100' Date 9-6-1996 Meehan & Goodin Engineers – Surveyors Map Book 26 Page 34 Mansfield Land Records

7. Resurvey Prepared For The University Of Connecticut South Eagleville Road & Storrs Road Mansfield, Connecticut. Scale 1"=100' Date Oct. 2005 Rev. 6/04/07 Design Professionals, Civil Engineers, Planners, Surveyors, Landscape Architects

8. Water And Sewer Services Mansfield Retirement Community, Mansfield Connecticut South Eagleville Road Sta. 11+00 to Sta. 25+70 sheets #2 & #3, Scale As Noted Date: Aug. 1979 Rev. As Built 10-22-80 Loureiro Engineering Associates.

SURVEY MAPS

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

2. THIS SURVEY IS A FIRST SURVEY. NO PREVIOUS PROPERTY SURVEY OF THE PARCEL WAS FOUND. MULTIPLE EASEMENT SURVEYS WERE FOUND. THIS PLAN REPRESENTS A COMPILATION OF EASEMENT PLANS AND PROPERTY SURVEYS OF ADJACENT PROPERTIES AS LISTED.

3. BEARINGS ON THIS PLAN ARE BASED ON NAD 1983 COORDINATES. ELEVATIONS ARE BASED ON NAVD 1988 DATUM. EXISTING GROUND CONTOURS ARE 1' INTERVAL.

4. CURRENT OWNER OF THIS PROPERTY IS THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION 309 MAPLE ROAD, STORRS, CT. 06268. PARCEL 16.57.5 DEED VOL 764 PG 555 MANSFIELD LAND RECORDS AREA=226,508 S.F. 5.2± ACRES

5. THIS PARCEL IS SUBJECT TO A DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT VOL 83 PG 71 REF. MAP #3 AREA=180± S.F.

6. THIS PARCEL IS SUBJECT TO A WATER & SEWER LINE EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 176 PG 200 REF. MAP #4. AREA=10,696± S.F.

7. THIS PARCEL IS SUBJECT TO A SIDEWALK EASEMENT IN FAVOR OF THE TOWN OF MANSFIELD VOL 271 PG 255 REF. MAP #5. AREA=16,250± S.F.

8. THIS PARCEL IS SUBJECT TO A ROADWAY EASEMENT IN FAVOR OF KNOLLWOOD APARTMENTS VOL 378 PG 285 REF. MAP #6. AREA=1,655± S.F.

9. PROPERTY IS LOCATED IN RURAL AGRICULTURAL RESIDENCE 90 ZONE (RAR-90) BUILDING #113 S EAGLEVILLE ROAD IS NON-CONFORMING TO FRONT YARD REQUIREMENT, BUILT PRIOR TO PRESENT ZONING REGULATIONS.

10. PROPERTY IS NOT LOCATED IN FLOOD ZONE – FIRM MAP TOWN OF MANSFIELD CONNECTICUT TOLLAND COUNTY COMMUNITY-PANEL NUMBER 090128 0005 C EFFECTIVE JAN. 2, 1981

11. WETLANDS WERE DELINEATED ON JUNE 8, 2016 BY IAN T. COLE, REGISTERED SOIL SCIENTIST/PROFESSIONAL WETLAND SCIENTIST #2006. WETLAND FLAGS LOCATED AS SHOWN BY LENARD ENGINEERING, INC. JUNE 13, 2016.

12. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON WERE HAVE BEEN COMPILED IN PART FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION CALL-BEFORE-YOU-DIG 1-800-922-4455.

13. THIS MAP & SURVEY CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY AND CLASS T-2 TOPOGRAPHIC SURVEY ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

KEVIN L. DaROS #13291 DATE 6/27/16

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Basemap

Drawing Scale: 1"=40'
Drawing date: June 27, 2016

Rev.	Date	Revision	By

PROPERTY/BOUNDARY SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD

STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
19 Midstate Drive AUBURN, MA (508) 721-7000
140 Willow Street WINSTED, CT (860) 379-9669
2210 Main Street GLASTONBURY, CT (860) 659-3100

Drawing #: 1

Job #: 16-358

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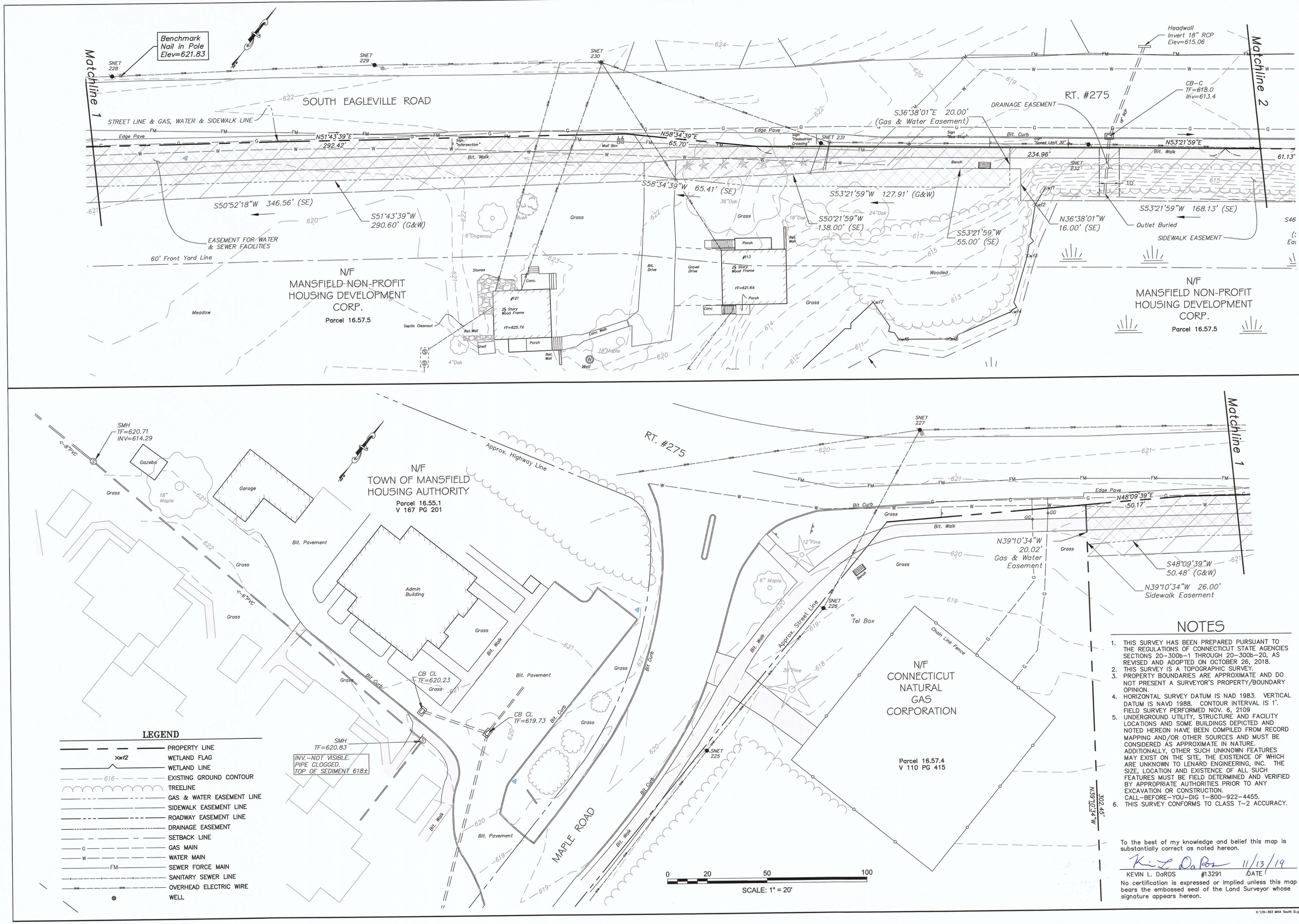

LEGEND

- PROPERTY LINE
- Xwf2 WETLAND FLAG
- WETLAND LINE
- 616 EXISTING GROUND CONTOUR
- TREELINE
- GAS & WATER EASEMENT LINE
- SIDEWALK EASEMENT LINE
- ROADWAY EASEMENT LINE
- DRAINAGE EASEMENT
- SETBACK LINE
- G GAS MAIN
- W WATER MAIN
- FM SEWER FORCE MAIN
- SANITARY SEWER LINE
- OHW OVERHEAD ELECTRIC WIRE
- WELL

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20, AS REVISED AND ADOPTED ON OCTOBER 26, 2018.
2. THIS SURVEY IS A TOPOGRAPHIC SURVEY.
3. PROPERTY BOUNDARIES ARE APPROXIMATE AND DO NOT PRESENT A SURVEYOR'S PROPERTY/BOUNDARY OPINION.
4. HORIZONTAL SURVEY DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988. CONTOUR INTERVAL IS 1'. FIELD SURVEY PERFORMED NOV. 6, 2109
5. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS AND SOME BUILDINGS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED FROM RECORD MAPPING AND/OR OTHER SOURCES AND MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH UNKNOWN FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO LENARD ENGINEERING, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY APPROPRIATE AUTHORITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION. CALL-BEFORE-YOU-DIG 1-800-922-4455.
6. THIS SURVEY CONFORMS TO CLASS T-2 ACCURACY.

To the best of my knowledge and belief this map is substantially correct as noted hereon.

Kevin L. DaRos 11/13/19

KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

113-121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street GLASTONBURY, CT (860) 659-3100
140 Willow Street WINSTED, CT (860) 379-6669
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 1 of 2

Job #: 19-404

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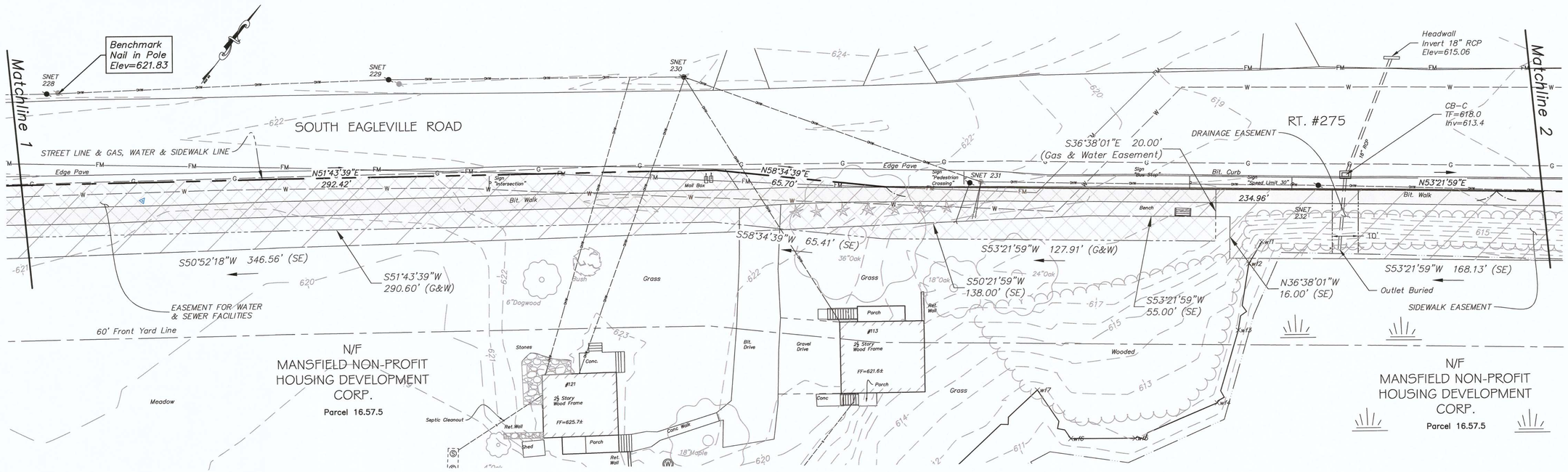

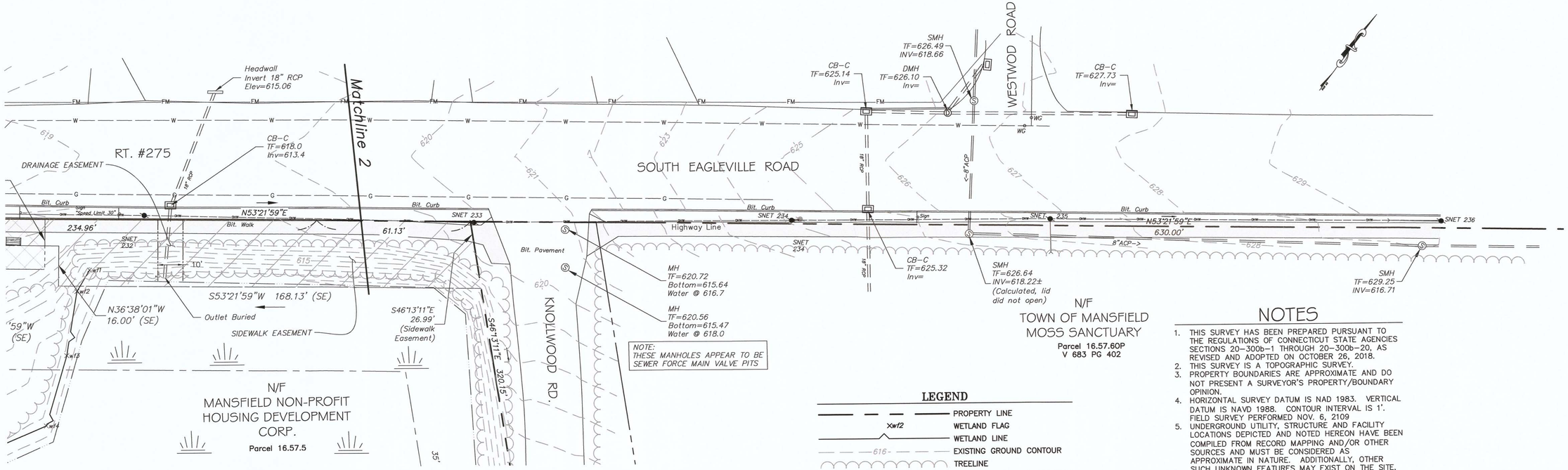

LEGEND

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To the best of my knowledge and belief this map is substantially correct as noted hereon.

Kevin L. DaRos 11/13/19
KEVIN L. DaROS #13291 DATE

No certification is expressed or implied unless this map bears the embossed seal of the Land Surveyor whose signature appears hereon.

Reference Map:
Property Boundary Survey Prepared for Mansfield Non–Profit Housing Development Corp. 113–121 South Eagleville Road, Storrs, Connecticut. Date June 24, 2016 Scale: 1"=40' Class A–2 and Class T–2 Accuracy Lenard Engineering, Inc. 2210 Main St. Glastonbury, Connecticut

0 20 50 100
SCALE: 1" = 20'

Designed By: KLD
Drawn By: KLD
Checked By: PM
CAD File: Survey2

Drawing Scale: 1"=20'

Rev.	Date	Revision	By

Drawing date: Nov. 13, 2019

TOPOGRAPHIC SURVEY

PREPARED FOR

MANSFIELD NON–PROFIT HOUSING DEVELOPMENT CORP.

113–121 SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street, GLASTONBURY, CT (860) 659-3100
140 Willow Street, WINSTED, CT (860) 379-8689
19 Midstate Drive AUBURN, MA (508) 721-7600

Drawing #: 2 OF 2

Job #: 19–404

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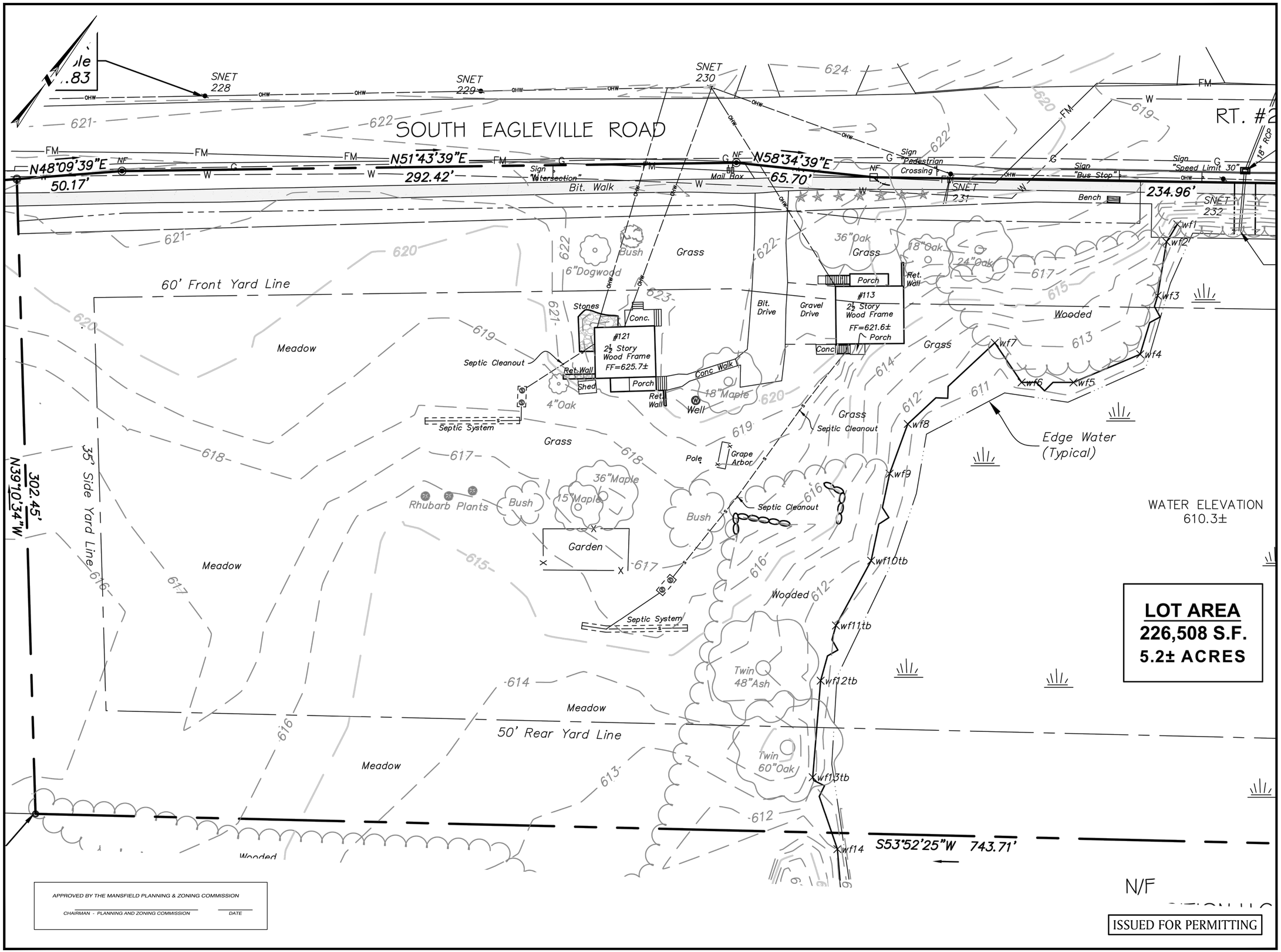

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING CONDITIONS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
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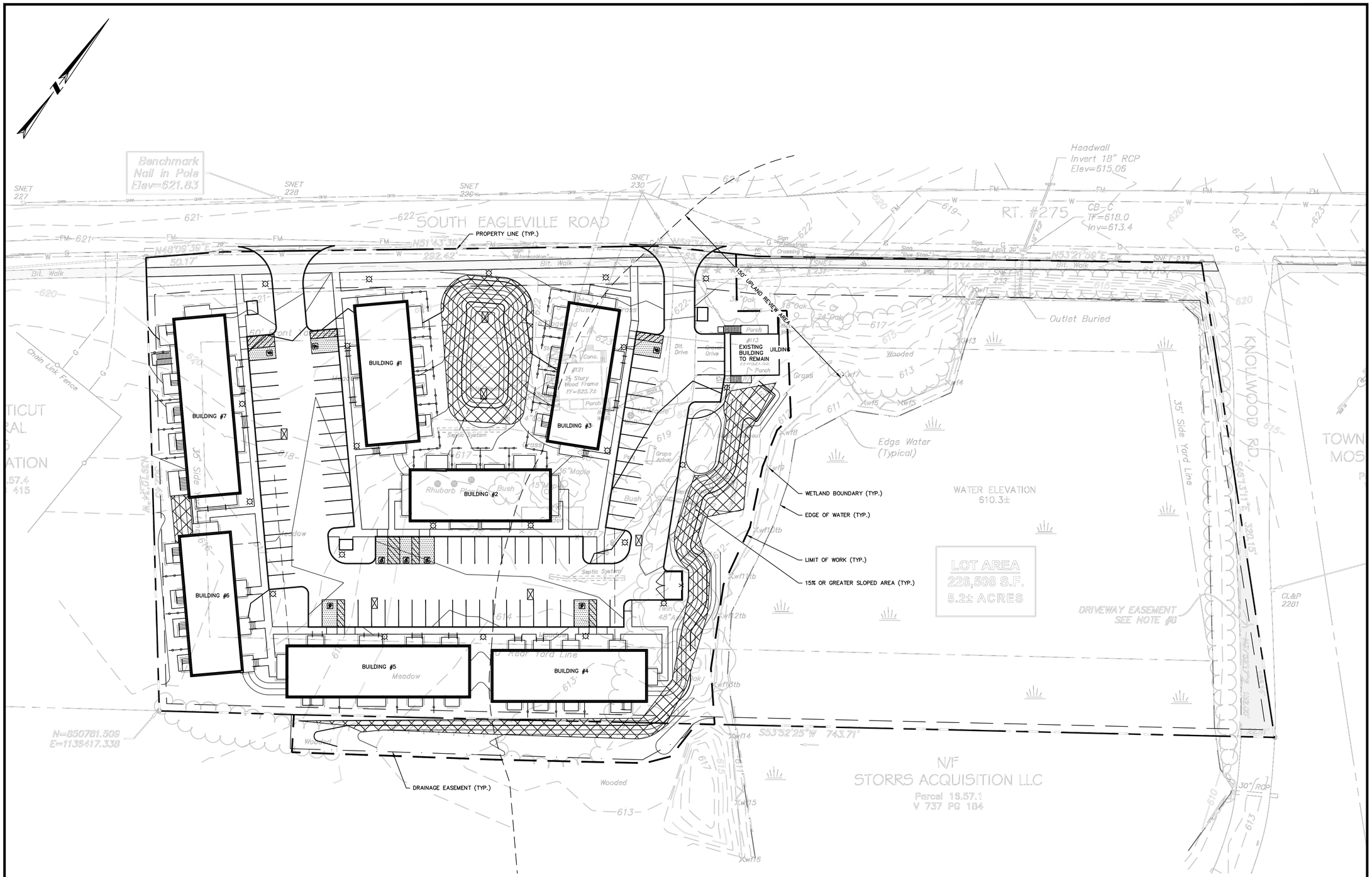
FILE: 8374900-EC.DWG
DWG. NO:
JOB. NO: 83749.00

EC-1.0



PROPOSED STEEP SLOPES–15% OR GREATER = 0.25 ACRES
WETLAND AREA = 1.75 ACRES
EARTHWORK FILL = 6,868 CUBIC YARDS
EARTHWORK CUT = 591 CUBIC YARDS
NET EARTHWORK = 6,277 CUBIC YARDS

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

OVERALL SITE IMPROVEMENTS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900–SITE.DWG
DWG. NO:
JOB. NO: 83749.00

OV-1.0

EROSION AND SEDIMENTATION CONTROL NOTES:

1. DO NOT PROCEED WITH THE WORK UNTIL ALL E&S CONTROL MEASURES ARE IN-PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. THE MEASURES SPECIFIED ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER OR THE ENGINEER.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2002 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR HAY BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO ENTER ANY STORMWATER SYSTEM OR EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER. SHOULD THE CONSTRUCTION ENTRANCE FAIL TO PREVENT THE TRACKING OF SOILS OR SEDIMENT OFF OF THE PROJECT SITE, A WASHING RACK SHALL BE INSTALLED ALONG WITH APPROPRIATE MEASURES TO COLLECT RESULTING WASTEWATER.
13. DRAINAGE STRUCTURE FILTER INSERTS SHALL BE INSTALLED AND CLEANED/CHANGED PER THE MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL BE INSTALLED COMPLETELY AROUND INLETS OF EXISTING AND PROPOSED DRAINAGE STRUCTURES SUCH THAT NO RUNOFF IS ALLOWED TO ENTER DRAINAGE SYSTEMS WITHOUT FILTERING THROUGH THE DEVICE.

SUGGESTED CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER AND ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. FOLLOWING THE ENGINEER'S APPROVAL OF INSTALLED E&S CONTROLS, COMMENCE CONSTRUCTION OPERATIONS.
5. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.

NOTE: THE CONTRACTOR MAY MODIFY THE SUGGESTED CONSTRUCTION SEQUENCE INDICATED ABOVE, PROVIDED A REVISED SEQUENCE IS SUBMITTED FOR REVIEW AND APPROVED BY THE OWNER AND ENGINEER.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALES	REPAIR DAMAGED AREAS WITHIN 24 HRS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY
HAY BALES/ SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED, REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TARP TEMPORARY STOCKPILES	ENSURE TARP IS SECURED OVER STOCKPILE AT THE END OF EACH DAY	DAILY
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY

PERCOLATION TEST RESULTS:

PERCOLATION TESTS PERFORMED ON 11/21/2019 BY BSC GROUP
SEE SHEET C-4.0 FOR LOCATIONS OF PERCOLATION TESTS

PT-A
DEPTH: ~30"
PRESOAK @ 11:30 AM
DRY @ 12:33 PM
BEGIN TEST @ 12:35 PM

TIME	DEPTH	CHANGE
12:35	9.5"	–
12:36	13.5"	4"
12:37	16.5"	3"
12:38	18.75"	2.25"
12:39	20.25"	1.5"
12:40	21.25"	1"
12:41	22.25"	1"
12:42	15.75"	REFILL
12:43	18"	2.25"
12:44	20"	2"
12:45	21.5"	1.5"
12:46	22.25"	0.75"
12:47	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) = 30 IN/HR

PT-B
DEPTH: ~30"
PRESOAK @ 12:00 PM
BEGIN TEST @ 2:00 PM

TIME	DEPTH	CHANGE
2:00	3"	–
2:05	5.25"	2.25"
2:10	7.25"	2"
2:15	8.75"	1.5"
2:20	10.25"	1.5"
2:25	11.50"	1.25"
2:30	12.50"	1"
2:35	13.50"	1"
2:40	14.50"	1"
2:45	15.50"	1"

EFFECTIVE INFILTRATION RATE (FS=2) = 6 IN/HR

PT-C
DEPTH: ~30"
PRESOAK @ 12:10 PM
DRY @ 12:54 PM
BEGIN TEST @ 1:00 PM

TIME	DEPTH	CHANGE
1:00	5.5"	–
1:01	7.25"	1.75"
1:02	8.25"	1"
1:03	9"	0.75"
1:04	9.75"	0.75"
1:06	11"	1.25"
1:08	12"	1"
1:10	13"	1"
1:12	14"	1"
1:14	14.75"	0.75"
1:16	15.50"	0.75"
1:18	16"	0.50"
1:20	16.5"	0.50"
1:22	17.25"	0.75"
1:24	DRY	–

EFFECTIVE INFILTRATION RATE (FS=2) =7.5 IN/HR

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION *DATE*

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL CONSTRUCTION FENCING AND WARNING SIGNS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION. INSTALL CONSTRUCTION FENCING AT THE LIMIT OF WORK.
8. PRIOR TO THE TERMINATION, ABANDONMENT, OR REMOVAL OF ANY UTILITY, VERIFY THAT APPLICABLE NOTIFICATIONS HAVE BEEN MADE TO THE UTILITY OWNER/OPERATOR AND THAT THE UTILITY HAS BEEN PROPERLY TERMINATED, CAPPED, OR PLUGGED AS REQUIRED.
9. PROTECT ALL IMPROVEMENTS NOT INCLUDED IN THE SCOPE OF SITE DEMOLITION. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
10. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
11. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.

UTILITY NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.
3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.
4. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
5. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
6. ALL LIGHTING ELECTRICAL SUPPLIES SHALL BE INSTALLED IN MINIMUM 1-INCH PVC CONDUIT PER APPLICABLE SPECIFICATIONS. PLASTIC MARKING TAPE SHALL BE USED ON ALL CONDUIT RUNS.
7. THE ROUTING OF LIGHTING ELECTRICAL SUPPLIES SHOWN IS CONCEPTUAL. CONTRACTOR SHALL DETERMINE THE SPECIFIC ROUTING OF ALL LIGHTING SYSTEMS BASED ON THE ACTUAL LOCATION OF TIE-IN(S) TO EXISTING LIGHTING FEEDS AND AS REQUIRED TO AVOID CONFLICTS WITH OTHER CONSTRUCTION OR SUBSURFACE FACILITIES. PRIOR TO INSTALLATION, PROVIDE SHOP DRAWING SHOWING THE ROUTING OF ALL CONDUIT, LOCATIONS OF HANDHOLES, AND DETAILS OF TIE-INS TO EXISTING SYSTEM.
8. CONDUIT: RIGID PVC ELECTRICAL CONDUIT, NEMA TC 2 AND UL -651; FITTINGS AND CONDUIT BODIES: PVC TO MATCH CONDUIT, NEMA TC-3. PRIMER/SOLVENT CEMENT: ASTM F656/ASTM D2564; PULL ROPE: 3/8-INCH DOUBLE BRAIDED, LOW STRETCH POLYESTER COMPOSITE ROPE.
9. TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
10. ALL UNDERGROUND TELECOMMUNICATIONS AND ELECTRIC CONDUITS SHALL BE ENCASED IN CONCRETE EXCEPT BRANCH DISTRIBUTION FOR LIGHTING. WORK CONCRETE TO REMOVE ALL TRAPPED AIR AND INSURE EACH CONDUIT IS COMPLETELY SURROUNDED BY A MINIMUM 2" OF CONCRETE. ALLOW CONCRETE TO CURE FOR AT LEAST ONE HOUR BEFORE BACKFILLING.
11. FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
12. SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
13. ALL WORK ASSOCIATED WITH FIRE PROTECTION AND DOMESTIC WATER SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LOCAL WATER UTILITY.
14. ALL WORK ASSOCIATED WITH ELECTRICAL SERVICE SHALL CONFORM TO THE STANDARDS OF EVERSOURCE. IF THERE ARE ANY CONFLICTS BETWEEN THE REQUIREMENTS INDICATED AND EVERSOURCE STANDARDS, EVERSOURCE STANDARDS SHALL PREVAIL.
15. ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL PROVIDER.
16. INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.
17. ALTHOUGH NOT SHOWN ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

LAYOUT AND MATERIALS NOTES:

1. NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
8. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
9. ALL CURBING IS BITUMINOUS CONCRETE UNLESS OTHERWISE INDICATED. WHERE CURBING IS CALLED-FOR ADJACENT TO SIDEWALKS, IT SHALL BE MONOLITHIC CONCRETE CURB AND SIDEWALK PER APPLICABLE DETAILS.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. CONSTRUCTION JOINTS: REINFORCEMENT SHALL NOT CONTINUE THROUGH CONSTRUCTION JOINTS.
14. PRIOR TO INITIATION OF CONCRETE FLATWORK, SUBMIT PROPOSED CONSTRUCTION JOINT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. COORDINATE SUCH PLAN WITH THE JOINT PATTERNS DEPICTED ON THE DRAWINGS.
15. UNLESS OTHERWISE SPECIFIED, MISCELLANEOUS CONCRETE PADS SHALL BE CONSTRUCTED PER SIDEWALK DETAIL.
16. ALL NON-ACCESSIBLE PARKING SPACES ARE 9' X 18'. VERIFY OVERALL LAYOUT DIMENSIONS BASED ON THESE DIMENSIONS AND THE NUMBER OF SPACES INDICATED. FIELD-ADJUST OVERALL LAYOUT DIMENSION IN CONCERT WITH THE ENGINEER IF REQUIRED.
17. DIMENSIONS INDICATED ARE TO FACE OF CURB, PAVEMENT EDGE, EDGE OR CENTERLINE OF IMPROVEMENT, OR AS OTHERWISE NOTED.
18. PROVIDE FOR THE LAYOUT AND STAKING/MARKING OF THE PROPOSED LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING FURNISHINGS. OBTAIN ENGINEER'S APPROVAL OF THE LAYOUT PRIOR TO PROCEEDING WITH THE WORK.
19. UNLESS OTHERWISE INDICATED, LINES ARE PARALLEL OR PERPENDICULAR TO LINE FROM WHICH THEY ARE MEASURED.

PLANTING NOTES:

1. THE CONTRACTOR SHALL CLEARLY MARK LIMITS OF CLEARING AND LIMITS OF TREE REMOVAL, SELECTIVE PRUNING AND THINNING FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO ANY CLEARING OPERATIONS. ALL TREE WORK SHALL BE EXECUTED BY A LICENSED ARBORIST.
2. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT EXISTING VEGETATION THAT IS DESIGNATED, "TO REMAIN".
3. ALL TREES TO BE SAVED SHALL BE PROTECTED. SEE SPECIFICATION FOR TREE PROTECTION REQUIREMENTS.
4. EXISTING ON SITE TOPSOIL MAY BE REUSED UPON APPROVAL BY THE LANDSCAPE ARCHITECT. EXISTING TOPSOIL SHALL BE TESTED AND AMENDED FOR NUTRIENTS, ORGANIC MATTER, PH, AND SOIL TEXTURE. – SEE SPECIFICATIONS.
5. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE AND GRADE TO AN EVEN SURFACE. – SEE SPECIFICATIONS.
6. COMPLETE QUANTITIES OF PLANTS FOR EACH AREA TO BE AVAILABLE ON SITE AT THE TIME OF PLANTING FOR FIELD LAYOUT BY OWNER'S REPRESENTATIVE. NO PARTIAL LAYOUT AND PLANTING OF AREAS WILL BE ACCEPTABLE.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. – SEE SPECIFICATION FOR DETAILED REQUIREMENTS.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL IN OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. NO SUBSTITUTION OF PLANT SPECIES OR VARIETIES WILL BE ACCEPTABLE WITHOUT LANDSCAPE ARCHITECT'S WRITTEN APPROVAL.
9. OWNER'S REPRESENTATIVE TO APPROVE PLANT MATERIAL PRIOR TO DELIVERY TO SITE AND AGAIN AT THE PROJECT SITE PRIOR TO PLANTING.
10. VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER OR HIS REPRESENTATIVE.
11. NO PLANTING SHALL OCCUR PRIOR TO ACCEPTANCE OF FINAL GRADING.
12. INSTALL PLANTS WITH ROOT FLARES FLUSH WITH GRADE. IMMEDIATELY REPLANT PLANTS WHICH SETTLE OUT OF PLUMB OR BELOW FINISH GRADE.
13. SEE SPECIFICATIONS FOR PLANTING MAINTENANCE AND GUARANTEE REQUIREMENTS.
14. THE LANDSCAPE ARCHITECT OR ENGINEER RESERVES THE RIGHT TO ADJUST FINAL GRADES IN THE FIELD TO SAVE EXISTING VEGETATION.
15. PLANT QUANTITIES NOTED IN THE PLANT SCHEDULE ARE APPROXIMATE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING AND INSTALLATION OF ALL PLANT MATERIALS NOTED ON THE PLANTING PLAN.
16. CAUTION SHALL BE USED NOT TO EXTEND MULCH LAYER ABOVE SOIL LEVEL AT TRUNKS/STEMS OF INSTALLED PLANT MATERIAL.
17. PROVIDE FOUR (4) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS AND CONTINUOUS MULCH BED AROUND SHRUB, PERENNIAL AND GROUNDCOVER PLANTINGS, UNLESS OTHERWISE NOTED. DO NOT MOUND SOIL OR MULCH AT TRUNKS.
18. ALL PLANTING SHALL BE DONE UNDER FULL SUPERVISION OF CERTIFIED ARBORIST, NURSERYMAN, OR LICENSED LANDSCAPE ARCHITECT.
19. LOOSE OR CRACKED ROOTBALLS SHALL BE REJECTED.

SEWER DESIGN NOTES:

1. SEWER DESIGN IN ACCORDANCE WITH CT PUBLIC HEALTH CODE ON-SITE SEWAGE DISPOSAL REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS (SSDS), REVISED JANUARY 2018.
2. TOTAL NUMBER OF PROPOSED BEDROOMS = 73
3. PER SECTION IV.A, DESIGN FLOW = 150 GPD/BEDROOM
4. DESIGN FLOW = 150 GPD X 73 BEDROOMS = 10,950 GPD
5. MINIMUM PUMP CHAMBER SIZE = 10,950 GPD X 4 HOURS = 1,825 GALLONS
6. PUMP CHAMBER SIZE USED = 2,000 GALLONS

GRADING AND DRAINAGE NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK.
6. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF PROPOSED IMPROVEMENTS, DIMENSIONS, AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
7. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
8. NO TOPSOIL IS TO BE REMOVED FROM THE SITE.
9. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
10. THE CROSS-SLOPE OF ANY SIDEWALK, WALKWAY, OR OTHER PEDESTRIAN SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
11. ACCESSIBLE ROUTES SHALL COMPLY WITH CONNECTICUT BUILDING CODE. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 (5%). THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
12. RAMPS SHALL COMPLY WITH CT BUILDING CODE, REF. 2012 IBC SECTION 1010 AND ICC/ANSI A117.1 2009 CHAPTER 4, SECTION 405.
13. VERIFY ALL GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
14. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
15. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
16. UNLESS OTHERWISE INDICATED, BLEND TRANSITIONS IN ELEVATION BETWEEN NEW WORK AND AREAS TO REMAIN AT A MAXIMUM SLOPE OF 1V:2H AND RESTORE WITH FOUR (4) INCHES OF LOAM AND SEED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED. COORDINATE WITH ENGINEER IF DIMENSIONAL CONSTRAINTS REQUIRE STEEPER SLOPES.
17. UPON REACHING PROPOSED SUBGRADE ELEVATIONS WITHIN THE FIELD, ENGINEER WILL REVIEW SUBGRADE PRIOR TO INSTALLATION OF DRAINAGE SYSTEM. SEE SPECIFICATION SECTION 31 2310 – EARTHWORK.
18. ALL CATCH BASINS AND SHALLOW DROP INLETS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C". ALL OTHERS SHALL BE CONNDOT TYPE "C-L"..
19. ALL UNDERDRAINS SHALL BE 6-INCH HDPE. SEE SPECIFICATIONS.
20. THE TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) OF ALL UTILITY STRUCTURES THAT ARE TO REMAIN SHALL BE ADJUSTED TO MATCH FINAL GRADE IN A FLUSH CONDITION. ALL NEW UTILITY STRUCTURES SHALL BE INSTALLED WITH TOPS, RIMS, FRAMES, GRATES, AND COVERS (AS APPLICABLE) TO FINAL GRADE IN A FLUSH CONDITION.
21. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM, INCLUDING NEW WORK AND EXISTING WORK THAT REMAINS OR IS INCORPORATED INTO THE NEW SYSTEM.

OPERATION AND MAINTENANCE PLAN:

THE FOLLOWING MAINTENANCE PROCEDURES SHALL BE FOLLOWED BY THE CONTRACTOR FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION MEASURES AND STORMWATER TREATMENT SYSTEMS INSTALLED DURING THE CONSTRUCTION PERIOD:

- DUST CONTROL: MOISTEN DISTURBED SOIL AREAS WITH WATER PERIODICALLY, OR USE A NON-ASPHALTIC SOIL TACIFIER TO MINIMIZE DUST.
- TEMPORARY SEEDING: INSPECT WEEKLY AND WITHIN 24 HOURS OF A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- PERMANENT SEEDING: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. CONTINUE INSPECTION UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- TEMPORARY SOIL PROTECTION: INSPECT SEEDED AREAS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- TEMPORARY EROSION CONTROL MAT: INSPECT MATS WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE.
- CATCH BASIN FILTER INSERTS: INSPECT THE FABRIC AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. CHECK THE FABRIC FOR STRUCTURAL SOUNDNESS (I.E. TEARS), PROPER ANCHORING/ALIGNMENT WITHIN THE GRATE AND ABILITY TO DRAIN RUNOFF (I.E. PERCENT OF CLOGGING BY SEDIMENT). REMOVE THE SEDIMENT EVERY WEEK, OR SOONER IF PONDING IS EXCESSIVE. EACH TIME THE SEDIMENT IS REMOVED, REPLACE THE SECTION OF FABRIC REMOVED WITH A NEW SECTION. DO NOT REMOVE THE SEDIMENT AND REUSE THE SAME SECTION OF FABRIC.
- HAY BALE/ SILT FENCE BARRIER: INSPECT THE BARRIER AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM GENERATING A DISCHARGE. FOR DEWATERING OPERATIONS, INSPECT FREQUENTLY BEFORE, DURING AND AFTER PUMPING OPERATIONS. REMOVE THE SEDIMENT DEPOSITS WHEN THE DEPTH REACHES ONE HALF THE BARRIER HEIGHTS. REPAIR OR REPLACE A BARRIER WITHIN 24 HOURS OF OBSERVED FAILURE. MAINTAIN THE BARRIER UNTIL THE CONTRIBUTING DISTURBED AREA IS STABILIZED.
- CONSTRUCTION ENTRANCE/EXIT PAD: MAINTAIN THE PAD IN A CONDITION THAT WILL PREVENT TRACKING AND WASHING OF SEDIMENT ONTO PAVED SURFACES. PLACE ADDITIONAL CLEAN GRAVEL ON TOP OF GRAVEL THAT HAS BECOME SILTED, OR REMOVE THE SILTED GRAVEL AND REPLACE THE GRAVEL TO THE DEPTH REMOVED WITH CLEAN GRAVEL, AS CONDITIONS WARRANT. REMOVE IMMEDIATELY ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED AT THE END OF EACH DAY BY HAND SWEEPING OR SWEEPER TRUCK.
- DEWATERING SETTLING BASIN (IF USED): INSPECT THE BASIN AT LEAST EVERY TWO HOURS DURING PERIODS OF USE. REMOVE ACCUMULATED SEDIMENTS WHEN THE VOLUME EQUALS ONE HALF THE PROVIDED STORAGE VOLUME.
- EXISTING CATCH BASINS AND SUMPS: INSPECT THE SEDIMENT TRAPS AS SPECIFIED IN "F" ABOVE. AFTER FINAL REMOVAL OF THE SEDIMENT TRAPS AT THE END OF CONSTRUCTION, CLEAN THE SUMP OF ALL SILT AND DEBRIS.
- NEW CATCH BASINS AND SUMPS: AS NEW CATCH BASINS ARE CONSTRUCTED, A FILTER INSERT SHALL BE INSTALLED IN THE UNIT AND A SEDIMENT BARRIER INSTALLED AROUND THE GRATE. INSPECT THE FILTER AND BARRIER WEEKLY AND WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE. AFTER STABILIZATION OF THE DRAINAGE AREA ENTERING THE CATCH BASIN, REMOVE THE FILTER AND BARRIER AND CLEAN THE BASIN SUMP OF ALL SILT AND DEBRIS.
- TEMPORARY STOCKPILES: INSPECT TEMPORARY STOCKPILES AT THE END OF EACH WORKDAY TO ENSURE THAT TARPS ARE IN PLACE AND SECURED. TEMPORARY STOCKPILES THAT ARE EXPECTED TO BE INACTIVE FOR MORE THAN 30 DAYS SHOULD BE TEMPORARILY SEEDED (SEE ABOVE).

AFTER CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE OWNER, IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO MAINTAIN ALL DRAINAGE STRUCTURES. IN ADDITION, THE FOLLOWING INSPECTION AND MAINTENANCE GUIDELINES SHALL BE THE RESPONSIBILITY OF THE OWNER, OR THE OWNER'S REPRESENTATIVE, BEGINNING THE FIRST YEAR PERIOD FOLLOWING CONSTRUCTION COMPLETION AND ACCEPTANCE, AND SHALL BE FOLLOWED EACH YEAR THEREAFTER:

- PARKING LOT AND SITE CLEANUP: INSPECT ON A REGULAR BASIS NOT TO EXCEED WEEKLY FOR LITTER AND DEBRIS.
- PARKING LOT AND DRIVEWAY SWEEPING: AT LEAST TWICE A YEAR, WITH THE FIRST OCCURRING AS SOON AS POSSIBLE AFTER SNOWMELT AND THE SECOND NOT LESS THAN 90 DAYS FOLLOWING THE FIRST.
- CATCH BASIN SUMPS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED WHEN THE SUMP IS ONE HALF FULL OF SILT AND / OR DEBRIS.
- HYDRODYNAMIC SEPARATOR: SHALL BE INSPECTED AND CLEANED ANNUALLY.
- LANDSCAPED AREAS: INSPECT SEMI-ANNUALLY FOR EROSION OR DYING VEGETATION. REPAIR AND STABILIZE ANY BARE OR ERODED AREAS AND REPLACE VEGETATION AS SOON AS POSSIBLE.
- ABOVE-GROUND DETENTION BASIN: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS. SHALL BE MOWED ANNUALLY.
- UNDERGROUND DETENTION SYSTEMS: SHALL BE INSPECTED SEMI-ANNUALLY AND CLEANED OF ANY SEDIMENT AND/OR DEBRIS.

DEEP TEST PIT RESULTS:

DEEP TESTS PERFORMED ON 02/08/2020 BY BSC GROUP. SEE SHEET C-4.0 FOR LOCATIONS OF DEEP TESTS.

TH-1 (APPROX. GROUND EL. 619.00±)
0-8" TOPSOIL
8-40" BROWN SANDY LOAM
40-100" BROWN SAND WITH SOME FINES

GW @ 100"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 610.67±

TH-2 (APPROX. GROUND EL. 615.75±)
0-12" TOPSOIL
12-20" BROWN SAND
20-72" GRAY GLACIAL TILL

GW @ 54"
MOTTLING @ 48"
RESTRICTIVE LAYER @ EL. 611.75±

TH-3 (APPROX. GROUND EL. 614.75±)
0-12" TOPSOIL
12-60" BROWN SILTY SAND

GW @ 60"
MOTTLING @ 38"
RESTRICTIVE LAYER @ EL. 611.58±

TH-4 (APPROX. GROUND EL. 616.50±)
0-12" TOPSOIL
12-36" BROWN SAND
36-84" GRAY GLACIAL TILL

POSSIBLE LEDGE @ 84"
GW @ 84"
RESTRICTIVE LAYER @ EL. 609.50±

TH-5 (APPROX. GROUND EL. 618.50±)
0-12" TOPSOIL
12-24" BROWN SANDY LOAM
24-84" BROWN FINE SAND

GW @ 80"
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.83±

TH-6 (APPROX. GROUND EL. 619.75±)
0-12" TOPSOIL
12-40" BROWN SAND WITH FINES
40-96" GRAY FINE SAND

NO GW OBSERVED
NO MOTTLING
RESTRICTIVE LAYER @ EL. 611.75±

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · ROBERT S. NEWTON · No. 20662 · LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

GENERAL NOTES

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-NOTES.DWG
DWG. NO: G-1.0
JOB. NO: 83749.00

PEDESTRIAN ACCESS ROUTE AVAILABLE FOR USE

12' X 50' CONSTRUCTION ENTRANCE

CONCRETE WASHOUT AREA

PROVIDE SILT FENCE AROUND DETENTION BASIN

CLEAN DEBRIS AND ACCUMULATED SEDIMENT FROM DETENTION BASIN PRIOR TO DEMOBILIZATION FROM SITE

PEDESTRIAN ACCESS ROUTE AVAILABLE FOR USE

12' X 50' CONSTRUCTION ENTRANCE

CONCRETE WASHOUT AREA

150' UPLAND REVIEW AREA

EXISTING BUILDING TO REMAIN

EDGE OF WATER (TYP.)

WETLAND BOUNDARY (TYP.)

LIMIT OF WORK (TYP.)

DOUBLE ROW SILT FENCE (TYP. ADJACENT TO WETLAND)

CATCH BASIN FILTER INSERT (TYP.)

PERIMETER SILT FENCE

TEMPORARY STOCKPILE LOCATION

TEMPORARY EROSION CONTROL MATTING (TYP. OF 2)

WATER ELEVATION 610.3±

LOT AREA
226,508 S.F.
5.2± ACRES

NOTE: FOR EROSION & SEDIMENTATION CONTROL NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- SILT FENCE
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- CONSTRUCTION ENTRANCE
- CATCH BASIN FILTER INSERT
- CONCRETE WASHOUT AREA
- TEMPORARY STOCKPILE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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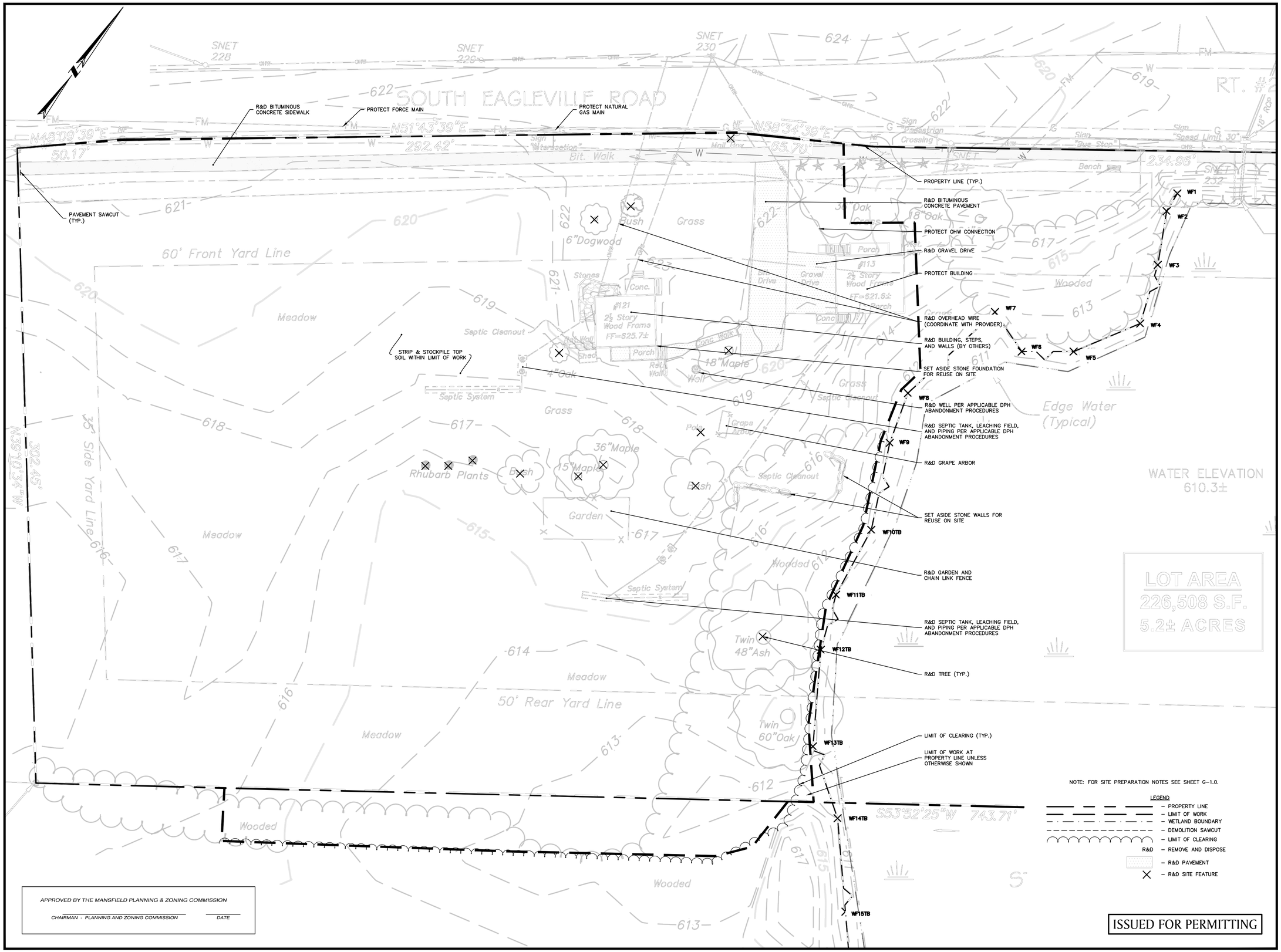
SCALE: 1" = 20'

0 10 20 40 FEET

FILE: 8374900-ES.DWG

DWG. NO: C-1.0

JOB. NO: 83749.00



EAGLEVILLE GREEN - NOVEMBER 25, 2019

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SITE PREPARATION PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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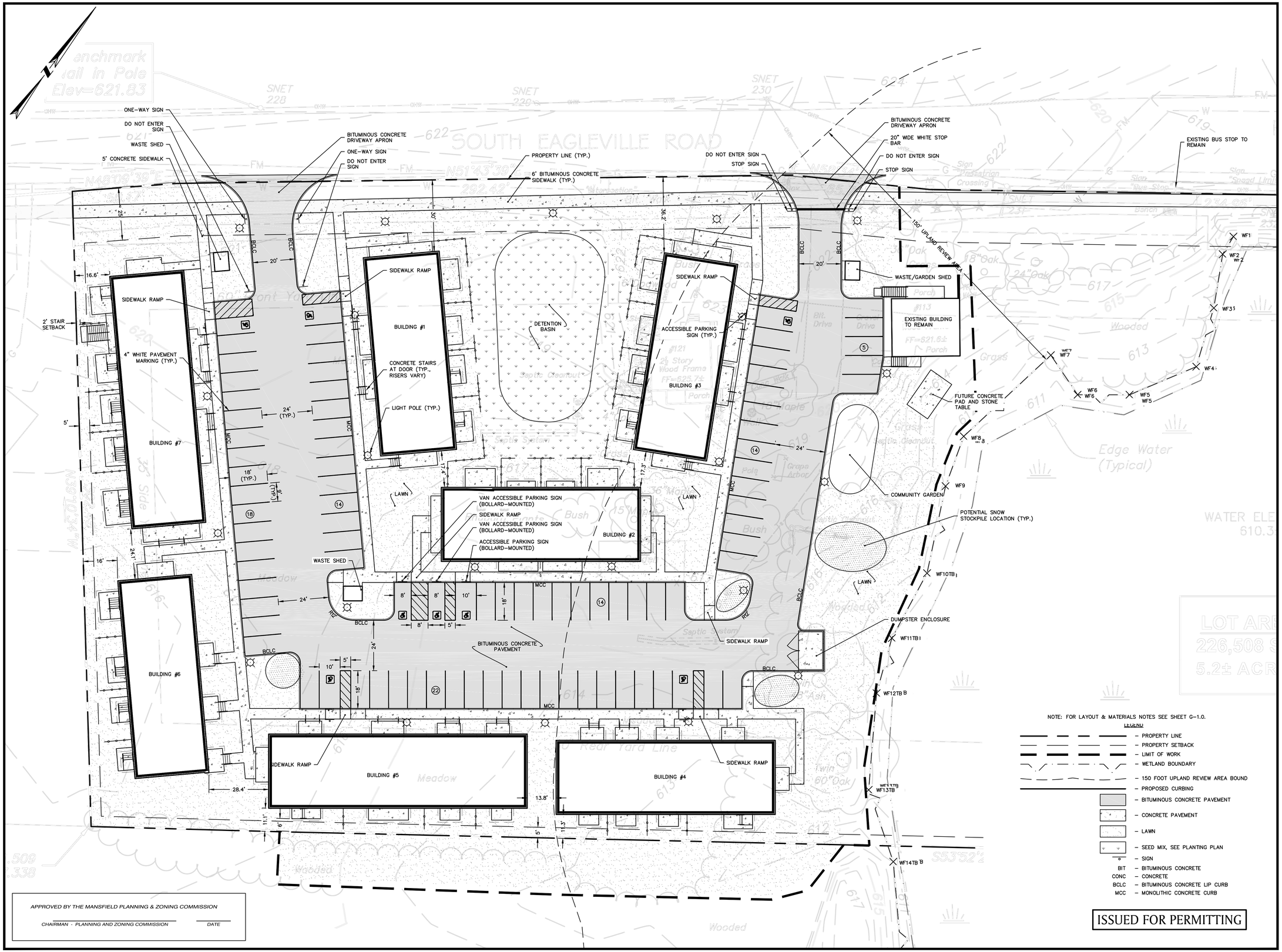
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PREP.DWG
DWG. NO: C-2.0
JOB. NO: 83749.00



NOTE: FOR LAYOUT & MATERIALS NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- PROPERTY SETBACK
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUND
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

LAYOUT & MATERIALS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

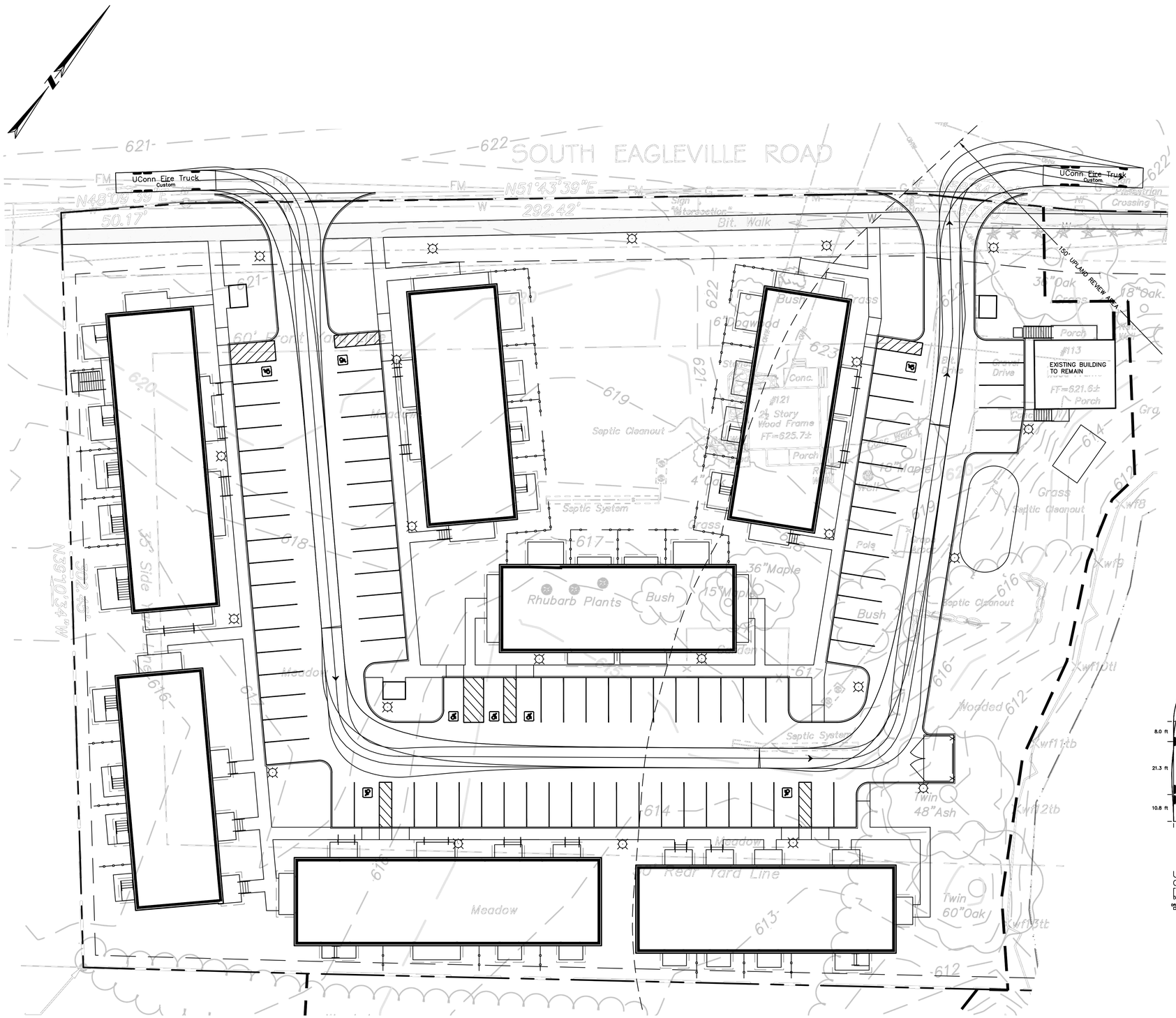
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

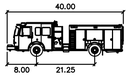
© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-LM.DWG
DWG. NO:
JOB. NO: 83749.00

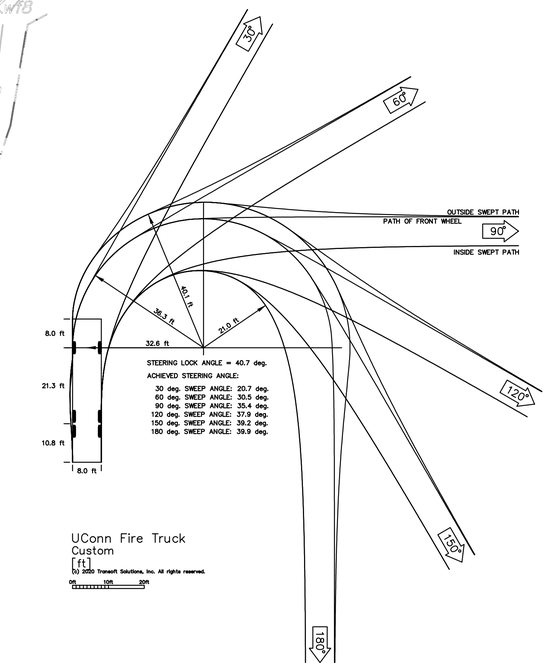
C-3.0





UConn Fire Truck

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 40.7



ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWBURY No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT S. NEWBURY, P.E., L.A. No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UCONN FIRE TRUCK TURNING MOVEMENT PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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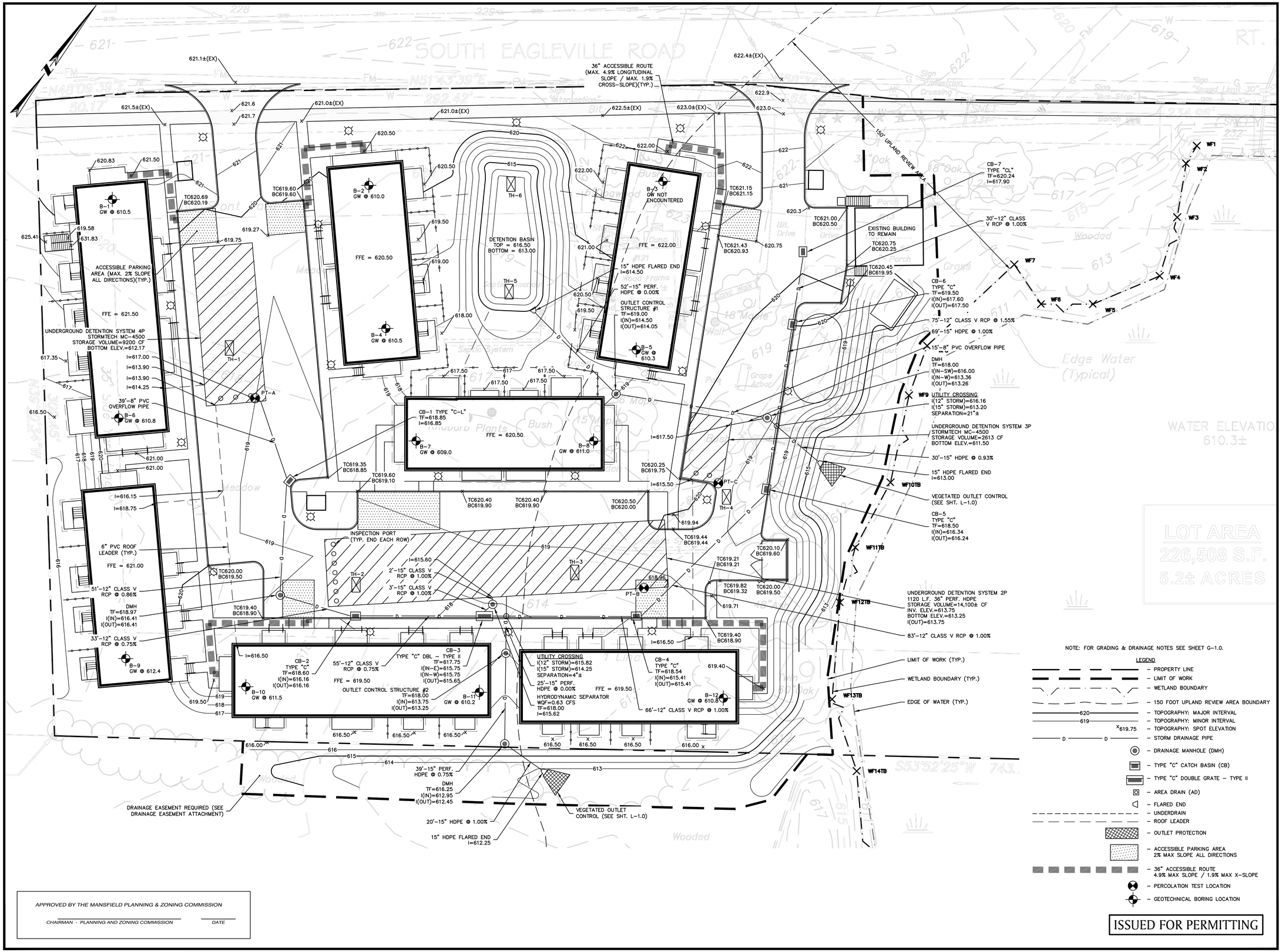
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900–AUTOTURN.DWG
DWG. NO:
JOB. NO: 83749.00

C-3.1



NOTE: FOR GRADING & DRAINAGE NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- 620 — TOPOGRAPHY: MAJOR INTERVAL
- 619 — TOPOGRAPHY: MINOR INTERVAL
- x619.75 — TOPOGRAPHY: SPOT ELEVATION
- D — D — STORM DRAINAGE PIPE
- DRAINAGE MANHOLE (DMH)
- TYPE "C" CATCH BASIN (CB)
- TYPE "C" DOUBLE GRATE – TYPE II
- AREA DRAIN (AD)
- FLARED END
- UNDERDRAIN
- ROOF LEADER
- OUTLET PROTECTION
- ACCESSIBLE PARKING AREA 2% MAX SLOPE ALL DIRECTIONS
- 36" ACCESSIBLE ROUTE 4.9% MAX SLOPE / 1.9% MAX X-SLOPE
- PERCOLATION TEST LOCATION
- GEOTECHNICAL BORING LOCATION

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

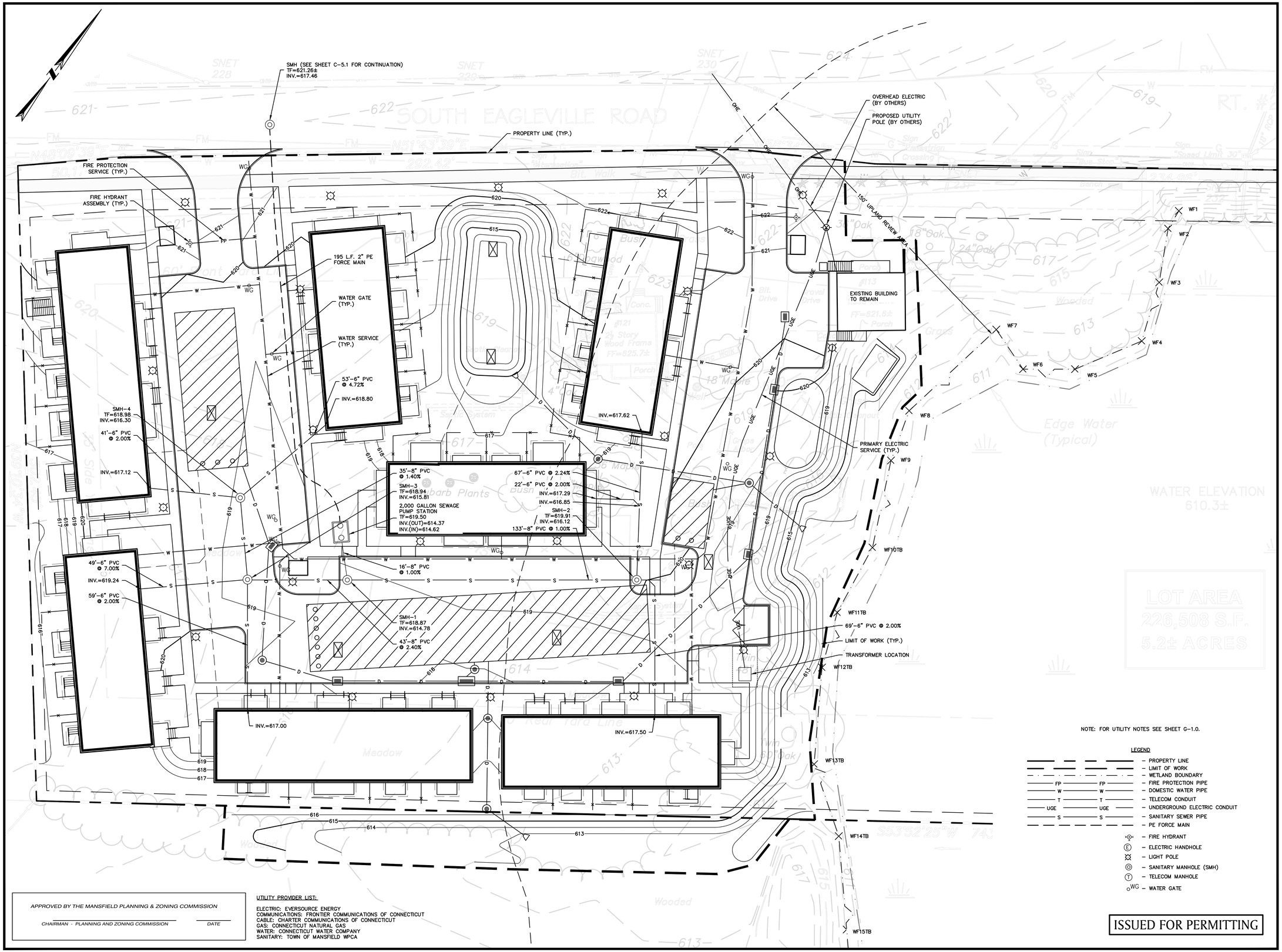
© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019



NOTE: FOR UTILITY NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- FIRE PROTECTION PIPE
- DOMESTIC WATER PIPE
- TELECOM CONDUIT
- UNDERGROUND ELECTRIC CONDUIT
- SANITARY SEWER PIPE
- PE FORCE MAIN
- FIRE HYDRANT
- ELECTRIC HANDHOLE
- LIGHT POLE
- SANITARY MANHOLE (SMH)
- TELECOM MANHOLE
- WATER GATE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

UTILITY PROVIDER LIST:

ELECTRIC: EVERSOURCE ENERGY
COMMUNICATIONS: FRONTIER COMMUNICATIONS OF CONNECTICUT
CABLE: CHARTER COMMUNICATIONS OF CONNECTICUT
GAS: CONNECTICUT NATURAL GAS
WATER: CONNECTICUT WATER COMPANY
SANITARY: TOWN OF MANSFIELD WPCA

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

UTILITY PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

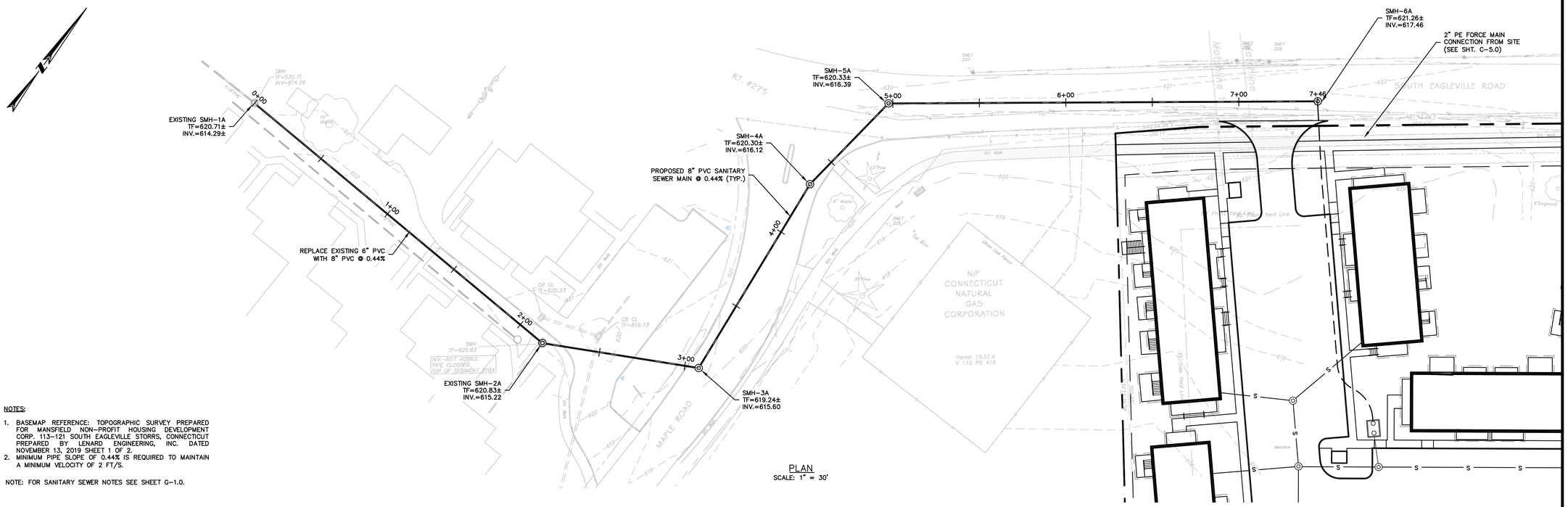
BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-UT.DWG
DWG. NO:
JOB. NO: 83749.00

C-5.0



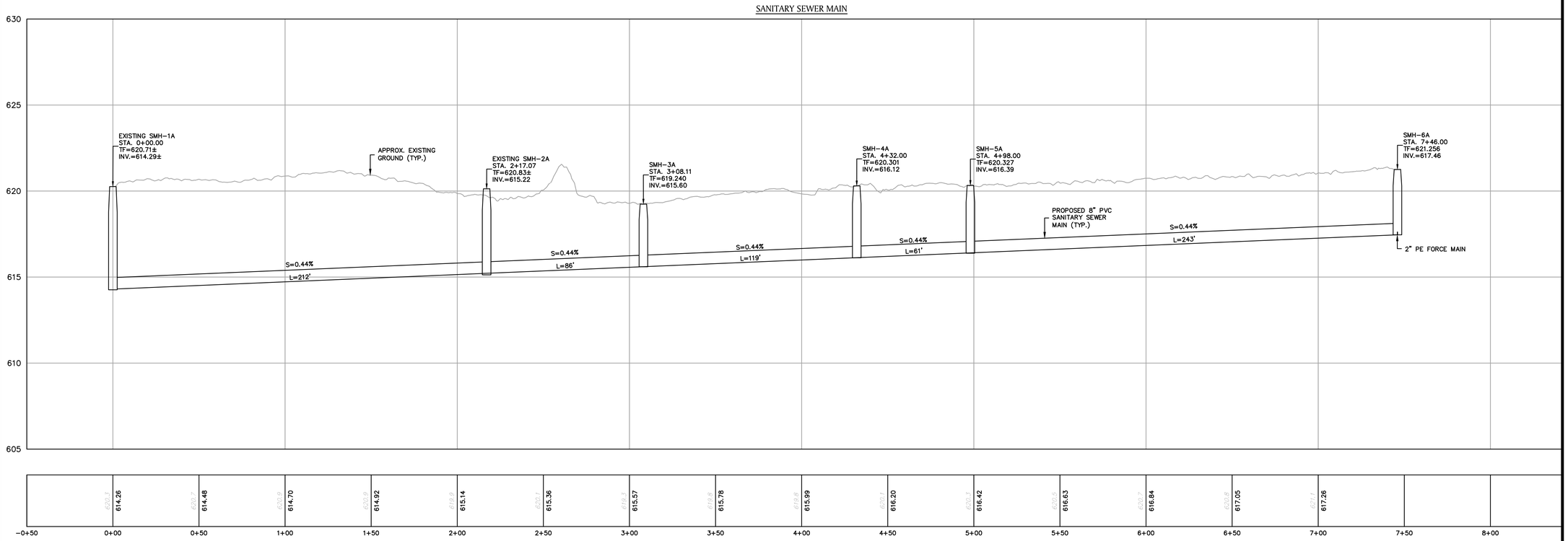
PLAN
SCALE: 1" = 30'

NOTES:

1. BASEMAP REFERENCE: TOPOGRAPHIC SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE STORRS, CONNECTICUT PREPARED BY LENARD ENGINEERING, INC. DATED NOVEMBER 13, 2019 SHEET 1 OF 2.
2. MINIMUM PIPE SLOPE OF 0.44% IS REQUIRED TO MAINTAIN A MINIMUM VELOCITY OF 2 FT/S.

NOTE: FOR SANITARY SEWER NOTES SEE SHEET G-1.0.

SANITARY SEWER MAIN



PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
ROBERT S. NEWTON
No. 20662
LICENSED
PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SANITARY SEWER PLAN & PROFILE

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

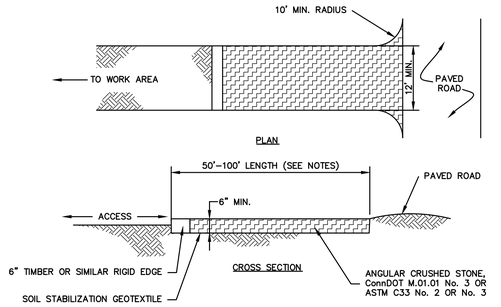
PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-SEWER_ALT2.DWG
DWG. NO: C-5.1
JOB. NO: 83749.00

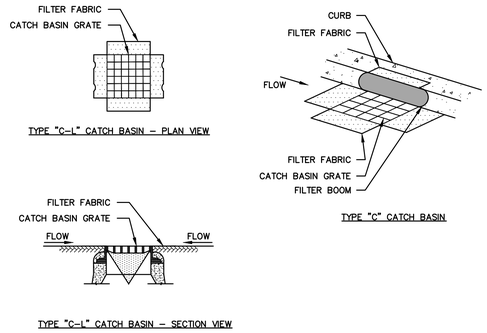


NOTES:

1. REMOVE TOPSOIL AND ORGANICS PRIOR TO CRUSHED STONE PLACEMENT.
2. INSTALL SUB-BASE OF FREE DRAINING BACKFILL OR ROAD STABILIZATION GEOTEXTILE AS NECESSARY ON UNSTABLE SOILS.
3. LENGTH SHALL BE 50 FOOT MINIMUM. WHERE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, LENGTH SHALL BE 100 FOOT MINIMUM.
4. IF THE GRADE OF THE CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND IT EXCEEDS 2% SLOPE, CONSTRUCT ENTRANCE AT LEASE 15 FEET FROM ITS ENTRANCE ONTO THE PAVED SURFACE WHILE DIVERTING RUN-OFF WATER TO A SETTLING OR FILTERING AREA.
5. CONSTRUCT ANY DRAINAGE AND SETTLING FACILITIES REQUIRED TO ACCOMMODATE VEHICLE WASHING OPERATIONS. DIVERT ALL WASH WATER AWAY FROM ENTRANCE TO THE SETTLING AREA.
6. MAINTAIN ENTRANCE IS A CONDITION THAT WILL PREVENT WASHING OF SEDIMENT ONTO PAVED SURFACES.

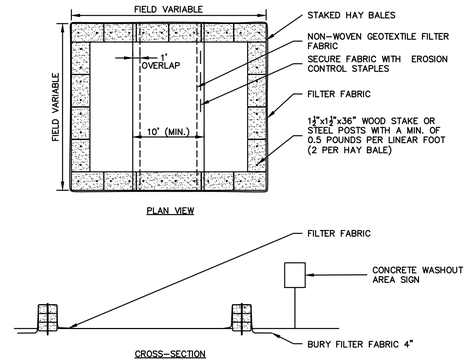
CONSTRUCTION ENTRANCE

SCALE: NONE
EC-101-CT



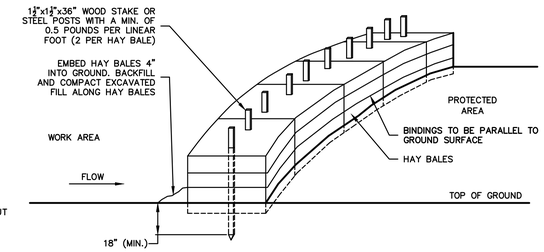
GENERAL NOTES

1. PROVIDE INLET PROTECTION TO ALL EXISTING CATCH BASINS IN THE VICINITY OF CONSTRUCTION. PROTECT NEW CATCH BASINS AS THEY ARE CONSTRUCTED.
2. GRATE TO BE PLACED OVER FILTER FABRIC.



NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

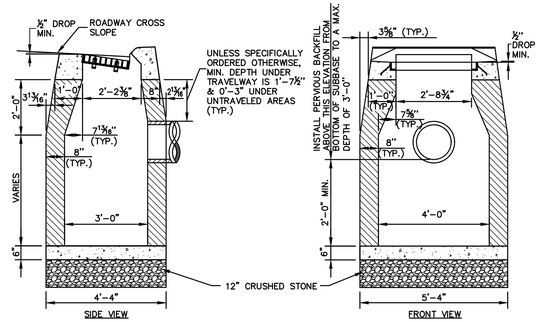


GENERAL NOTES

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

CATCH BASIN FILTER INSERT

SCALE: NONE

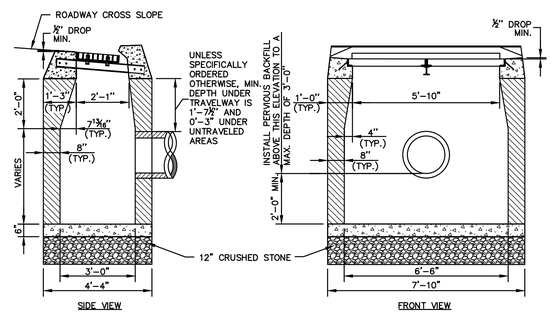


GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TEMPORARY CONCRETE WASHOUT AREA

SCALE: NONE



GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
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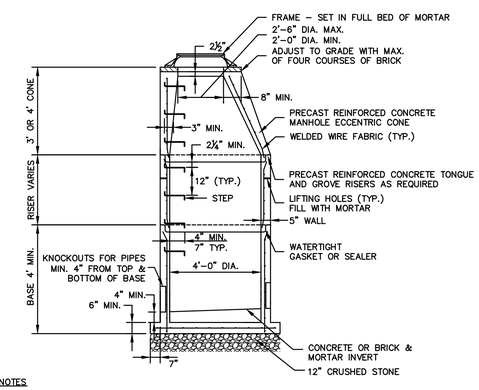
5. USE APPROPRIATE CONCRETE TOP FOR CURBING SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.
6. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

STRAW BALE BARRIER

SCALE: NONE
EC-106-CT

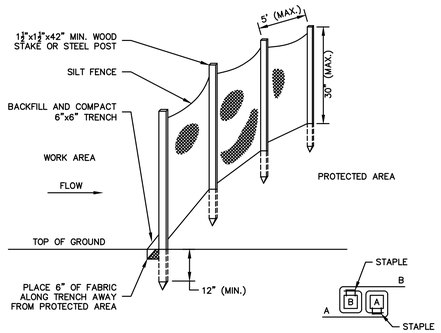


GENERAL NOTES

1. 5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' OR 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.
2. FRAME DIAMETER OF 3'-3" WITH 4" FLANGE MUST BE USED WHEN THE TOP DIA. OF THE PRECAST CONE IS LESS THAN 3'-6". ALL OTHER FRAME DIMENSIONS ARE TO REMAIN THE SAME.
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

SILT FENCE BARRIER

SCALE: NONE
EC-107

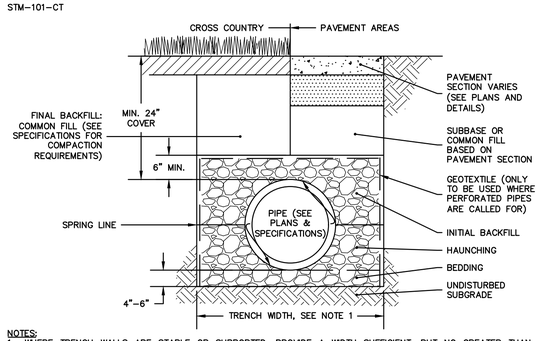


GENERAL NOTES

1. FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE OP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
2. FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

TYPE "C" CATCH BASIN

SCALE: NONE
STM-101-CT



NOTES:

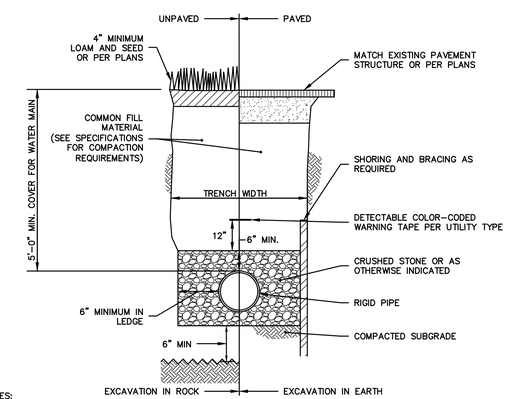
1. WHERE TRENCH WALLS ARE STABLE OR SUPPORTED, PROVIDE A WIDTH SUFFICIENT, BUT NO GREATER THAN NECESSARY, TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER EMBEDMENT MATERIALS. UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER, THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED IN THE PIPE ZONE. MINIMUM WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER THE PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES.
2. WHERE PERFORATED PIPES ARE CALLED-FOR, BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6 CRUSHED STONE SHALL MEET THE REQUIREMENTS OF FORM 816 M.08.
3. WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL PER THE SPECIFICATIONS. AS AN ALTERNATIVE, AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL UNDER SOME CIRCUMSTANCES.
4. BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CONNDOT NO. 6, NO. 67, OR NO. 8 AGGREGATE OR OTHER MATERIALS MEETING THE REQUIREMENTS OF ASTM D2321 FOR CLASS IA, IB, II, OR III UNLESS OTHERWISE INDICATED BY THE PIPE MANUFACTURER.

TYPICAL TRENCH SECTION - THERMOPLASTIC DRAINAGE PIPE

SCALE: NONE

TYPE "C" CATCH BASIN DOUBLE GRATE TYPE II

SCALE: NONE
STM-106-CT



NOTES:

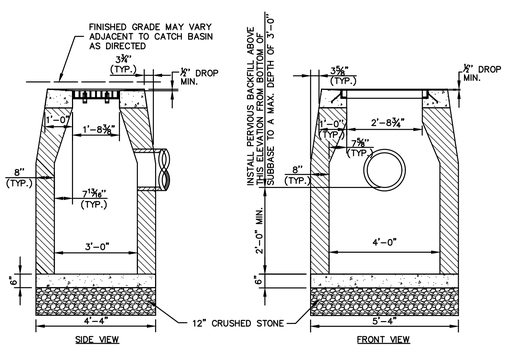
1. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
2. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.

TYPICAL PIPE TRENCH - RIGID PIPE

SCALE: NONE

STORM DRAINAGE MANHOLE

SCALE: NONE
STM-109-CT



GENERAL NOTES

1. FRAME AND GRATE SHALL BE CONSTRUCTED PER SPECIFICATIONS.
2. ALL FACES OF STRUCTURES IN CONTACT WITH PAVEMENT SHALL BE COVERED WITH TAR PAPER OR APPROVED EQUAL.
3. TO CONVEY SUBSURFACE DRAINAGE, OPENINGS SHALL BE FORMED IN THE FOUR WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF PERVIOUS BACKFILL.
4. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (12" THICKNESS WILL START AFTER THE FIRST 10').
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF F'c = 4000 PSI SHALL BE OBTAINED PRIOR TO SHIPPING.

TYPE "C-L" CATCH BASIN

SCALE: NONE
STM-102-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

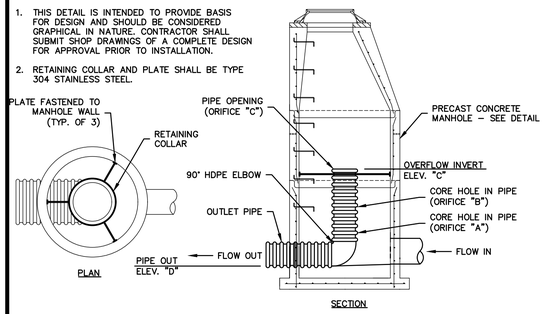
C-6.0

OUTLET CONTROL STRUCTURE	ORIFICE "A"		ORIFICE "B"		ELEV. "C"		ELEV. "D"	
	DIA.	INV.	DIA.	INV.	DIA.	INV.	DIA.	INV.
#1	6"	614.30'	N/A	N/A	15"	616.00'	15"	614.05'
#2	6"	614.72'	8"	615.33'	10"	617.00'	15"	613.25'

NOTES:
1. DESIGN TO CONFORM TO H-20 LOADING.
2. THE INLET PIPE CONNECTING THE OUTLET CONTROL STRUCTURE TO THE DETENTION SYSTEM SHALL BE SET AT 0.00% SLOPE.

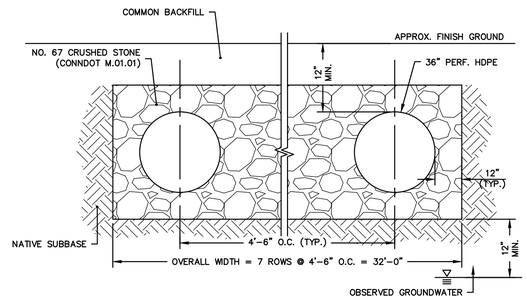
GENERAL NOTES

1. THIS DETAIL IS INTENDED TO PROVIDE BASIS FOR DESIGN AND SHOULD BE CONSIDERED GRAPHICAL IN NATURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF A COMPLETE DESIGN FOR APPROVAL PRIOR TO INSTALLATION.
2. RETAINING COLLAR AND PLATE SHALL BE TYPE 304 STAINLESS STEEL.



OUTLET CONTROL STRUCTURE

SCALE: NONE

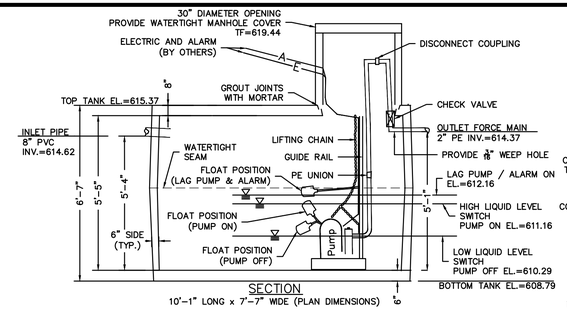


NOTE:

1. PERFORATED PIPE SHALL BE WRAPPED IN GEOTEXTILE FABRIC.

36" PIPE DETENTION SECTION

SCALE: NONE

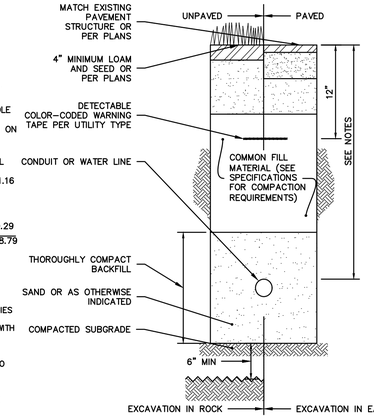


PRECAST CONCRETE PUMP CHAMBER NOTES:
1. TANK SIZE = 4 HOURS OF STORAGE = 10,950 GPD x 4 Hrs = 1,825. USE 2,000.
2. TANK DESIGN SHALL CONFORM TO LATEST ASTM DESIGNATION C913.
3. JOINT SEALANT: BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-198. MEETS FEDERAL SPECIFICATIONS SS-S-0021 (210-A).
4. PIPE INLET AND OUTLET LOCATIONS SHALL HAVE POLYLOK II PIPE SEALS.
5. TANK EXTERIOR SHALL BE COATED WITH BAY OIL, "EBONY" OR APPROVED EQUAL.
6. THE TANK INTERIOR SHALL BE COATED WITH FLOROK EPOXY OR EQUAL.
7. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
8. CONCRETE COMPRESSIVE STRENGHT – 4,000 PSI AT 28 DAYS.
9. METHOD OF MANUFACTURE: WET CAST.
10. SECTION SHALL BE MONOLITHIC.
11. CHAMBER TO BE DESIGNED FOR HS-20 LOADING.

PUMP DESIGN NOTES:
1. PUMPS SHALL BE LIBERTY PUMPS MODEL LSG200-SERIES SEWAGE GRINDER PUMP OR APPROVED EQUAL.
2. PUMP CYCLE DESIGNED FOR 10 MINUTES AT 50 GPM WITH 3 FEET OF STATIC HEAD.
3. PUMPS TO BE CONFIGURED WITH DUPLEX ELECTRICAL ALTERNATOR CONTROL PANEL.
4. ALL PUMPS AND APPURTENANCES TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS AND APPLICABLE BUILDING ELECTRICAL CODES.
5. PUMP AND FORCE MAIN SHALL BE CONFIGURED SUCH THAT THE FORCE MAIN WILL COMPLETELY DRAIN ONCE THE PUMP SHUTS OFF.
6. ROUTING OF ELECTRIC AND ALARM TO BE BY OTHERS.
7. CONTRACTOR SHALL SUBMIT A COMPLETE PUMPING SYSTEM SHOP DRAWING PACKAGE FOR REVIEW BY THE ENGINEER.

2,000 GALLON SEWAGE PUMP STATION

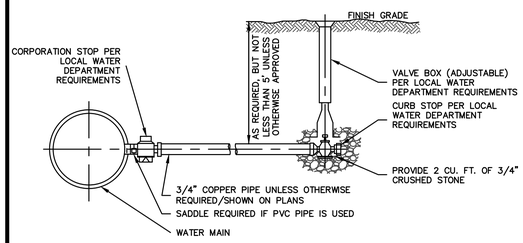
SCALE: NONE



NOTES:
1. THIS DETAIL IS APPLICABLE FOR SINGLE CONDUIT OR PIPE UP TO FOUR INCHES IN DIAMETER.
2. SHORING AND BRACING OF TRENCHES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHORING AND BRACING SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS AND INTERPRETATIONS, TO ALL OTHER APPLICABLE CODES, RULES, AND REGULATIONS, OF FEDERAL STATE AND LOCAL AUTHORITIES, AND AS REQUIRED TO MAINTAIN SAFE WORKING CONDITIONS AT ALL TIMES.
3. IN CASE OF CONFLICT BETWEEN THIS DETAIL AND INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER, INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER OR LOCAL UTILITY OWNER WILL PREVAIL.
4. ANY DISTURBED SUBGRADE SHALL BE WELL COMPACTED. EXCAVATION IN ROCK SHALL BE A MINIMUM 6-INCHES BELOW BOTTOM OF BEDDING AND BACKFILLED WITH GRANULAR FILL OR OTHER APPROVED MATERIAL.
5. PULL-LINE IN ALL CONDUIT: 3/8-INCH DOUBLE-BRAIDED LOW STRETCH POLYESTER COMPOSITE ROPE.
6. ALL CONDUIT AND PIPE DEPTHS PER CONNECTICUT BUILDING CODE OR UTILITY OWNER'S REQUIREMENTS, WHICHEVER IS MORE STRINGENT.

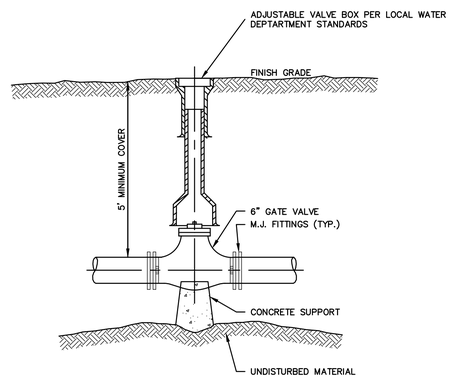
CONDUIT OR WATER SERVICE TRENCH

SCALE: NONE



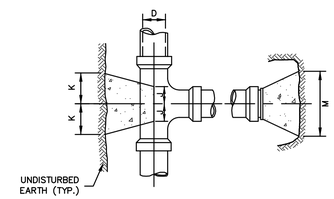
WATER SERVICE CONNECTION

SCALE: NONE
WTR-104-CT

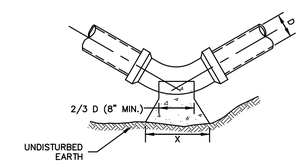


GATE VALVE

SCALE: NONE
WTR-102-CT



PLAN – TEE AND PLUG



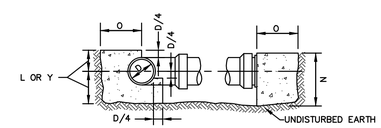
PLAN – HORIZ. AND VERT. BEND

SIZE OF BRANCH	J	K	L	M	N	O
4" TO 8"	10"	10"	1'-0"	2'-0"	1'-6"	10"
10" TO 16"	1'-0"	1'-6"	1'-8"	3'-10"	2'-10"	1'-6"
24"	1'-4"	2'-0"	2'-6"	5'-0"	3'-6"	1'-8"

TEES AND PLUGS

	90° & 45°			22½° & 11¼°		
D	4" TO 8"	10" TO 16"	24"	4" TO 8"	10" TO 16"	24"
X	1'-8"	3'-4"	3'-6"	1'-4"	2'-0"	3'-6"
Y	1'-2"	1'-8"	2'-4"	1'-0"	1'-2"	2'-4"

BENDS



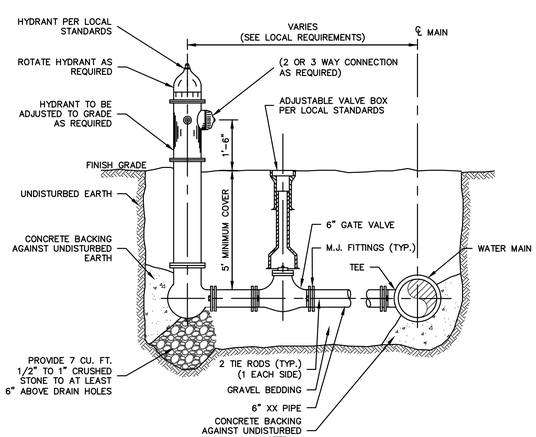
TYPICAL SECTION – TEES, BENDS AND PLUGS

GENERAL NOTES

1. PROVIDE CONCRETE THRUST BLOCKS AT ALL BENDS, DEAD ENDS, & TEES UNLESS OTHERWISE DIRECTED. CONCRETE FOR ALL THRUST BLOCKS TO BE PLACED AGAINST FIRM, UNDISTURBED EARTH. PROVIDE APPROVED ANCHOR HARNESS RODS AND SOCKET CLAMPS AS SPECIFIED AND IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS WHERE SOIL HAS BEEN DISTURBED OR THRUST BLOCKS CANNOT BE USED.
2. ALL SOCKET CLAMP METAL SHALL BE COATED WITH BLACK ASPHALTUM OR OTHER WATER DEPARTMENT APPROVED COATINGS.
3. CONCRETE THRUST BLOCKS POURED BEHIND 3-WAY TEE AND HYDRANT SHOE TO BE USED WITH SOCKET CLAMPS.
4. NO CONCRETE SHALL COVER PIPE JOINTS, FITTING JOINTS, BOLTS OR HYDRANT DRAINS.

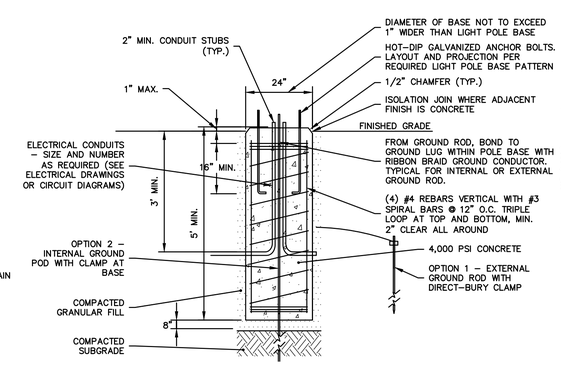
CONCRETE THRUST BLOCK FOR PRESSURE PIPE

SCALE: NONE
WTR-105-CT



FIRE HYDRANT & VALVE

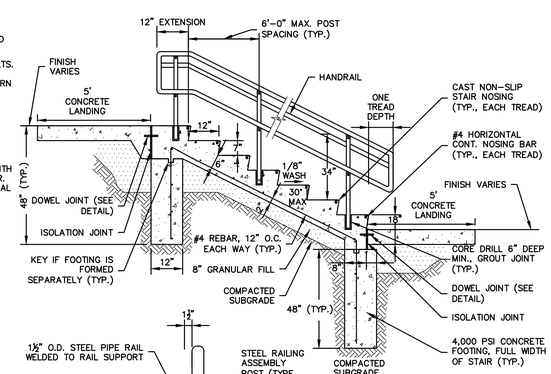
SCALE: NONE
WTR-103-CT

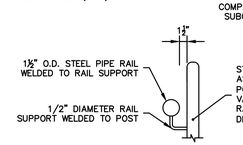


NOTES:
1. REINFORCING BARS SHALL BE DEFORMED BAR, ASTM A615 GRADE 60.
2. CONDUIT LOCATIONS SHOWN ARE CONCEPTUAL. REFER TO ELECTRICAL DRAWINGS OR CIRCUIT DIAGRAMS FOR THE NUMBER, SIZES, AND ORIENTATION REQUIRED.
3. ALL GROUND RODS SHALL BE COPPER-COATED. DIAMETER AND LENGTH PER APPLICABLE CODES. GROUNDING WIRE SHALL BE No. 4 AWG STRANDED COPPER WIRE UNLESS OTHERWISE SPECIFIED.
4. ANCHOR BOLTS SHOWN ARE CONCEPTUAL. ANCHOR BOLT SPECIFICATIONS SHALL MEET THE POLE MANUFACTURER'S REQUIREMENTS FOR SIZE, LENGTH, AND GRADE, BASED ON POLE TYPE, HEIGHT, AND FIXTURE(S).

LIGHT POLE BASE

SCALE: NONE





HANDRAIL DETAIL

NOTES:
1. COMPLY WITH ICC/ANSI A117.1 CHAPTER 5.
2. SUBMIT DETAILED SHOP DRAWINGS FOR APPROVAL SHOWING THE LAYOUT AND DIMENSIONS OF ALL STAIR SYSTEM COMPONENTS.
3. EXPOSED SURFACES TO BE BRUSHED FINISH TROWELED EDGES.
4. MINIMUM WIDTH TO BE 48" CLEAR HANDRAIL TO HANDRAIL.
5. MAXIMUM RADIUS OF CURVATURE AT THE LEADING EDGE OF TREADS SHALL BE 1/2".
6. CONSTRUCT CONCRETE LANDINGS PER SIDEWALK DETAIL.

CONCRETE STAIRS

SCALE: NONE

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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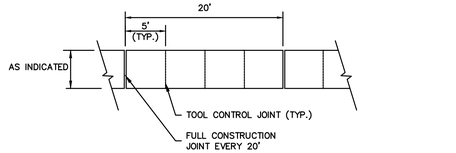
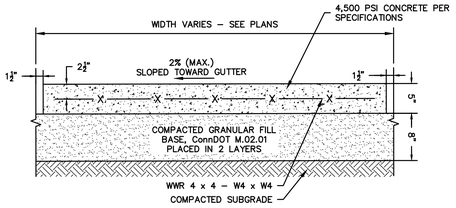
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00

C-6.1



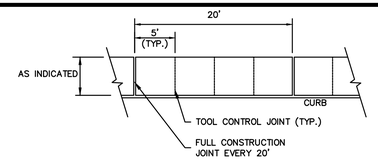


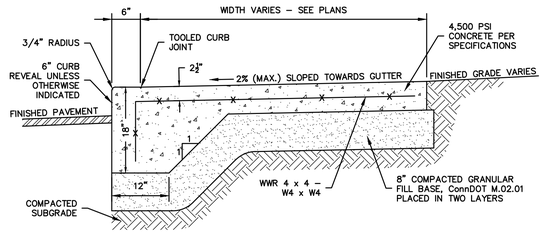
NOTES:

1. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
2. FULL-DEPTH JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
3. SIDEWALK SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

CONCRETE SIDEWALK

SCALE: NONE



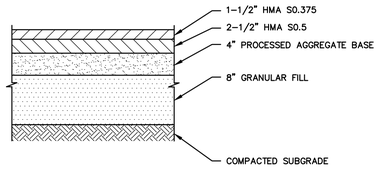


NOTES:

1. CURB REVEAL DIMENSION MAY VARY, SEE PLANS.
2. TOOLED CONTROL JOINTS SHALL BE 1/4 SLAB THICKNESS. TOOL JOINTS EARLY IN THE FINISHING PROCESS AND RE-RUN TO ENSURE GROOVE BOND HAS NOT OCCURRED.
3. TOOLED CURB JOINT SHALL BE 1/4-INCH DEEP MAX.
4. CONSTRUCTION JOINTS SHALL INCORPORATE FULL-DEPTH JOINT FILLER PER SPECIFICATIONS AND DETAILS.
5. SIDEWALKS SHALL HAVE LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.

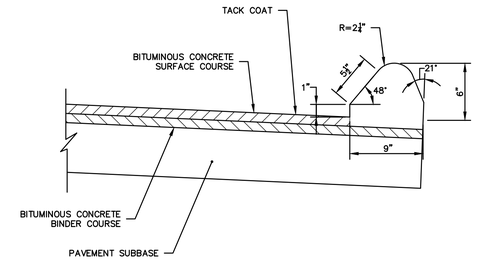
MONOLITHIC CONCRETE CURB AND SIDEWALK

SCALE: NONE



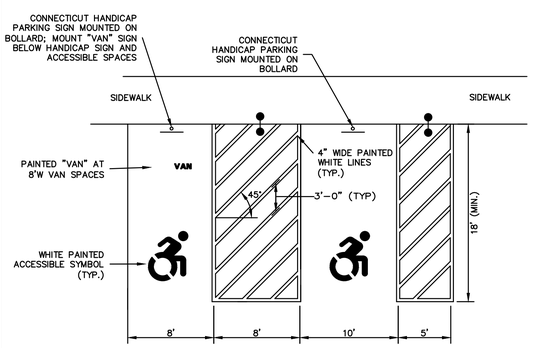
BITUMINOUS CONCRETE PAVEMENT

SCALE: NONE



6" BITUMINOUS CONCRETE LIP CURBING

SCALE: NONE
CRB-103-CT

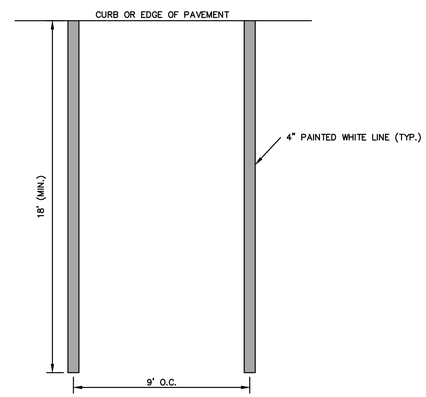


NOTES:

1. GRADING WITHIN HANDICAP SPACES SHALL BE LESS THAN 2.00% IN ALL DIRECTIONS
2. SIGN LOCATION VARIES – SEE PLAN

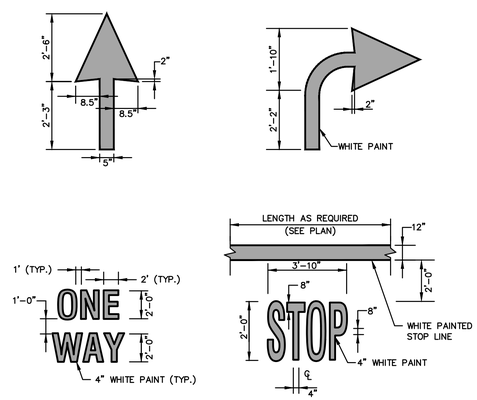
ACCESSIBLE PARKING SPACES

SCALE: NONE



STANDARD PAINTED PARKING MARKINGS

SCALE: NONE

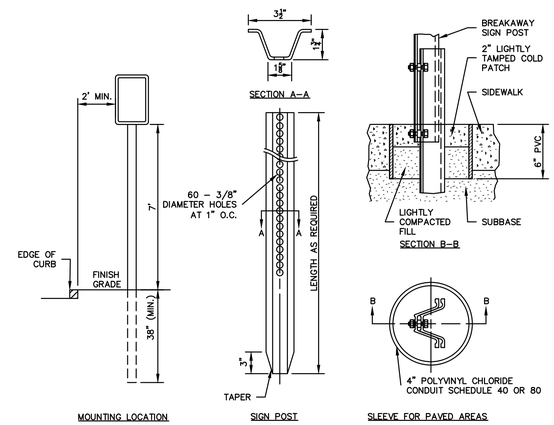


NOTES:

1. PAVEMENT MARKINGS SHOWN SHALL NOT BE INSTALLED ON PUBLIC ROADWAYS.

PAINTED PAVEMENT MARKINGS

SCALE: NONE
PVT-104-CT

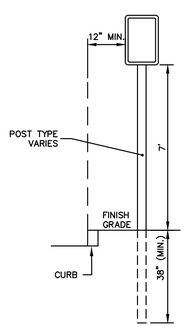


NOTES:

1. MOUNT SIGN TO POST PER CONNDOT 816 SPECIFICATIONS AND DETAILS.
2. PROVIDE SLEEVE FOR ALL SIGNS MOUNTED IN CONCRETE.

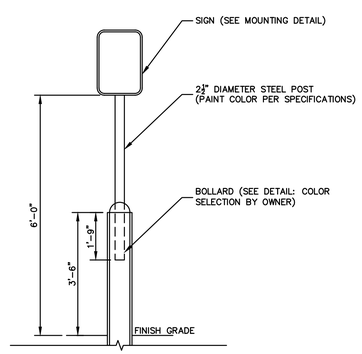
TYPICAL SIGN SUPPORT – BREAKAWAY TYPE II

SCALE: NONE



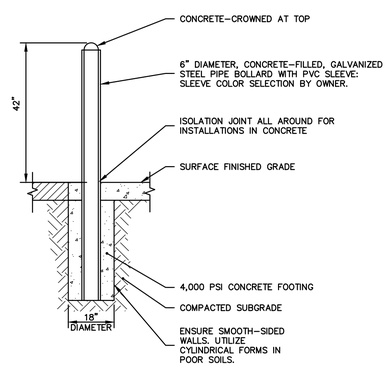
POST-MOUNTED SIGN

SCALE: NONE



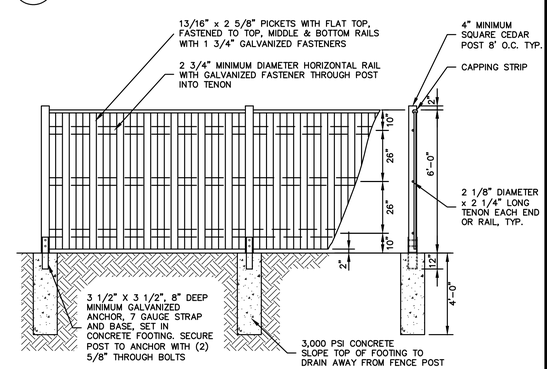
BOLLARD-MOUNTED SIGN

SCALE: NONE



CONCRETE-FILLED STEEL BOLLARD

SCALE: NONE



GENERAL NOTES

1. ALL FENCING MATERIAL SHALL BE TREATED NORTHERN WHITE CEDAR, TO THE DIMENSIONS SHOWN ON THE DRAWING.
2. LINE FENCE TOP AND BOTTOM SHALL BE INSTALLED STRAIGHT AND TRUE. ALL POSTS AND FACING BOARDS OR SLATS SHALL BE INSTALLED PARALLEL AND PLUMB. ALL RAILS SHALL BE INSTALLED PARALLEL AND TRUE.
3. ALL GATE HARDWARE SHALL BE DOUBLE DIP HOT GALVANIZED. THE CONTRACTOR SHALL SUBMIT GATE AND FENCE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

6' SINGLE SIDED WOOD FENCE

SCALE: NONE
FSN-105-CT

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO: C-6.2
JOB. NO: 83749.00

ADVANCED DRAINAGE SYSTEMS, INC.

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

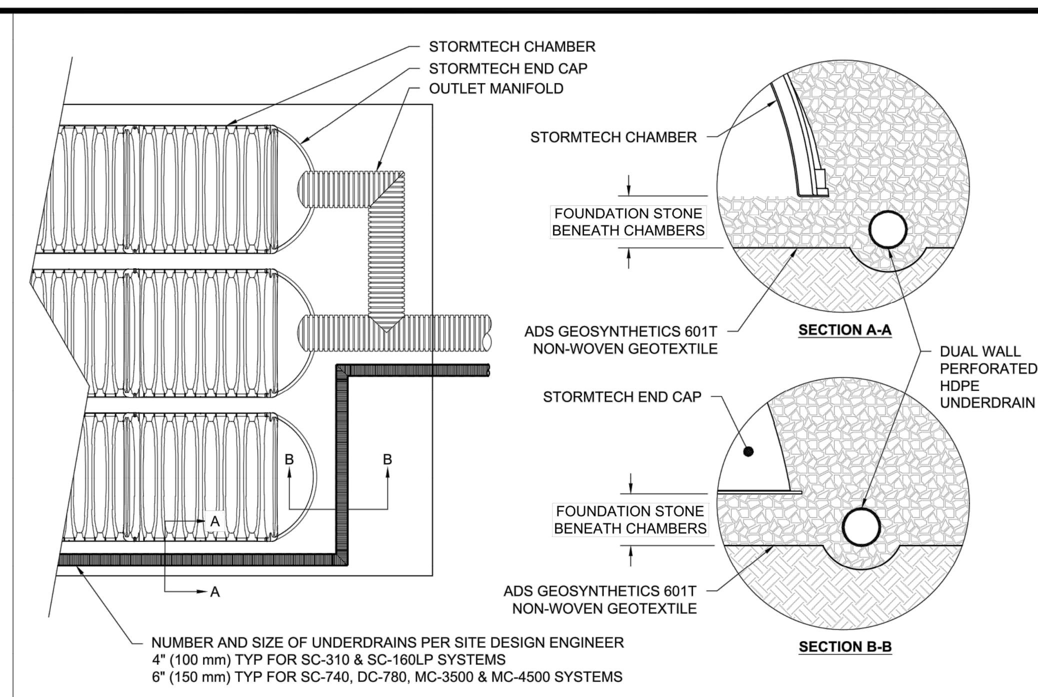
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

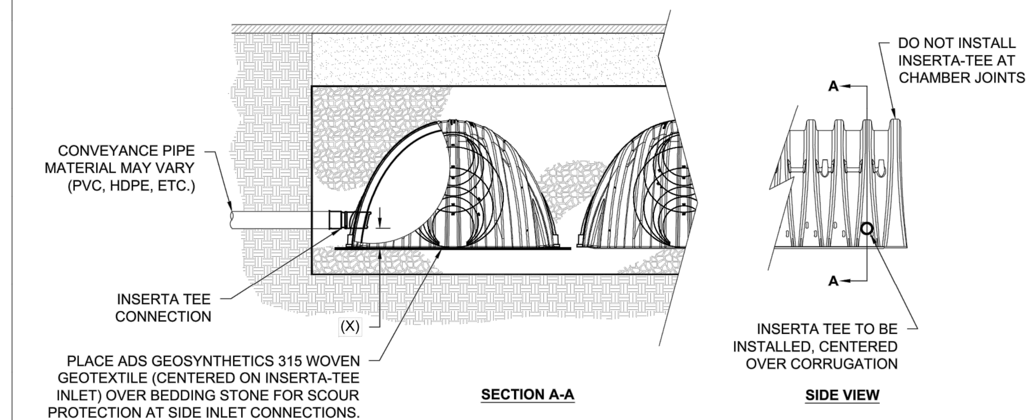
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



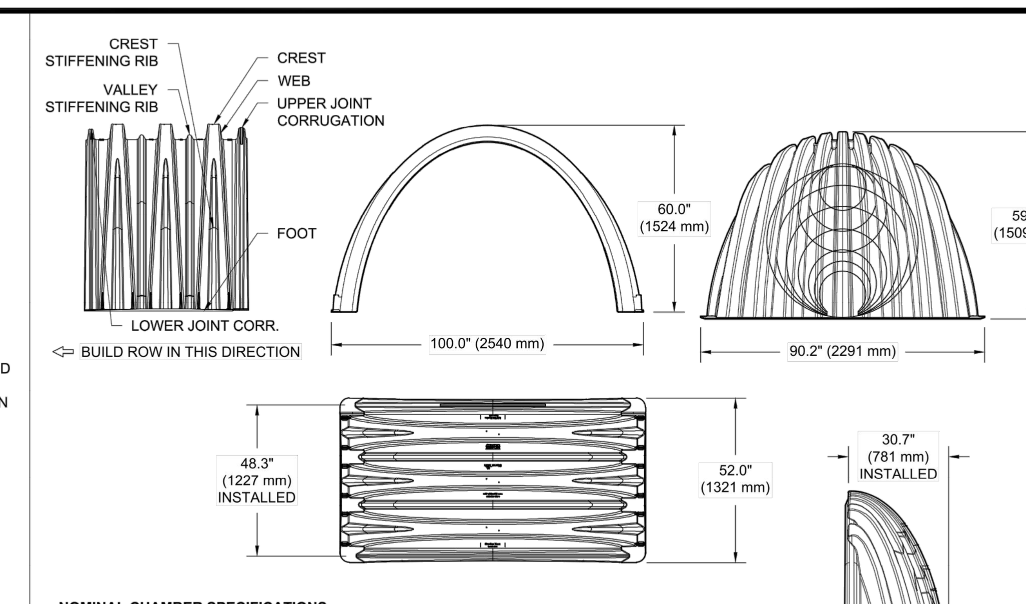
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT	130.0 lbs.	(59.0 kg)

NOMINAL END CAP SPECIFICATIONS

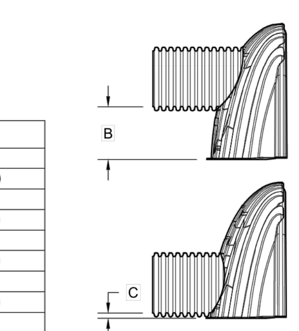
SIZE (W X H X INSTALLED LENGTH)	90.2" X 59.4" X 30.7"	(2291 mm X 1509 mm X 781 mm)
END CAP STORAGE	35.7 CUBIC FEET	(1.01 m³)
MINIMUM INSTALLED STORAGE*	108.7 CUBIC FEET	(3.08 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

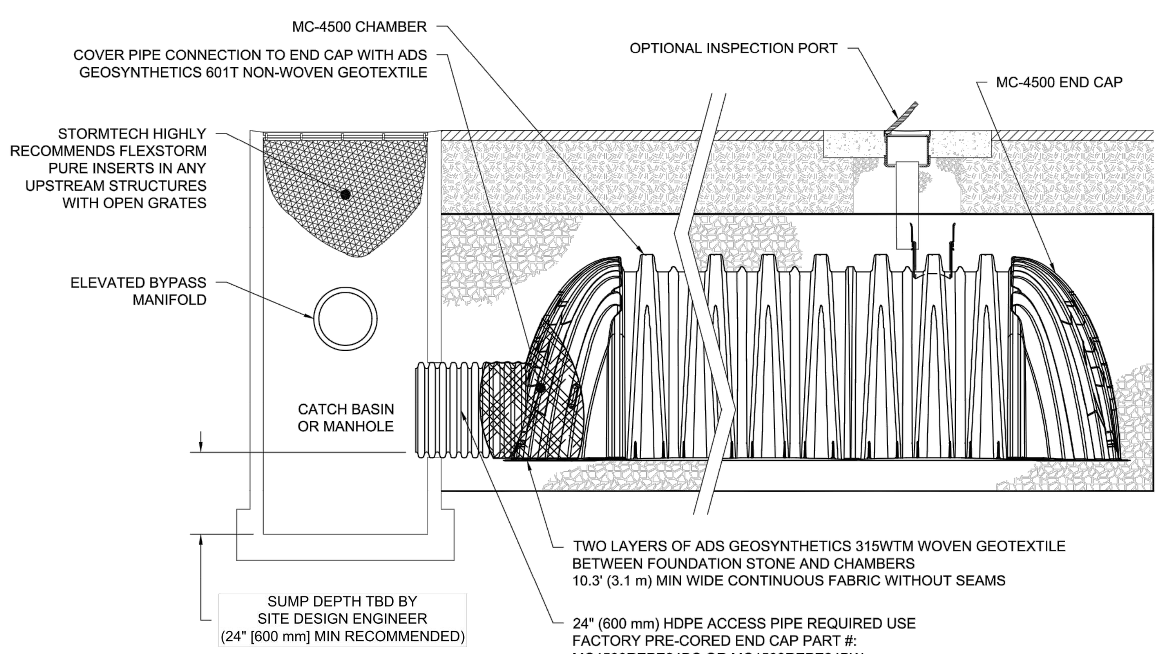
PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B		---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B		---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B		---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B		---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B		---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18TW			
MC4500REPE18BC		---	1.97" (50 mm)
MC4500REPE18BW			
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24TW			
MC4500REPE24BC		---	2.26" (57 mm)
MC4500REPE24BW			
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

2 MC-4500 TECHNICAL SPECIFICATIONS



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

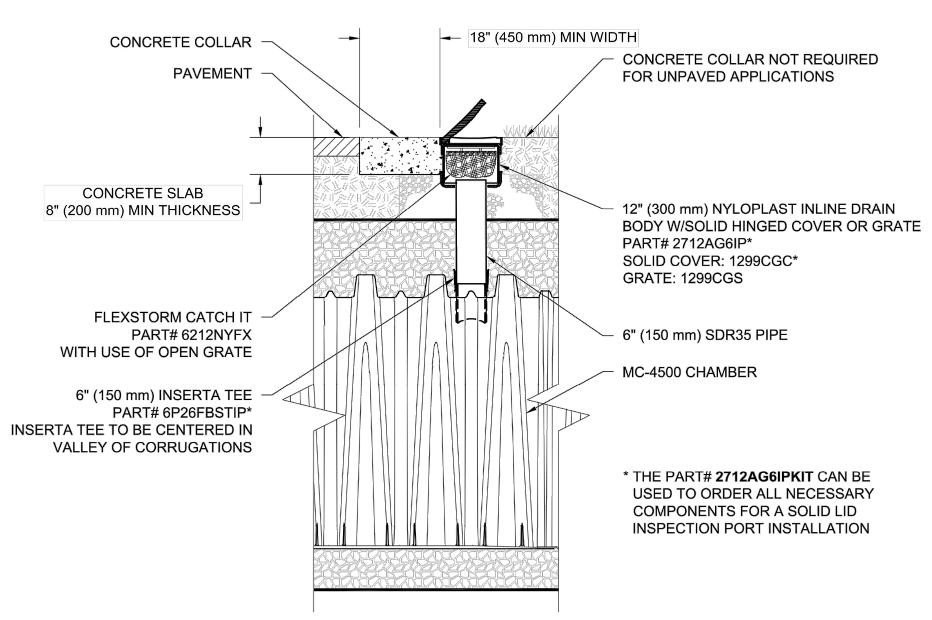
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

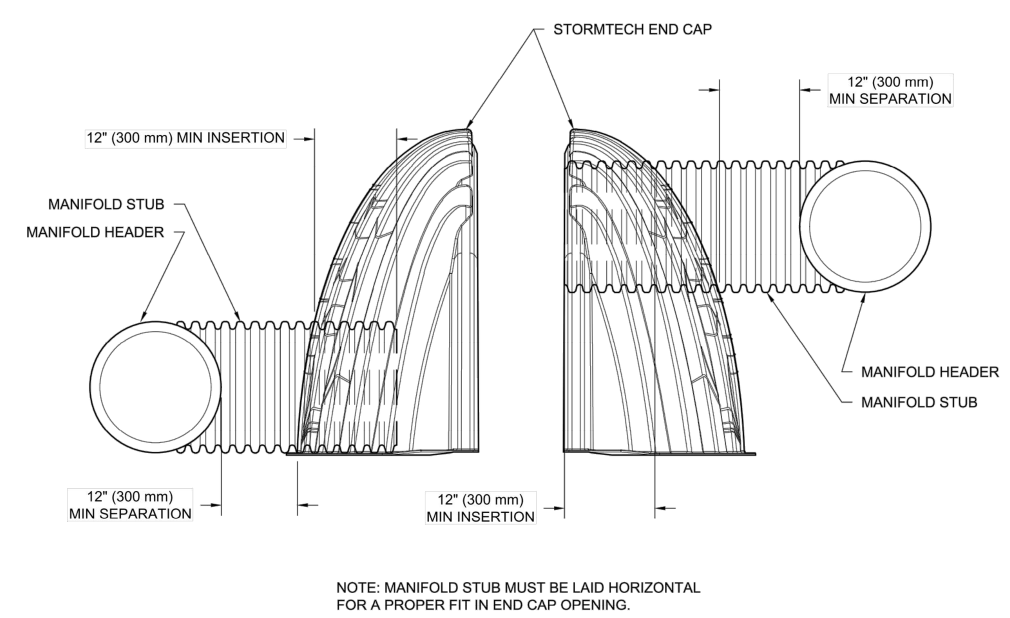
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

3 MC-4500 ISOLATOR ROW DETAIL



4 MC-4500 6" (150 mm) INSPECTION PORT DETAIL



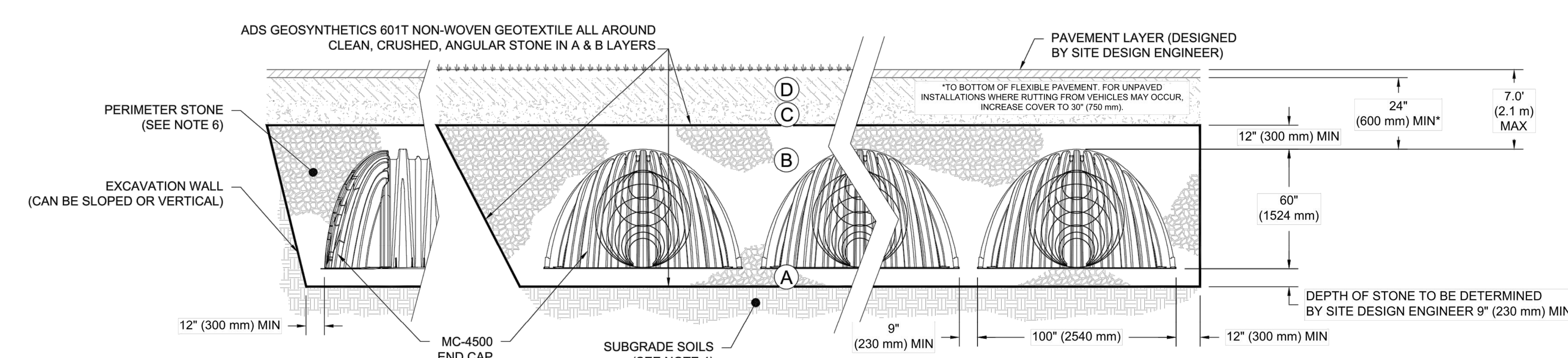
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

7 MC-SERIES END CAP INSERTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

1 MC-4500 CROSS SECTION DETAIL

DATE: 08/28/18
PROJECT NO:
NOT TO SCALE
DRAWN: JLM
REVIEWED: JLM
REV:

MC-4500
STANDARD DETAILS

StormTech
Detention • Retention • Water Quality
70 INWOOD ROAD, SUITE 3 | ROCKY HILL | CT | 06067
860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
ADVANCED DRAINAGE SYSTEMS, INC.

SHEET
1 OF 1

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT, UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER. THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION   DATE

ISSUED FOR PERMITTING

NOTES:
1. ADS STORMTECH MC-4500 USED AS BASIS FOR DESIGN. CONTRACTOR SHALL SELECT THIS PRODUCT OR APPROVED EQUAL AND SUBMIT A COMPLETE SHOP DRAWING PACKAGE FOR REVIEW AND APPROVAL BY THE ENGINEER.

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT • ROBERT S. NEWTON • No. 20662 • LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE   No. 20662

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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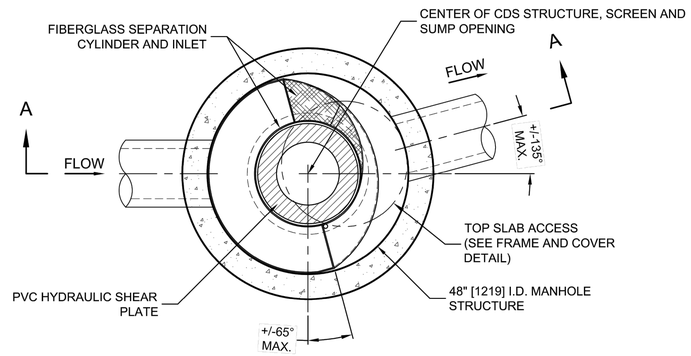
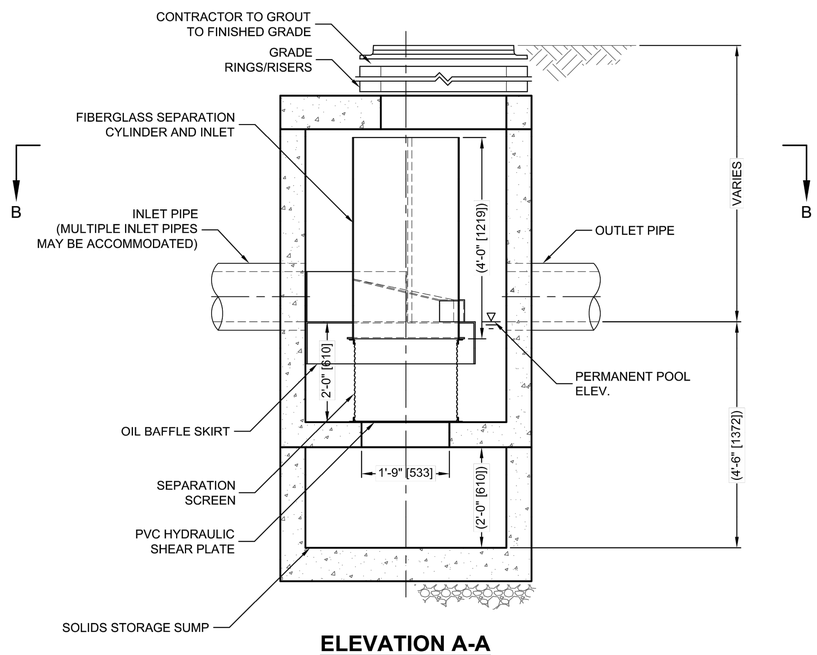
SCALE: AS SHOWN

FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00
C-6.3



PLAN VIEW B-B
N.T.S.



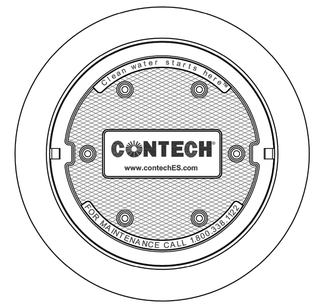
ELEVATION A-A
N.T.S.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,846; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

C:\USERS\SCHLACHTER\DESKTOP\CDS DETAILS 180 MICRON SIZING\ACAD\CDS2015-4-C-DTL.DWG 5/19/2014 5:16 PM

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

DETAILS

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
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PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
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860 652 8227

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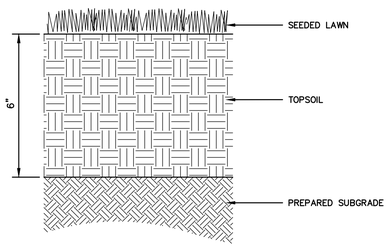
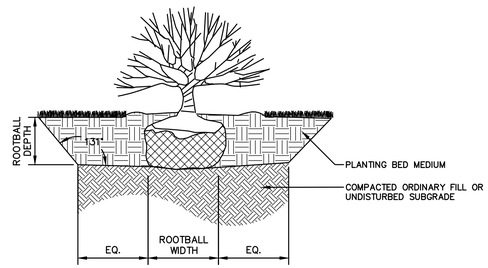
DWG. NO: C-6.4
JOB. NO: 83749.00



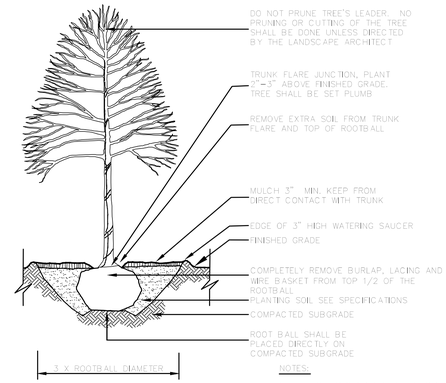
NOTES:
1. CONTRACTOR SHALL PREPARE SOILS IN ALL DISTURBED AREAS AND AREAS USED FOR EQUIPMENT ACCESS.

LAWN
SCALE: NONE

NOTES:
1. LOOSE OR CRACKED ROOT BALLS ARE UNACCEPTABLE.
2. EXCAVATE TO REQUIRED DEPTH AND DO NOT EXCAVATE BELOW ROOT BALL DEPTH.
3. SET SHRUBS PLUMB WITH ROOT FLARE 1" ABOVE FINISHED GRADE, BACKFILL WITH PLANTING MIX.
4. FLOOD WATERING SAUCER TWICE IN FIRST 24 HOURS AFTER PLANTING.
5. RAISE AND REPLANT ANY SHRUBS THAT SETTLE AFTER PLANTING & WATERING.
6. REMOVE 1/3 BURLAP PRIOR TO BACKFILL. SYNTHETIC BURLAP UNACCEPTABLE.
7. 2" DEPTH MULCH (KEEP MULCH 1" AWAY FROM SHRUB BASE) 3" HIGH EARTH WATERING SAUCER 1'-0" BEYOND ROOT BALL PLANTING MIXTURE.
8. FOR CONTAINERIZED PLANTS: REMOVE CONTAINER PRIOR TO PLANTING, SCARIFY ROOT BALL BELOW EDGE 1/2" DEEP IN FOUR LOCATIONS.

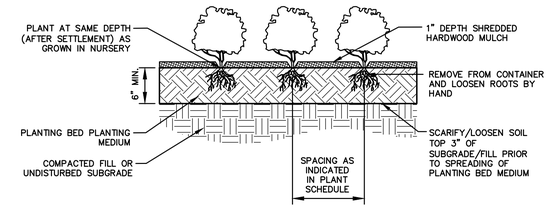


SHRUB PLANTING
SCALE: NONE

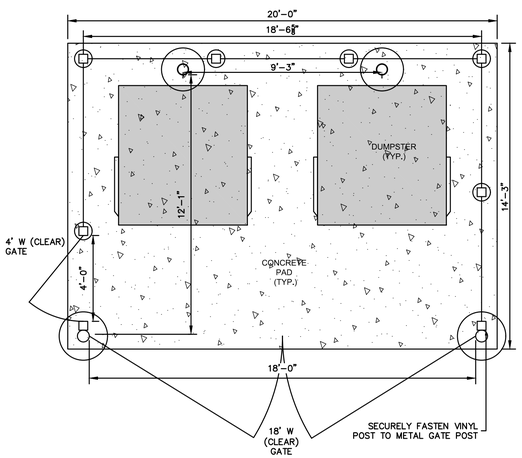


NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
3. DO NOT STAKE OR WRAP TREE UNLESS NOTED OTHERWISE.

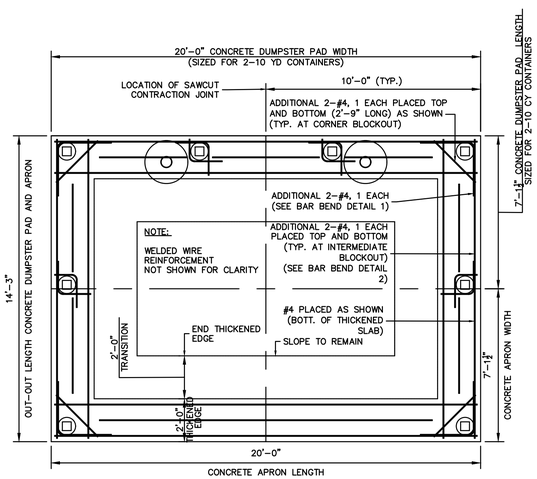
DECIDUOUS TREE PLANTING
SCALE: NONE
PLNT-107-CT



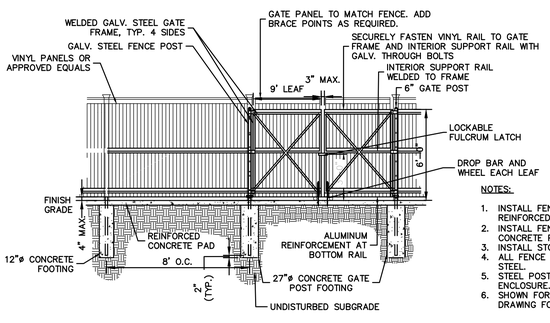
GROUNDCOVER PLANTING TYP.
SCALE: NONE



DUMPSTER PAD LAYOUT



CONCRETE SLAB LAYOUT



DUMPSTER PAD ENCLOSURE

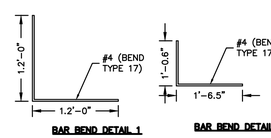
FENCE FRAMEWORK SCHEDULE

FENCE HEIGHT	UP TO 4'	5' TO 6'
FENCE POST	2.375" O.D.	2.875" O.D.
TOP AND BOTTOM RAIL	1.6" O.D.	2.375"
MIDDLE RAIL	NONE	2.375"
FOOTING	12" DIA.	12" DIA.

GATE FRAMEWORK SCHEDULE

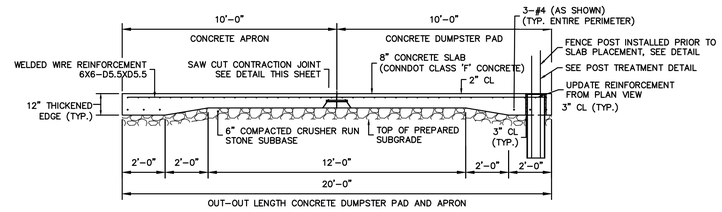
GATE LEAF WIDTH	6'W OR LESS	>6'W – <12'W
GATE POST	6" O.D.	6" O.D.
GATE FRAME (4 SIDES)	2"	2.375"
INTERIOR SUPPORT	NONE	2.375"
HEAVY DUTY HINGE	3 PER LEAF	3 PER LEAF
FOOTING	16" DIA.	24" DIA.

NOTES:
1. INSTALL FENCE FOOTINGS PRIOR TO INSTALLATION OF REINFORCED CONCRETE PAD.
2. INSTALL FENCE POSTS 6" FROM THE EDGE OF THE CONCRETE PAD.
3. INSTALL STOCKADE ON OUTSIDE OF POSTS.
4. ALL FENCE POSTS SHALL BE SCHEDULE 80 GALV. STEEL.
5. STEEL POSTS SHALL NOT BE VISIBLE FROM OUTSIDE OF ENCLOSURE.
6. SHOWN FOR DIAGRAMMATIC PURPOSES. PROVIDE SHOP DRAWING FOR APPROVAL.

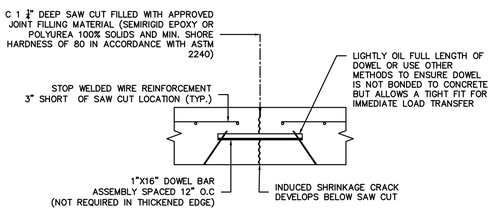


BAR BEND DETAIL 1 **BAR BEND DETAIL 2**

DUMPSTER ENCLOSURE
SCALE: NONE



CONCRETE SLAB SECTION



SAWCUT CONTRACTION JOINT DETAIL

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

1710LED VILLA SERIES
LED
11/05

EPA 0.78 (ft²) | WEIGHT 35 LBS | 7 YEAR WARRANTY | LUMEN RANGE 3,070 to 7,365 | LIFE SPAN L70 MINIMUM 100,000 HOURS | UL LISTED | CLICK FOR FAQ's | IP RATING* IP66

*Optical module only

JOB NAME
FIXTURE TYPE
MEMO

*Fixture "A" shown above, additional styles on page 3.

BUILD A PART NUMBER

ORDERING EXAMPLE: PT-1710CLED-RA-1H1-R3-IL40TS-MDL07-SV2-MS-R5-PE/BKT

Mounting Config.	Fixture	Roof	Internal Housing	Fitter	LED	CCT	Type	Driver	Internal Lens	Option Mini Shade	Option External Rings	Option Control Recept.	Option Control	Option Fuse	Option Hangstraight	Option House Side Shield	Arm See Arm Spec. Sheets	Pole See Pole Spec. Sheets	Finish

Mounting Configuration
(Click here to view mounting configuration sheet)
• IW • 2A • 3A90 • 1AM • CAT
• PT • 2A90 • 3APT • 2AM
• IA • 2APT • 4A • 4S0PB
• IAPT • 3A • 4APT • SH44/
W=Wall Mount; PT=Post Top; A=Arm Mount; AM=Arm Mid-Mount; PB=Pier Base; CAT=Cannery; SH=Stem Hung
[1]Include overall drop length in inches after designation for stem application (IE: SH44-48").

Fixture
• 1710ALED • 1710BLED • 1710CLED
• 1710ALEDH • 1710BLEDH • 1710CLEDH
H=Hanging Fixture

Roof
• RA (Deep shade w/ sloped top)
• ~~RB (Deep shade w/ stepped cap)~~
• RC[1] (Thin shade)
• RD (Shallow shade w/ flat top)
• RE[2] (No shade w/ flat top)
[1]Not for use with "A" or "B" style fixture
[2]Not for use with "B" style fixture

Internal Housing[7]
• IH1[4] (Stacked louvers)
• IH2[5] (Smooth cylinder)
• IH3[6] (Tapered cylinder)
• IH4[5] (4-vaned deco)
• IH5[5] (Ringed cylinder)
• IH6[6] (Low-rise cone)
[1]Not for use with "SV2RB" Internal Lens
[2]For use with "TS" optic only
[3]For use with "TSL" or "TAL" optic only
[7]Internal Housing offered with Silver finish only

Fitter
• R3 • R4 • NA[6]
[6]For use with hanging (H) fixture only

LED
• IL

CCT - Color Temperature (K)
• 27(00) • 30(00) • 40(00) • 50(00)

Distribution Type
• TS (Symmetric, behind internal lens)
• TSL* (Symmetric, with large optic)
• TAL* (Asymmetric, with large optic)
*Not for use with "RC" roof.

Driver
• MDL05 (120V-277V, 500mA)
• MDL07 (120V-277V, 700mA)
• MDL09 (120V-277V, 900mA)
• MDL11 (120V-277V, 1100mA)
• MDH07 (347V-480V, 700mA)
• MDH09 (347V-480V, 900mA)
• MDH11 (347V-480V, 1100mA)

Internal Lens
• SV2RB[10] (Soft Vue Moderate Diffused Ribbed Acrylic Vertical Lens)
• SV2[10] (Soft Vue Moderate Diffused Acrylic Vertical Lens)
• SV4[10] (Soft Vue Maximum Diffused Acrylic Vertical Lens)
• NIL[8] (No Internal Vertical Lens)
[8]For use with "TS" optic only.
[10]For use with "TSL" or "TAL" optic only.

Options (Click here to view accessories sheet)
• MS[12] Mini-Shade
• ERS[9] External Rings
• R[11] 3-Pin control receptacle only
• R5[11] 5-Pin control receptacle only
• R7[11] 7-Pin control receptacle only
• PE[11] Twist-Lock Photocontrol (120V-277V)
• PE3[11] Twist-Lock Photocontrol (347V)
• PE4[11] Twist-Lock Photocontrol (480V)
• SC[11] Shorting Cap
• FHD[1] Double Fuse and Holder
• HSHS[11] Standard Horizontal Hangstraight, Spike Finial
• HSHN[11] Standard Horizontal Hangstraight, No Finial
• HSHB[11] Standard Horizontal Hangstraight, Ball Finial
• EZ[11] Vertical Hangstraight, Large, "EZ" Mount
• HSV[11] Vertical Hangstraight, Standard
• HSS 120° House Side Shield
[1]For use with "C" style fixture only
[9]Cannot be used with SH44, CAT, EZ or HSV mounting style
[11]Requires control receptacle
[12]Ships loose for installation in base
[9]For use with hanging (H) fixture only

Arm (Click here to link to arm specification page)
See Arms & Wall Brackets specification sheets.
• OMS • HMS • VCS
• VFS • VLS

Pole (Click here to link to pole specification page)
See Pole specification sheets.

Finish (Click here to view paint finish sheet)
Standard Urban Finishes
• UGMT Gun Metal Textured
• UGM Gun Metal Matte
• UBT Urban Bronze Textured
• UB Urban Bronze Matte
• ULBT Urban Light Bronze Textured
• ULB Urban Light Bronze Matte
• USLT Urban Silver Textured
• USL Urban Silver Matte
• UWHT Urban White Textured
• UWH Urban White Matte
• UCHS Urban Champagne Satin Smooth
• BKT Black Textured

Custom Urban Finishes[17]
• CM Custom Match
• CHL Custom Highlights (consult factory for more information)
[17]Custom finish requires upcharge; consult factory for more information.

Specifications
Fixture
Fixture shall be cylindrical in form (straight or tapered lens as specified), and feature both a roof casting and internal housing manufactured via permanent mold tooling. The outer lens shall be one-piece, injection molded, non-yellowing acrylic, sealed top and bottom with seamless silicone gaskets to an IP66 rating. Set screws and related hardware shall be finish painted to match the fixture housing. The luminaire shall be UL listed in the U.S. and Canada.

Optional Mini-Shade / External Rings
Offered on fixture style "C" only.
(Mini-Shade) A small cast aluminum louvered shade measuring 17-1/2" OD x 1-1/2" tall, *See next page*

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roselle, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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1710LED VILLA SERIES
LED

installed above the shade on roof style **RC**. Installed under shade on styles **RA, RB, RD & RE (External Rings)** 2 flat cast aluminum rings measuring 13" OD, installed above the shade on roof style **RC**. Installed under shade on styles **RA, RB, RD & RE**

Fitter - Standard
Fixture shall house the driver and be provided with a heavy wall die cast aluminum fitter designed to slip-fit 3"OD (R3) or 4"OD (R4) x 3" tall tenons/poles. The fitter shall have three (3) stainless steel allen head screws to secure the connection between the fitter and tenon/pole. All external hardware shall be finish painted to match the rest of the fixture housing.

LEDs
The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating of 1 to 3 mils. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS-compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K or 5000K option) color temperature with a minimum of 70 CRI. Consult factory for custom color CCT. The luminaire shall have a minimum _____ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Optics
(TS Optic) The luminaire shall be provided with an individual, molded silicone refractor type optic applied to the COB (Chip On Board) LED assembly. An additional vertical diffused acrylic lens installed inside the unit allows for a high level of visual comfort. All testing shall be done in accordance with IESNA LM-79.
(TSL & TAL Optic) The luminaire shall be provided with an individual, large injection molded acrylic refractor type optic applied to the COB (Chip On Board) LED assembly. The optic visually spreads out size of the light source while creating a Symmetric **(TSL)** or asymmetric **(TAL)** light pattern. All testing shall be done in accordance with IESNA LM-79.

Electronic Drivers
The LED driver shall be U.L. Recognized. It shall be securely mounted inside the fixture, for optimized performance and longevity. It shall be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections and fixture installation. It shall have overload, overheat and short circuit protection, and have a DC voltage output, constant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It shall be a high efficiency driver with a THD less than 20% and a high power factor greater than .9. It shall be dimming capable using a 0-10v signal, consult factory for more information.

Photocontrols
Twist-Loch Style: The photocontrol shall be mounted externally on the fixture and pre-wired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. Photocontrol is 120-277 volt and warranted for 6 years.

Wireless Controls
A 5-pin (R5) or 7-pin (R7) NEMA receptacle can be included on the unit for wireless control systems.

Warranty
Seven-year limited warranty. See product and finish warranty guide for details.

Finish
Refer to website for details.

Performance (based on "C" style fixture with "RD" roof)

MODEL #	TS DELIVERED LUMENS	EFFICACY (LPW)	TSL DELIVERED LUMENS	EFFICACY (LPW)	TAL DELIVERED LUMENS	EFFICACY (LPW)	WATTAGE
1L40T_MDL11	7325	114.5	7365	115.1	7270	113.6	64
1L30T_MDL11	7140	111.6	7175	112.1	7085	110.7	64
1L27T_MDL11	6485	101.3	6520	101.9	6435	100.5	64
1L40T_MDL09	6060	116.5	6130	117.9	6045	116.3	52
1L30T_MDL09	5905	113.6	5975	114.9	5890	113.3	52
1L27T_MDL09	5365	103.2	5425	104.3	5350	102.9	52
1L40T_MDL07	4790	116.8	4845	118.2	4770	116.3	41
1L30T_MDL07	4670	113.9	4720	115.1	4650	113.4	41
1L27T_MDL07	4240	103.4	4290	104.6	4225	103.0	41
1L40T_MDL05	3500	116.7	3540	118.0	3470	115.7	30
1L30T_MDL05	3410	113.7	3450	115.0	3380	112.7	30
1L27T_MDL05	3100	103.3	3135	104.5	3070	102.3	30

SternbergLighting
ESTABLISHED 1923 / EMPLOYEE OWNED

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555 Lawrence Ave., Roselle, IL 60172
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EAGLEVILLE GREEN - NOVEMBER 25, 2019

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

DETAILS

NOVEMBER 25, 2019

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1	01/20/2020	PER TOWN COMMENTS
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STORRS, CT 06268

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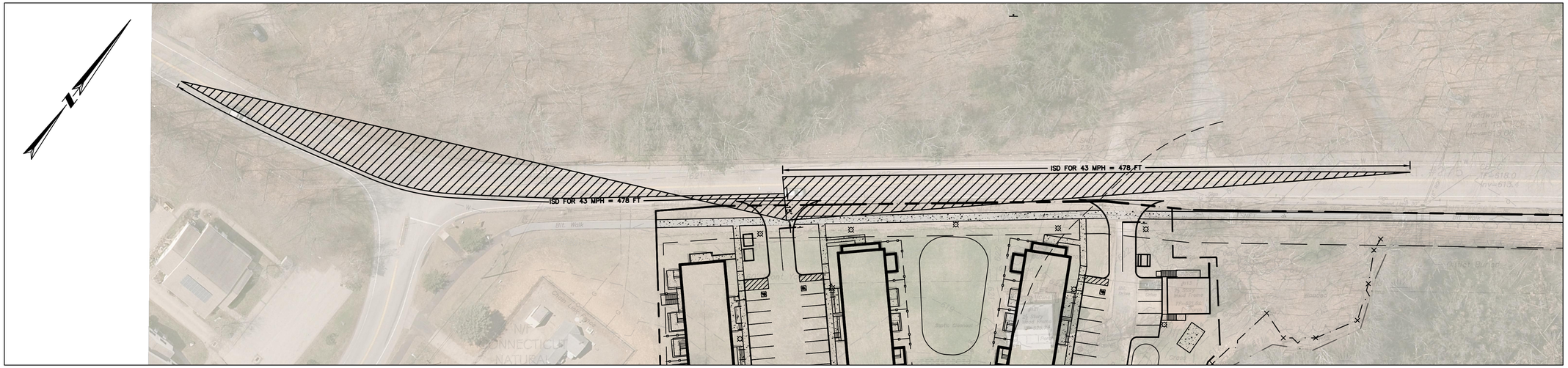
FILE: 8374900-DET.DWG
DWG. NO:
JOB. NO: 83749.00
C-6.5



WEST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

EAST EXIT - INTERSECTION SIGHT DISTANCE
SCALE: 1" = 40'

NOTES:

1. INTERSECTION SIGHT DISTANCE IDENTIFIED ON THIS PLAN IS DESIGNED IN ACCORDANCE WITH THE CONNECTICUT HIGHWAY DESIGN MANUAL, CHAPTER 11 "INTERSECTIONS AT GRADE," SECTION 2.03.01 – FIGURE 11–2C "INTERSECTION SIGHT DISTANCES (TWO–LANE HIGHWAY OR STREET)."
2. THE 85TH PERCENTILE SPEED ON SOUTH EAGLEVILLE ROAD (STATE ROUTE NO. 275) AT THE LOCATION OF THE SITE IS 43 MPH.
3. THE INTERSECTION SIGHT DISTANCE FOR A PASSENGER VEHICLE MAKING A LEFT TURN ONTO THE 43 MPH ROAD IS 478 FEET ALONG THE VEHICLE PATH.
4. THE INTERSECTION SIGHT DISTANCE LINE OF SIGHT IS MEASURED 15 FEET BACK OF THE GUTTER LINE AT THE CENTER OF THE EXIT LANE.
5. THE APPROACH GRADE AT BOTH INTERSECTIONS IS LESS THAN +3.0% SLOPE.

INTERSECTION DISTANCES (MINIMUM REQUIRED = 478 FEET):

WEST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = 478 FEET

EAST EXIT:
LEFT–TURN = GREATER THAN 1000 FEET
RIGHT–TURN = GREATER THAN 600 FEET

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- PROPOSED CURBING
- INTERSECTION SIGHT DISTANCE TRIANGLE

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

INTERSECTION SIGHT DISTANCE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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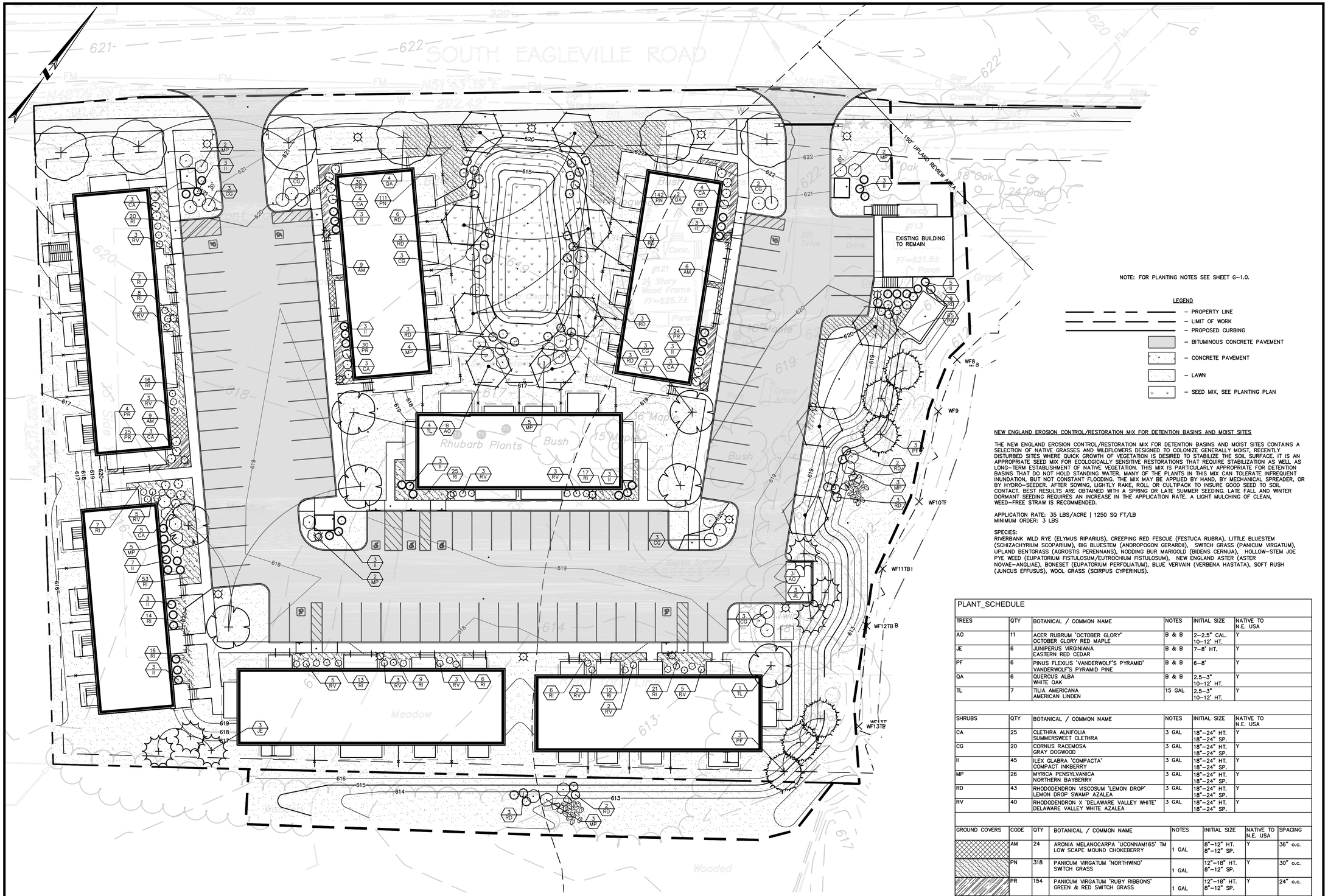
SCALE: 1" = 40'
0 20 40 80 FEET

FILE: 8374900–ISD.DWG
DWG. NO:
JOB. NO: 83749.00

C-7.0



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG-TERM ESTABLISHMENT OF NATIVE VEGETATION. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS THAT DO NOT HOLD STANDING WATER. MANY OF THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDATION, BUT NOT CONSTANT FLOODING. THE MIX MAY BE APPLIED BY HAND, BY MECHANICAL SPREADER, OR BY HYDRO-SEEDER. AFTER SOWING, LIGHTLY RAKE, ROLL OR CULTIPACK TO INSURE GOOD SEED TO SOIL CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE FALL AND WINTER DORMANT SEEDING REQUIRES AN INCREASE IN THE APPLICATION RATE. A LIGHT MULCHING OF CLEAN, WEED-FREE STRAW IS RECOMMENDED.

APPLICATION RATE: 35 LBS/ACRE | 1250 SQ FT/LB
MINIMUM ORDER: 3 LBS

SPECIES:
RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW-STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

PLANT_SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
AO	11	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	B & B	2-2.5" CAL. 10-12' HT.	Y
JE	6	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	B & B	7-8' HT.	Y
PF	6	PINUS FLEXILIS 'VANDERWOLF'S PYRAMID' VANDERWOLF'S PYRAMID PINE	B & B	6-8'	Y
QA	6	QUERCUS ALBA WHITE OAK	B & B	2.5-3" 10-12' HT.	Y
TL	7	TILIA AMERICANA AMERICAN LINDEN	15 GAL	2.5-3" 10-12' HT.	Y

SHRUBS	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA
CA	25	CLETHRA ALNIFOLIA SUMMERSWEET CLETHRA	3 GAL	18"-24" HT. 18"-24" SP.	Y
CG	20	CORNUS RACEMOSA GRAY DOGWOOD	3 GAL	18"-24" HT. 18"-24" SP.	Y
II	45	ILEX GLABRA 'COMPACTA' COMPACT INKBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
MP	26	MYRICA PENSYLVANICA NORTHERN BAYBERRY	3 GAL	18"-24" HT. 18"-24" SP.	Y
RD	43	RHODODENDRON VISCOSUM 'LEMON DROP' LEMON DROP SWAMP AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y
RV	40	RHODODENDRON X 'DELAWARE VALLEY WHITE' DELAWARE VALLEY WHITE AZALEA	3 GAL	18"-24" HT. 18"-24" SP.	Y

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	NOTES	INITIAL SIZE	NATIVE TO N.E. USA	SPACING
	AM	24	ARONIA MELANOCARPA 'UCONNAM165' TM LOW SCAPE MOUND CHOKEBERRY	1 GAL	8"-12" HT. 8"-12" SP.	Y	36" o.c.
	PN	318	PANICUM VIRGATUM 'NORTHWIND' SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	30" o.c.
	PR	154	PANICUM VIRGATUM 'RUBY RIBBONS' GREEN & RED SWITCH GRASS	1 GAL	12"-18" HT. 8"-12" SP.	Y	24" o.c.
	RI	250	RUDBECKIA FULGIDA 'INDIAN SUMMER' CONEFLOWER	1 GAL	8"-12" HT. 8"-12" SP.	Y	30" o.c.

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT · RACHEL NICOLE SALCH · LICENSED LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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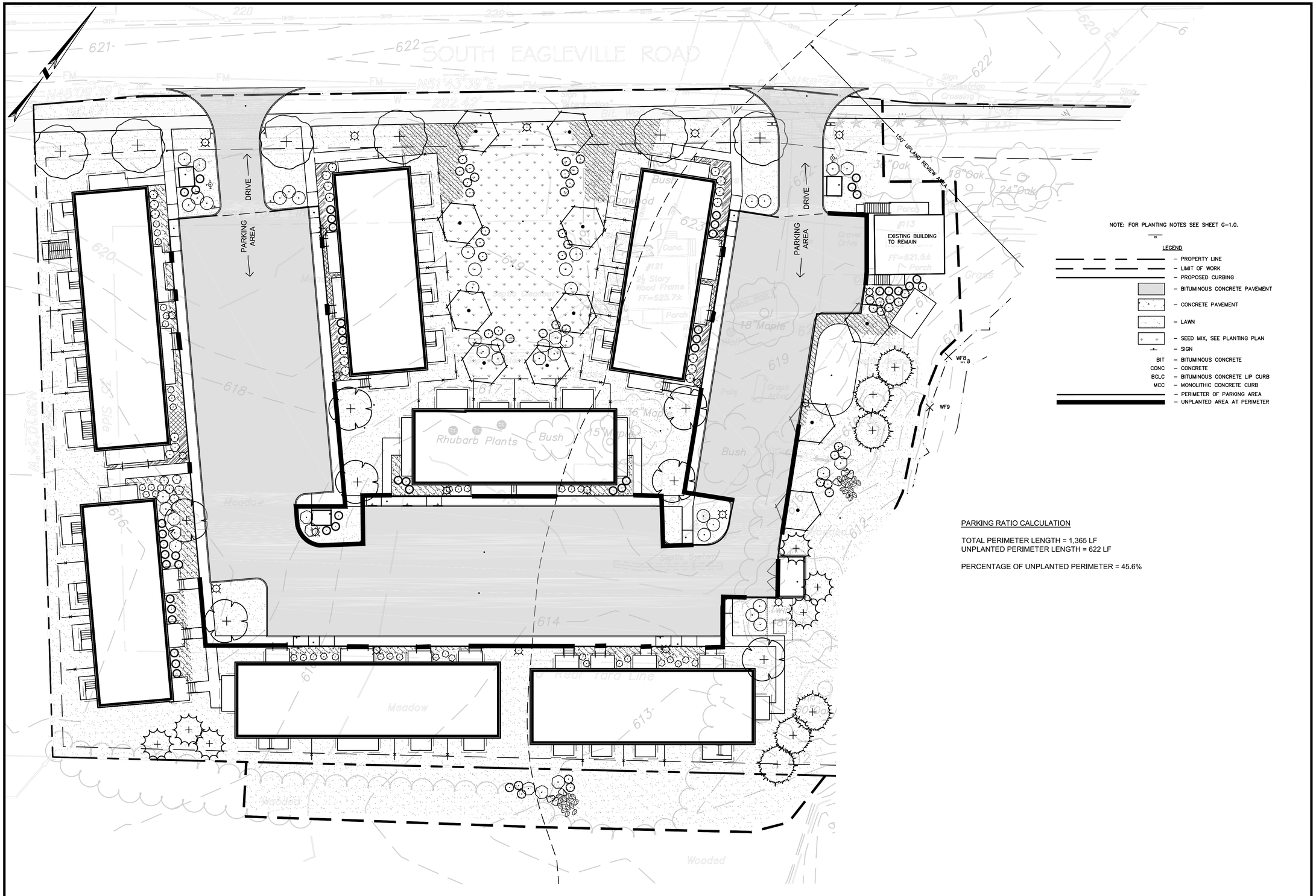
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PLANT.DWG
DWG. NO: L-1.0
JOB. NO: 83749.00



NOTE: FOR PLANTING NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CURBING
- BITUMINOUS CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- LAWN
- SEED MIX, SEE PLANTING PLAN
- SIGN

BIT – BITUMINOUS CONCRETE
CONC – CONCRETE
BCLC – BITUMINOUS CONCRETE LIP CURB
MCC – MONOLITHIC CONCRETE CURB

- PERIMETER OF PARKING AREA
- UNPLANTED AREA AT PERIMETER

PARKING RATIO CALCULATION

TOTAL PERIMETER LENGTH = 1,365 LF
UNPLANTED PERIMETER LENGTH = 622 LF

PERCENTAGE OF UNPLANTED PERIMETER = 45.6%

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT
RACHEL NICOLE SALCH
LICENSED LANDSCAPE ARCHITECT

RACHEL N. SALCH, PLA No. 1438

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PLANTING RATIO

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
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STORRS, CT 06268

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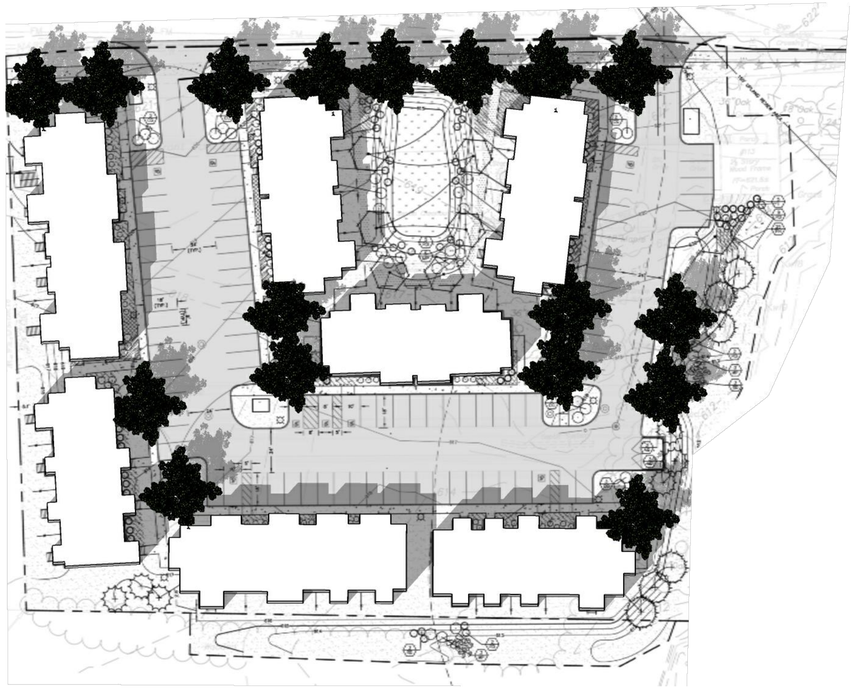
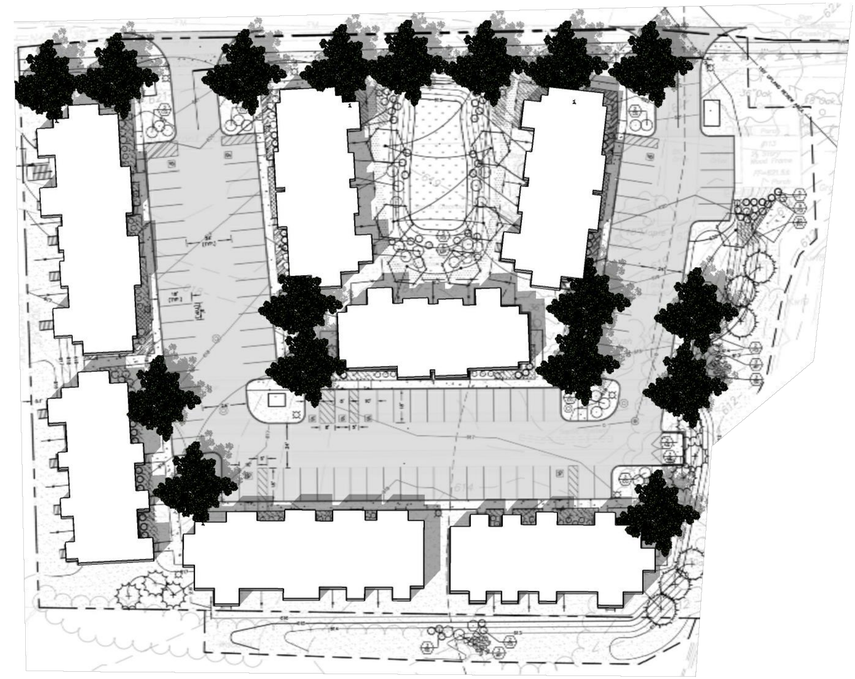
SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-PLANT.DWG
DWG. NO:
JOB. NO: 83749.00

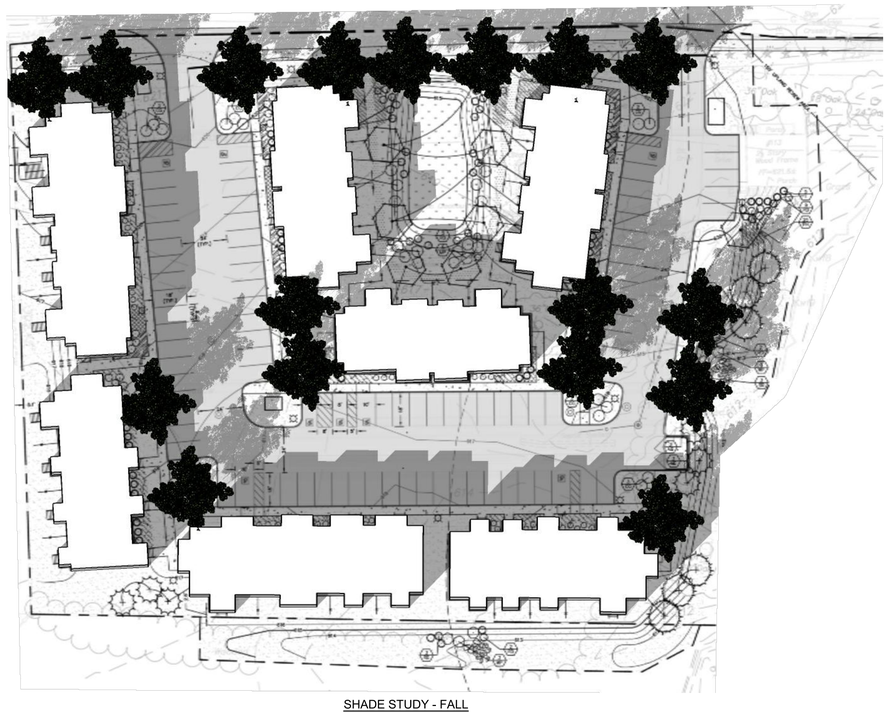
L-1.1



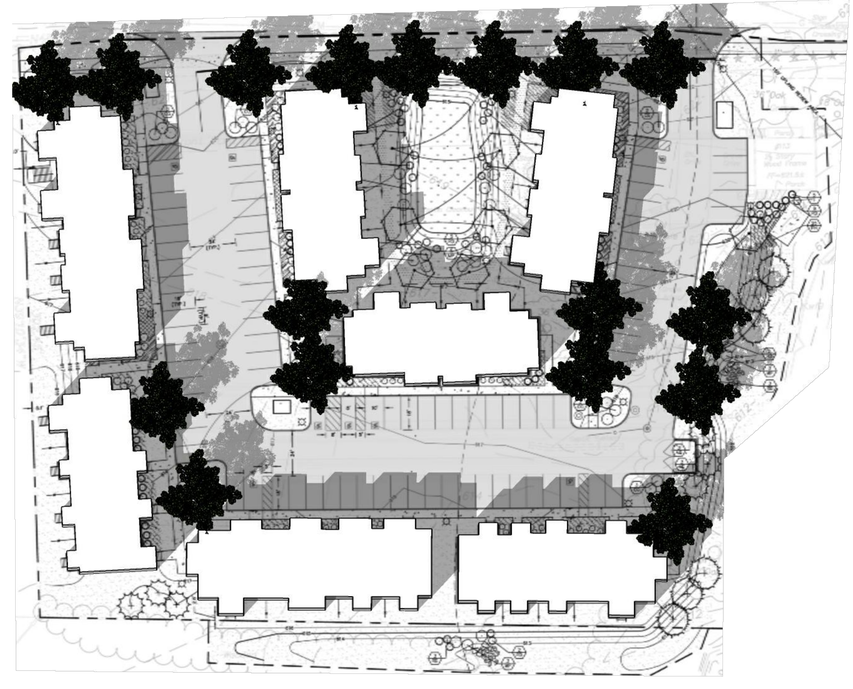
SHADE STUDY - SPRING



SHADE STUDY - SUMMER



SHADE STUDY - FALL



SHADE STUDY - WINTER

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

SHADE STUDY

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

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SCALE: NONE

FILE: 8374900–PLANT.DWG
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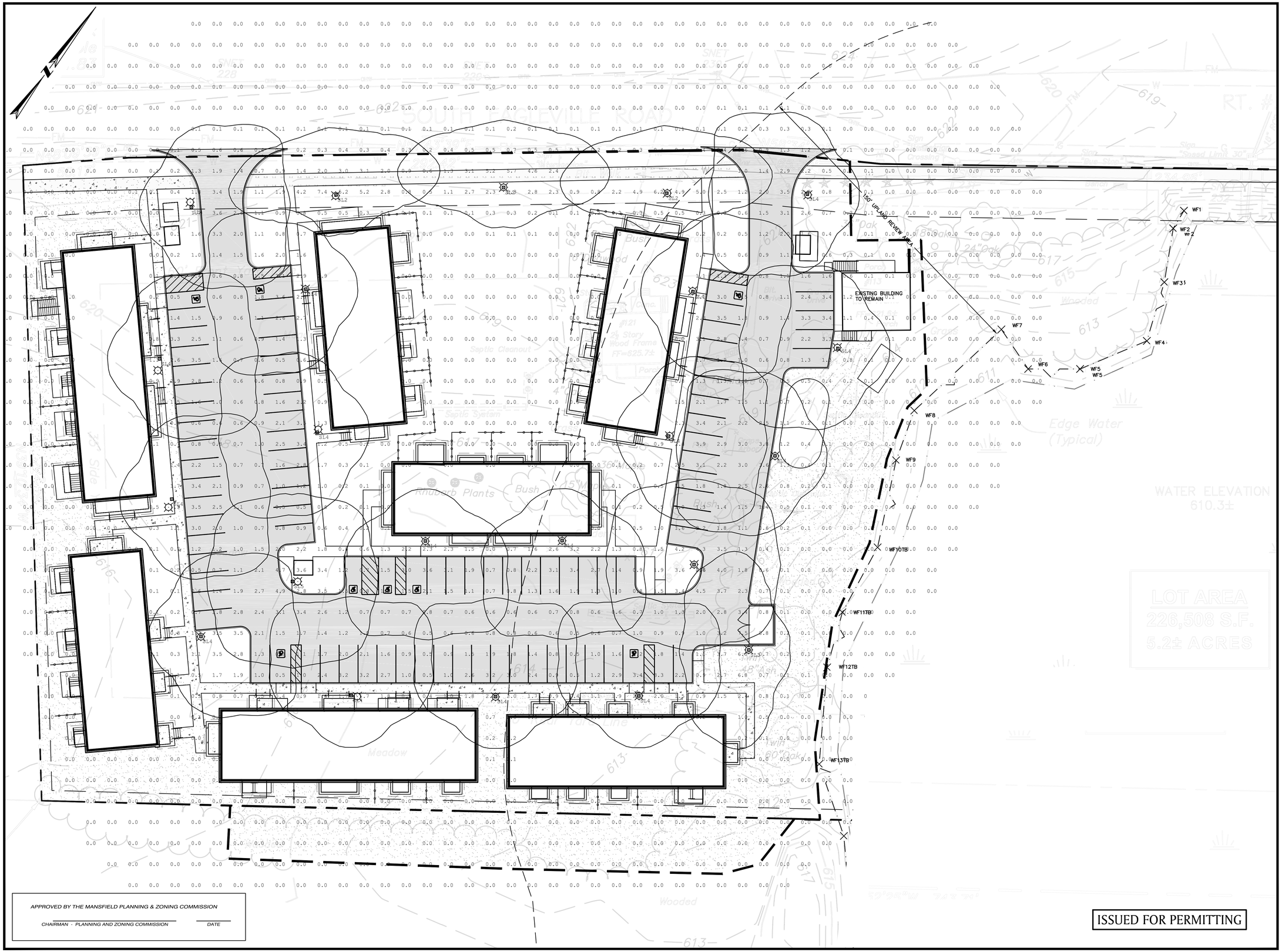
JOB. NO: 83749.00

L-1.2



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION _____ DATE _____

ISSUED FOR PERMITTING

EAGLEVILLE GREEN - NOVEMBER 25, 2019

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

PHOTOMETRICS PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

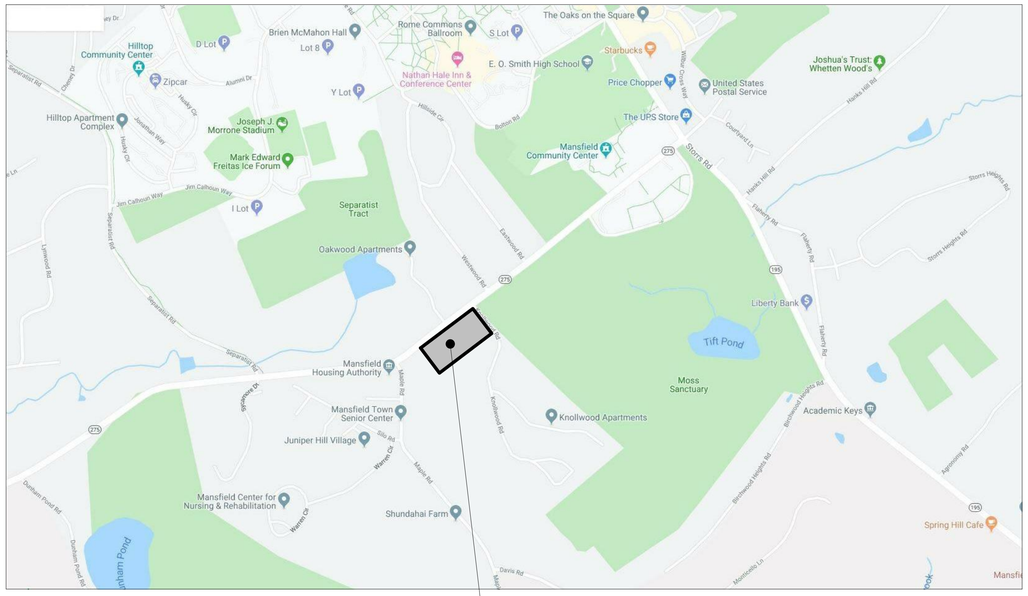
FILE: 8374900-PHOTO.DWG
DWG. NO:
JOB. NO: 83749.00

L-2.0

1 A1.1 CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN	MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.	dorgan architecture & planning	SHEET TITLE: SITE PLAN
		1 Revision #1 2/11/20	PROJECT NAME: EAGLEVILLE GREEN
		REVISIONS:	PROJECT #: DRAWN BY:
			DATE: 2/6/20
			SHEET NUMBER A1.1



1 A1.1a LOCATION PLAN
SCALE: 1" = 1'-0"

PARKING

(79) REGULAR SPACES
(8) ACCESSIBLE SPACES

(87) TOTAL SPACES

87 SPACES/ 42 DWELLING UNITS = 2.07 SPACES/ UNIT

UNITS PER ACRE

PROPERTY AREA = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = +/-3.2 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 13.125

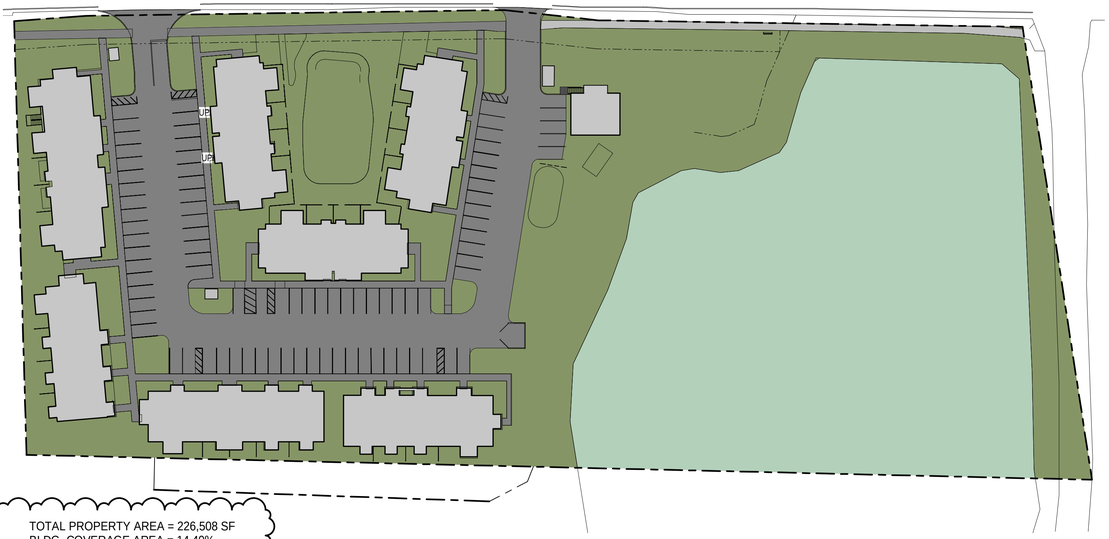
BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNIT BREAKDOWN

UNIT TYPE	UNIT QUANTITY.		AFFORDABLE UNITS*				BEDS		BATHS		1/2 BATHS		NET AREA		COMMENTS
	QTY.	TOTAL	80%	60%	TOTAL	RENT	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	
1 BEDROOM - TYPE #1	6		2	1			1	6	1	6	0	0	706	4,236	Typical 1st floor unit
1 BEDROOM - TYPE #2	8		1	2			1	8	1	8	0	0	780	6,240	Typical 2nd floor unit
1 BEDROOM - TYPE #3	1						1	1	1	1	0	0	780	780	2nd floor - stacked over 3 BR
1 BEDROOM - TYPE #4	1						1	1	1	1	0	0	750	750	2nd floor - stacked over 3 BR
1 BEDROOM - ACCESSIBLE	2						1	2	1	2	0	0	706	1,412	1st floor - accessible
Total 1 BEDROOM UNITS		**18**	3	3	**6**										
2 BEDROOM - TYPE #1	12		2	2			2	24	1	12	1	12	1,045	12,540	Typical 2 story unit
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2						2	4	1	2	0	0	980	1,960	1st floor - accessible
2 BEDROOM - TYPE #3	2		1				2	4	1	2	0	0	1,060	2,120	2nd floor - stacked over 2 BR
2 BEDROOM - EXISTING BUILDING	1						2	2	1	1	1	1	1,200	1,200	Renovated exist. residence
Total 2 BEDROOM UNITS		**17**	3	2	**5**										
3 BEDROOM - TYPE #1	6		1	1			3	18	2	12	0	0	1,260	7,560	Typical 2 story unit
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1						3	3	2	2	0	0	1,400	1,400	1st floor - accessible
Total 3 BEDROOM UNITS		**7**	1	1	**2**										
TOTAL		**42**	7	6	**13 (31%)**			73		49		13		40,198	

*** THIS PLAN ILLUSTRATES A TYPICAL DISTRIBUTION OF AFFORDABLE UNITS. THE LOCATION OF AFFORDABLE UNITS WILL FLOAT DEPENDING ON THE NEEDS AND PREFERENCES OF RESIDENTS.**



TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 14.40%

2 A1.1a SITE COVERAGE PLAN
SCALE: 1" = 50'-0"

PROJECT NORTH

3 A1.1a DWELLING UNIT BREAKDOWN
SCALE: 1" = 50'-0"

PROJECT NORTH

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

1	Revision #1	2/11/20

REVISIONS:

SHEET TITLE: SITE INFORMATION

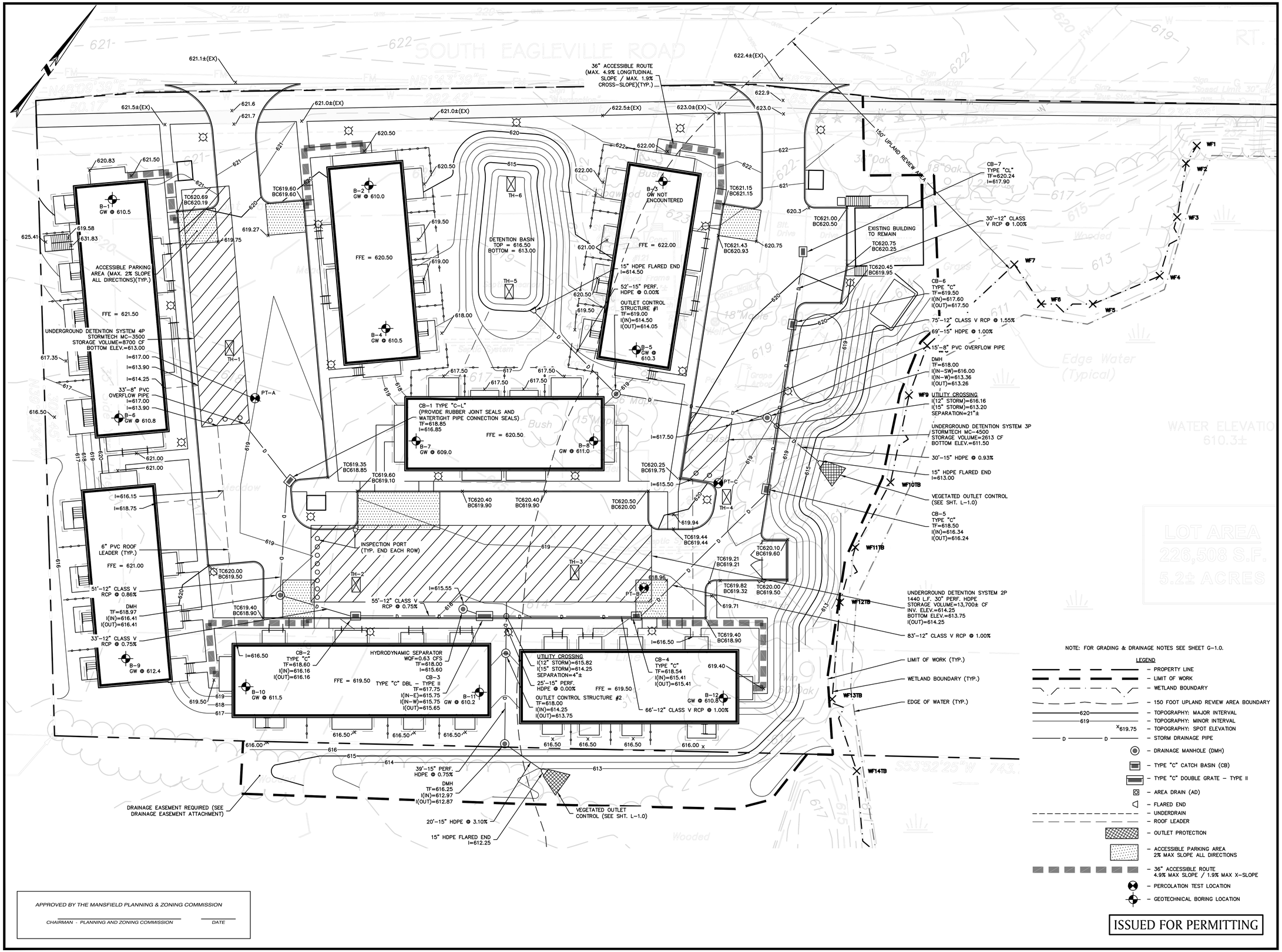
PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 2/6/20

SHEET NUMBER A1.1a



NOTE: FOR GRADING & DRAINAGE NOTES SEE SHEET G-1.0.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- WETLAND BOUNDARY
- 150 FOOT UPLAND REVIEW AREA BOUNDARY
- 620 – TOPOGRAPHY: MAJOR INTERVAL
- 619 – TOPOGRAPHY: MINOR INTERVAL
- x619.75 – TOPOGRAPHY: SPOT ELEVATION
- D — D – STORM DRAINAGE PIPE
- DRAINAGE MANHOLE (DMH)
- TYPE "C" CATCH BASIN (CB)
- TYPE "C" DOUBLE GRATE – TYPE II
- AREA DRAIN (AD)
- FLARED END
- UNDERDRAIN
- ROOF LEADER
- OUTLET PROTECTION
- ACCESSIBLE PARKING AREA 2% MAX SLOPE ALL DIRECTIONS
- 36" ACCESSIBLE ROUTE 4.9% MAX SLOPE / 1.9% MAX X-SLOPE
- PERCOLATION TEST LOCATION
- GEOTECHNICAL BORING LOCATION

ISSUED FOR PERMITTING

APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	02/26/2020	PER REVIEW COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0

EAGLEVILLE GREEN - NOVEMBER 25, 2019

2 A1.2 1ST FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da&p dorgan architecture & planning

REVISIONS:

SHEET TITLE: OVERALL FIRST FLOOR PLAN

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A1.2

1 / A1.3 2ND FLOOR OVERALL PLAN
SCALE: 1/16" = 1'-0"

THESE DOCUMENTS ARE PROGRESS DRAWINGS PREPARED AS A SUPPLEMENT TO THE ZONING BOARD APPLICATION. THEY ARE NOT FOR CONSTRUCTION. IN THE CASE OF CONFLICTS THE ENGINEERING SET PREPARED BY BSC GROUP SHALL PREVAIL.

EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da&p dorgan architecture & planning

REVISIONS:

SHEET TITLE: OVERALL SECOND FLOOR PLAN

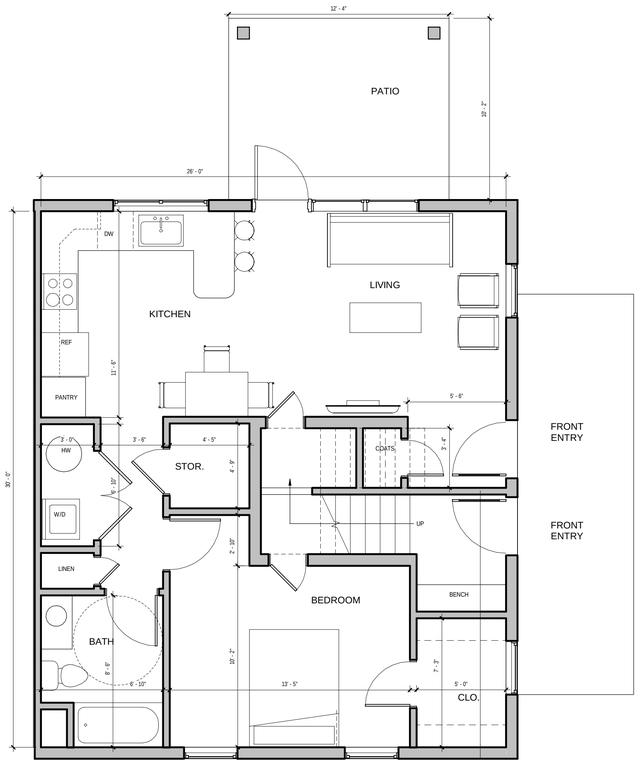
PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER A1.3

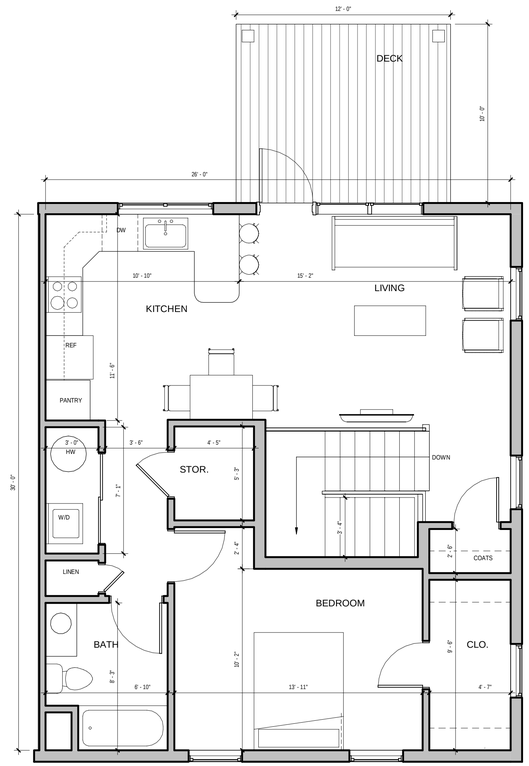


1ST FLOOR

STACKED
(ACCESSIBLE UNIT IS SIMILAR)

TOTAL AREA = 706 SF

2 A2.1 UNIT PLAN - 1 BR TYPE #1
SCALE: 1/4" = 1'-0"

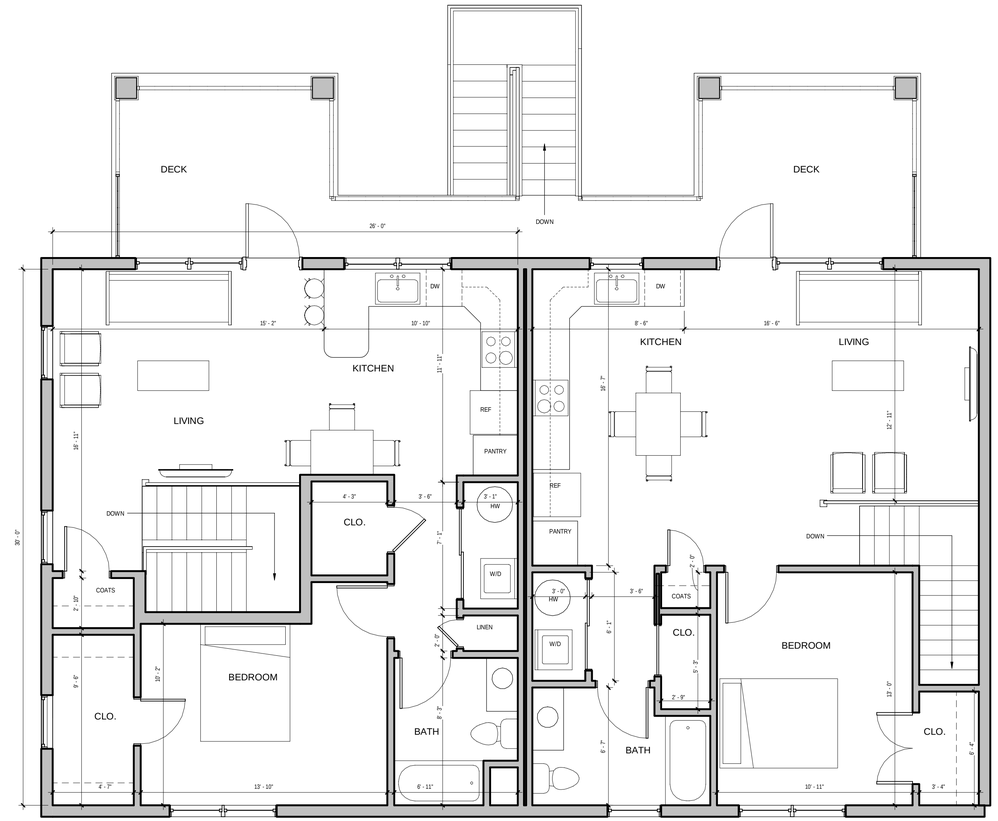


2ND FLOOR

STACKED

TOTAL AREA = 780 SF

1 A2.1 UNIT PLAN - 1 BR TYPE #2
SCALE: 1/4" = 1'-0"



TYPE 3

2ND FLOOR

OVER ACCESSIBLE UNIT

780 SF

TYPE 4

2ND FLOOR

OVER ACCESSIBLE UNIT

750 SF

3 A2.1 UNIT PLAN - 1 BR TYPES #3 AND #4
SCALE: 1/4" = 1'-0"

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: UNIT TYPE PLANS

PROJECT NAME: EAGLEVILLE GREEN

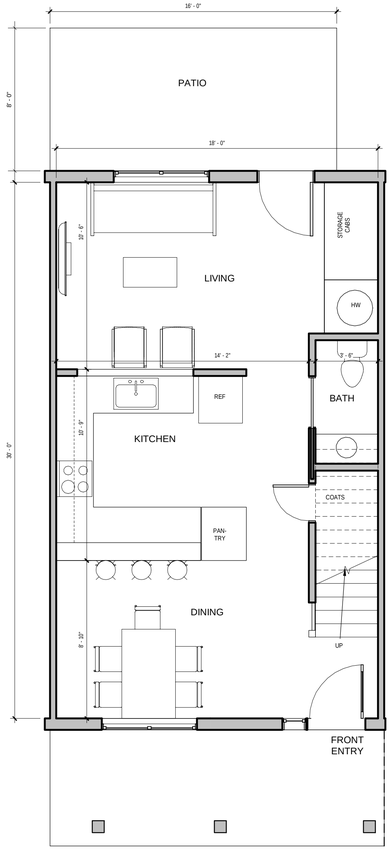
PROJECT #:

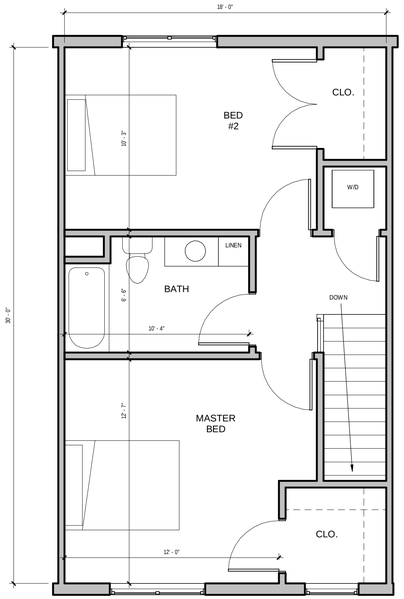
DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A2.1

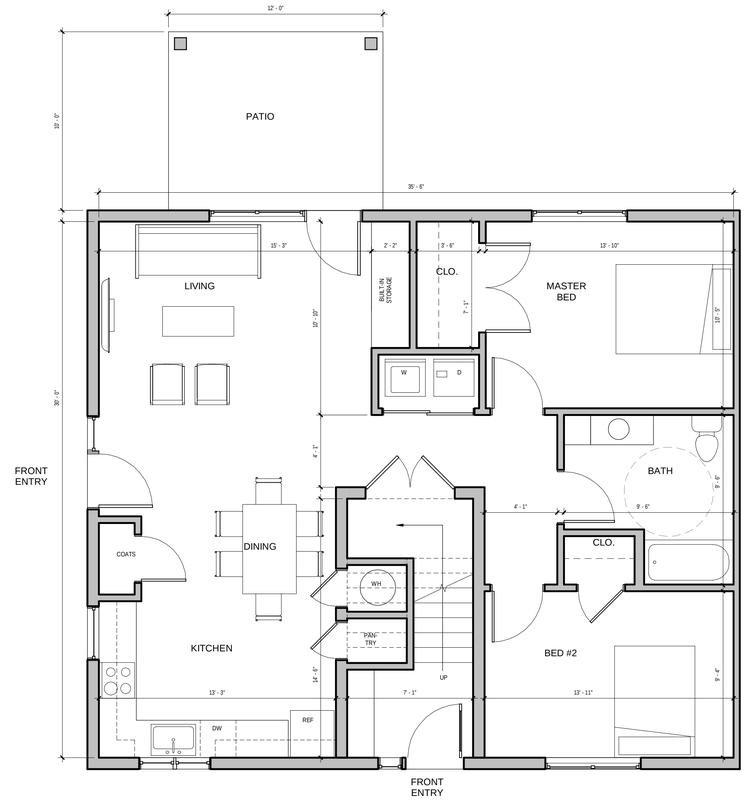


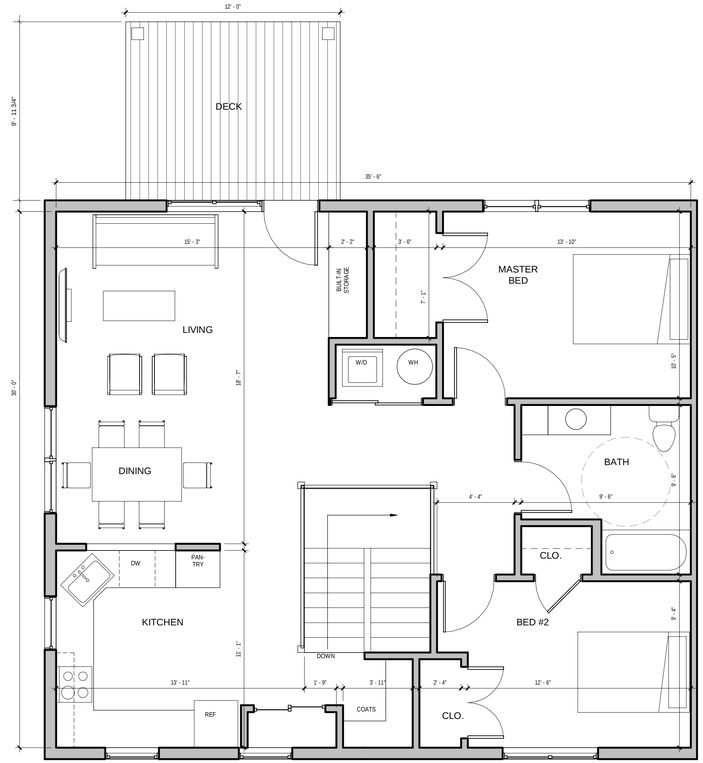


1ST FLOOR 540 SF 2ND FLOOR 505 SF

TOWNHOUSE TOTAL AREA = 1045 SF

1 A2.2 UNIT PLAN - 2BR TYPE #1
SCALE: 1/4" = 1'-0"





1ST FLOOR

ACCESSIBLE TOTAL AREA = 980 SF

4 A2.2 UNIT PLAN - 2BR TYPE #2
SCALE: 1/4" = 1'-0"

2ND FLOOR

STACKED OVER ACCESSIBLE UNIT TOTAL AREA = 1,060 SF

3 A2.2 UNIT PLAN - 2BR TYPE #3
SCALE: 1/4" = 1'-0"

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: UNIT TYPE PLANS

PROJECT NAME: EAGLEVILLE GREEN

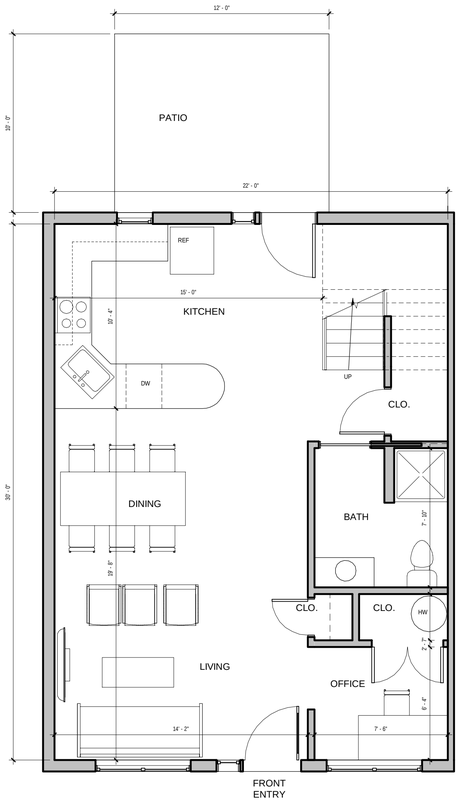
PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

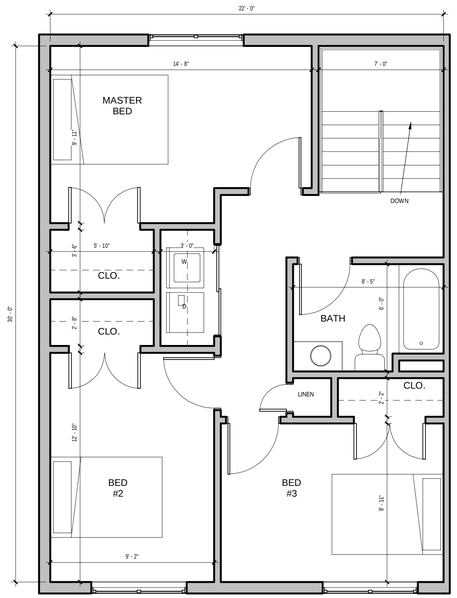
A2.2



1ST FLOOR 660 SF

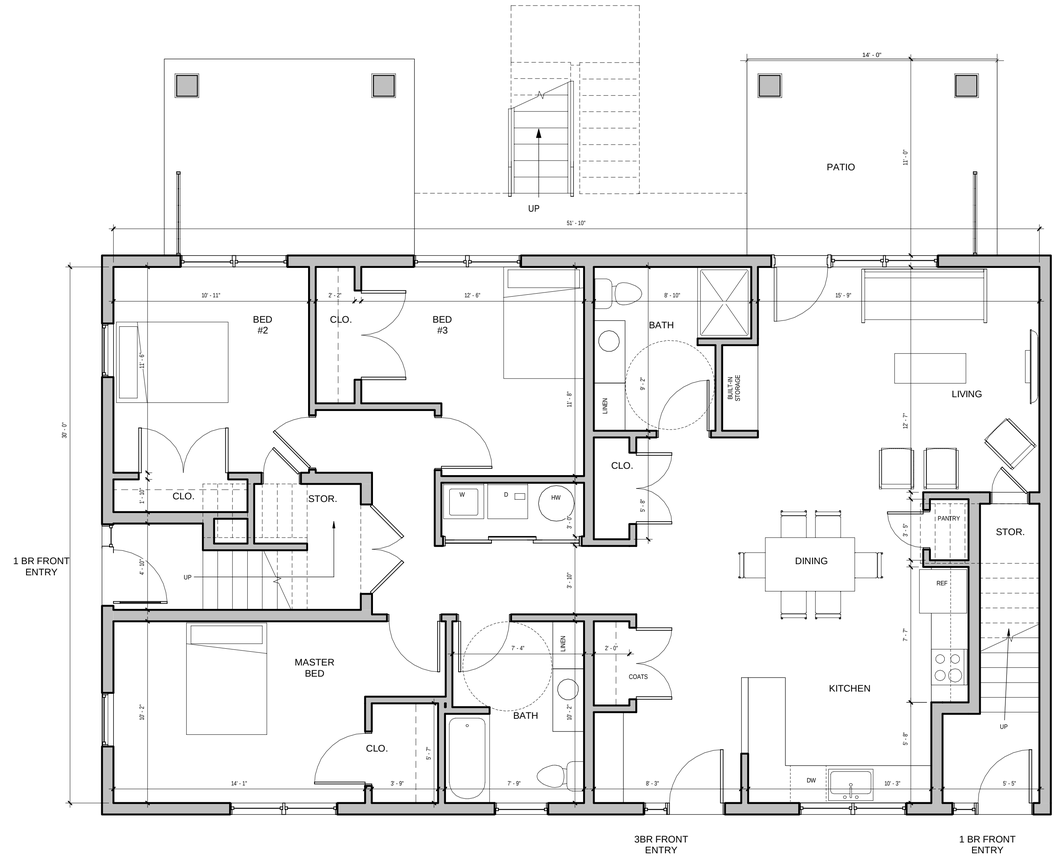
TOWNHOUSE

1 UNIT PLAN - 3 BR TYPE #1
A2.3 SCALE: 1/4" = 1'-0"



2ND FLOOR 600 SF

TOTAL AREA = 1,260 SF



1ST FLOOR

ACCESSIBLE 1400 SF

3 UNIT PLAN - 3BR TYPE #2
A2.3 SCALE: 1/4" = 1'-0"

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: UNIT TYPE PLANS

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

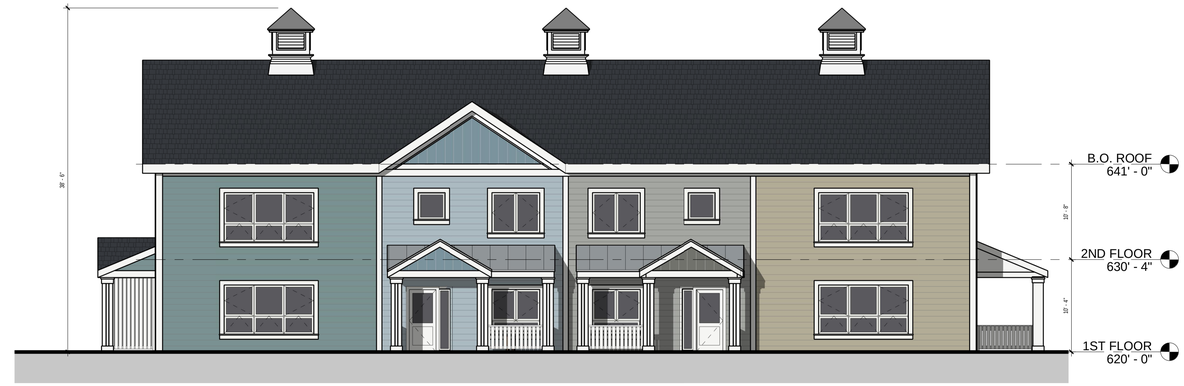
DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A2.3

1 A3.1 BUILDING 1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 A3.1 BUILDING 1 WEST ELEVATION
SCALE: 1/8" = 1'-0"

4 A3.1 BUILDING 1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

3 A3.1 BUILDING 1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 1

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

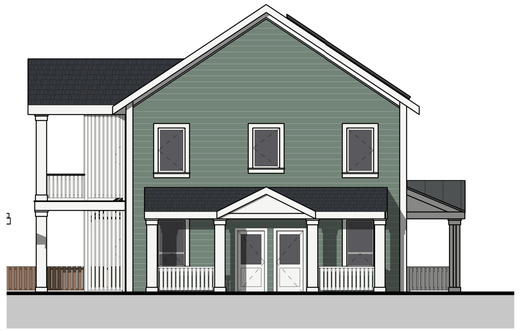
SHEET NUMBER

A3.1

1 A3.2 BUILDING 2 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.2 BUILDING 2 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.2 BUILDING 2 SOUTH ELEV
SCALE: 1/8" = 1'-0"



4 A3.2 BUILDING 2 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 2

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A3.2

1 A3.3 BUILDING 3 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.3 BUILDING 3 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.3 BUILDING 3 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.3 BUILDING 3 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da&p dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 3

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

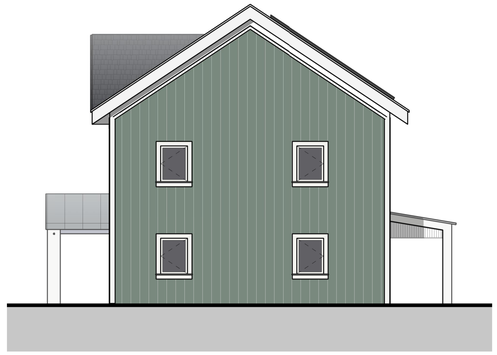
SHEET NUMBER

A3.3

1 A3.4 BUILDING 4 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.4 BUILDING 4 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.4 BUILDING 4 SOUTH ELEV
SCALE: 1/8" = 1'-0"



4 A3.4 BUILDING 4 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 4

PROJECT NAME: EAGLEVILLE GREEN

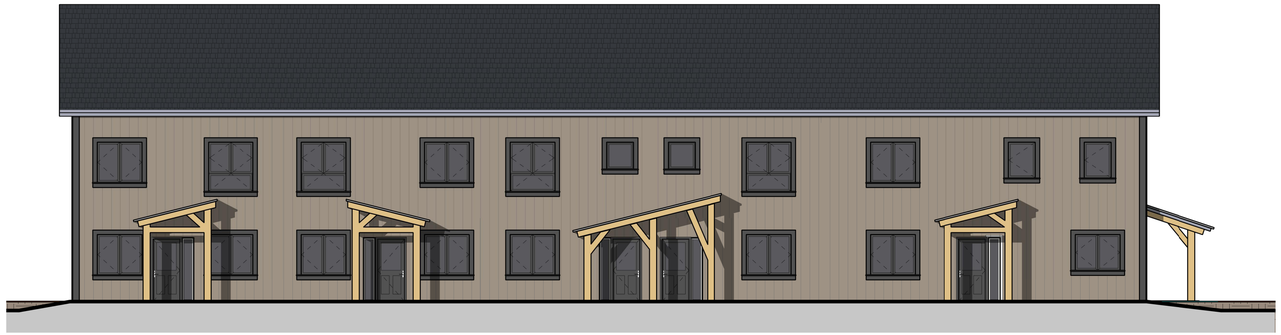
PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

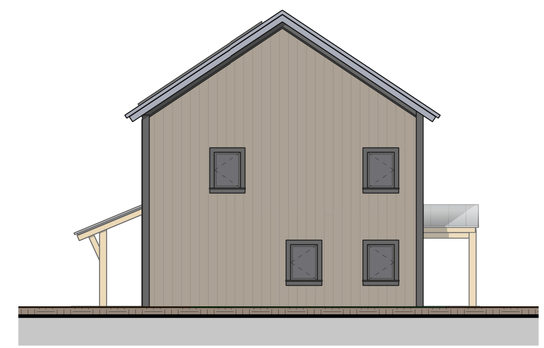
A3.4



1 A3.5 BUILDING 5 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.5 BUILDING 5 WEST ELEV
SCALE: 1/8" = 1'-0"

3 A3.5 BUILDING 5 SOUTH ELEV
SCALE: 1/8" = 1'-0"



4 A3.5 BUILDING 5 EAST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 5

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

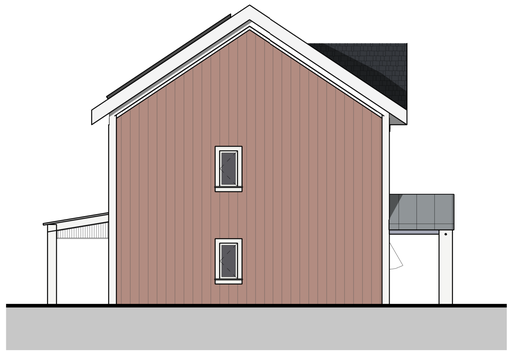
DATE: 11/25/19

SHEET NUMBER

A3.5

1 A3.6 BUILDING 6 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.6 BUILDING 6 EAST ELEV
SCALE: 1/8" = 1'-0"



3 A3.6 BUILDING 6 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.6 BUILDING 6 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da &p dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 6

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A3.6

1 A3.7 BUILDING 7 NORTH ELEV
SCALE: 1/8" = 1'-0"

2 A3.7 BUILDING 7 EAST ELEV
SCALE: 1/8" = 1'-0"

3 A3.7 BUILDING 7 SOUTH ELEV
SCALE: 1/8" = 1'-0"

4 A3.7 BUILDING 7 WEST ELEV
SCALE: 1/8" = 1'-0"

DRAFT

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EAGLEVILLE GREEN

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

dorgan architecture & planning

REVISIONS:

SHEET TITLE: EXTERIOR ELEVATIONS - BUILDING 7

PROJECT NAME: EAGLEVILLE GREEN

PROJECT #:

DRAWN BY:

DATE: 11/25/19

SHEET NUMBER

A3.7

THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION

Eagleville Green
113-121 SOUTH EAGLEVILLE ROAD
MANSFIELD, CONNECTICUT

Affordability Plan

Zoning Submission Draft
January 2020

Submitted by The Mansfield Nonprofit Housing Development Corporation

Updated January 21, 2020

DEFINITIONS:

"**Community**" – means Eagleville Green, a multi-family rental development at 113-121 South Eagleville Road approved as a South Eagleville Road-Housing Opportunity District ("SER-HO") in **Schedule A**. The site plan is on file with the Commission. All units within the Community shall be constructed in compliance with the minimum specifications set forth in **Schedule B**. The initial location, design and features of the income-restricted housing units in the Community are set forth in **Schedule C**. The Community shall have 42 dwelling units, a minimum of thirty percent (30%) of which shall be income restricted. The specific location of the income-restricted units within the Community may be subject to change; however, the required number and mix of income-restricted units shall be maintained at all times, and all units, market and income-restricted, shall be comparable in design and amenities.

"**Developer**" – means The Mansfield Nonprofit Housing Development Corporation, of Mansfield, Connecticut, or its successors and assigns.

1. The following Affordability Plan is submitted pursuant to CGS Section 8-30g (b)(1)(A) – (E).

A. Entity Responsible for Administration and Compliance.

This Affordability Plan will be administered by the Mansfield Housing Authority or its successors and assigns, and in such role is hereafter referred to as "Administrator." The point of contact for the Administrator shall be Rebecca Fields, Executive Director or her successor, who can be reached at (860) -487-0693. The Administrator shall submit a status report in the format agreed upon by the Administor and the Commission, to the Town on compliance with this Affordability Plan annually by January 31 to show the prior year's activity.

B. Following is the Affirmative Fair Housing Marking Plan which can be found on the Mansfield Housing Authority's webpage as it may change from time to time.

MANSFIELD HOUSING AUTHORITY
Affirmative Fair Housing Marketing Plan (AFHMP)

1. Housing Program Name and Address:
   Affordable Housing (Excluding Section 8 Voucher Program)
   Mansfield Housing Authority
   309 Maple Road Storrs, Tolland County, CT 06268

2. Census Tracts used for Town of Mansfield Housing Market: 8811, 8813, 8815

3. **Local Market** Demographics includes the jurisdiction of the Mansfield Housing Authority (MHA): Towns of Mansfield, Coventry, Willington Ashford and Chaplin.

4. **Expanded Market** Demographics includes Windham, Tolland, Hartford, and New London Counties

5. All correspondence should be sent to the Managing Agent :
   Mansfield Housing Authority
   309 Maple Road
   Storrs, CT 06268
   Telephone: 860-487-0693
   Email: Rfields@mansfieldhousingct.org

6. Entity Responsible for Marketing: See 5 above

7. Current Adult Participants (Non-Section 8) and Demographics:
   a. Current Participants (Dec. 2019)

White	62.50%
Black	2.67%
Hispanic	4.46%
Asian	34.82%
Am. Indian and Alaskan Native	0.00%
Native Hawaiian or Pacific Islander	0.00%
Persons with Disabilities	19.64%
Families with Children (households)	46.66%
Elderly (62+)	27.67%

   b. Local Market Demographics:

White	83.31%
Black	2.86%
Hispanic	5.39%
Asian	5.84%
Am Indian	.09%
Native Hawaiian or Pacific Islander	0.00%
Persons with Disability	7.87%
Families with Children	26.73%
Elderly (62+)	13.37%

   c. Local Market: Renters with income < 80% Area Median Income

White	83.24%
Black	1.05%
Hispanic	6.91%
Asian	7.56%
American Indian	0%

Pacific Islander	0%
Other	1.23%

d. Town of Mansfield Demographics: (Census Tracks 8811, 8813, and 8815)

White	75.69%
Black	4.90%
Hispanic	6.42%
Asian	9.91%
Am Indian	.10%
Native Hawaiian or Pacific Islander	0.00%
Persons with Disability	7.86%
Families with Children	8.65%
Elderly (62+)	16.79%

e. Town of Mansfield: Renters with incomes < 80% Area Median Income

White	80.04%
Black	1.70%
Hispanic	6.06%
Asian	11.51%
American Indian	0%
Pacific Islander	0%
Other	0.68%

8. a. Expanded Housing Market Demographics

White	70.68%
Black	9.79%
Hispanic	14.58%
Asian	4.44%
American Indian	.17%
Native Hawaiian or Pacific Islander	0.00%
Persons with Disability	12.14%
Families with Children	26.99%
Elderly (62+)	16.76%

b. Renters <80% AMI

White	51.96%
Black	16.81%
Hispanic	26.03%
Asian	2.49%
American Indian	0.25%
Pacific Islander	0.04%
Other	2.41%

Least Likely to Apply:
We consider the least likely to apply to be persons who are Black and Hispanic families.

9. Residency Preference: The MHA has no preferences.

10. Marketing Activities.
The following will be sent with the initial opening announcement attached to all Partner Organization:
Mansfield's Waiting List for Non-Section 8 Housing will Remain Open
Providing housing first can help individuals and families successfully deal with life's challenges. We understand this and want to reach out to all individuals and families that might be interested in applying to our affordable housing programs. We are sending this announcement to you in an effort to reach as many people as possible. We would appreciate it if you would share this with anyone you think would be interested. Information on each town in our jurisdiction can be found at the following web addresses:
    1. www.mansfieldct.gov
    2. www.willingtonct.org
    3. www.coventryct.org
    4. www.ashfordtownhall.org
    5. www.chaplinct.org

Partner Organizations to receive the initial opening of the waiting List

1. Town of Mansfield
    a. Social Services
    b. Senior Center
    c. Library
    d. Community Center

2. Town of Willington
    a. Social Services
    b. First Selectman Office
    c. Senior Center

3. Town of Coventry
    a. Social Services
    b. Senior Center

4. Town of Ashford
    a. Social Services
    b. First Selectman Office
    c. Senior Center

5. Town of Chaplin

a. First Selectman Office
b. Senior Center

6. Hartford HealthCare
   a. Natchaug Hospital - Sachem House Adult Program
   b. Older Adult Program (Over 55) Windham Hospital
   c. Quinebaug Treatment Center

7. Access Agency - Willimantic

8. Dept. of Social Services: Willimantic Branch

9. Social Security Administration: Willimantic Branch

10. www.cthcvp.org (covers the entire state and nation)

11. Windham No Freeze Shelter

12. Connecticut Coalition Against Domestic Violence – United Services of Willimantic
   a. Dayville
   b. Willimantic
   c. Wauregan
   d. Columbia

13. Windham Regional Community Council

14. UCONN Veterans Affairs and Military Programs
   a. University of Connecticut
   b. VA Willimantic Outpatient Clinic

13. Fair Housing Poster.
This is displayed on the bulletin board in the lobby of the MHA.

14. This Affirmative Fair Housing Marketing Plan.
This is available at the MHA office and on its webpage.

15. Evaluation of Marketing Plan.
   a. After the creation of the waiting lists, the demographics of those applying compared to those in the expanded market area will be assessed.
   b. Specifically, the MHA will look at the number of applicants in the "least likely to apply" groups.
   c. Any determination to change the existing marketing plan would be made if, and when, there is a statistically significant change to the category of families found to be "least likely to apply."

16. Marketing Staff.

Due to the size of the program, the MHA has no marketing staff positions. As part of their other duties, the Executive Director and staff will coordinate marketing.

17. Staff Training and Assessment: AFHMP

a. All office staff was trained on December 8, 2016 by Open Community Alliances, both orally and in writing, on non-discrimination and fair housing policies.

b. The MHA will endeavor to have employees attend formal training on an annual basis, however employees continue informal training on an ongoing basis through information provided by HUD, free online educational webcasts, and reading fair housing notices submitted to professional organizations who advocate for fair housing.

c. The AFHMP will be reviewed when:

i. the Consolidated Plan as set by the State of Connecticut is updated, or

ii. there are material changes in the demographics or housing market.

18. Selection of Applicants.

a. Applicants are selected by lottery for each opening in conformance with the Mansfield Housing Authority Tenant Selection Policy as it may be amended from time to time.

b. Staff does not select applicants. Applicants are randomly chosen by lottery via a housing software program.

C. The sample calculations of the maximum rents of the intended affordable dwellsing units are as follows:

ONE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN <u>80 PERCENT</u> OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 1.5 persons by calculating 75 percent of Item 1	$73,425
3. Calculate 80 percent of Item 2	$58,740
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$17,622
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,469
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($960) times 120 percent	$1,152
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,152
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$125
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,027

ONE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 60 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 1.5 persons by calculating 75 percent of Item 1	$73,425
3. Calculate 60 percent of Item 2	$44,055
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$13,217
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,101
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$960
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$960
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$125
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$835

TWO BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN 80 PERCENT OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 3 persons by calculating 90 percent of Item 1	$88,110
3. Calculate 80 percent of Item 2	$70,488
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$21,146
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,762
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($1,194) times 120 percent	$1,433
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,433
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,283

TWO BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN <u>60 PERCENT</u> OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 3 persons by calculating 90 percent of Item 1	$88,110
3. Calculate 60 percent of Item 2	$52,866
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$15,860
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,322
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$1,194
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,194
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,044

THREE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN <u>80 PERCENT</u> OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 4.5 persons by calculating 104 percent of Item 1	$101,816
3. Calculate 80 percent of Item 2	$81,453
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$24,436
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$2,036
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA ($1,496) times 120 percent	$1,795
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,795
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,645

THREE BEDROOM RENTAL UNIT FOR FAMILY EARNING LESS THAN <u>60 PERCENT</u> OF STATEWIDE MEDIAN INCOME	SAMPLE COMPUTATIONS BASED ON FY 2019 DATA
1. Determine lower of relevant year (2019) area median income for Hartford-West Hartford-East Hartford, CT HMFA ($97,900) or statewide median income ($100,400), adjusted for family size (family of 4), as published by HUD	$97,900
2. Determine adjusted income for a household of 4.5 persons by calculating 104 percent of Item 1	$101,816
3. Calculate 60 percent of Item 2	$61,090
4. Calculate 30 percent of Item 3, representing maximum portion of a family's income that may be used for housing	$18,327
5. Divide Item 4 by 12 to determine maximum monthly housing expense	$1,527
6. Compare HUD 2019 Fair Market Rents for Hartford-West Hartford-East Hartford, CT HMFA	$1,496
7. Use lesser of calculated maximum monthly expense (Item 5) and HUD fair market rent (Item 6)	$1,496
8. Determine by reasonable estimate monthly expenses for heat and utility costs, excluding television, telecommunications, and information technology services, but including any fee required for all tenants (tenant responsible for such expenses)	$150
9. Subtract reasonable monthly expenses (Item 8) from maximum housing expense (Item 7) to determine maximum amount available for rent	$1,346

D. All units will be constructed and offered for lease concurrently. The initial location, design and features of the income-restricted housing units are set forth in Schedule C.

E. a. Restrictive Covenants - Affordability Period.

The SER-HO units shall be designated as affordable for the period set forth in state law. The affordability period shall be calculated separately for each SER-HO unit, and the period shall begin on the date of initial rental of such SER-HO unit to an eligible tenant household.

b. Lease Provisions governing affordable dwelling units

i. Principal Residence.

SER-HO units shall be occupied only as a tenant's principal residence. Subleasing of SER-HO units shall be prohibited.

ii. Requirement to Maintain Condition.

All tenants are required to maintain their units. The tenant shall not destroy, damage or impair the unit, allow the unit to deteriorate, or commit waste on the unit. When a SER-HO unit is offered for re-rental, the Administrator may cause the unit to be inspected.

iii. Affordable apartment home is subject to income limitions:

This apartment home is an affordable housing unit and is therefore subject to a limitation at the date of leasing and occupancy on the maximum annual income of the household that may occupy the apartment home, and is subject to a limitation on the maximum monthly rent. These limitations shall be strictly enforced.

2. General

a. Calculation of the maximum monthly payment for affordable apartment homes, so as to satisfy C.G.S. § 8-30g, shall utilize the median income data as published by the U.S. Department of Housing and Urban Development in effect on the day a lease is executed.

b. The maximum monthly payment that the tenant of an affordable apartment home shall pay shall not be greater than the amount that will preserve such unit as defined in C.G.S. § 8-30g.

c. The affordability period shall be calculated separately for each affordable apartment home in the Community, and the period shall begin on the date, as stated in the lease, of occupancy of the affordable apartment home. The designation of an affordable unit

may change over time due to an affordability tenant becoming ineligible and for other reasons in compliance with fair housing requirements.

d. In the event a tenant who occupies an affordable apartment home becomes ineligible due to an increase in income, the next available apartment in the Community would become an affordable apartment home. A temporary lapse in compliance with affordability requirements shall not result in a forfeiture or reversion of title, but the Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including the authority under C.G.S. § 8-12 to issue notices of violation, to impose fines, and to seek injunctive relief.

3. Enforcement.

A violation of this Affordability Plan shall not result in a forfeiture of title, but the Mansfield Planning and Zoning Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including § 8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect the property and to examine the books and records of the Administrator to determine compliance of SER-HO units with the affordable housing regulations.

4. Binding Effect.

This Affordability Plan shall be binding on the successors and assigns of the Developer and may be amended as set forth within.

SCHEDULE A

PROPERTY DESCRIPTION

A certain piece or parcel of land situated in the Town of Mansfield, County of Tolland and State of Connecticut, and shown on a map or plan entitled, "PROPERTY/BOUNDARY SURVEY PREPARED FOR MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP. 113-121 SOUTH EAGLEVILLE ROAD STORRS, CONNECTICUT Drawing date: June 27, 2016 Drawing Scale: 1" = 40'," prepared by Lenard Engineering, Inc., 2210 Main Street, Glastonbury, Connecticut. Said parcel is more particularly bounded and described as follows:

Beginning at a point on the easterly side of South Eagleville Road (Rt. #275), which point is the northeasterly corner of now or formerly Connecticut Natural Gas Corporation and the northwesterly corner of the property herein described, said point being the POINT OF BEGINNING;

thence N 48° 09' 39" E, along South Eagleville Road a distance of 50.17 feet;

thence N 51° 43' 39" E., along South Eagleville Road a distance of 292.42 feet;

thence N 58° 34' 39" E, along South Eagleville Road a distance of 65.70 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 234.96 feet;

thence N 53° 21' 59" E, along South Eagleville Road a distance of 61.13 feet;

thence S 46° 13' 11" E, along land now or formerly Storrs Acquisition LLC a distance of 320.15 feet;

thence S 53° 52' 25" W, along land now or formerly N/F Storrs Acquisition LLC a distance of 743.71 feet;

thence N 39° 10' 34" W, along land now or formerly Connecticut Natural Gas Corporation a distance of 302.45 feet to the POINT OF BEGINNING.

SCHEDULE B

dorgan architecture & planning

10 Eastwood Road, Storrs, CT 06268 01.518.469.6464 Registered Architect NCARB

Draft Outline Specifications Eagleville Green 11/2/19

Please note that all units will be constructed to the same standard.

Structure

- Reinforced concrete footings set on gravel over undisturbed soil.
- Concrete slab on grade
- Wood frame

Building Envelope

- Energy Star Rated Windows
- Continuous air barrier including high performance caulking
- Continuous moisture barrier
- Architectural roof shingle (25 year)
- Insulation to exceed code requirements
- Fiber cement siding

Interior

- Water Saver Rated plumbing fixtures
- Energy Star Rated appliances
- North America sourced gypsum wallboard
- Cement board in bathrooms
- Low VOC caulk
- Low VOC paint
- Low VOC mastic
- Washer dryer connections
- Solid surface countertops
- Energy Star Rated mechanical equipment
- Energy Star Rated ventilation equipment
- Smoke and CO2 detectors
- Durable cabinets and flooring

Site

- Night sky protective lighting
- Native and natively adapted plantings
- Private outdoor patio or deck for all units
- Asphalt paving

SCHEDULE C

LOCATION, DESIGN AND FEATURES OF INCOME-RESTRICTED HOUSING UNITS

Low-income, affordable and workforce housing units in the Community shall:

a. Be situated within the Community so as not to be in less desirable locations than market-rate units, and shall, on average, be no less accessible to public amenities, such as open space and recreational facilities, than the market rate units.

b. Be integrated with the rest of the Community and be compatible in size, number of bedrooms, design, appearance, exterior features, construction, and quality of materials to the market rate units. Interior features and mechanical systems shall conform to the same specifications as market rate units.

c. Use building materials that have a compatible exterior style to other units in the Community.

d. Be ready for occupancy no later than the date of the initial occupancy of the market-rate portion of the Community. If the project is developed in phases, the affordable residential units shall be developed in proportion to the phases.

As set forth in the approved site plan on file with the Commission, the affordable and market-rate units will all be comparable in terms of construction, amenities and bedroom sizes. The following will be the initially-designated affordable units. The unit designation may change due to the needs or preferences of the resident households or other reasons compliant with fair housing requirements.

EAGLEVILLE GREEN
AFFORDABLE HOUSING
UNITS

UNIT TYPE	UNIT QUANTITY		AFFORDABLE UNITS			MARKET UNITS
	#	Subtotal	60%	80%	Total	
1 BEDROOM - Type #1	6		1	2		3
1 BEDROOM - Type #2	8		2	1		5
1 BEDROOM - Type #3	1					1
1 BEDROOM - Type #4	1					1
1 BEDROOM - Accessible	2					2
TOTAL 1 BEDROOM UNITS		**18**	**3**	**3**	**6**	**12**
2 BEDROOM - Type #1	12		2	2		8
2 BEDROOM - Type #2 (Accessible)	2					2
2 BEDROOM - Type #3	2		1			1
2 BEDROOM - Existing Building	1					1
TOTAL 2 BEDROOM UNITS		**17**	**3**	**2**	**5**	**12**
3 BEDROOM - Type #1	6		1	1		4
3 BEDROOM - Type #2 (Accessible)	1					1
TOTAL 3 BEDROOM UNITS		**7**	**1**	**1**	**2**	**5**
TOTAL UNITS		**42**	**7**	**6**	**13**	**29**
PERCENTAGE oF TOTAL UNITS					31%	69%

LEGEND
1 BED
2 BED
3 BED
SUPPORT
(A) = ACCESSIBLE GROUND FLOOR UNIT
(60%) = 60% OF MEDIAN INCOME AFFORDABLE UNIT
(80%) = 80% OF MEDIAN INCOME AFFORDABLE UNIT
ACCESSIBLE & 1 BED UNITS ARE 1 STORY/ STACKED. ALL OTHER UNITS ARE 2 STORIES

Statement of Use

The Mansfield Non-Profit Housing Development Corporation is proposing a project located at 113-121 South Eagleville Road in Mansfield, CT. This project involves the construction of a residential development containing 42 mixed-family residential units in 7 multi-story buildings spread over a 5.2-acre parcel. In addition to the constructed building complex, the site will include access via two driveway entrances, paved surface parking for approximately 87 vehicle spaces, and a community garden area that will improve the sense of community. The total area of construction activity (disturbed area) is approximately 3.2 acres.

Approximately 47,518 square feet of construction will be performed within the 150-foot wetland buffer zone and therefore the proposed activities are under the jurisdiction of the Mansfield Inland Wetland Agency (IWA). The IWA license application has been received by the Town of Mansfield and is currently under review. The IWA and Planning & Zoning Commission will be meeting on December 2, 2019 at 6:30pm to set a date for the public hearing.

STORMWATER MANAGEMENT REPORT

Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

October 2019
Revised February 2020

PREPARED FOR:

Mansfield Non-Profit Housing Development Corporation
309 Maple Road
Storrs, CT 06268

PREPARED BY:

BSC GROUP, INC.
300 Winding Brook Drive
Glastonbury, CT 06033
PHONE: 860-652-8227 FAX: 860-652-8229

TABLE OF CONTENTS

CONTENTS **PAGE**

1.0 INTRODUCTION 1
2.0 EXECUTIVE SUMMARY 1
3.0 PROJECT DESCRIPTION 1
3.1 Characteristics 2
3.2 Soil 2
3.3 Wetlands 2
3.4 Hydrology 3
4.0 STORMWATER MANAGEMENT 3
4.1 Design Objective 3
4.2 Design Criteria 3
4.3 Design Methodology 3
4.4 Existing Conditions 4
4.5 Proposed Conditions 4
4.6 Stormwater Detention 5
4.7 Pre- and Post-Comparison 8
5.0 STORMWATER DRAINAGE SYSTEM 8
5.1 Design Criteria 8
5.2 Design Methodology 8
6.0 STORMWATER QUALITY 9
6.1 Temporary Control of Sediment and Erosion 10
6.2 Permanent Control of Stormwater Quality 11
7.0 OPERATION AND MAINTENANCE PLAN 11
7.1 During Construction 11
7.2 After Construction 13
8.0 CONCLUSION 14

LIST OF DRAWINGS/FIGURES

Figure 1 Site Location Map
Figure 2 Existing Watershed Area Map
Figure 3 Proposed Watershed Area Map
Figure 4 Catchment Area Map

LIST OF APPENDICES

Appendix A Existing Stormwater Discharge Computations
Appendix B Proposed Stormwater Discharge Computations
Appendix C Proposed Hydraulic Sizing Computations
Appendix D Water Quality Computations

1.0 INTRODUCTION

This Stormwater Management Report contains the engineering design of the stormwater management systems for the proposed development of the Eagleville Green, located at 113-121 South Eagleville Road in Mansfield, Connecticut. (Figure 1 – Site Location Map). The development will consist of seven (7) multi-story housing buildings, surface parking for approximately 87 vehicle spaces, and other "typical" site improvements to support the proposed building program. The engineering design and report are prepared in accordance with Town of Mansfield Regulations, the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, the 2004 Connecticut Department of Energy & Environmental Protection (CT DEEP) Water Quality Manual, and the 2000 Connecticut Department of Transportation (ConnDOT) Drainage Manual.

2.0 EXECUTIVE SUMMARY

This report is prepared for Mansfield Housing Authority in support of the Eagleville Green proposed development. It addresses the impacts and drainage mitigation for the increase in site impervious caused by the new building complex and its appurtenances.

The following stormwater management facilities are designed in accordance with the Town of Mansfield in coordination with their engineering department, the Mansfield Zoning Regulations, CT DEEP, and ConnDOT Drainage Standards:

- As part of the construction, total site impervious area has been increased. Therefore, peak flows for the ,2-, 10-, 25-, and 100-year design storms have been mitigated.
- In accordance with the Town of Mansfield Regulations, the peak flow generated during the 2-year design storm has been reduced to 50% of the pre-development rate.
- On-site stormwater collection and conveyance is accomplished by a series of catch basins, manholes, piping, above-ground detention pond, water quality units and underground detention facilities.
- Short-term erosion control is achieved through use of construction entrances, inlet protection, silt fence and hay bale barriers.
- A stormwater treatment train is provided, including parking lot sweeping, catch basins with two (2) foot sumps for sediment collection, hydrodynamic separator, above-ground dry detention basin, and open bottom infiltrating underground detention units. All stormwater runoff from the proposed development will be directed to the proposed site drainage and management system, where it will pass through detention systems before ultimately discharging to the adjacent wetland onsite.
- Stormwater drainage piping has been designed to convey the 10-year design storm in accordance with the 2000 ConnDOT Drainage Manual.

3.0 PROJECT DESCRIPTION

This project involves the construction of a residential development containing 7 residential buildings spread over a 5.2-acre parcel. In addition to the constructed building complex, the site will include access via two driveways, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site. The total area of construction activity (disturbed area) is approximately 3.2 acres.

Storm drainage and runoff control will be accomplished by directing site overland runoff to a series of area drains and catch basins, then via underground piping to either the above-ground detention basin or the underground detention system. The discharge of the collected stormwater from the site

will drain to the east, through outlet protection aprons, and into the adjacent onsite wetland. The roof runoff will be directed to roof leaders, then via underground piping to either the above-ground detention basin or dedicated infiltration units designed to hold and infiltrate the 100-year storm. See Section 4.6 for a more detailed discussion.

EXISTING CONDITIONS

3.1 Characteristics

The project site consists of an approximately 5.2-acre parcel located off of South Eagleville Road in Mansfield, Connecticut, with two (2) existing single-family residential buildings developed at the front of the site with a paved driveway, and grass area/wetlands surrounding. The property is bound by South Eagleville Road to the north, Oakwood Apartments across South Eagleville Road, Knollwood Apartments to the south, Knollwood Road to the east, and an Eversource Natural Gas facility to the west. Existing property access is off South Eagleville Road.

The site generally slopes downward to the southeast throughout the entire property. The highest elevation onsite is at South Eagleville Road at elevation ±622, adjacent to 121 South Eagleville Road, at which point it begins to slope down toward elevation ±612 over approximately 310 feet.

3.2 Soil

Following research of the USDA-NRCS Web-soil Survey online database, approximately 90 percent of the site is recorded as Agawam Fine Sandy Loam, 0 to 3 Percent Slopes. Agawam Fine Sandy Loam is suited for community development. This nearly level, well-drained soil is found in areas of irregular shape. Typically, the surface layer is dark brown fine sandy loam about 7 inches thick. The subsoil is yellowish brown, reddish yellow and light yellowish brown sandy loam 25 inches thick. The substratum extends to a depth of 60 inches or more. It is pale brown sand to a depth of 31 inches and gravelly sand at a depth of more than 31 inches. Slopes of more that 3 percent make up 10 percent of this unit. According to the online database, Agawam Fine Sandy Loam, 0 to 3 percent slopes is generally considered a Hydrologic Soil Group B.

The remaining 10 percent of the site, located along the southeast border of the site, is identified as Sudbury Sandy Loam, 0 to 3 Percent Slope and Timakwa and Natchaug Soils, 0 to 2 Percent Slopes. This complex is identified to have a hydrologic soil group range between B and D. For the purposes of this analysis, the site will be considered hydrologic group B for consistency.

3.3 Wetlands

Upon review of the Mansfield Geographic Information System (GIS) Mapping, there are wetlands located on the property to the east, adjacent to Knollwood Road. The proximity of the wetlands to the project site will put a portion of the site (± 3.41 Ac – 65.5% of the property) located within a designated Upland Review Area. Approximately 1.09 acres of this Upland Review Area will be located within the limits of disturbance for the project. We do not anticipate that the site improvements will have any impact on the regulated areas on or off site. A detailed description of the onsite wetlands can be found in the Wetlands Report, dated September 13, 2019, prepared by BSC Group.

3.4 Hydrology

The existing conditions for the site were modeled as two (2) distinct discharges from the property:

1. Overland sheet flow runoff on the west portion of the site. This area sheet flows offsite before ultimately discharging to the southwest grassy area. The tributary area for this discharge will be modeled as Existing Subwatershed "E1". This area ultimately discharges to the onsite wetland located to the east.

2. Overland sheet flow runoff on the east portion of the site. This area sheet flows offsite before ultimately discharging to the onsite wetland. The tributary area for this discharge will be modeled as Existing Subwatershed "E2".

The Existing Watershed Area Map has been included as Figure 2.

4.0 STORMWATER MANAGEMENT

4.1 Design Objective

The intent of the project hydrologic study is to determine rates of runoff for maximum storm frequencies of two, ten, twenty-five, and one hundred-year intervals under existing and proposed conditions for the designated design points. From this analysis, the proposed stormwater collection and management system is designed to mitigate the post development increase in the peak rates of runoff for the above-mentioned storm events associated with the construction of new buildings, driveways, and sidewalks.

4.2 Design Criteria

This project has been designed in accordance with the Town of Mansfield requirements.

The following rainfall volumes for hydrologic analysis were used for each storm event for a 24-hour Type III distribution Storm:

2-year – 3.33 in
10-year – 5.05 in
25-year – 6.12 in
100-year – 7.78 in

* Source: NOAA Atlas 14 Point Precipitation Frequency/Volume Estimates

4.3 Design Methodology

This study was prepared using methods contained in the USDA Soil Conservation Service Publication TR-55 "Urban Hydrology for Small Watersheds". TR-55 outlines procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs.

The watershed was simulated as a series of contributing subcatchments, and inflow and outflow structures. A value for area, curve number (CN) and time of concentration (Tc) was calculated for each contributing subcatchment.

The curve number is a land sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. Based on the coverage of soil groups and land use in the watershed, an average CN was determined for each subcatchment under existing and proposed conditions.

The time of concentration is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a point of interest. Values for the time of concentration were determined for existing and proposed conditions based on land cover and slope of the flow path using methods described in TR-55.

Values for time of concentration (Tc) and curve numbers (CN) were then entered into the "HydroCAD 10.0" computer program (which is based on TR-20 and TR-55) where subcatchment hydrographs were calculated. The hydrological analysis consists of developing an existing conditions model to first establish existing peak rates of runoff for the various storm events mentioned above. Second, an evaluation is then conducted of the proposed condition to determine the effect of the development on the sites peak rates of runoff.

4.4 Existing Conditions

Area, Curve Number, and Tc of the existing subwatersheds can be seen in the table below:

Watershed	Area (ac)	C	Tc (min.)
E1	0.60	61	15
E2	2.96	59	15.3
TOTAL	**3.56**	**59.3**	**-**

Existing stormwater discharge computations are located in Appendix A.

4.5 Proposed Conditions

The intent of the hydrologic design was to maintain or reduce the peak flow rate exiting the site. To achieve mitigation of the peak flow rates, the proposed site was divided into four (4) subwatersheds.

P1: This subwatershed is composed of the western most exterior portion of the site. Runoff in this subwatershed bypasses the drainage system and discharges via overland sheet flow offsite.

P2-1: This subwatershed is composed of the interior portion of the site. Roof runoff from Buildings 1, 2, and 3, as well as runoff from the land surrounding these buildings is directed to the above ground detention basin. This runoff is directed into the new drainage system, which discharges out of a flared pipe, through a vegetated stabilized outlet, and ultimately to the wetland at the east of the site.

P2-2: This subwatershed comprises of the majority of the developed site and includes the contributing drainage area that is directed to the three underground detention systems. The roof runoff from buildings 4, 5, 6, and 7 drains to either detention 3P or 4P. These systems are infiltration units designed to hold and infiltrate the 100-year storm. The remanding runoff in this subwatershed is

directed into the new drainage system, flows to the underground detention system 2P, out of a flared pipe, through a vegetated stabilized outlet and ultimately off the property to the southeast.

P2-3: This subwatershed is composed of the northern and eastern exterior portions of the site. Runoff in this area bypasses the drainage system and discharges via overland sheet flow offsite.

Cover characteristics of each proposed subwatershed can be seen in the table below:

Subwatershed	Area (ac)	CN	Tc (min.)
P1	0.14	61	6.0
P2-1	0.60	79	6.0
P2-2	1.14	89	6.0
P2-3	1.26	56	6.0
BLDG 4	0.099	89	6.0
BLDG 5	0.118	89	6.0
BLDG 6	0.090	89	6.0
BLDG 7	0.120	89	6.0
Total	**3.56**	**63.9**	**-**

Proposed stormwater discharge computations are represented in Appendix A. The proposed subwatershed areas are depicted in Figure 3.

4.6 Stormwater Detention

Following completion of the analysis, the cumulative storage shall be ±22,600 cubic feet of available storage. A combination of above-ground and underground storage systems will be utilized to create this storage volume. Below is a detailed description of each system:

Detention P1

- Type: Above-ground dry pond
- Bottom Elevation: 613.00
- Observed Restrictive Layer: 611.83’
- Top of Berm Elevation: 616.50
- Design Storm: 100-Year
- Design Stage Elevation: 615.83
- Required WQV: 788 cf
- Storage Provided Below Outlet: 1,664 cf

- Outlets: Low flow 6" orifice @ 614.30, high flow 15" pipe @ 616.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 614.30
  - Depth of Stored Water = 614.30 – 613.00 = 1.30 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 1.30 ft / 1.02 in/hr x 12 in/ft = 15.3 hrs
- Description: The above-ground pond receives flow from Subcatchment Area P2-1, which includes Buildings 4 – 7, as well as the surrounding "inner" portion of the site. The discharge from the pond is controlled by Outlet Control Structure #1, which has a vertical riser pipe for high flows and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils in the pond are mostly find sands with little silt. Pond routing calculations do not account for infiltration, however it is anticipated that the pond will drain within a 24-hour period. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

Detention P2

- Type: 36" Perforated Corrugated HDPE Pipe
- Bottom of Stone Elevation: 613.25
- Observed Restrictive Layer: 611.75'
- Invert Elevation: 613.75
- Top of Pipe Elevation: 616.75
- Design Storm: 100-Year
- Design Stage Elevation: 616.68
- Required WQV: 2,246 cf
- Storage Provided Below Outlet: 2,541 cf
- Outlets: Low flow 6" orifice @ 614.72, high flow 8" orifice @ 615.33, overflow 10" pipe @ 617.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 614.72
  - Depth of Stored Water = 614.72 – 613.25 = 1.47 ft
  - Soil Type: Gray Glacial Till (Hydrologic Soil Group C)
  - Rawl's Rate: 0.27 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 1.47 ft / 0.27 in/hr x 12 in/ft = 65.33 hrs
- Description: The below-ground pipe storage receives flow from Subcatchment Area P2-2, which includes the site driveway, parking, and lawn areas. The discharge from the system is controlled by Outlet Control Structure #2, which has a vertical riser pipe for high flows, an orifice cored into the side for medium flows, and an orifice cored into the side for lower flows. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-B, see Plan Sheet G-1.0) and an effective infiltration rate of 6 in/hr was measured. A Rawl's Rate for the given soil type of 0.27 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

Detention P3

- Type: 90"W x 60"H open-bottom plastic arch chambers
- Bottom of Stone Elevation: 611.50
- Observed Restrictive Layer: 609.50'

- Invert Elevation: 610.75
- Top of Chamber Elevation: 617.25
- Top of Stone Elevation: 618.25
- Design Storm: 100-Year
- Design Stage Elevation: 617.59
- Required WQV: None
- Outlets: 8" overflow pipe @ 617.50
- Drawdown Computations:
  - Lowest Outlet Elevation = 617.50
  - Depth of Stored Water = 617.50 – 611.50 = 6.00 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 6.00 ft / 1.02 in/hr x 12 in/ft = 70.6 hrs
- Description: The open-bottom plastic arch chamber storage receives flow from Building #4 Roof via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-C, see Plan Sheet G-1.0) and an effective infiltration rate of 7.5 in/hr was measured. A Rawl's Rate for the given soil type of 1.02 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period. A maintenance access manhole to grade will be provided for periodic cleaning at the end of every row. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

<u>Detention P4</u>

- Type: 90"W x 60"H open-bottom plastic arch chambers
- Bottom of Stone Elevation: 612.17
- Observed Restrictive Layer: 610.67'
- Invert Elevation: 617.00
- Top of Chamber Elevation: 617.92
- Top of Stone Elevation: 618.92
- Design Storm: 100-Year
- Design Stage Elevation: 617.23
- Required WQV: None
- Outlets: 8" overflow @ 617.00
- Drawdown Computations:
  - Lowest Outlet Elevation = 617.00
  - Depth of Stored Water = 617.00 – 612.17 = 4.83 ft
  - Soil Type: Sandy Loam (Hydrologic Soil Group B)
  - Rawl's Rate: 1.02 in/hr (Rawls, Brakensiek and Saxton, 1982)
  - Time to Empty: 4.83 ft / 1.02 in/hr x 12 in/ft = 56.8 hrs
- Description: The open-bottom plastic arch chamber storage receives flow from Building #5, 6, 7, and 8 roofs via underground roof leader piping. Based on the project boring logs, the receiving soils under the stone base are mostly find sands with little silt. An in-situ percolation test was performed (PT-A, see Plan Sheet G-1.0) and an effective infiltration rate of 30 in/hr was measured. A Rawl's Rate for the given soil type of 1.02 in/hr was used for drawdown computations. Pond routing calculations do not account for infiltration, however it is anticipated that the system will drain within a 72-hour period.

A maintenance access manhole to grade will be provided for periodic cleaning at the end of every row. Test pits were performed into the receiving soil to determine the restrictive layer. See Sheet G-1.0 for Test Pit Logs.

Pre- and Post-Development Comparison

Peak flows at the off-site analysis point are shown in the following table:

STORMWATER DISCHARGE COMPARISON				
Design Point	Storm Event	Existing (cfs)	Proposed (cfs)	Difference (cfs)
1 (Off-Site Flow, West)	2-year	0.18	0.05	-0.13
	10-year	0.67	0.21	-0.46
	25-year	1.05	0.33	-0.72
	100-year	1.71	0.53	-1.18
2 (Flow to On-Site Wetland)	2-year	0.66	0.34	-0.32
	10-year	2.87	2.27	-0.60
	25-year	4.65	3.99	-0.66
	100-year	7.76	6.97	-0.79
Total Site	2-year	0.83	0.34	-0.49
	10-year	3.54	2.37	-1.17
	25-year	5.70	4.27	-1.43
	100-year	9.47	7.49	-1.98

The data summarized above indicates that the total peak stormwater discharge offsite will be reduced from the existing condition to the proposed conditions for all design storms. The 2-year discharge has been reduced to 50% of the pre-development rate.

5.0 STORMWATER DRAINAGE SYSTEM

5.1 Design Criteria

Design of the storm drainage system was performed in accordance with the standards and procedures specified in the 2000 ConnDOT Drainage Manual. The capacity within the site driveways and parking lots were designed to safely accommodate the 10-year, 24-hour design storm.

5.2 Design Methodology

The storm drain collection system was analyzed using the Rational Method for estimating runoff for a 10-year design storm. The project site was divided into catchment areas, with each contributing runoff to an individual catch basin or area drain inlet. A value for acreage area, time of concentration, and a runoff coefficient was calculated for each contributing catchment area.

Values for time of concentration were chosen based on land cover and slope of the flow path from the hydraulically most distant point in the sub-area to the appropriate inlet. Per Rational Method, the minimum time of concentration value is assumed to be 5 minutes for paved surfaces and 10 minutes

for unpaved surfaces. Using the time of concentration, rainfall intensities were determined using the Rainfall-Duration-Frequency Relationships for Connecticut (NOAA Atlas 14 Precipitation Frequency Estimates).

The average runoff coefficient, which is the ratio of peak runoff rate to the average rainfall rate for the period known as the time of concentration, was chosen using the following values:

Condition	C
Grass/Landscaped Areas	0.30
Pavement/Impervious Areas	0.90

Storm drainage pipes were then sized based upon calculated flows using Manning's Equation and the pipe sizes verified by solving for the hydraulic grade line. The drainage pipe materials proposed for this project are high density polyethylene pipe (HDPE) and reinforced concrete pipe (RCP).

Per the ConnDOT Drainage Manual (Table 6.C.1), the friction factor (n) utilized in the design is 0.011 for HDPE pipe and 0.013 for RCP.

Detailed calculations for the on-site stormwater sizing are included in this report in Appendix C. A Catchment Area Map has also been included (Figure 4) to detail the tributary area for each drainage structure.

6.0 STORMWATER QUALITY

The project has been designed to address both the short-term and long-term storm water quality. During construction, stormwater runoff is a concern due to the excess amount of exposed areas that do not have vegetation or other cover to prevent the removal and transportation of sediment to resource areas. The project addresses the short-term concerns by providing erosion control measures in the form of Erosion & Sediment Control Plans and a "During Construction" Operation and Maintenance Plan (Section 8.0).

The primary function of erosion and sediment control, as defined by the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control is to "absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area." The short-term project erosion measures were designed per the 2002 manual.

After construction, stormwater runoff is a concern because it may contain contaminants such as suspended solids, petroleum hydrocarbons, nutrients, heavy metals, and salts that may have adverse effects on water quality. The sources of the pollutants are generally associated with urban land use, including automobile exhaust, mechanical wear of vehicles, leaf litter, deicing salts and atmospheric deposition. The pollutants accumulate on the land surfaces and are washed off during storm events into the receiving waterways and wetlands.

The objective of the stormwater management system designed for the proposed development is to effectively remove the contaminant loading from the site runoff and to provide long-term protection of the quality and use of downstream water resources. The long-term stormwater quality measures were designed per the 2004 Connecticut Stormwater Quality Manual.

6.1 Temporary Control of Sediment and Erosion

The objective of temporary erosion control during construction is to minimize the area of exposed soil, control runoff rate and direction, and provide for rapid stabilization of exposed areas. Prior to any construction activity, trenched silt fence and/or staked hay bales will be placed down gradient of the proposed work areas. The fence/barrier will provide some sediment control, as well as provide a limit of construction activity.

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Any excavated and stockpiled topsoil will be contained within staked silt fence. Erosion-prone areas left exposed for extended periods (>30 days) will be mulched and seeded for temporary vegetative cover. After construction, all exposed areas will be graded, mulched and re-vegetated with appropriate ground cover. The silt fence and/or hay bales will remain in place until groundcover is established.

Catch basin filter inserts will be used to collect sediment that may be carried in the storm runoff during construction. Filter inserts will be placed in each existing catch basin, yard drain, and in each new catch basin, during construction and until all disturbed areas of the site have been stabilized. Replacement of the filter inserts shall be as often as necessary to prevent excessive ponding due to clogged fabric.

Dewatering settling basins will be utilized where groundwater is encountered in trenching, foundation excavation, or any other excavation. The dewatering wastewaters will be infiltrated into the ground or discharged, after filtration into the nearest catch basin.

Throughout all phases of construction, the erosion control measures will be routinely inspected and cleaned, repaired, and replaced as necessary by the Contractor. See Section 8.0 entitled “Operation and Maintenance Plan” for more details.

Throughout the construction process, extra stocks of hay bales and silt fence will be kept on-site to replace those that become damaged and/or deteriorated.

Any erosion and sediment control measures, which upon inspection are found to be damaged, deteriorated, or not functioning properly, will be repaired, replaced, and corrected immediately after inspection.

Areas mulched or seeded for temporary vegetative cover will be inspected for proper cover at the end of each workday if precipitation is forecast and also prior to weekends. Additional seeding or mulch will be placed as necessary.

The temporary erosion and sediment control systems will not be removed until all stormwater drainage system components are in place, cleaned and working properly and until permanent vegetative cover and other stabilization measures are established.

6.2 Permanent Control of Stormwater Quality

The design intent of the 2004 Connecticut Stormwater Quality Manual is to provide a "stormwater treatment train," where stormwater quality is achieved through a series of treatment measures. Harmful pollutants, such as sediment, pathogens, organic material, hydrocarbons, metals, synthetic organic chemicals and deicing compounds, are carried by the low-flow storms. Many of these pollutants are associated with vehicular exhaust, engine leaks and deicing, therefore key areas of on-site treatment include parking lots and access drives. Since pollutants typically attach themselves to solid particles, treatment practices are designed to remove suspended solids.

The treatment train for this site includes:

- Parking lot sweeping
- Catch basins with two (2) foot sumps
- Hydrodynamic Separator prior to the underground detention system.
- Stormwater infiltration within the open-bottom detention galleries

The hydrodynamic separator unit will be designed to treat the Water Quality Flow in accordance with the 2004 manual, effectively removing floatables, captured sediment solids, and hydrocarbons to achieve a TSS removal rate of 80% (and often 90% or better).

7.0 OPERATION AND MAINTENANCE PLAN

7.1 During Construction

The following maintenance procedures shall be followed by the Contractor for temporary and permanent erosion and sedimentation measures and stormwater treatment systems installed during the construction period:

a. Dust Control: Moisten disturbed soil areas with water periodically, or use a non-asphaltic soil tacifier to minimize dust.

b. Temporary Seeding: Inspect weekly and within 24 hours of a storm generating a discharge. Continue inspection until vegetation is firmly established.

c. Permanent Seeding: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge. Continue inspection until vegetation is firmly established.

d. Temporary Soil Protection: Inspect seeded areas weekly and within 24 hours after a storm generating a discharge.

e. Temporary Erosion Control Mat: Inspect mats weekly and within 24 hours after a storm generating a discharge.

f. Catch Basin Filter Inserts: Inspect the fabric at least once a week and within 24 hours after the end of a storm generating a discharge. Check the fabric for structural soundness (i.e. tears), proper anchoring/alignment within the grate and ability to drain runoff (i.e. percent of clogging by sediment). Remove the sediment every week, or sooner if ponding is excessive. Each time the sediment is removed, replace the section of fabric removed with a new section. Do not remove the sediment and reuse the same section of fabric.

g. Hay Bale/ Silt Fence Barrier: Inspect the barrier at least once a week and within 24 hours after the end of a storm generating a discharge. For dewatering operations, inspect frequently before, during and after pumping operations. Remove the sediment deposits when the depth reaches one half the barrier heights. Repair or replace a barrier within 24 hours of observed failure. Maintain the barrier until the contributing disturbed area is stabilized.

h. Construction Entrance/Exit Pad: Maintain the pad in a condition that will prevent tracking and washing of sediment onto paved surfaces. Place additional clean gravel on top of gravel that has become silted, or remove the silted gravel and replace the gravel to the depth removed with clean gravel, as conditions warrant. Remove immediately all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to the construction site shall be cleaned at the end of each day by hand sweeping or sweeper truck.

i. Dewatering Settling Basin (if used): Inspect the basin at least every two hours during periods of use. Remove accumulated sediments when the volume equals one half the provided storage volume.

j. Existing Catch Basins and Sumps: Inspect the sediment traps as specified in "f" above. After final removal of the sediment traps at the end of construction, clean the sump of all silt and debris.

k. New Catch Basins and Sumps: As new catch basins are constructed, a filter insert shall be installed in the unit and a sediment barrier installed around the grate. Inspect the filter and barrier weekly and within 24 hours after a storm generating a discharge. After stabilization of the drainage area entering the catch basin, remove the filter and barrier and clean the basin sump of all silt and debris.

l. Stone or Hay Bale Check Dams: Inspect the check dam at least once a week and within 24 hours after the end of a storm generating a discharge. Remove the sediment deposits when the depth reaches one half the check dam heights. Repair or replace a check dam within 24 hours of observed failure. Maintain the check dam until the contributing disturbed area is stabilized.

m. Temporary Stockpiles: Inspect temporary stockpiles at the end of each workday to ensure that tarps are in place and secured. Temporary stockpiles that are expected to be inactive for more than 30 days should be temporarily seeded (see above).

n. Temporary Sediment Traps: Inspect monthly and within 24 hours after a storm generating a discharge. Sediment and oil shall be removed when the storage volume is reduced by one half, or at least every 6 months during construction.

During construction, the Contractor shall be required to remove accumulated sediment from sediment control measures and water quality measures. Sediment shall be disposed of off-site in a manner and location approved by local and state agencies. Temporary storage of sediment on-site is permissible if it is protected from erosion and stockpiled in a manner that will prevent it from being carried by erosion into adjacent properties or resource areas.

Temporary sediment traps may be removed if the contributing drainage area is stabilized. The area shall be re-graded to match original grades or proposed grades as shown on the plans. The disturbed area shall be temporarily, or permanently seeded and mulched if the area is not to be paved.

Upon the stabilization of the contributing drainage area, silt fence shall be inspected for sediment accumulation prior to removal. For sediment depths greater than 6", the sediment shall be re-graded or removed. The silt fence shall be removed by pulling the support posts and cutting the geotextile at the ground level. Re-grade or remove the sediment as necessary and stabilize the disturbed soils by placing temporary or permanent seeding and mulch.

When dewatering has been completed, remove the hay bale barrier, sediment and stone, as appropriate, and re-grade the area to original or proposed grade. Stabilize the disturbed area with temporary or permanent seed and mulch.

After the drainage areas to the new and existing catch basins have been stabilized, the Contractor shall be required to clean all sumps and hoods of debris and silt. In addition, within the limits of work, the Contractor shall clean all storm drain piping of collected silt and debris by flushing with water. If the storm system discharges to ground, a hay bale and silt fence barrier must remain in place at each outfall to capture any sediment or debris carried down by the flushing. If the storm drain system discharges into a public or private drainage collection system, the Contractor must install a means of collecting debris and filtering the sediment from the flushing water in the on-site storm system before discharge to the existing storm system.

7.2 After Construction

After construction is completed and accepted by the Owner, it shall be the responsibility of the Owner to maintain all drainage structures. In addition, the following inspection and maintenance guidelines shall be the responsibility of the Owner, or the Owner's representative, beginning the first year period following construction completion and acceptance, and shall be followed each year thereafter:

a) Parking Lot and Site Cleanup: Inspect on a regular basis not to exceed weekly for litter and debris.

b) Parking Lot and Driveway Sweeping: At least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.

c) Catch Basin Sumps: Shall be inspected semi-annually and cleaned when the sump is one half full of silt and / or debris.

d) Hydrodynamic Separator: Shall be inspected and cleaned annually.

e) Landscaped Areas: Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.

f) Above-ground Detention Basin: Shall be inspected semi-annually and cleaned of any sediment and/or debris. Shall be mowed annually.

g) Underground Detention Systems: Shall be inspected semi-annually and cleaned of any sediment and/or debris.

8.0 CONCLUSION

The project has been designed to meet Town and State requirements for stormwater management, drainage sizing, and stormwater quality. Peak flows generated by the site for the 2-, 10-, 25-, and 100-year design storms have been mitigated to less than peak flows under existing conditions. The drainage system has been designed to convey the 10-year design storm and stormwater quality has been provided which meets both the State erosion sedimentation guidelines and the State stormwater quality requirements. There are no anticipated negative impacts on any of the upland review areas identified on this property.

LIST OF FIGURES/DRAWINGS

Figure 1 – Site Location Map

Figure 2 – Existing Watershed Area Map

Figure 3 – Proposed Watershed Area Map

Figure 4 – Catchment Area Map

FIGURE 1
Site Location Map

Figure 1 – Site Location Map

Eagleville Green

113-121 South Eagleville Road

Mansfield, Connecticut

Scale = 1:24,000

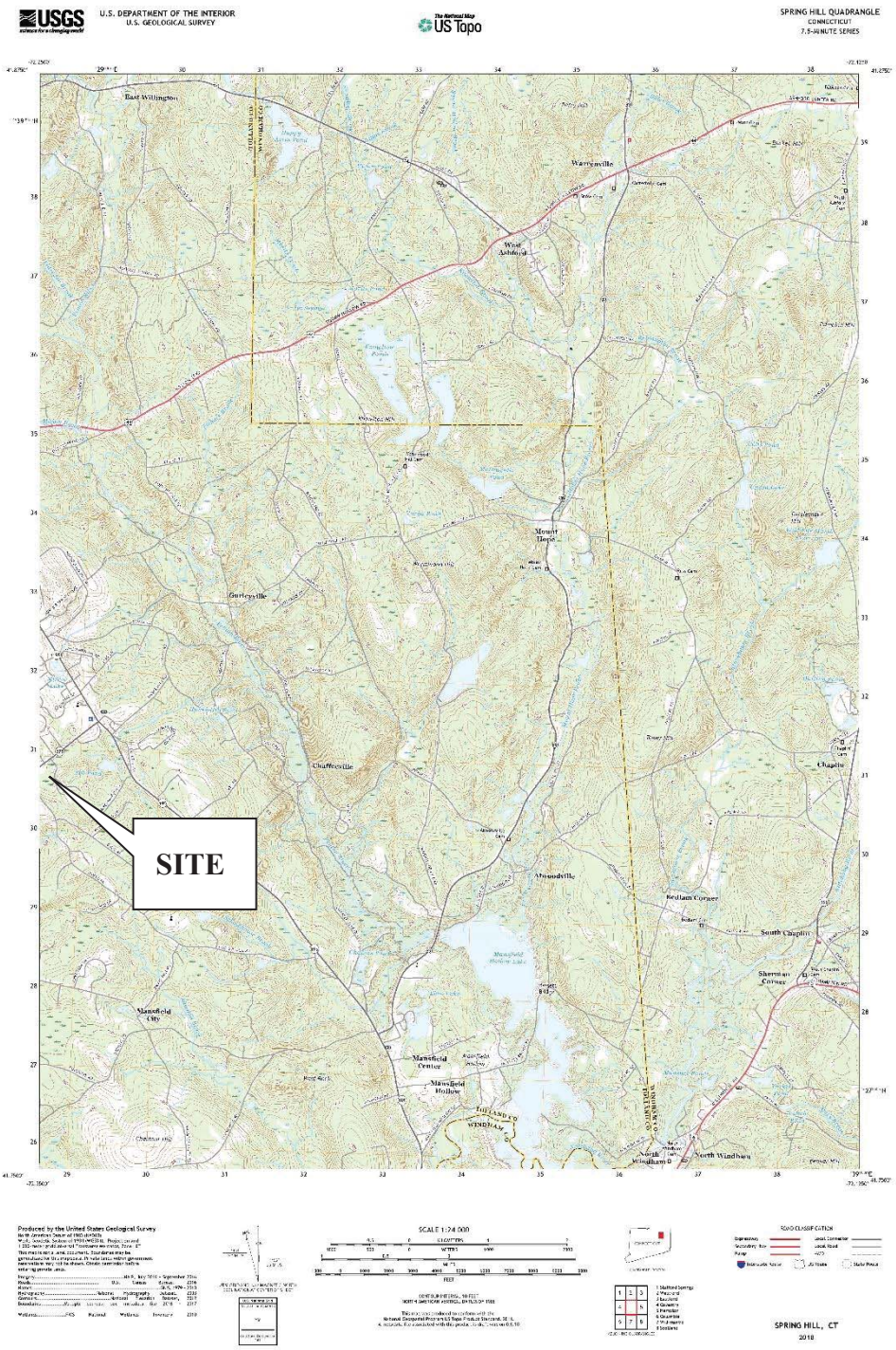
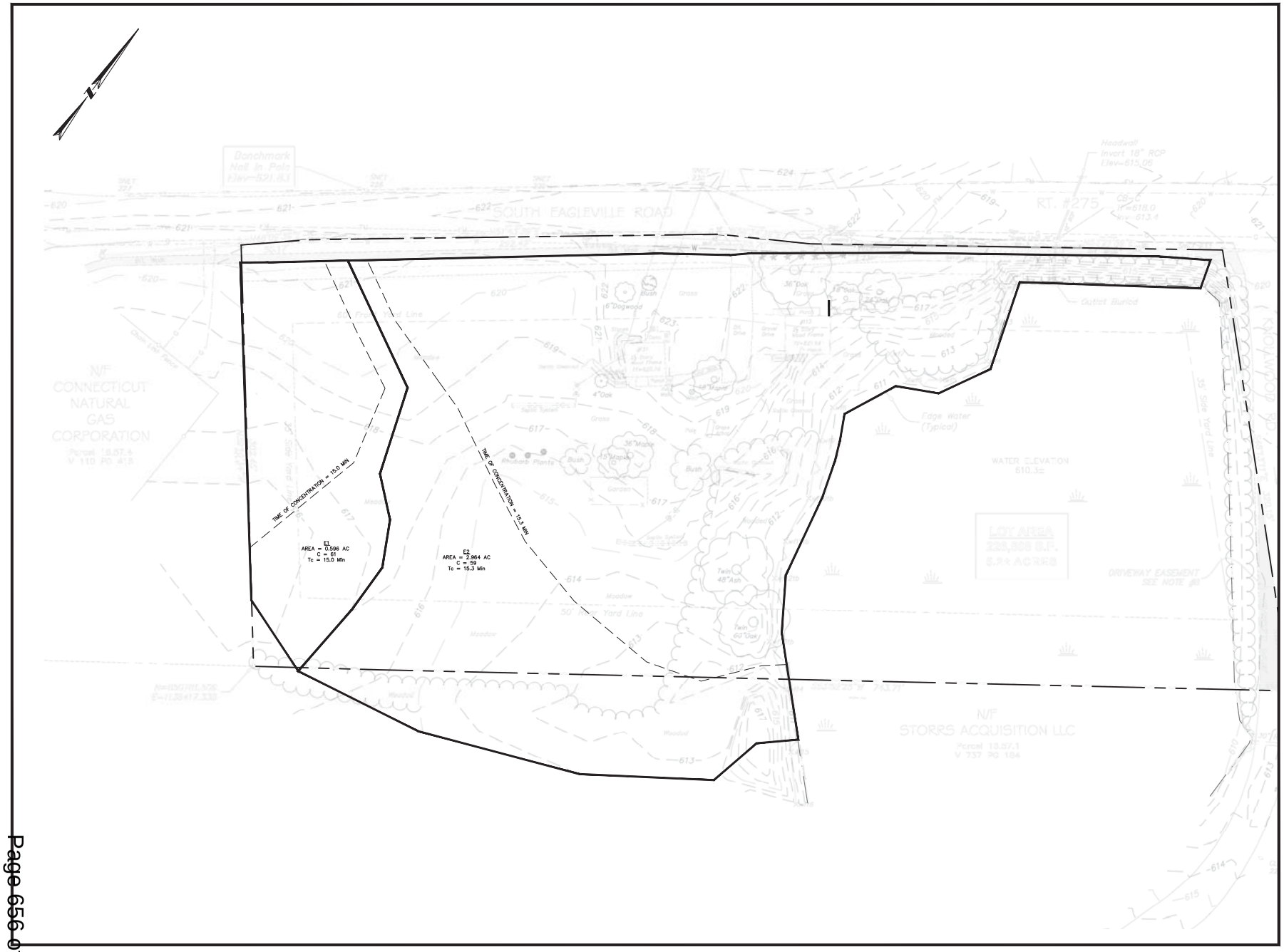


FIGURE 2
Existing Watershed Area Map



EAGLEVILLE GREEN

113-121 SOUTH
EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

EXISTING WATERSHED
AREA MAP

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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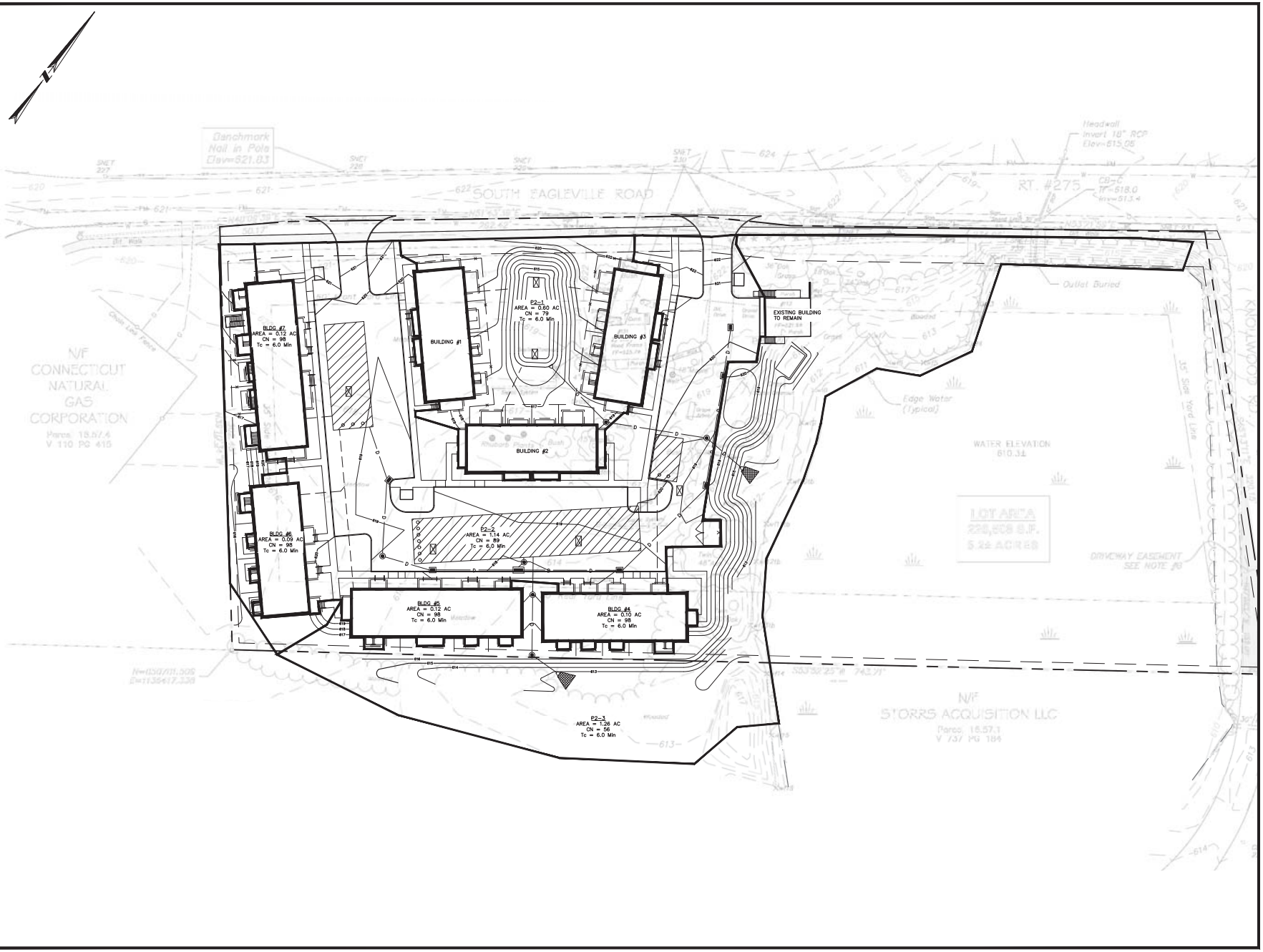
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-EWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 2

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FIGURE 3
Proposed Watershed Area Map



EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD CONNECTICUT

PROPOSED WATERSHED AREA MAP

FEBRUARY 12, 2020

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
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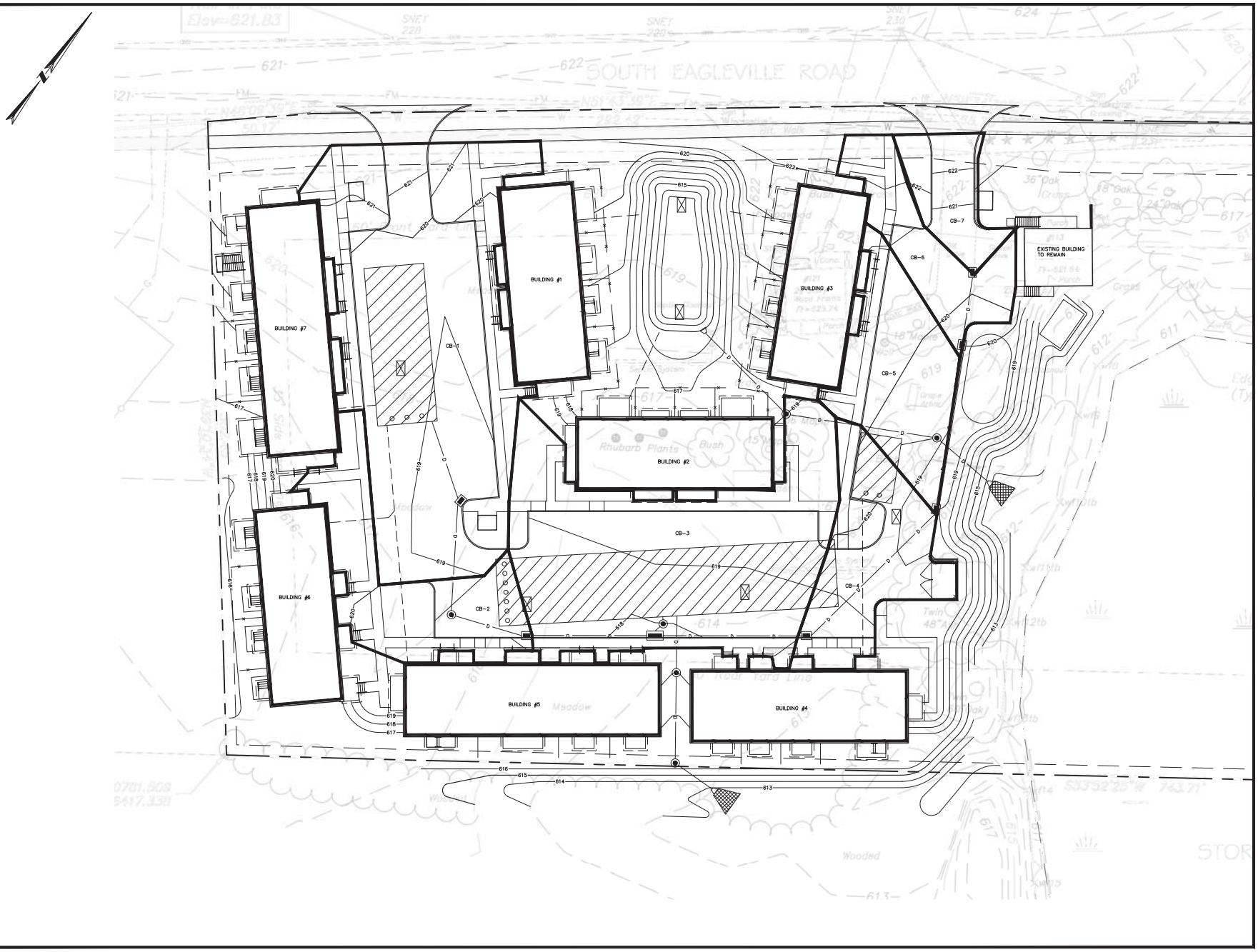
SCALE: 1" = 30'
0 15 30 60 FEET

FILE: 8374900-PWAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 3

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FIGURE 4
Catchment Area Map



EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

CATCHMENT AREA MAP

FEBRUARY 12, 2020

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
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860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-CAM.DWG
DWG. NO:
JOB. NO: 83749.00

FIGURE 4

EAGLEVILLE GREEN - NOVEMBER 25, 2019

LIST OF APPENDICES

Appendix A – Existing Stormwater Discharge Computations

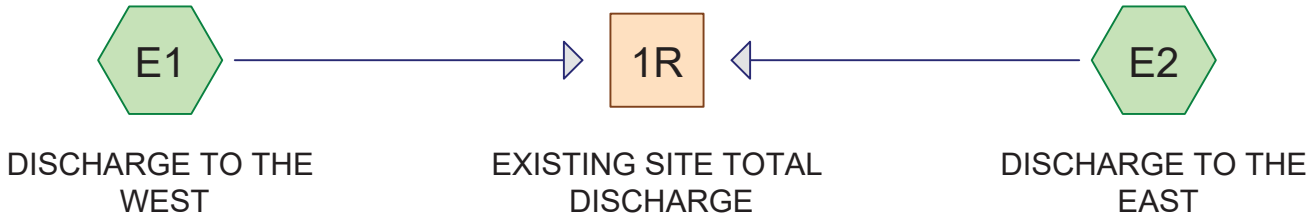
Appendix B – Proposed Stormwater Discharge Computations

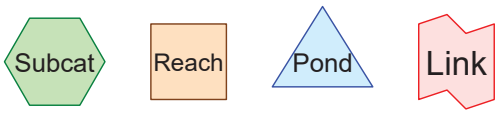
Appendix C – Proposed Hydraulic Sizing Computations

Appendix D – Water Quality Computations

APPENDIX A

Existing Stormwater Discharge Computations





Routing Diagram for 8374900-HYDRO
Prepared by {enter your company name here}, Printed 11/25/2019
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.580	61	>75% Grass cover, Good, HSG B (E1, E2)
0.870	48	Brush, Good, HSG B (E2)
0.110	98	Paved parking, HSG B (E2)
3.560	**59**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.560	HSG B	E1, E2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.560		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.580	0.000	0.000	0.000	2.580	>75% Grass cover, Good	E1, E2
0.000	0.870	0.000	0.000	0.000	0.870	Brush, Good	E2
0.000	0.110	0.000	0.000	0.000	0.110	Paved parking	E2
0.000	**3.560**	**0.000**	**0.000**	**0.000**	**3.560**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>0.50"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.18 cfs 0.025 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>0.42"
Flow Length=457' Tc=15.3 min CN=59 Runoff=0.66 cfs 0.104 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=0.83 cfs 0.129 af
Outflow=0.83 cfs 0.129 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.129 af Average Runoff Depth = 0.43"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

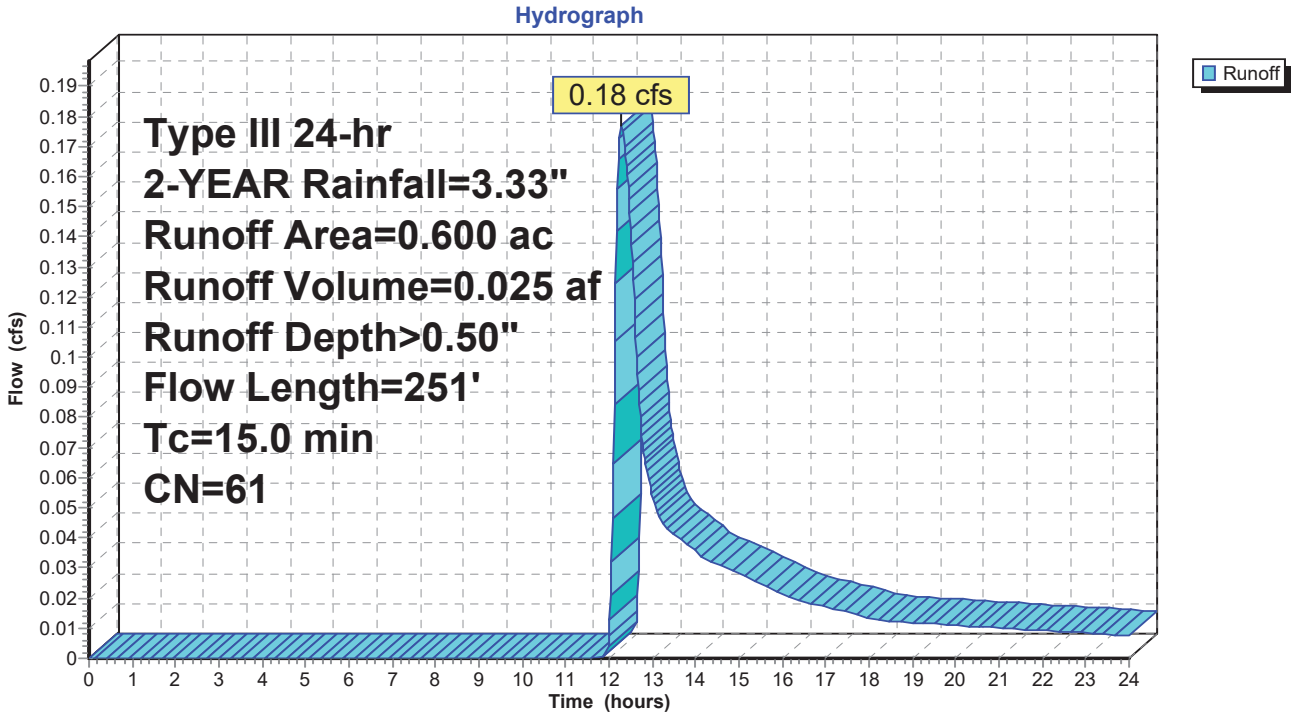
Runoff = 0.18 cfs @ 12.28 hrs, Volume= 0.025 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

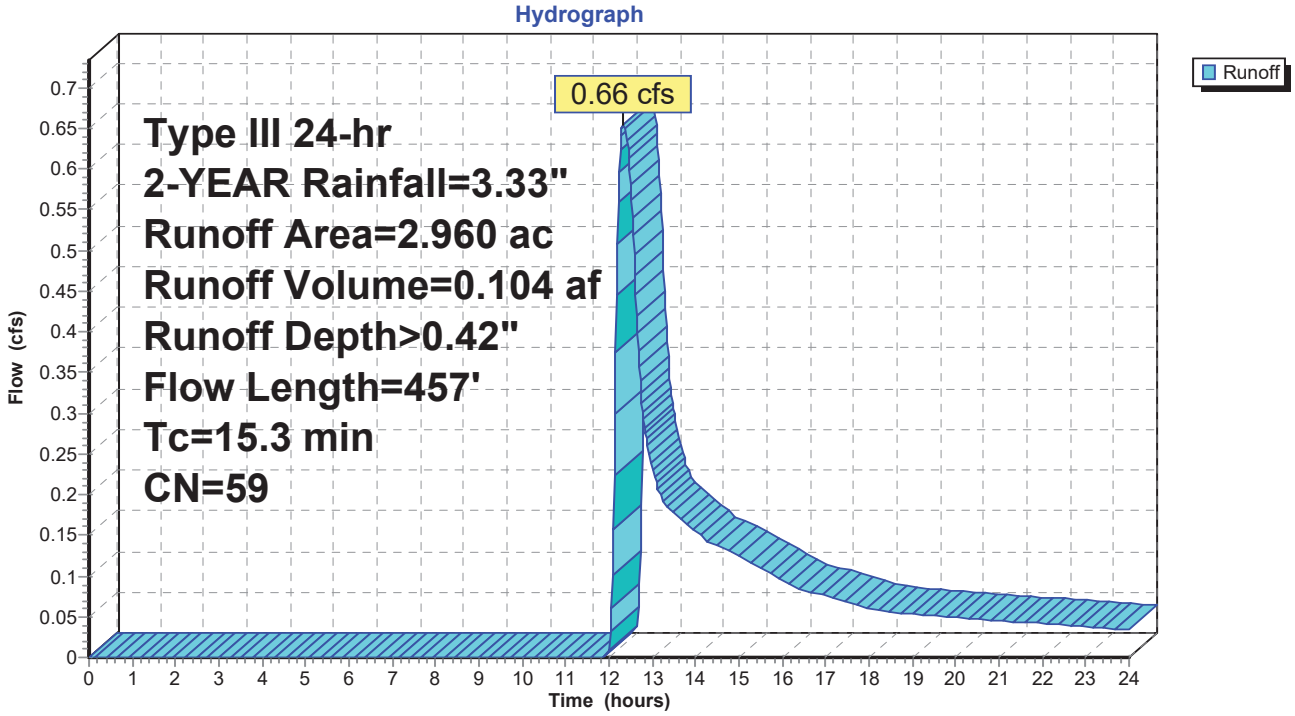
Runoff = 0.66 cfs @ 12.33 hrs, Volume= 0.104 af, Depth> 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



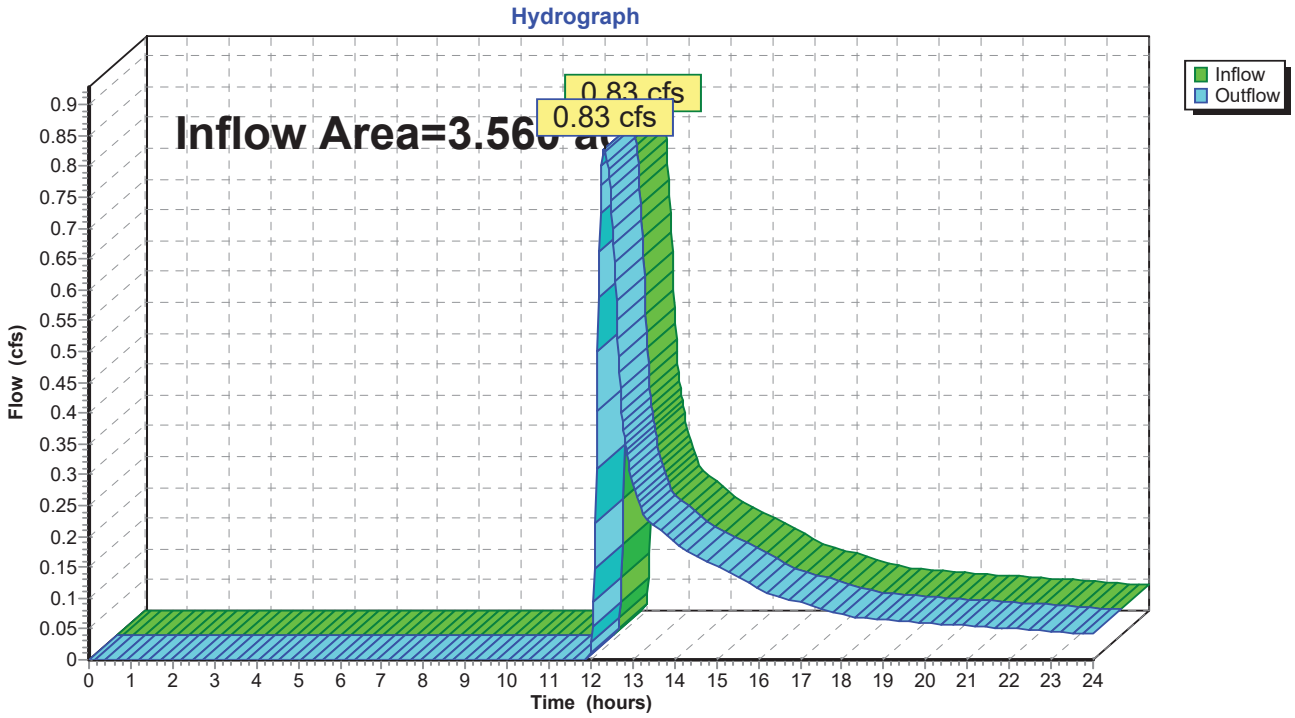
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 0.43" for 2-YEAR event
Inflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af
Outflow = 0.83 cfs @ 12.32 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>1.39"
Flow Length=251' Tc=15.0 min CN=61 Runoff=0.67 cfs 0.070 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.26"
Flow Length=457' Tc=15.3 min CN=59 Runoff=2.87 cfs 0.310 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=3.54 cfs 0.380 af
Outflow=3.54 cfs 0.380 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.380 af Average Runoff Depth = 1.28"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

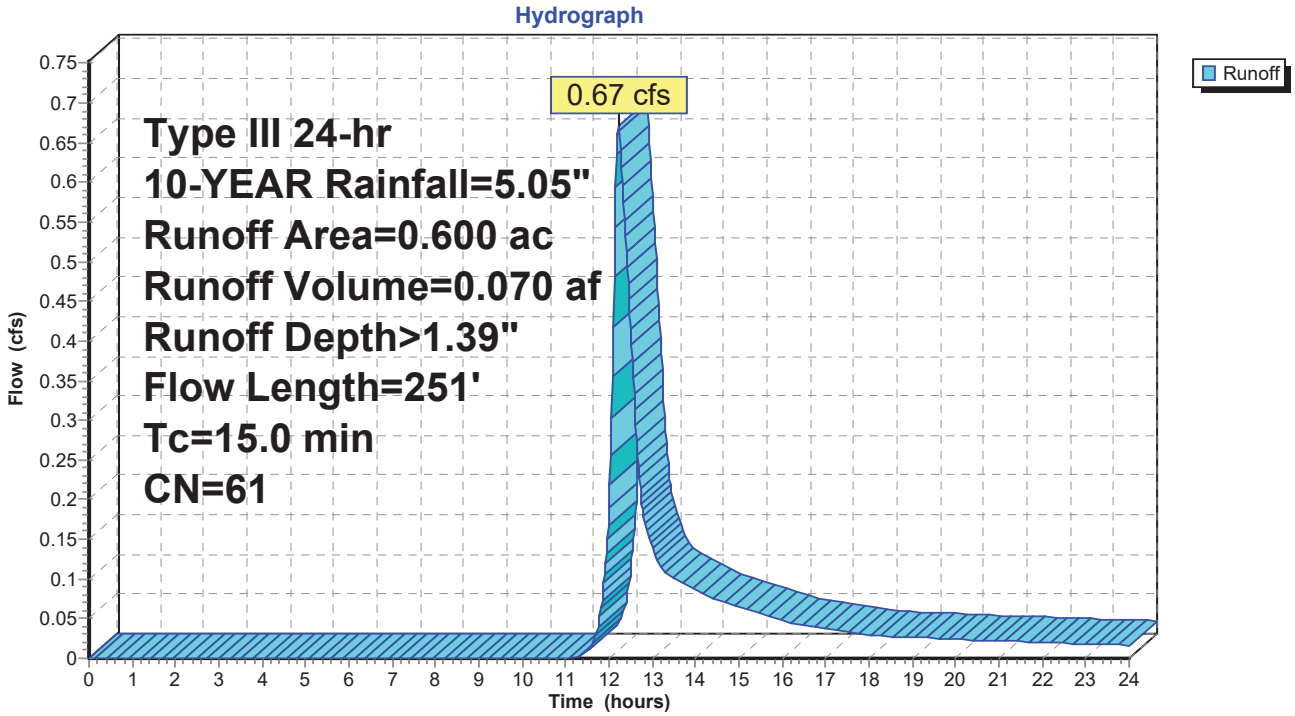
Runoff = 0.67 cfs @ 12.23 hrs, Volume= 0.070 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

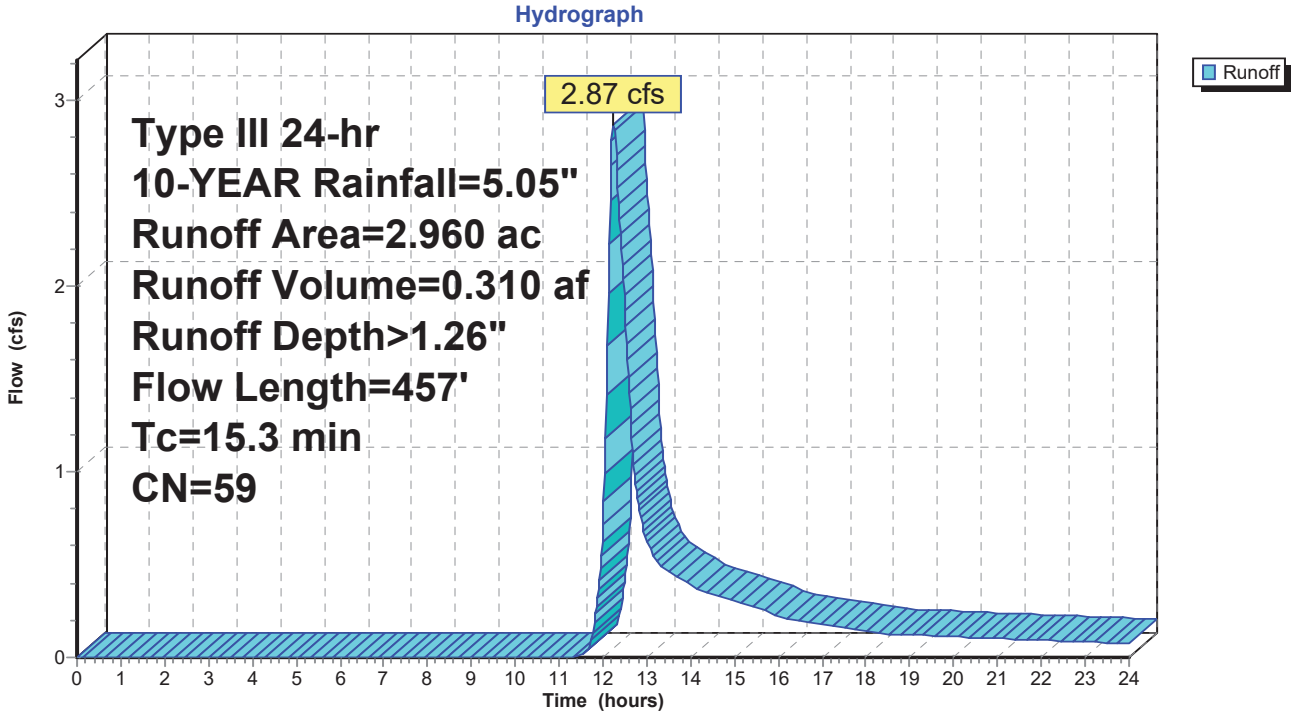
Runoff = 2.87 cfs @ 12.24 hrs, Volume= 0.310 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



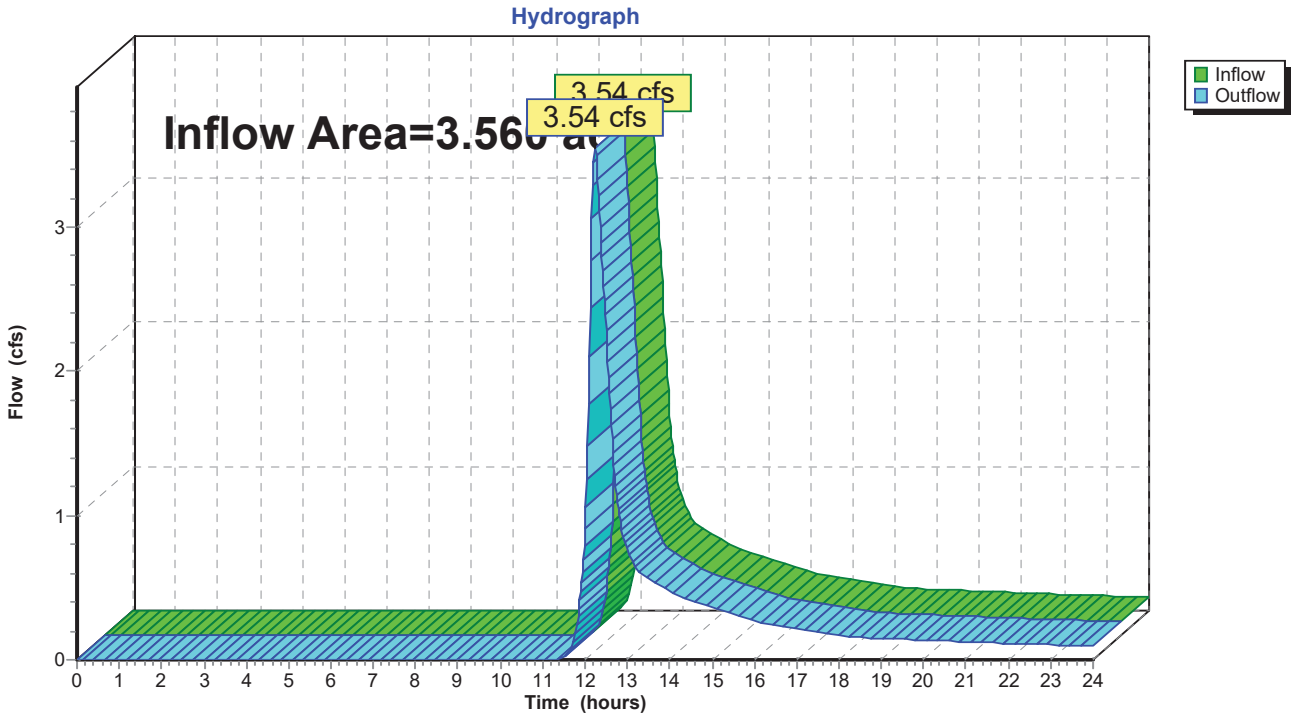
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.28" for 10-YEAR event
Inflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af
Outflow = 3.54 cfs @ 12.24 hrs, Volume= 0.380 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>2.08"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.05 cfs 0.104 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>1.91"
Flow Length=457' Tc=15.3 min CN=59 Runoff=4.65 cfs 0.471 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=5.70 cfs 0.575 af
Outflow=5.70 cfs 0.575 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.575 af Average Runoff Depth = 1.94"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

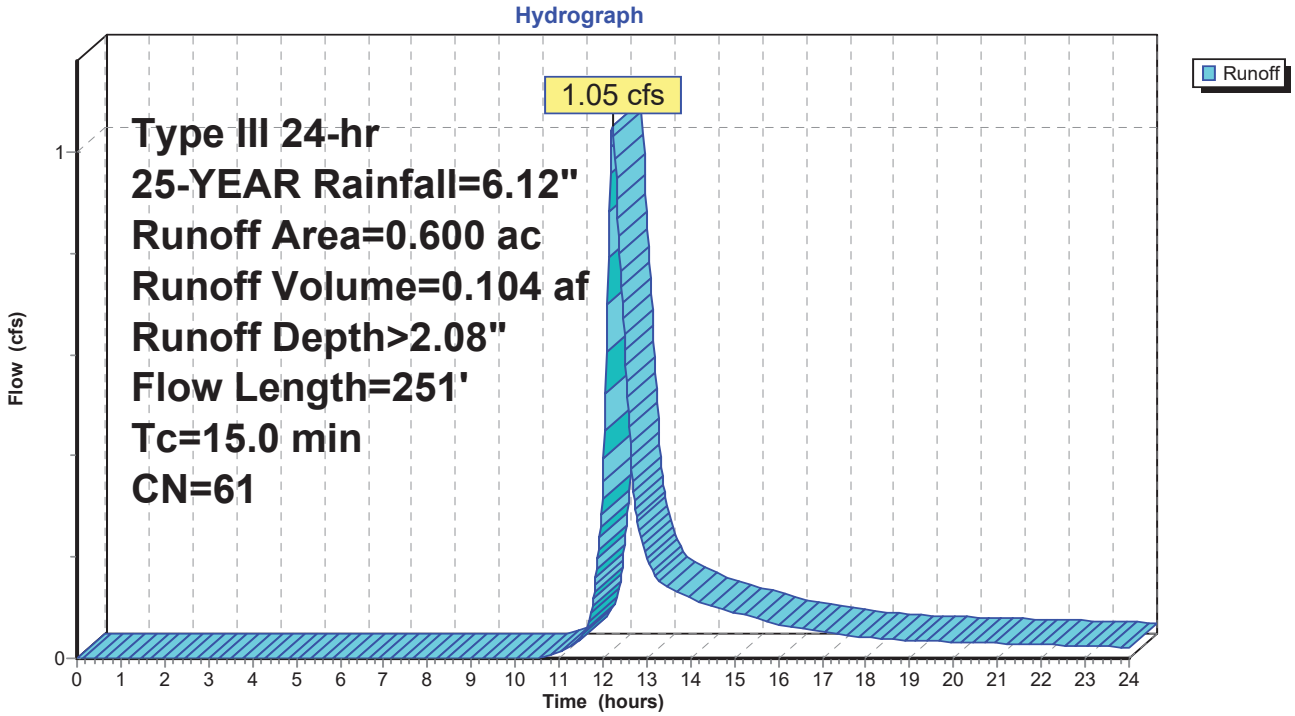
Runoff = 1.05 cfs @ 12.22 hrs, Volume= 0.104 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

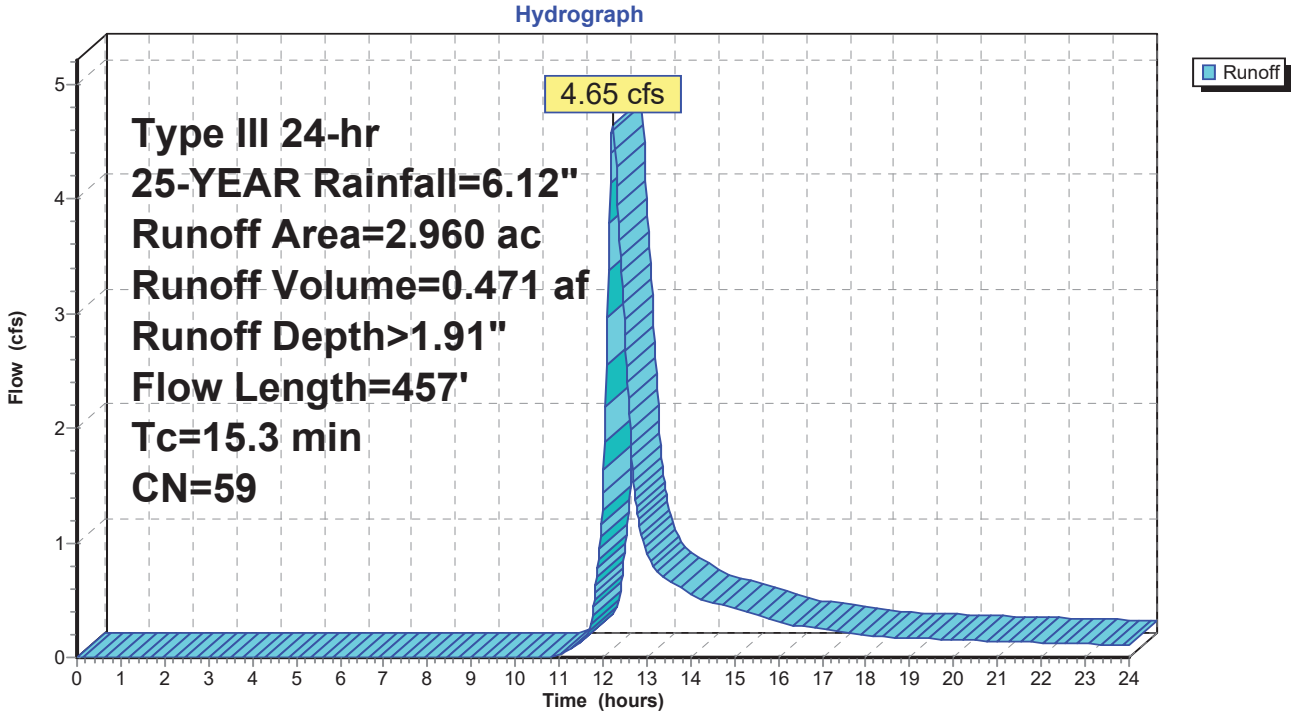
Runoff = 4.65 cfs @ 12.23 hrs, Volume= 0.471 af, Depth> 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



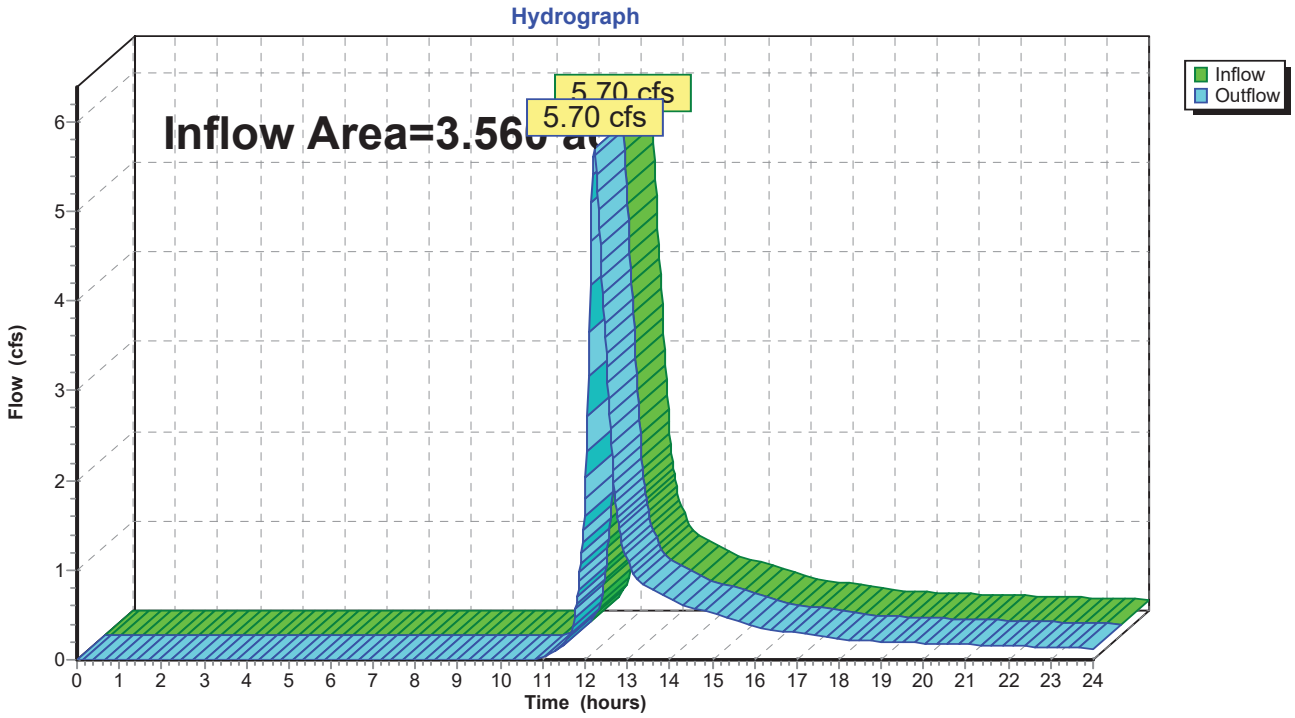
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.560 ac, 3.09% Impervious, Inflow Depth > 1.94" for 25-YEAR event
Inflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af
Outflow = 5.70 cfs @ 12.23 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 1R: EXISTING SITE TOTAL DISCHARGE



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: DISCHARGE TO THE Runoff Area=0.600 ac 0.00% Impervious Runoff Depth>3.27"
Flow Length=251' Tc=15.0 min CN=61 Runoff=1.71 cfs 0.163 af

Subcatchment E2: DISCHARGE TO THE Runoff Area=2.960 ac 3.72% Impervious Runoff Depth>3.05"
Flow Length=457' Tc=15.3 min CN=59 Runoff=7.76 cfs 0.752 af

Reach 1R: EXISTING SITE TOTAL DISCHARGE Inflow=9.47 cfs 0.916 af
Outflow=9.47 cfs 0.916 af

Total Runoff Area = 3.560 ac Runoff Volume = 0.916 af Average Runoff Depth = 3.09"
96.91% Pervious = 3.450 ac 3.09% Impervious = 0.110 ac

Summary for Subcatchment E1: DISCHARGE TO THE WEST

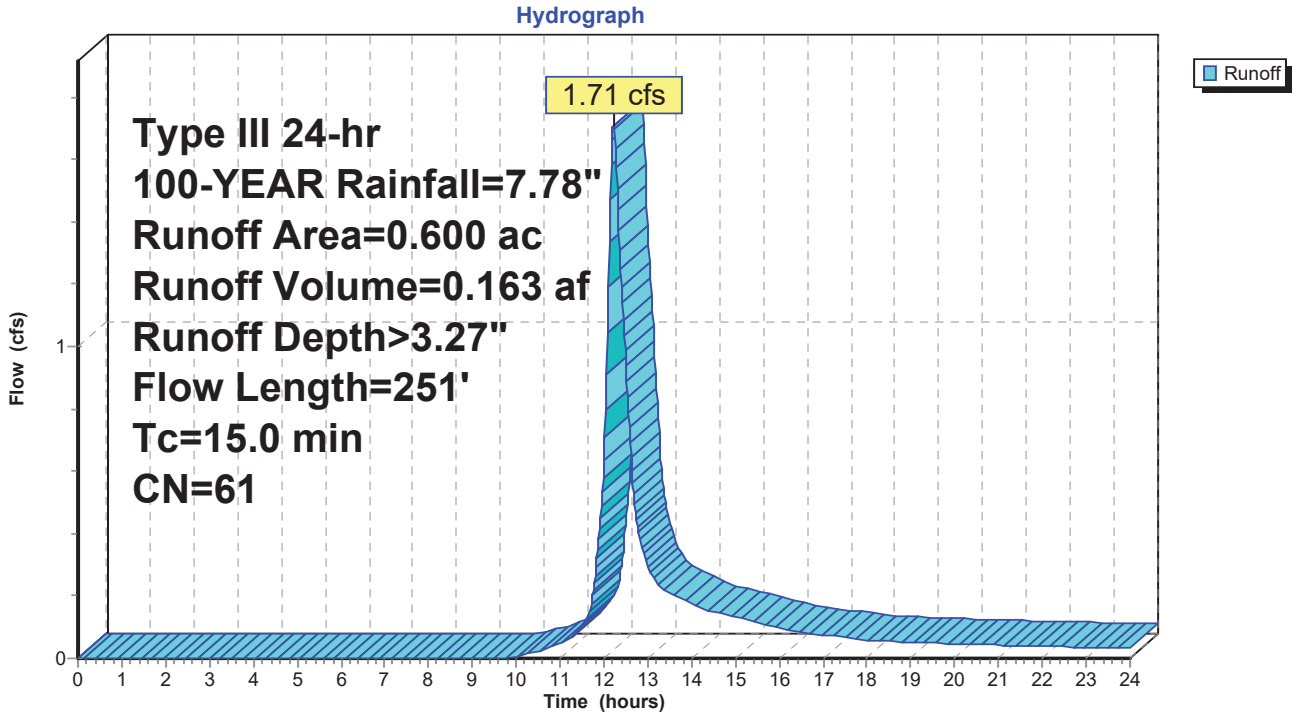
Runoff = 1.71 cfs @ 12.21 hrs, Volume= 0.163 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.600	61	>75% Grass cover, Good, HSG B
0.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0200	0.12		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
1.0	151	0.0265	2.62		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.0	251	Total			

Subcatchment E1: DISCHARGE TO THE WEST



Summary for Subcatchment E2: DISCHARGE TO THE EAST

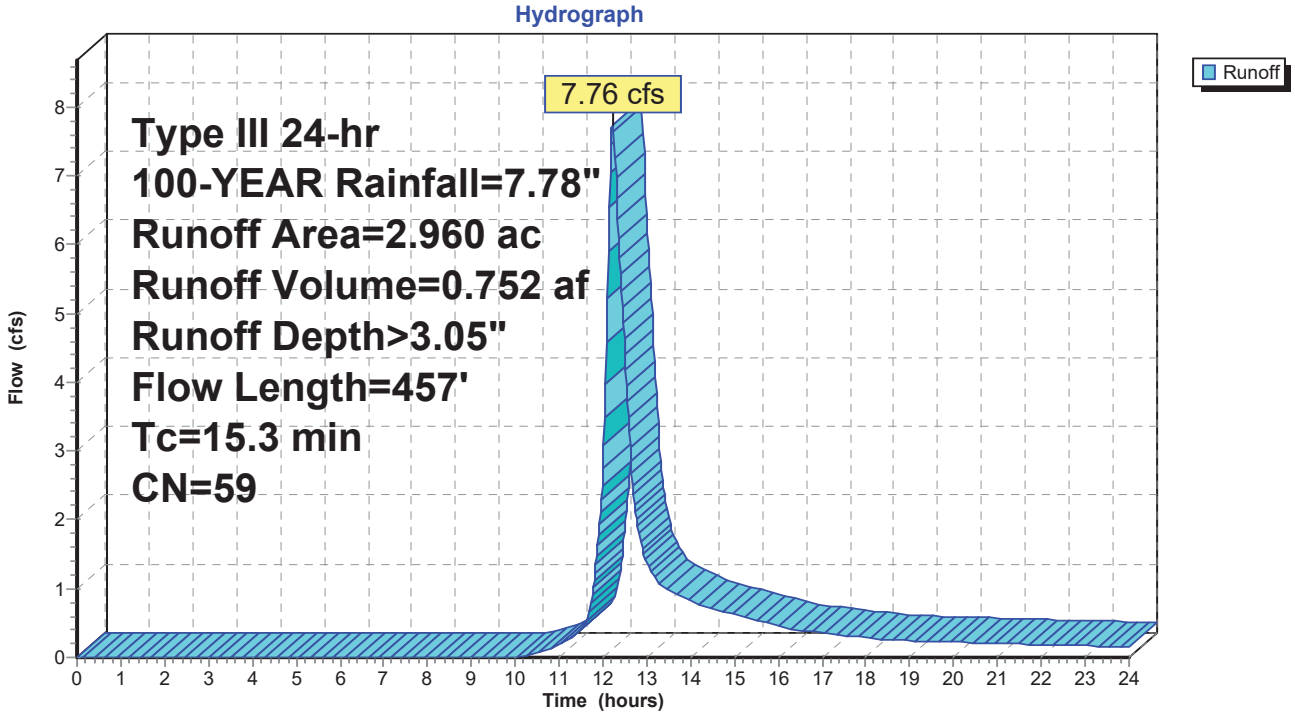
Runoff = 7.76 cfs @ 12.22 hrs, Volume= 0.752 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
1.980	61	>75% Grass cover, Good, HSG B
0.870	48	Brush, Good, HSG B
0.110	98	Paved parking, HSG B
2.960	59	Weighted Average
2.850		96.28% Pervious Area
0.110		3.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0250	0.13		**Sheet Flow, SEG 1** Grass: Dense n= 0.240 P2= 3.33"
2.5	357	0.0224	2.41		**Shallow Concentrated Flow, SEG 2** Unpaved Kv= 16.1 fps
15.3	457	Total			

Subcatchment E2: DISCHARGE TO THE EAST



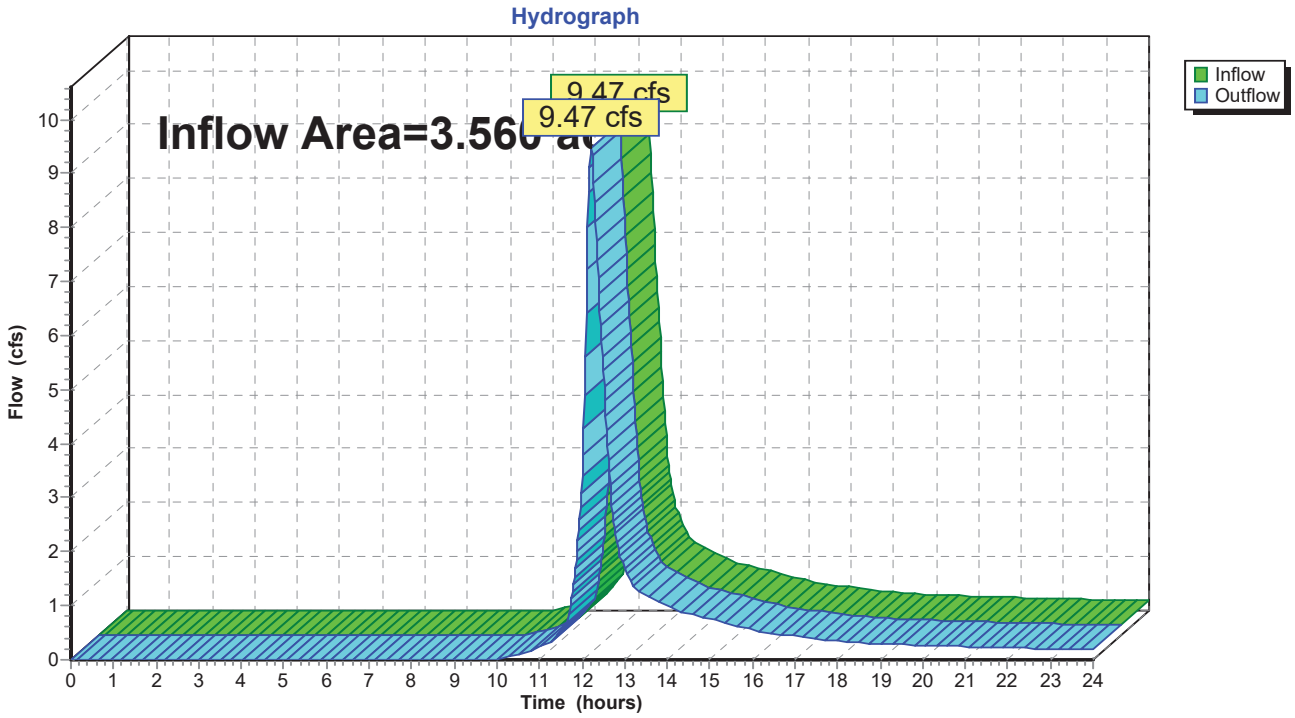
Summary for Reach 1R: EXISTING SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.560 ac,	3.09% Impervious,	Inflow Depth >	3.09"	for 100-YEAR event
Inflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af	
Outflow =	9.47 cfs @	12.22 hrs,	Volume=	0.916 af,	Atten= 0%, Lag= 0.0 min

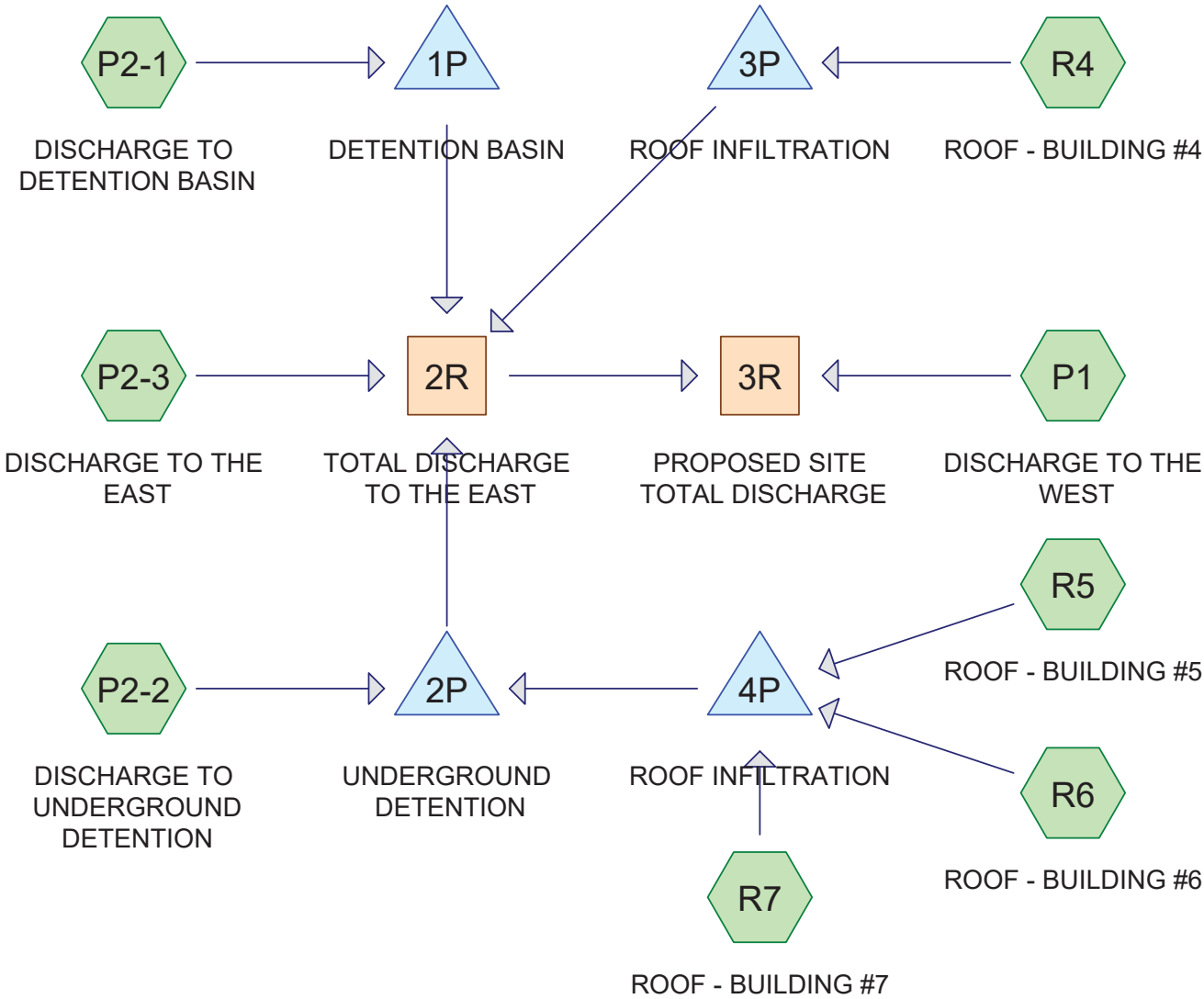
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

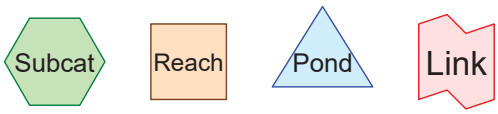
Reach 1R: EXISTING SITE TOTAL DISCHARGE



APPENDIX B

Proposed Stormwater Discharge Computations





Routing Diagram for 8374900-HYDRO2
Prepared by BSC Group, Printed 2/12/2020
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.400	61	>75% Grass cover, Good, HSG B (P1, P2-1, P2-2, P2-3)
0.550	48	Brush, Good, HSG B (P2-3)
1.180	98	Paved parking, HSG B (P2-1, P2-2, P2-3)
0.427	98	Unconnected roofs, HSG B (R4, R5, R6, R7)
3.557	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.557	HSG B	P1, P2-1, P2-2, P2-3, R4, R5, R6, R7
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.557		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.400	0.000	0.000	0.000	1.400	>75% Grass cover, Good	P1, P2-1, P2-2, P2-3
0.000	0.550	0.000	0.000	0.000	0.550	Brush, Good	P2-3
0.000	1.180	0.000	0.000	0.000	1.180	Paved parking	P2-1, P2-2, P2-3
0.000	0.427	0.000	0.000	0.000	0.427	Unconnected roofs	R4, R5, R6, R7
0.000	**3.557**	**0.000**	**0.000**	**0.000**	**3.557**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	614.05	613.00	105.0	0.0100	0.011	15.0	0.0	0.0
2	2P	613.75	613.75	18.0	0.0000	0.011	15.0	0.0	0.0
3	3P	617.50	616.00	15.0	0.1000	0.010	8.0	0.0	0.0
4	4P	617.00	617.00	33.0	0.0000	0.010	8.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>0.50"
Tc=6.0 min CN=61 Runoff=0.05 cfs 0.006 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>1.43"
Tc=6.0 min CN=79 Runoff=1.00 cfs 0.072 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>2.20"
Tc=6.0 min CN=89 Runoff=2.91 cfs 0.209 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=56 Runoff=0.19 cfs 0.033 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.026 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.031 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=0.34 cfs 0.162 af
Outflow=0.34 cfs 0.162 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=0.34 cfs 0.168 af
Outflow=0.34 cfs 0.168 af

Pond 1P: DETENTION BASIN Peak Elev=614.45' Storage=1,915 cf Inflow=1.00 cfs 0.072 af
Outflow=0.07 cfs 0.031 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.01' Storage=5,591 cf Inflow=2.91 cfs 0.209 af
Outflow=0.22 cfs 0.098 af

Pond 3P: ROOF INFILTRATION Peak Elev=614.22' Storage=1,112 cf Inflow=0.32 cfs 0.026 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=614.63' Storage=0.085 af Inflow=1.06 cfs 0.085 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.430 af Average Runoff Depth = 1.45"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

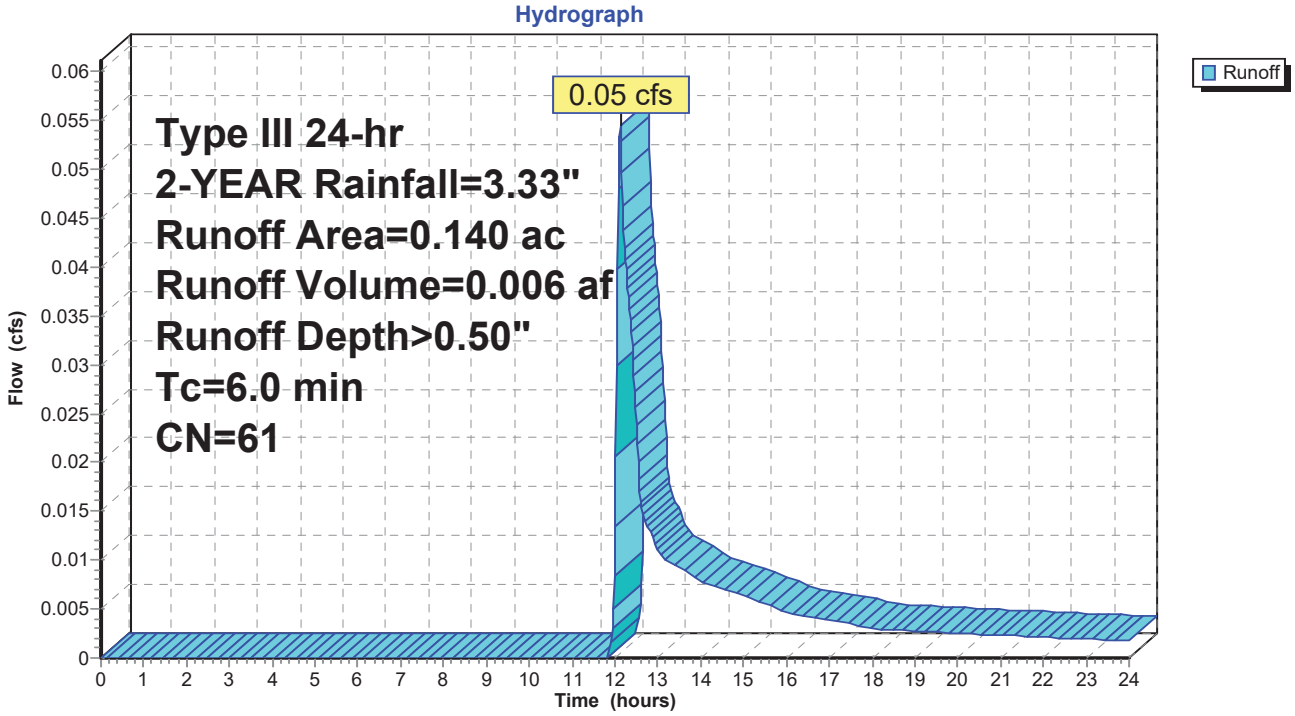
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.006 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

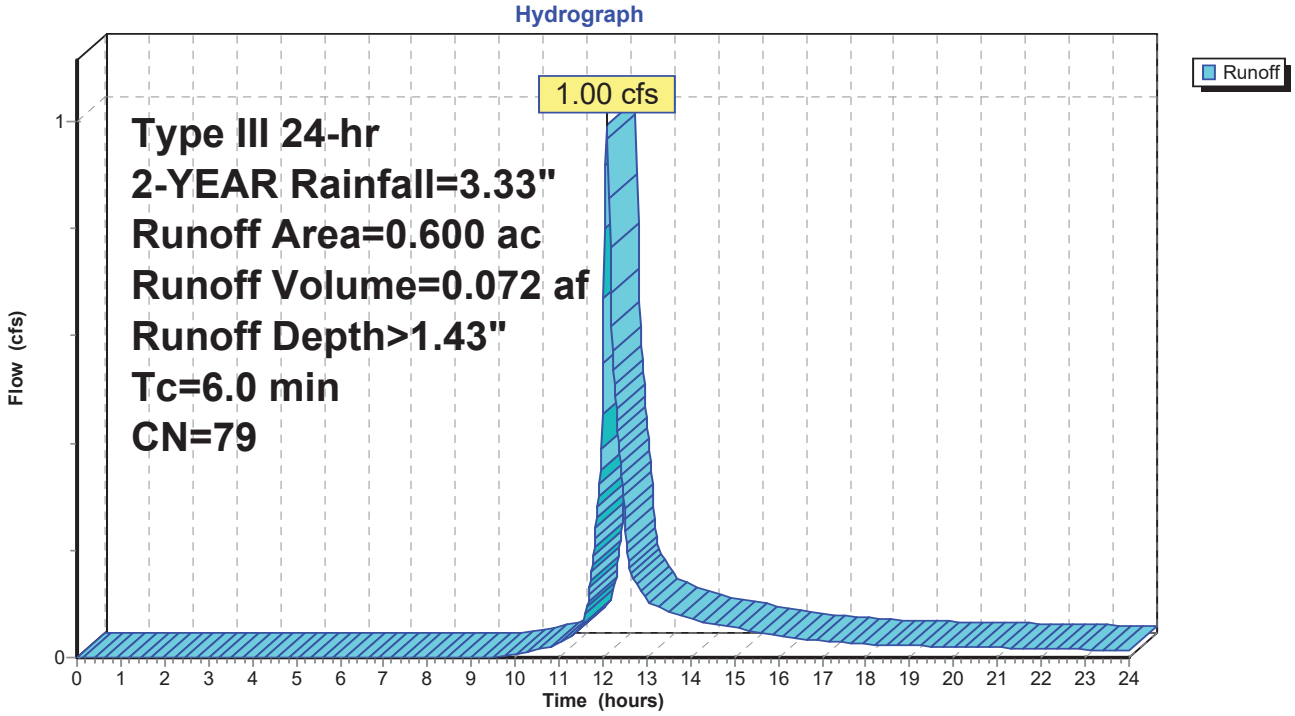
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

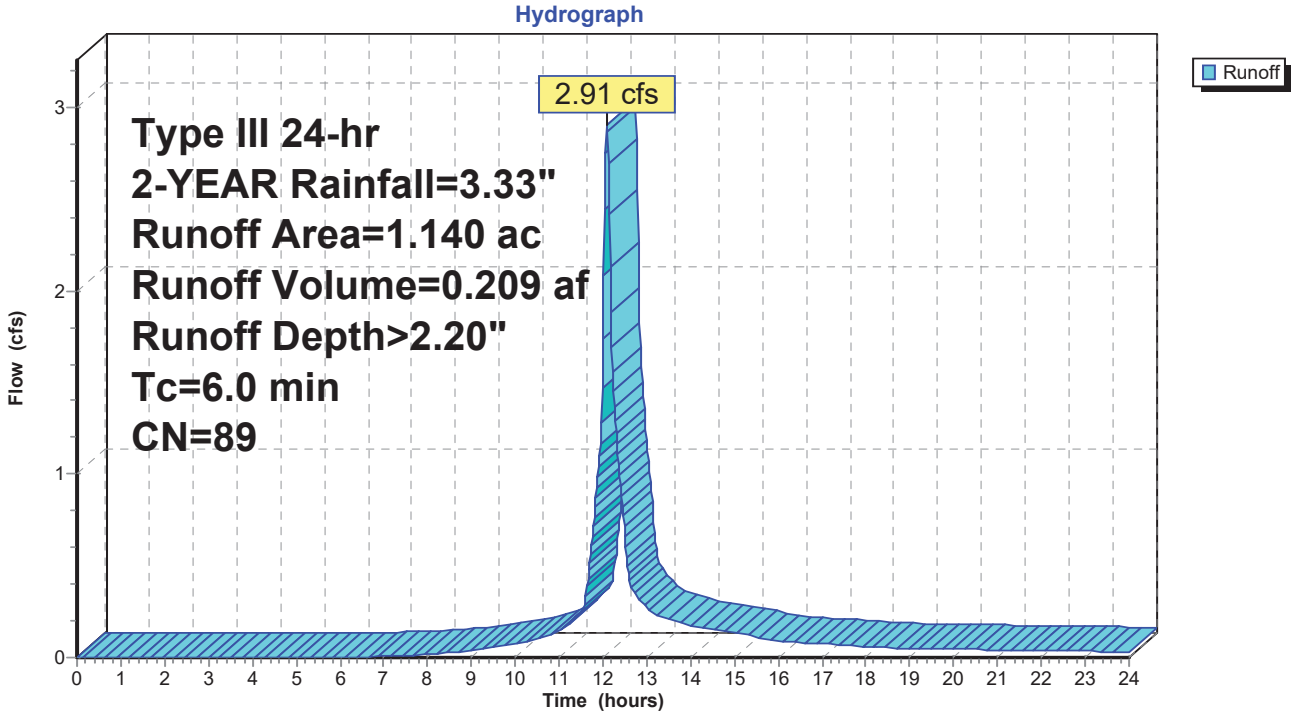
Runoff = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

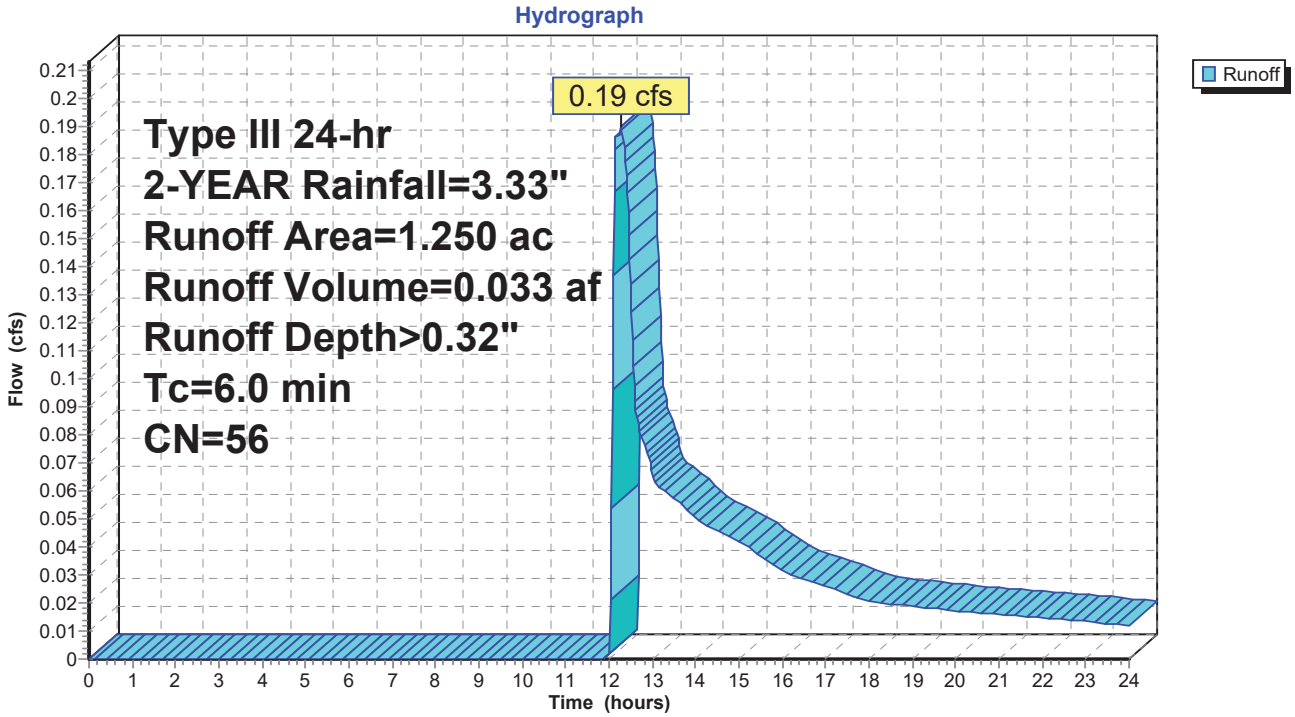
Runoff = 0.19 cfs @ 12.28 hrs, Volume= 0.033 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

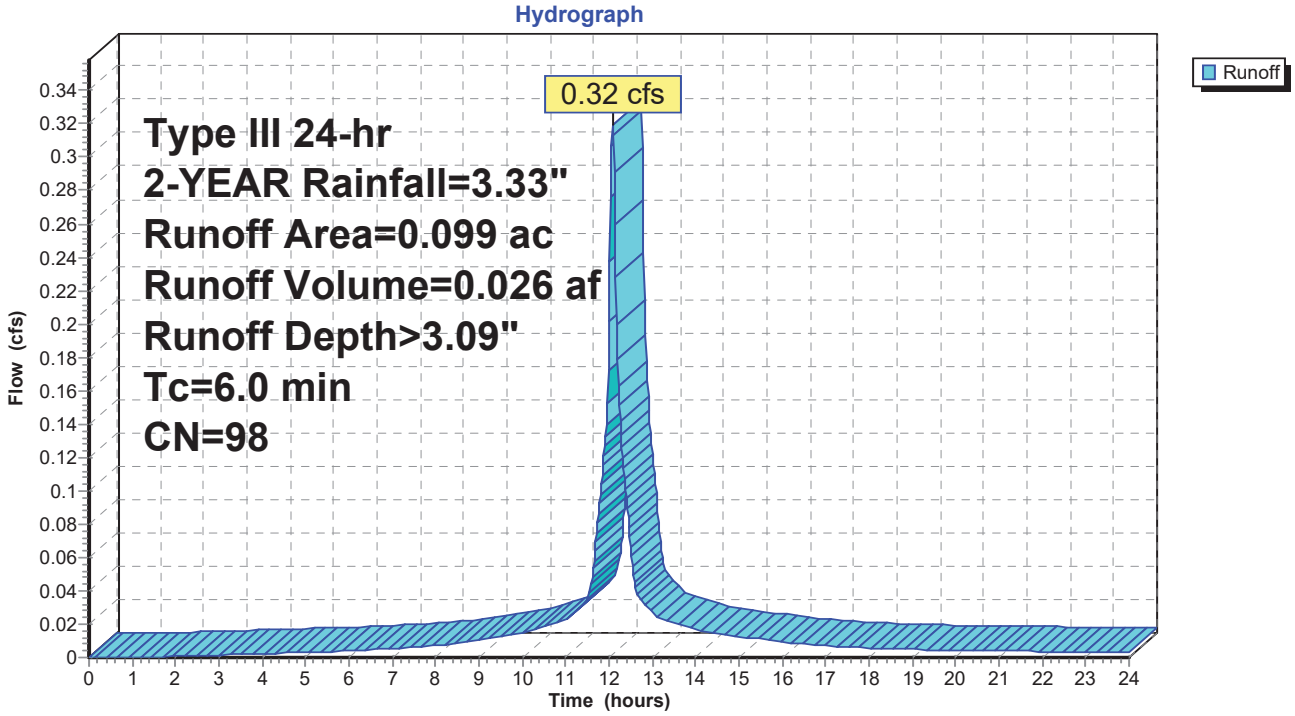
Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

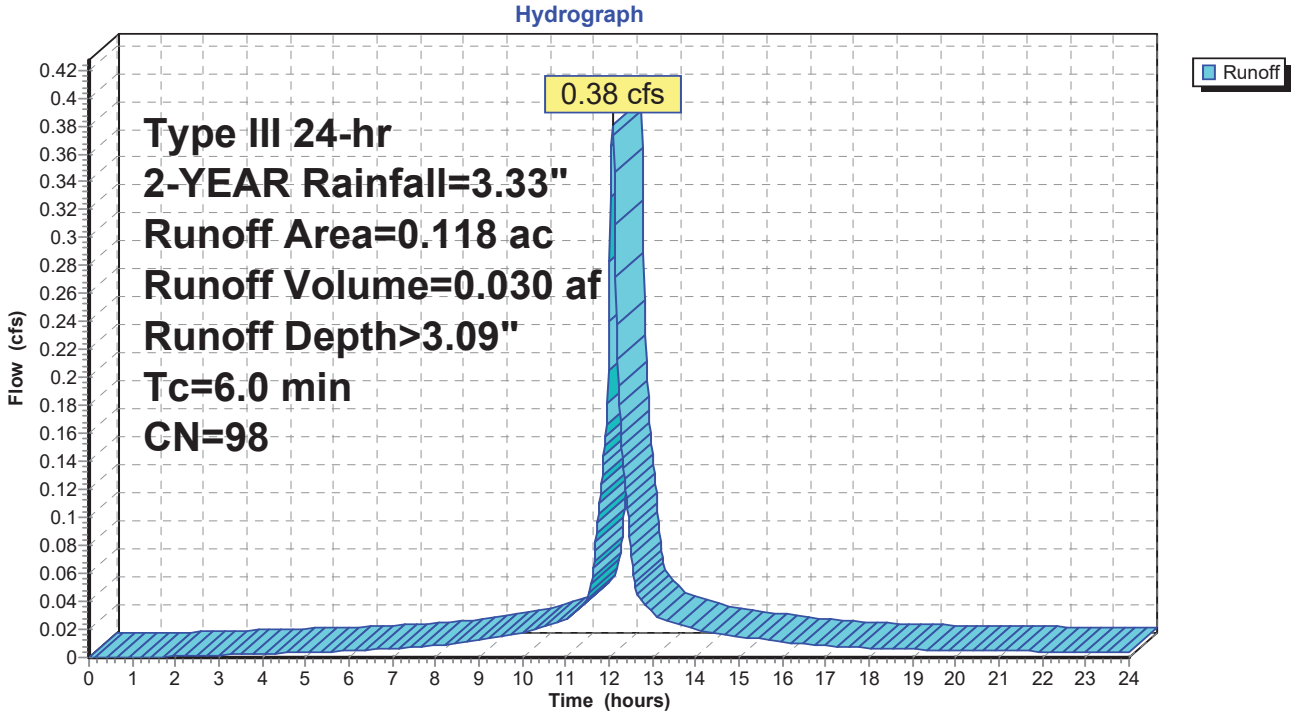
Runoff = 0.38 cfs @ 12.08 hrs, Volume= 0.030 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

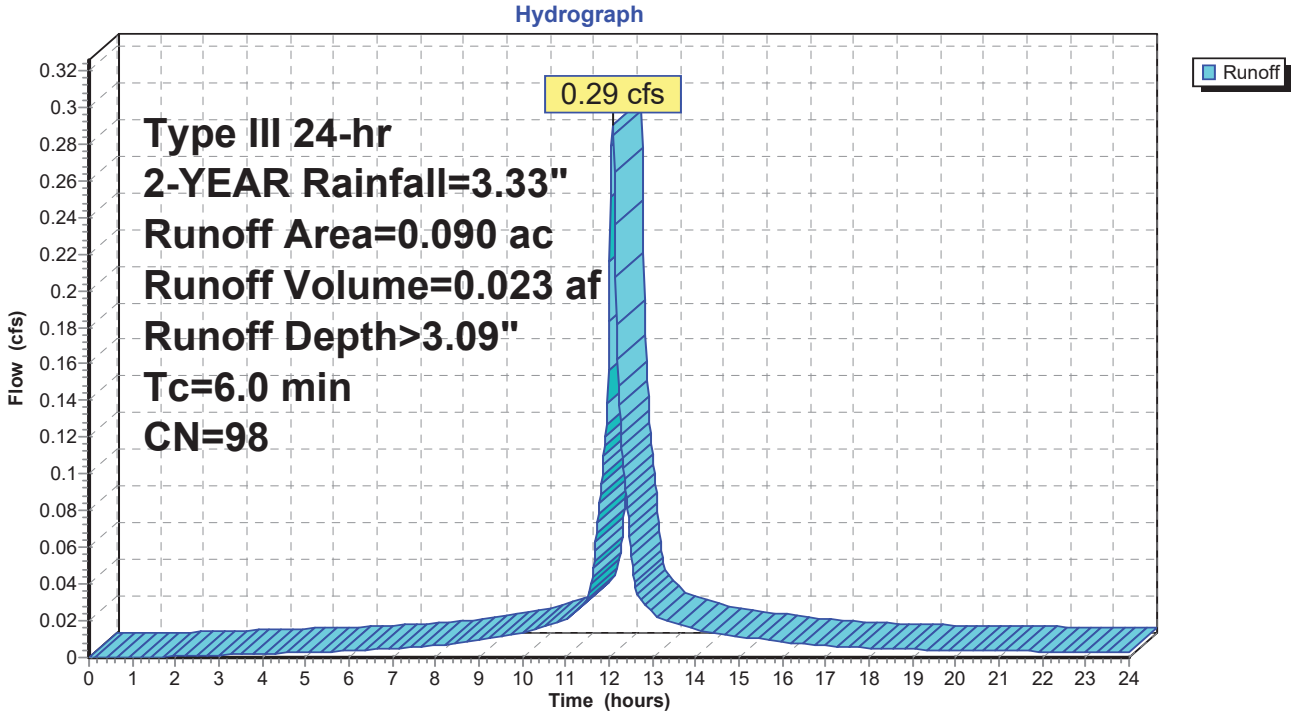
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

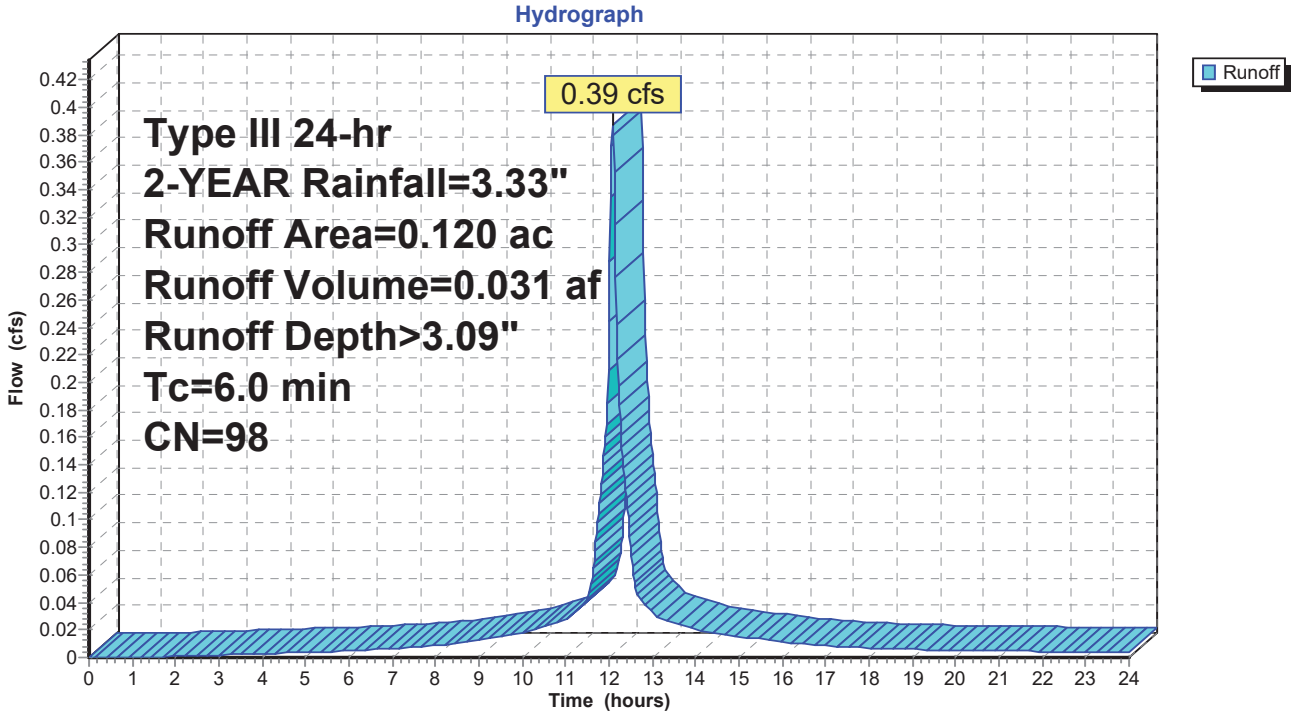
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.031 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



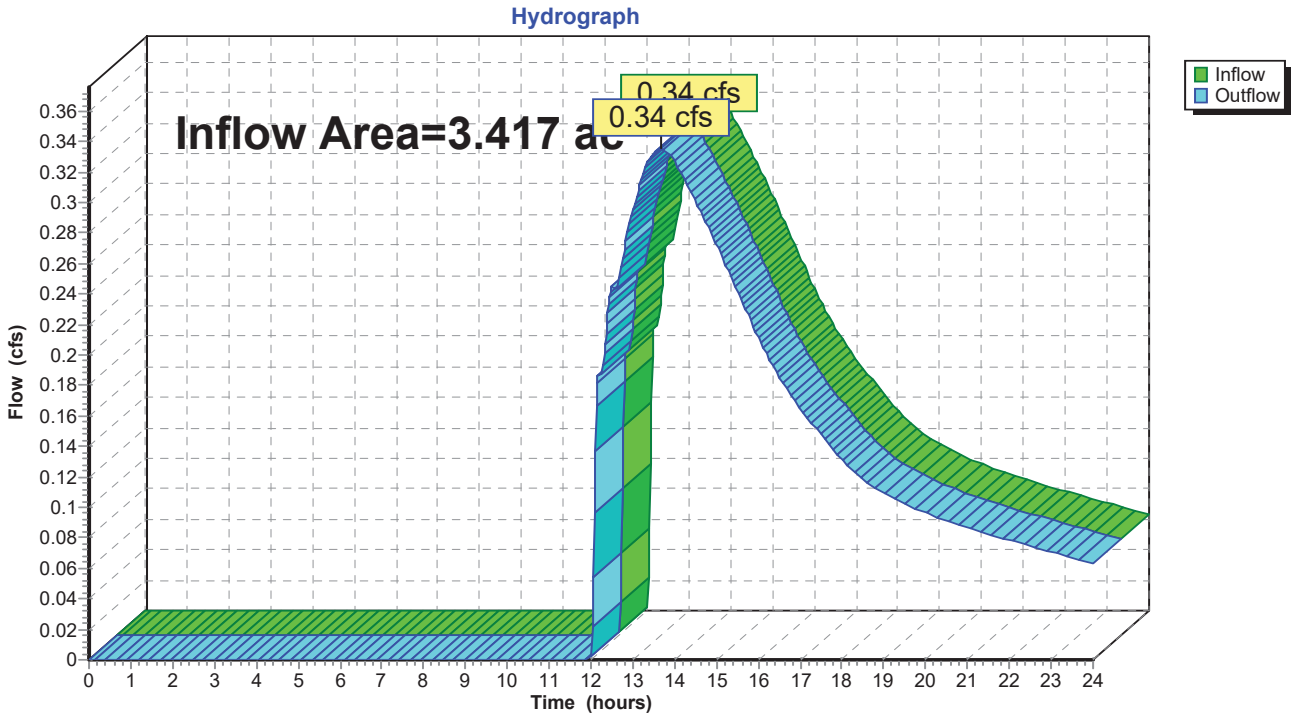
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 0.57" for 2-YEAR event
Inflow = 0.34 cfs @ 13.67 hrs, Volume= 0.162 af
Outflow = 0.34 cfs @ 13.67 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



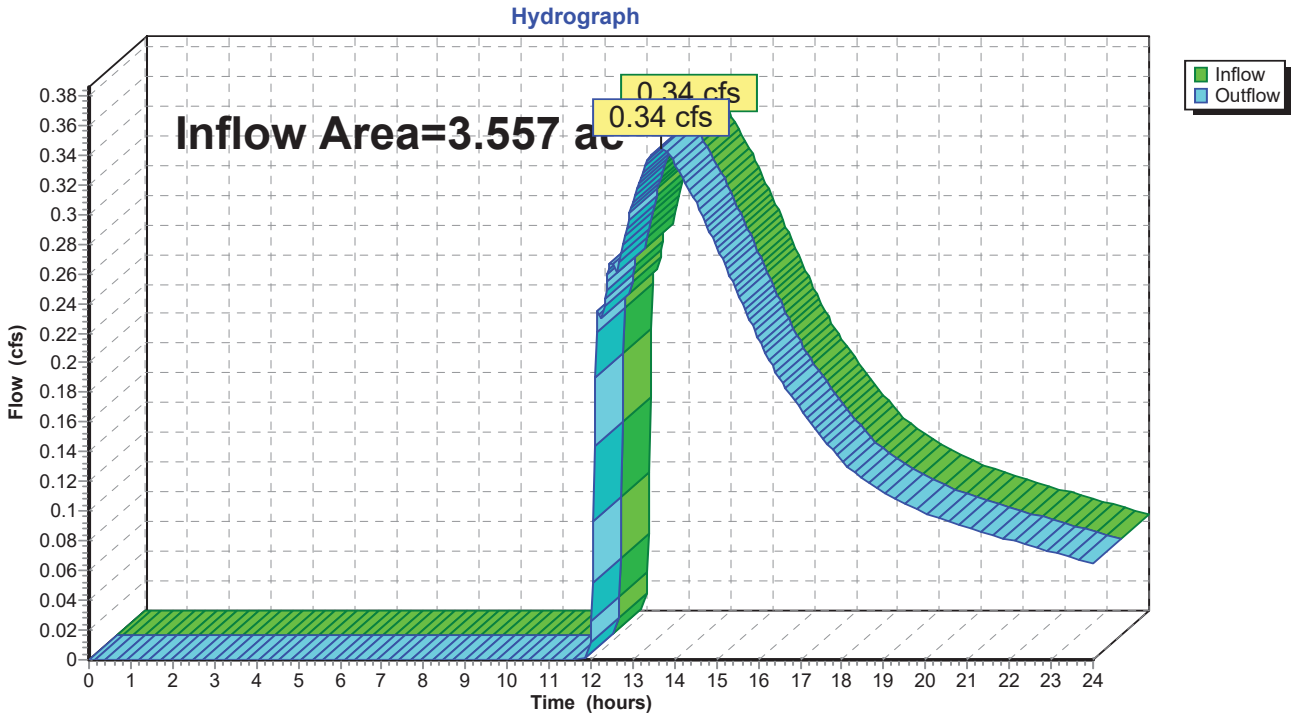
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 0.57" for 2-YEAR event
Inflow = 0.34 cfs @ 13.66 hrs, Volume= 0.168 af
Outflow = 0.34 cfs @ 13.66 hrs, Volume= 0.168 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 1.43" for 2-YEAR event
Inflow = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af
Outflow = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af, Atten= 93%, Lag= 122.0 min
Primary = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.45' @ 14.13 hrs Surf.Area= 1,679 sf Storage= 1,915 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 306.2 min calculated for 0.031 af (43% of inflow)
Center-of-Mass det. time= 180.6 min (1,023.7 - 843.1)

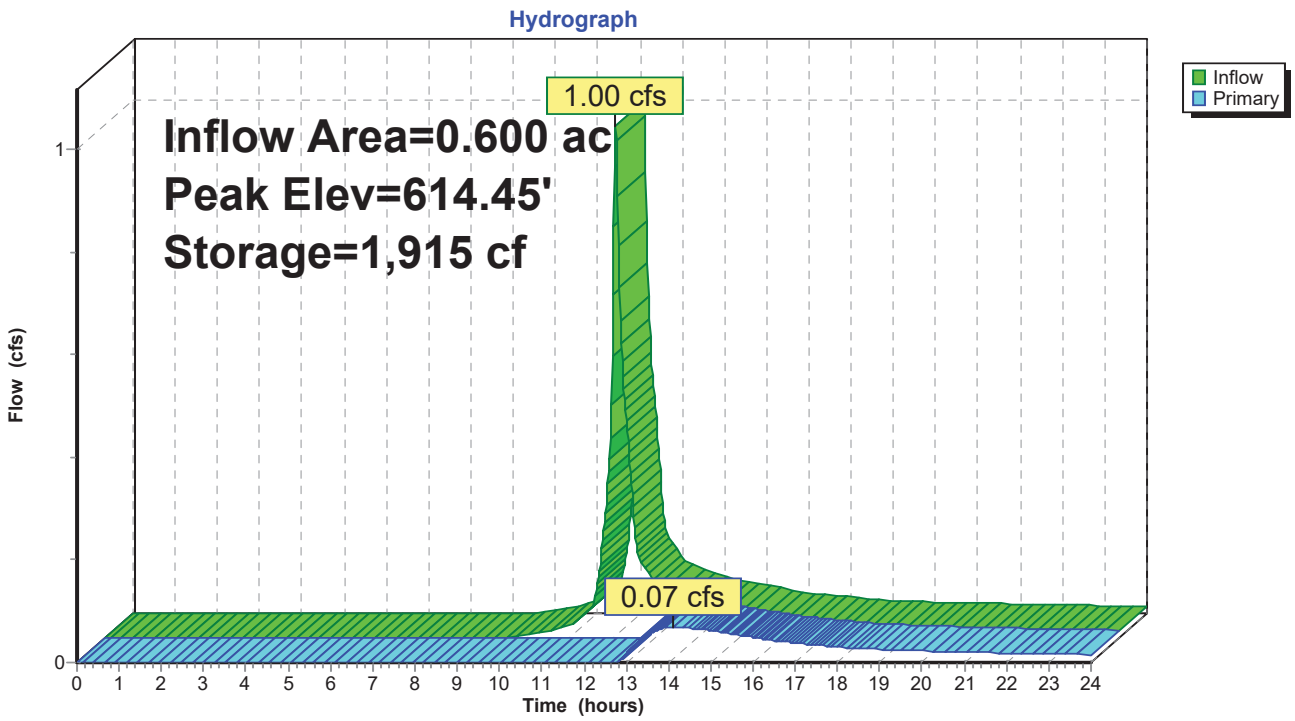
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

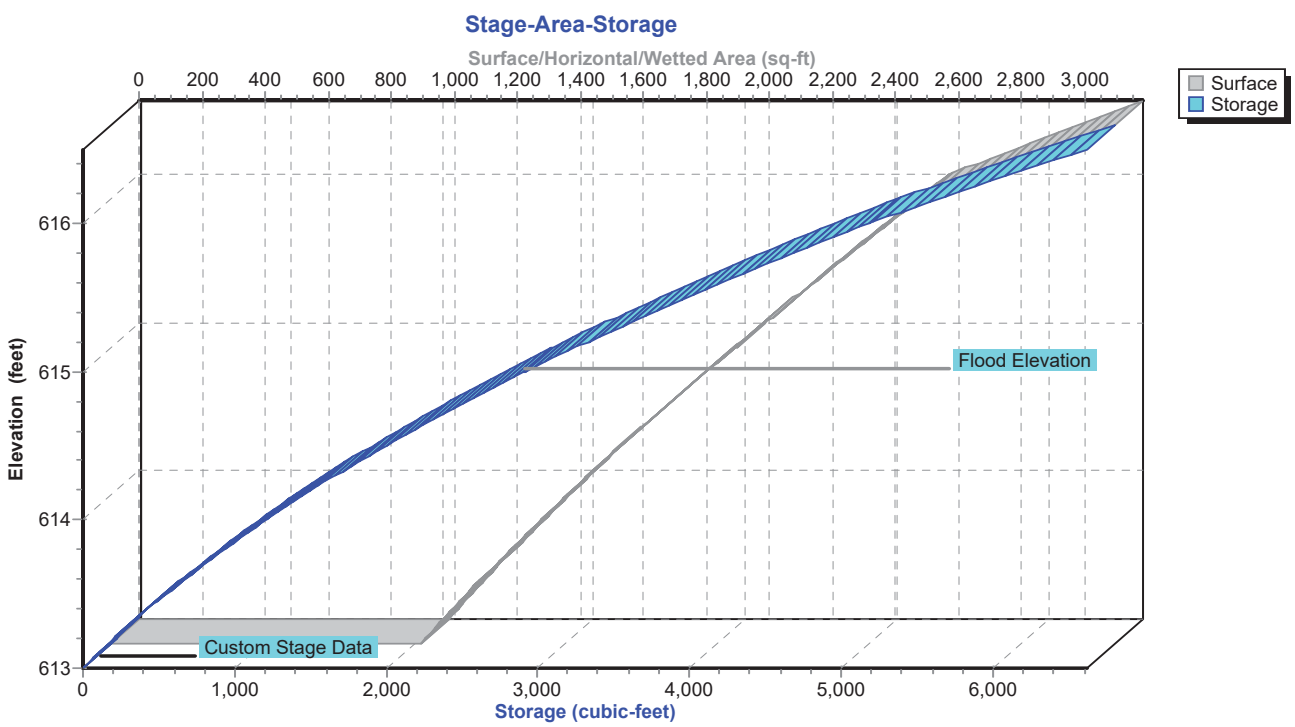
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 14.13 hrs HW=614.45' (Free Discharge)
└─**1=Culvert** (Passes 0.07 cfs of 0.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.33 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 1.71" for 2-YEAR event
Inflow = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 0.22 cfs @ 13.38 hrs, Volume= 0.098 af, Atten= 92%, Lag= 77.7 min
Primary = 0.22 cfs @ 13.38 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.01' @ 13.38 hrs Surf.Area= 5,184 sf Storage= 5,591 cf

Plug-Flow detention time= 287.5 min calculated for 0.097 af (47% of inflow)
Center-of-Mass det. time= 172.8 min (981.7 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.25'	6,164 cf	**32.00'W x 162.00'L x 4.50'H Field A** 23,328 cf Overall - 7,917 cf Embedded = 15,411 cf x 40.0% Voids
#2A	613.75'	7,917 cf	**CMP Round 36** x 56 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 7 Rows of 8 Chambers
#3	613.75'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		14,112 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.75' / 613.75' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.72'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 13.38 hrs HW=615.01' (Free Discharge)
└─**1=Culvert** (Passes 0.22 cfs of 3.42 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 1.85 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

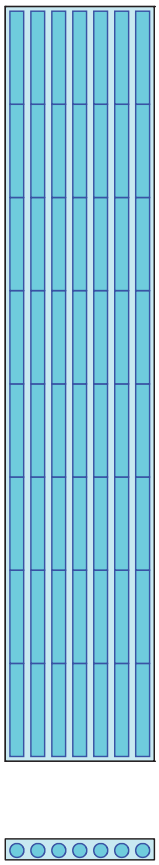
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
7 Rows x 36.0" Wide + 18.0" Spacing x 6 + 12.0" Side Stone x 2 = 32.00' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

56 Chambers x 141.4 cf = 7,916.8 cf Chamber Storage

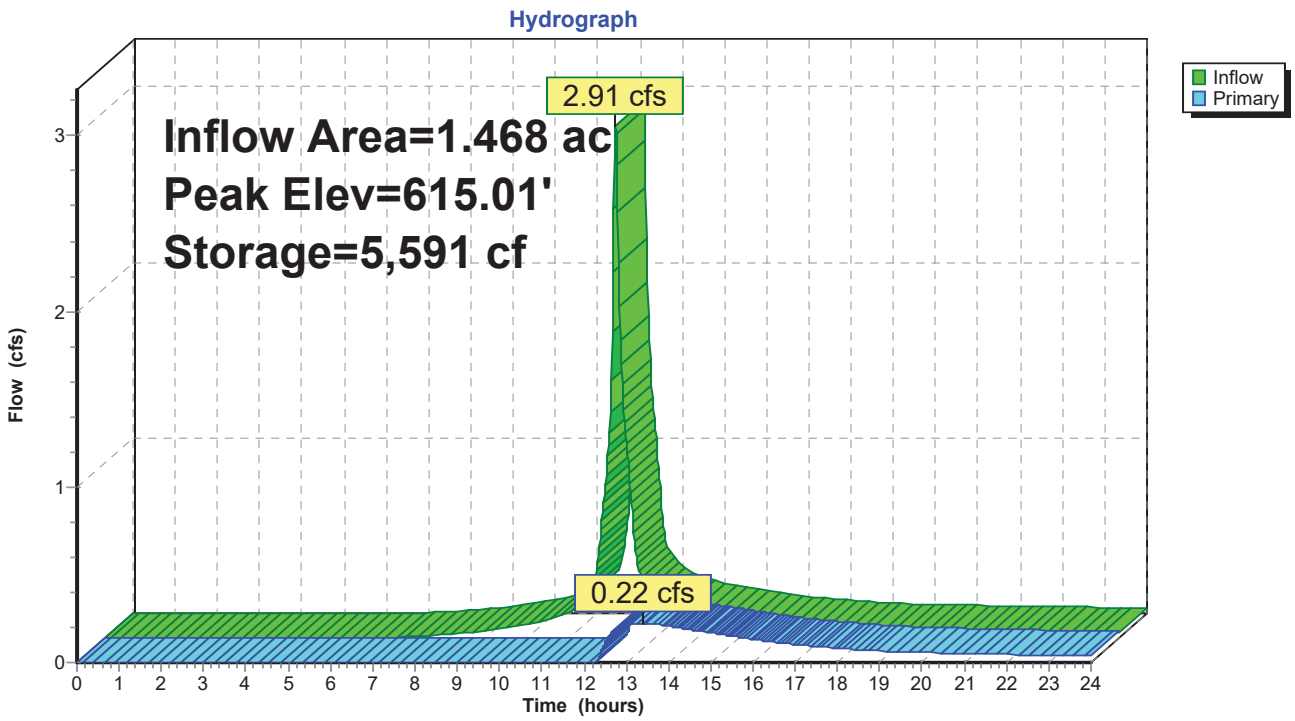
23,328.0 cf Field - 7,916.8 cf Chambers = 15,411.2 cf Stone x 40.0% Voids = 6,164.5 cf Stone Storage

Chamber Storage + Stone Storage = 14,081.3 cf = 0.323 af
Overall Storage Efficiency = 60.4%
Overall System Size = 162.00' x 32.00' x 4.50'

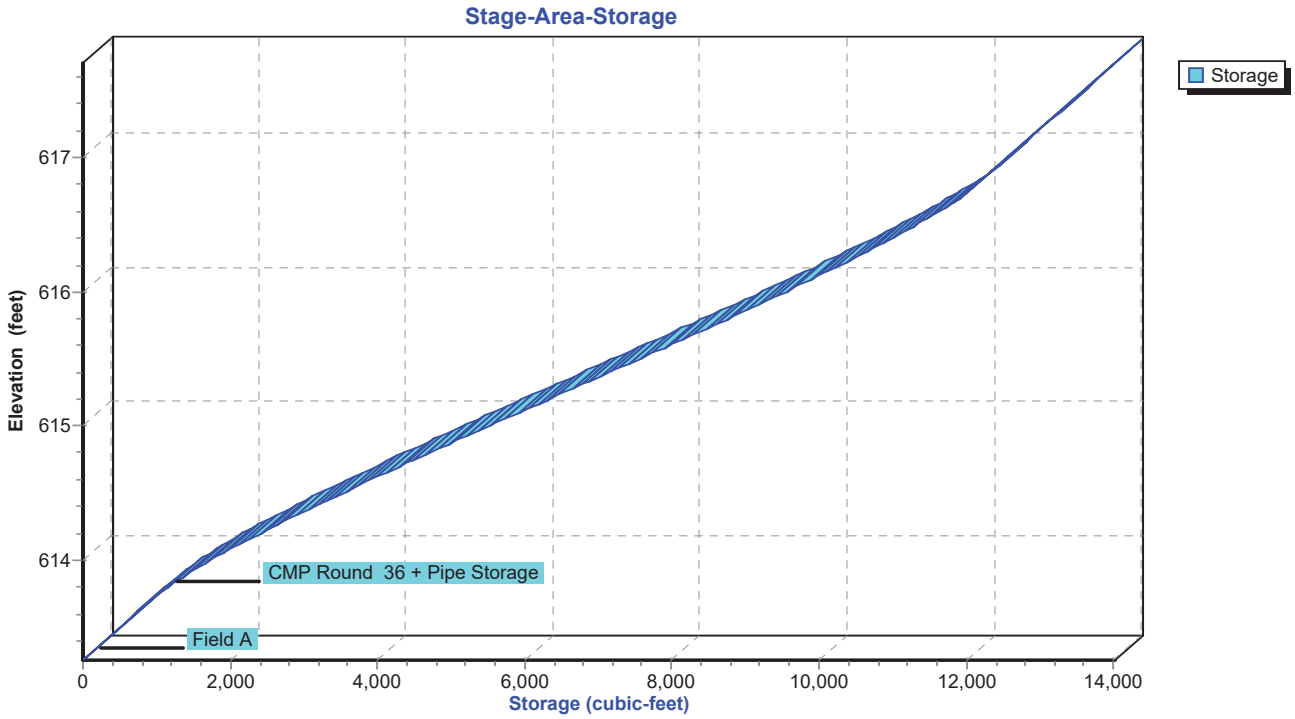
56 Chambers
864.0 cy Field
570.8 cy Stone



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.22' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

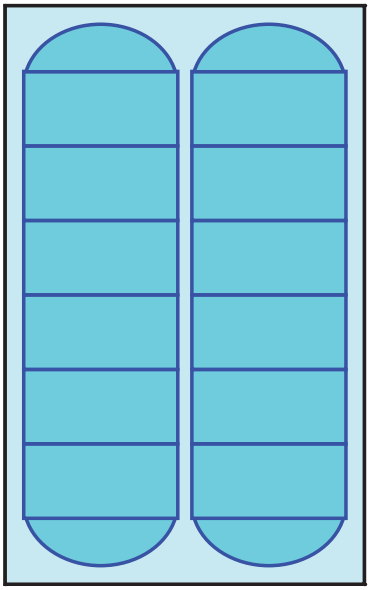
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

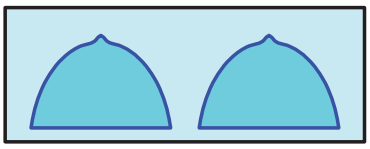
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

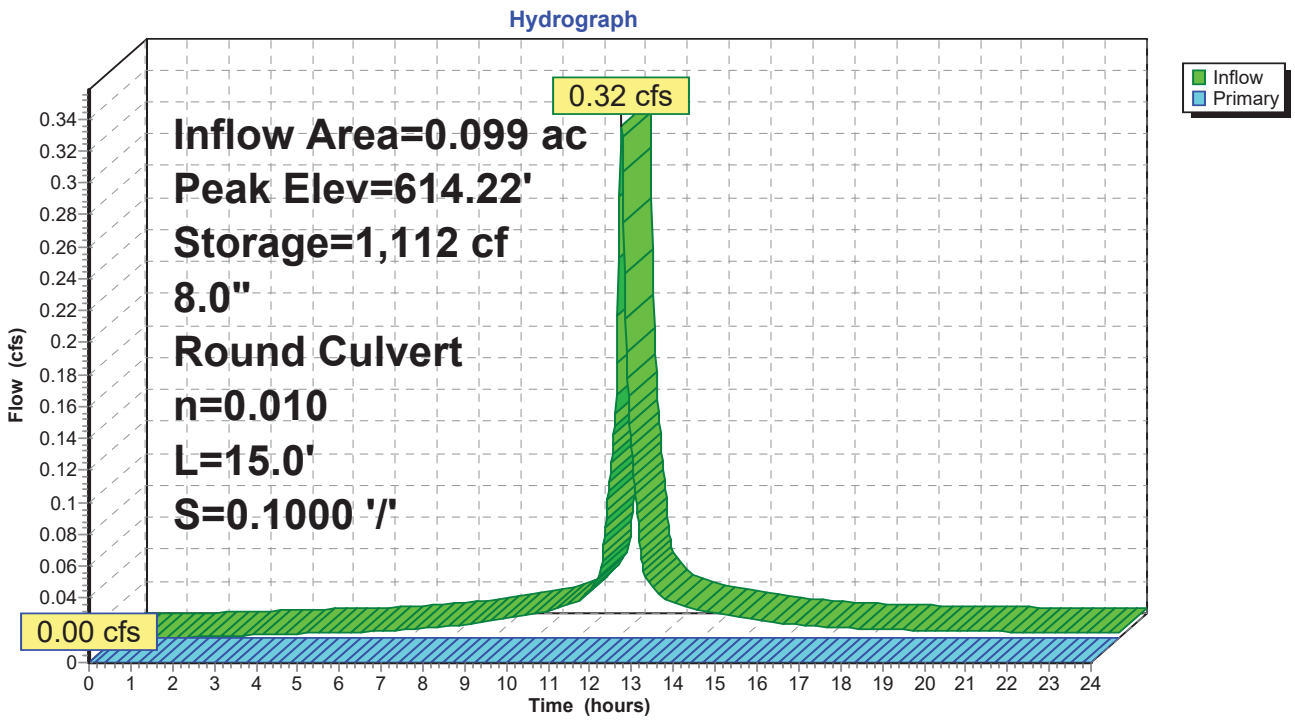
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

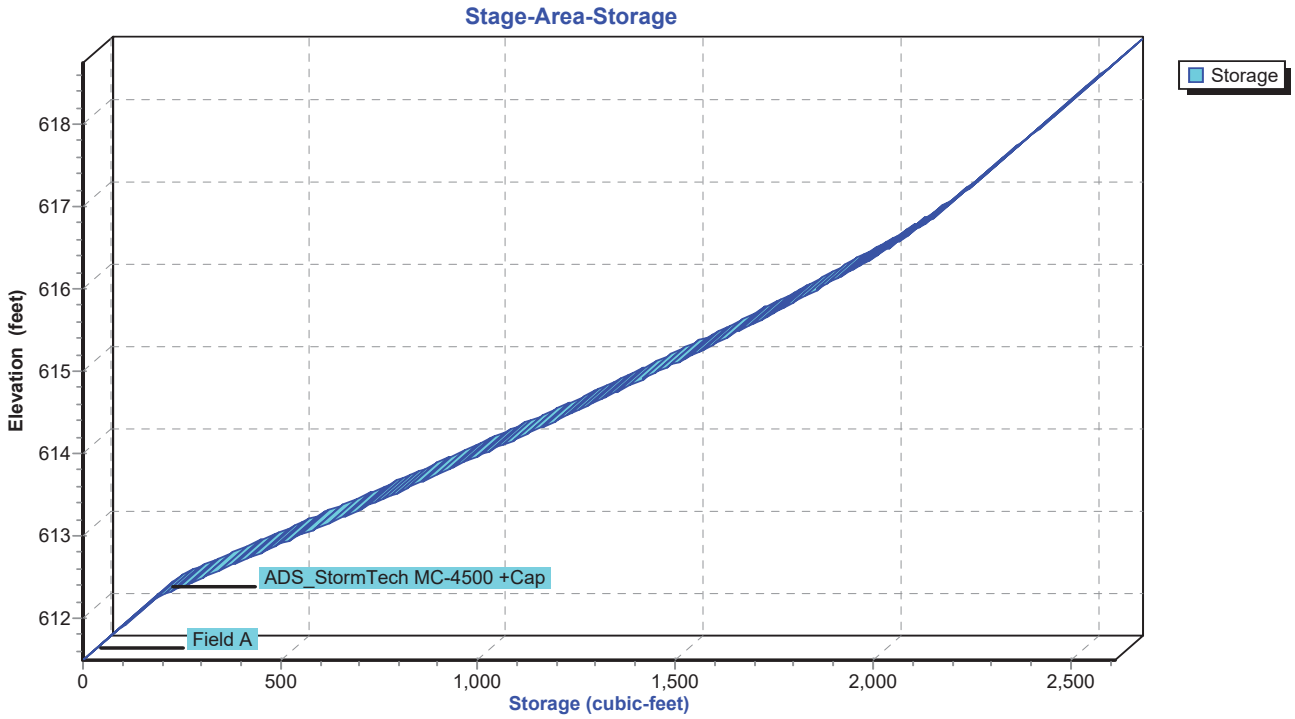




Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 1.06 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.63' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.085 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	612.17'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	612.92'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=612.17' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

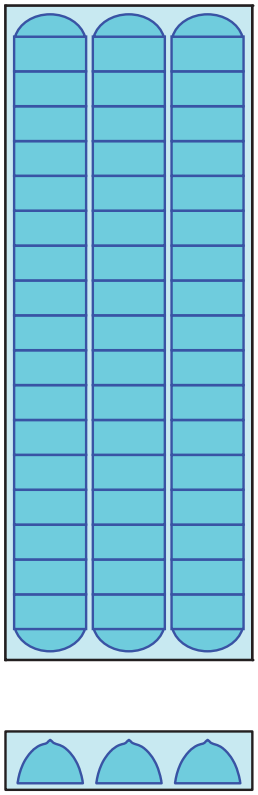
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

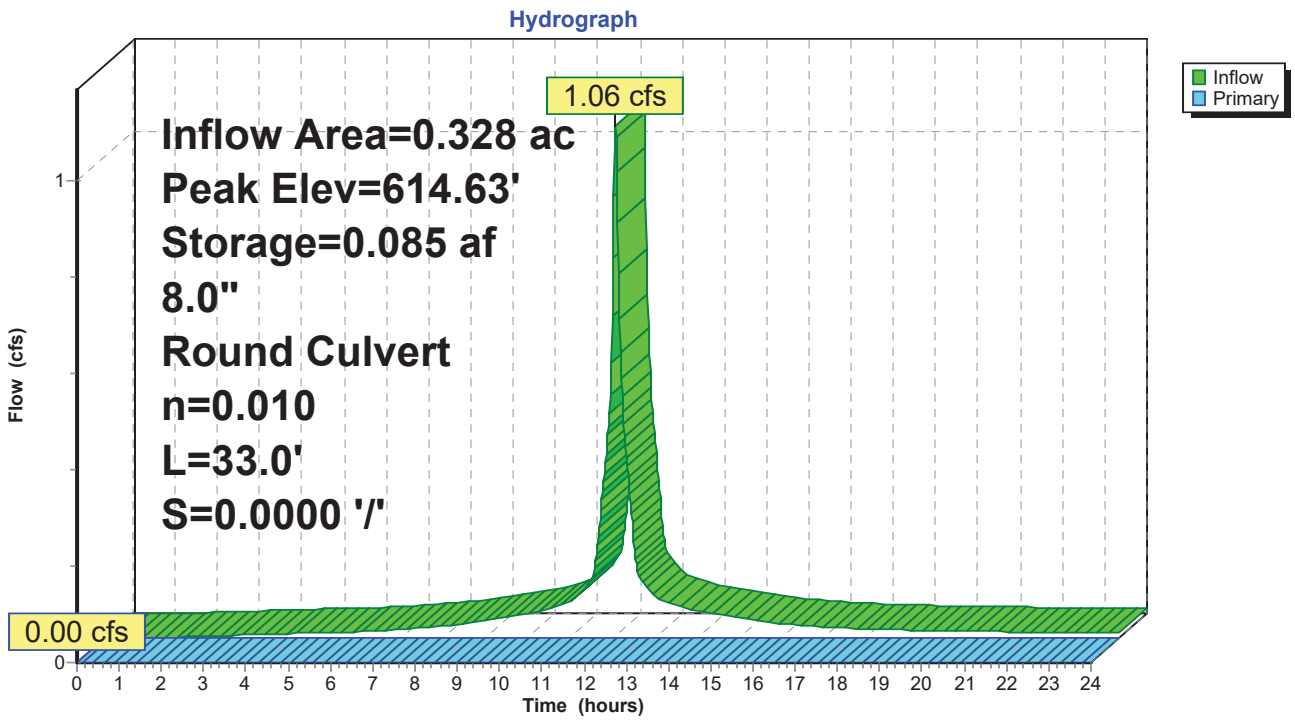
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

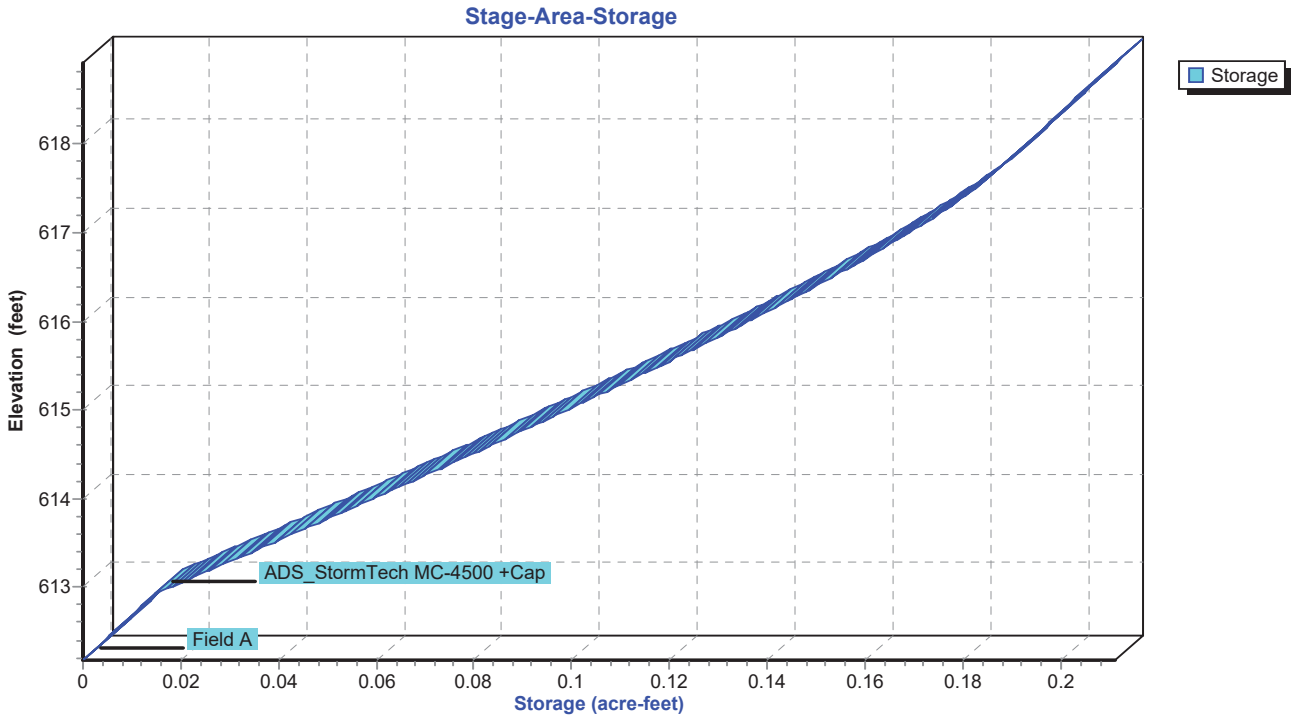
51 Chambers
538.2 cy Field
329.2 cy Stone



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>1.40"
Tc=6.0 min CN=61 Runoff=0.21 cfs 0.016 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>2.84"
Tc=6.0 min CN=79 Runoff=2.00 cfs 0.142 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>3.82"
Tc=6.0 min CN=89 Runoff=4.95 cfs 0.363 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.07"
Tc=6.0 min CN=56 Runoff=1.29 cfs 0.111 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.49 cfs 0.040 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.047 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=2.27 cfs 0.460 af
Outflow=2.27 cfs 0.460 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=2.37 cfs 0.476 af
Outflow=2.37 cfs 0.476 af

Pond 1P: DETENTION BASIN Peak Elev=614.89' Storage=2,704 cf Inflow=2.00 cfs 0.142 af
Outflow=0.55 cfs 0.101 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.67' Storage=8,262 cf Inflow=4.95 cfs 0.363 af
Outflow=1.15 cfs 0.249 af

Pond 3P: ROOF INFILTRATION Peak Elev=615.66' Storage=1,728 cf Inflow=0.49 cfs 0.040 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=615.86' Storage=0.131 af Inflow=1.62 cfs 0.131 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.803 af Average Runoff Depth = 2.71"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

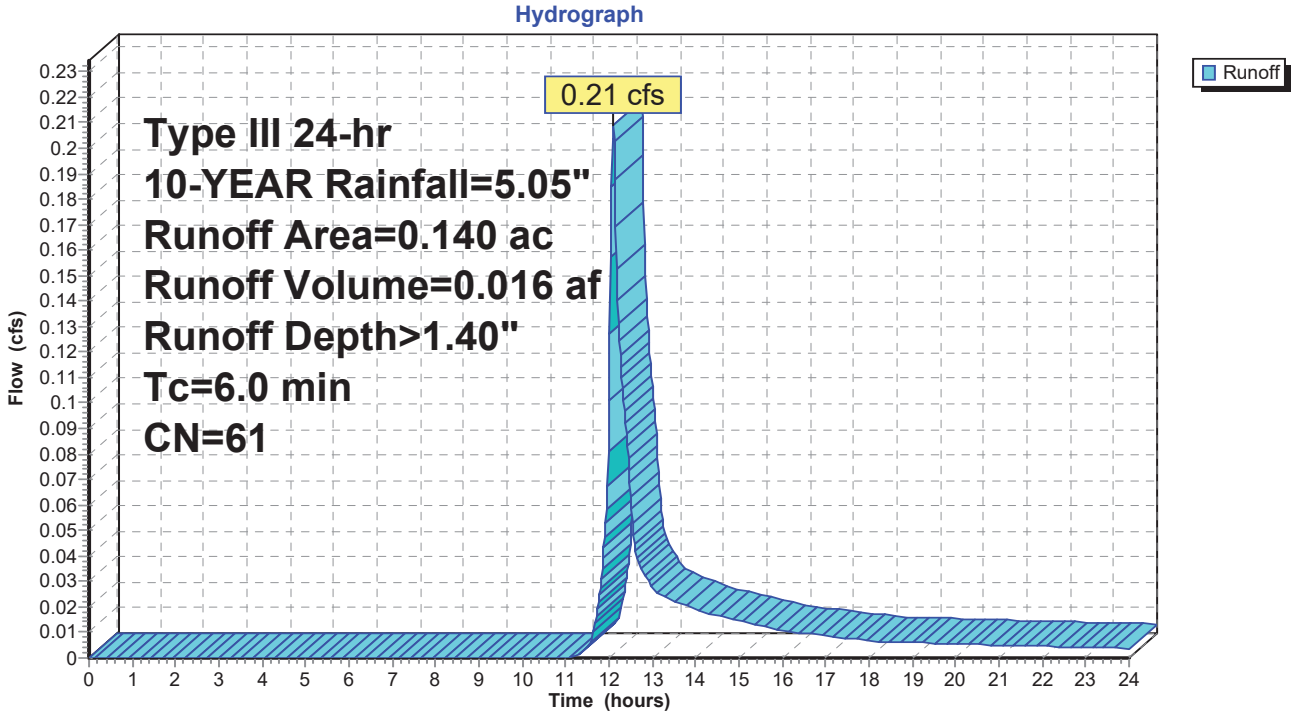
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

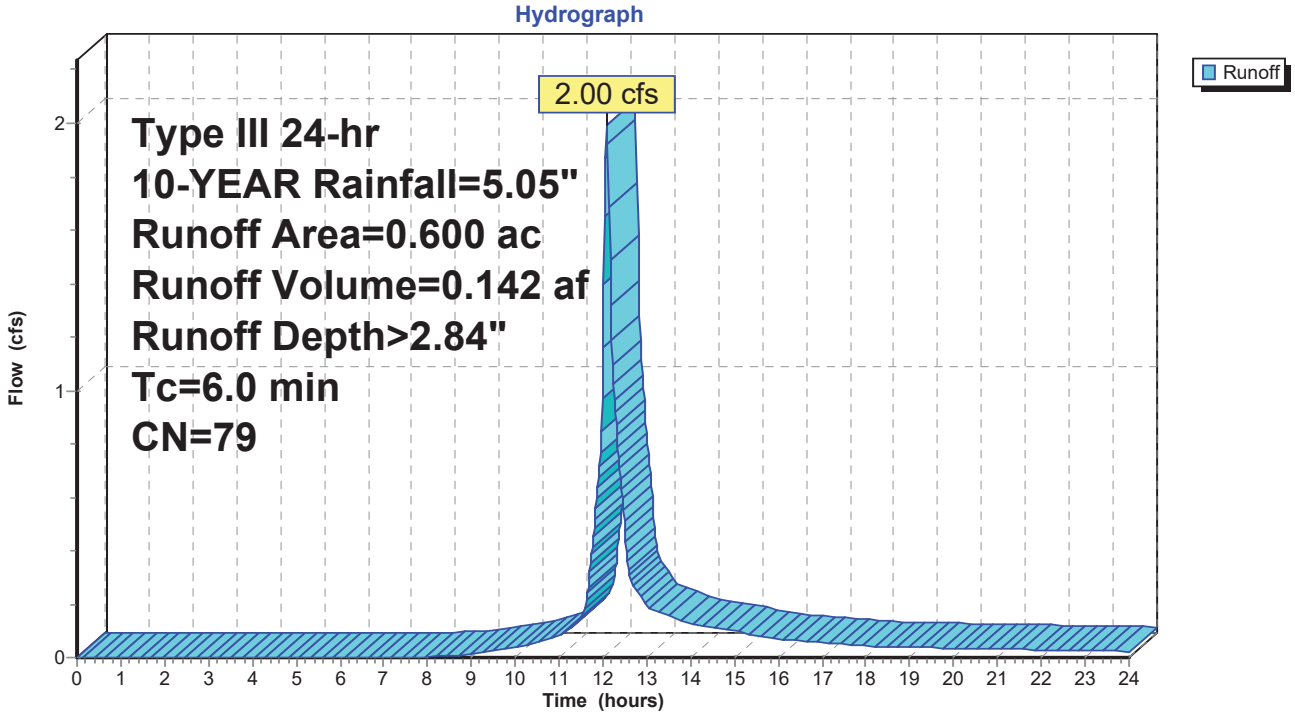
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

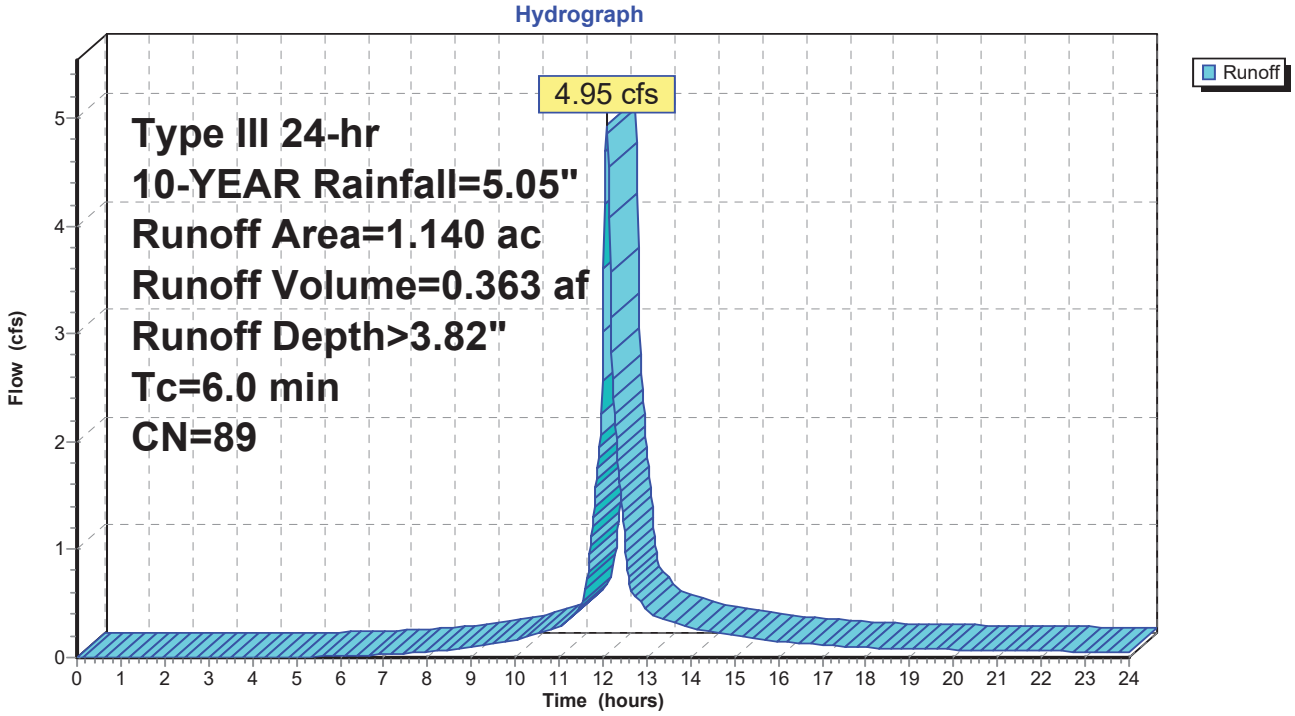
Runoff = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

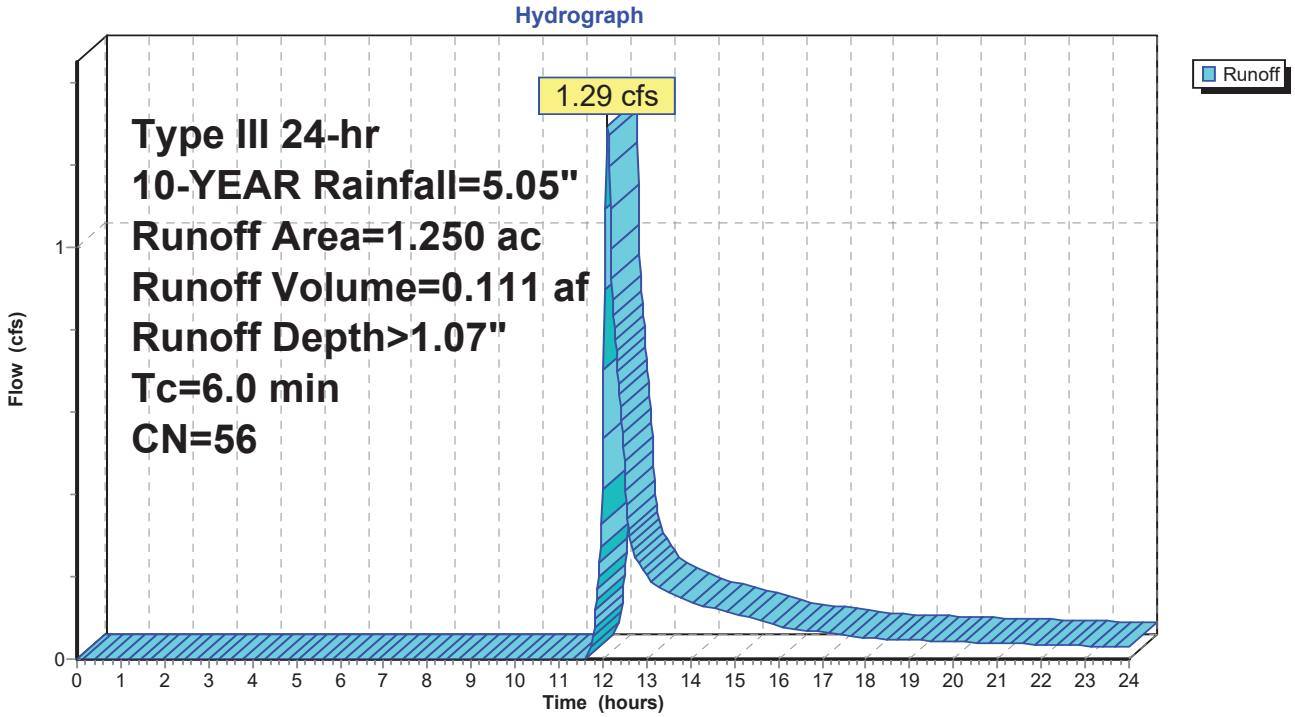
Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.111 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

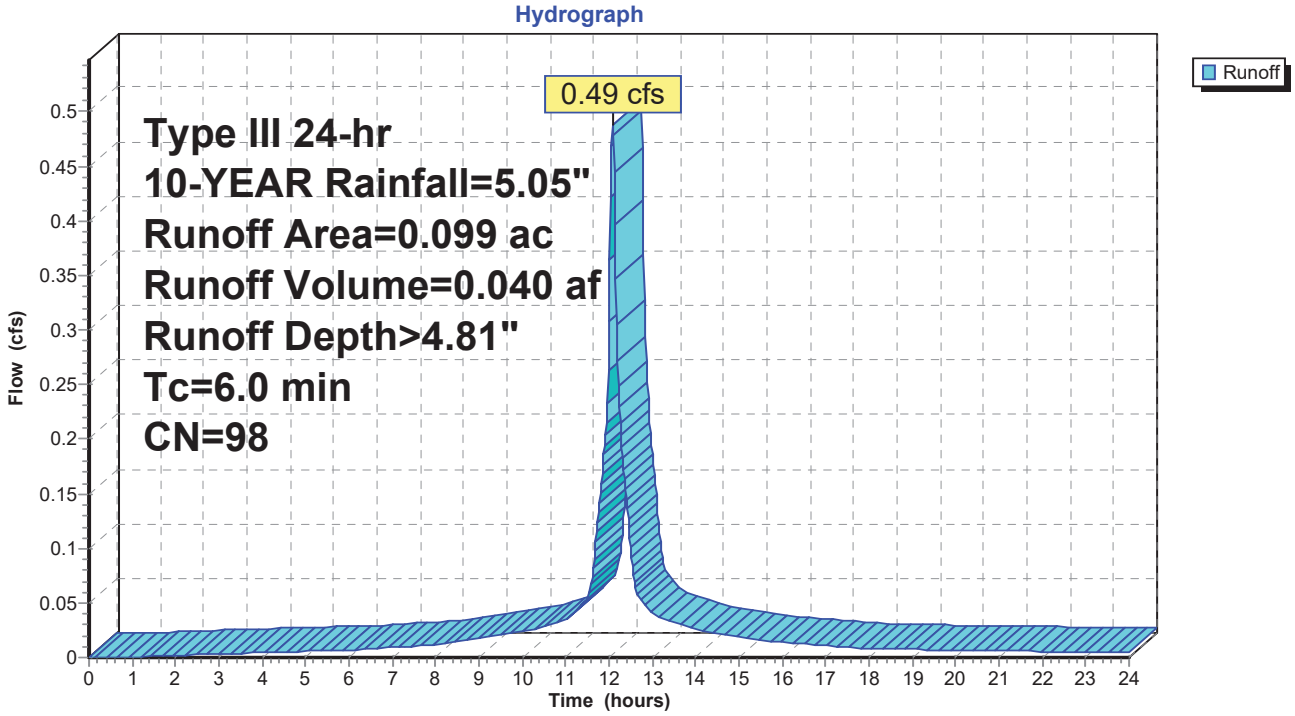
Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

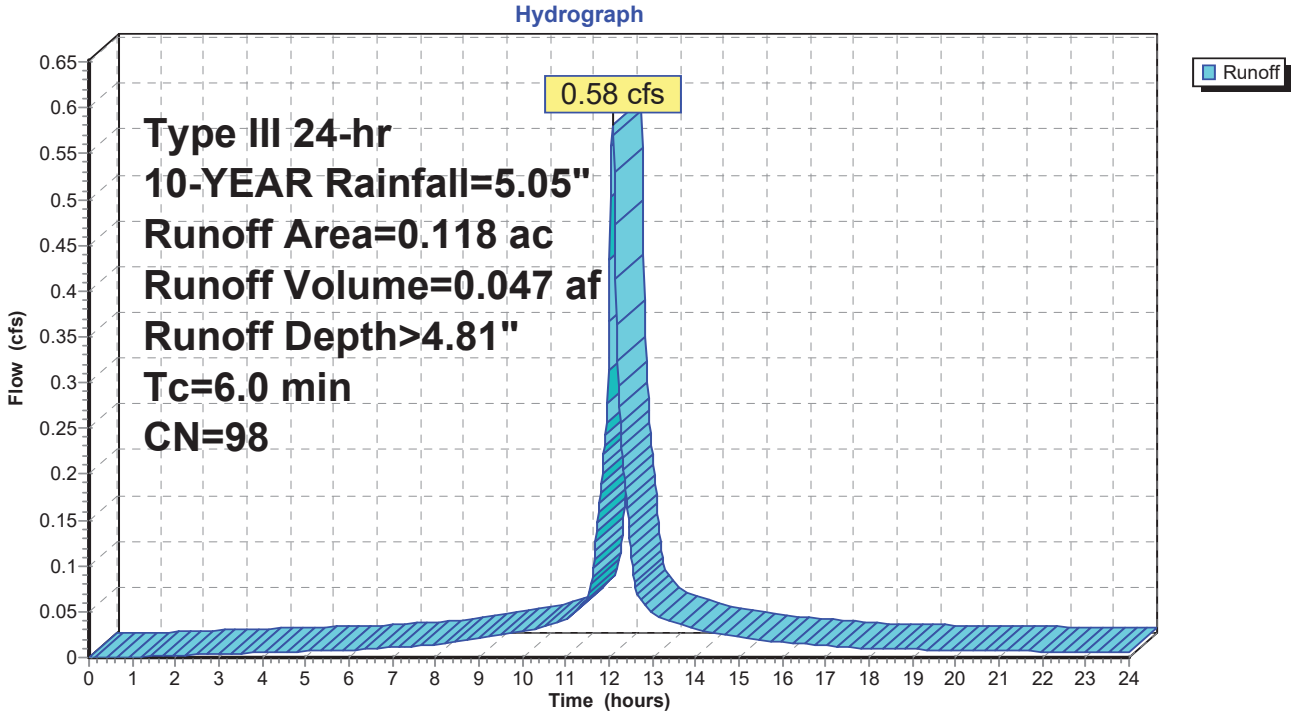
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

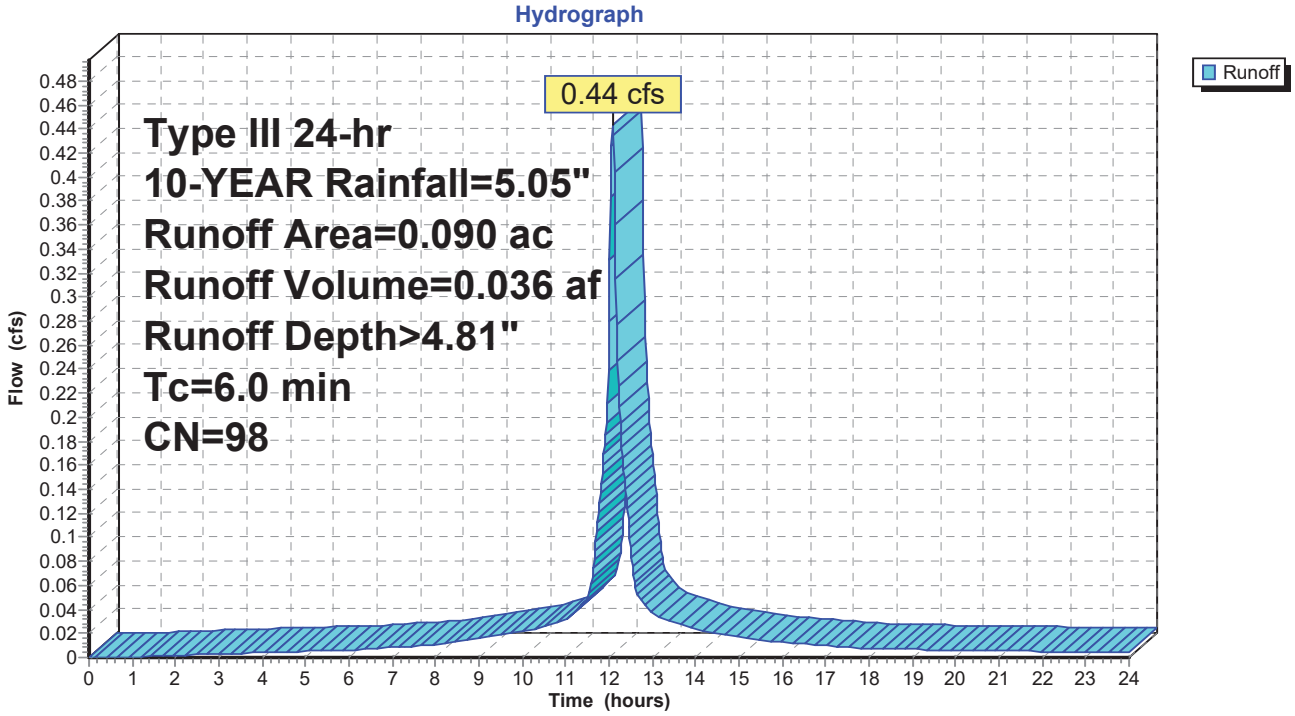
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

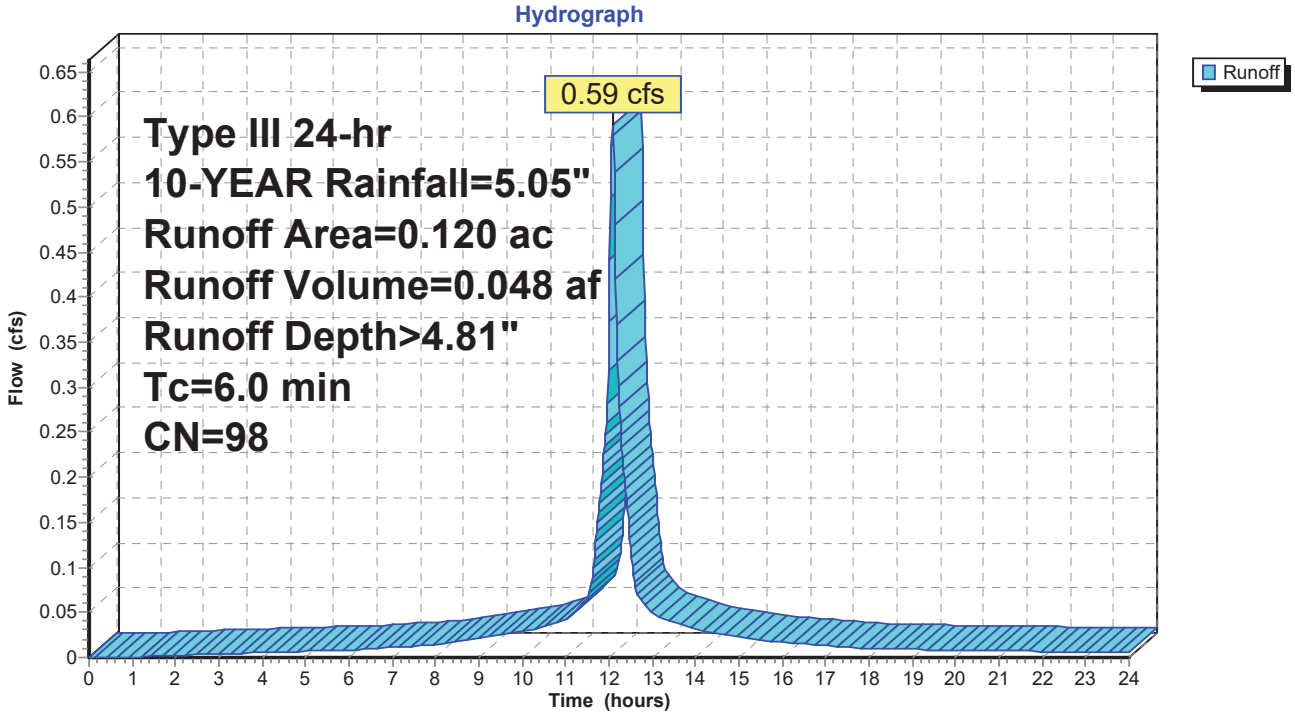
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



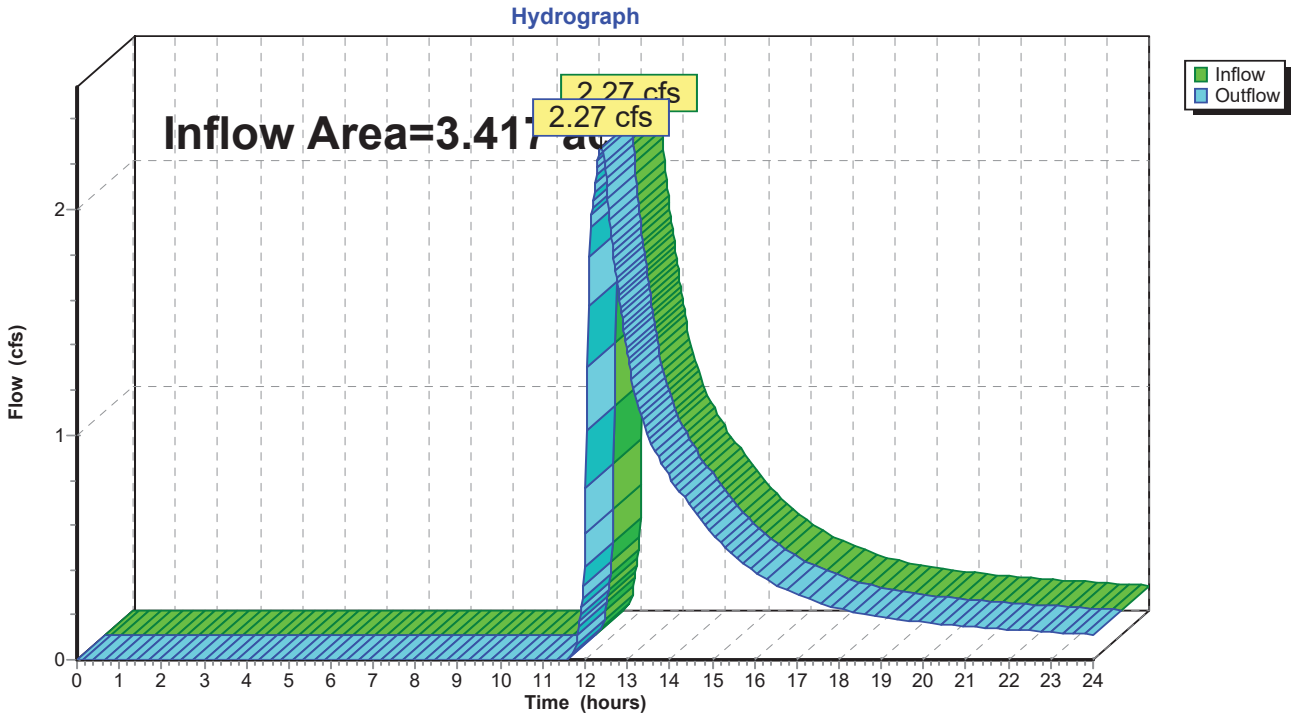
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 1.62" for 10-YEAR event
Inflow = 2.27 cfs @ 12.38 hrs, Volume= 0.460 af
Outflow = 2.27 cfs @ 12.38 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



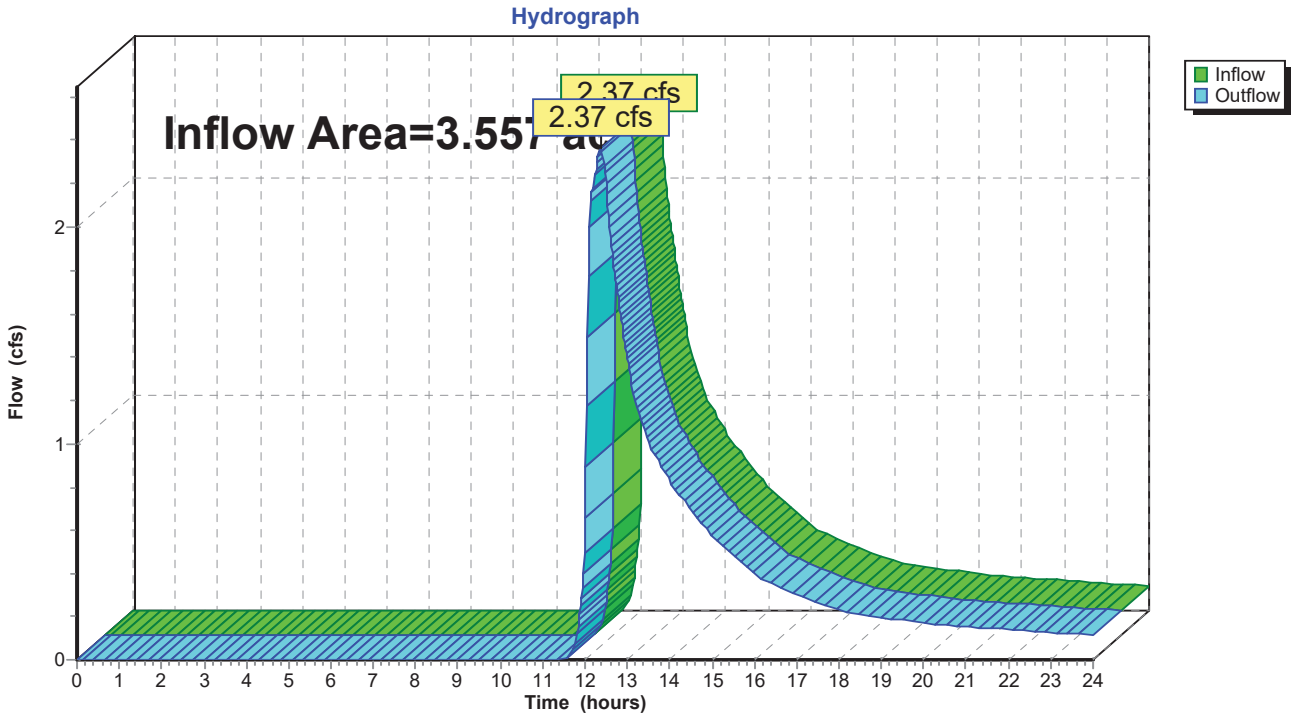
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 1.61" for 10-YEAR event
Inflow = 2.37 cfs @ 12.37 hrs, Volume= 0.476 af
Outflow = 2.37 cfs @ 12.37 hrs, Volume= 0.476 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 2.84" for 10-YEAR event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af, Atten= 72%, Lag= 22.3 min
Primary = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.89' @ 12.46 hrs Surf.Area= 1,921 sf Storage= 2,704 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 172.5 min calculated for 0.101 af (71% of inflow)
Center-of-Mass det. time= 78.2 min (901.5 - 823.4)

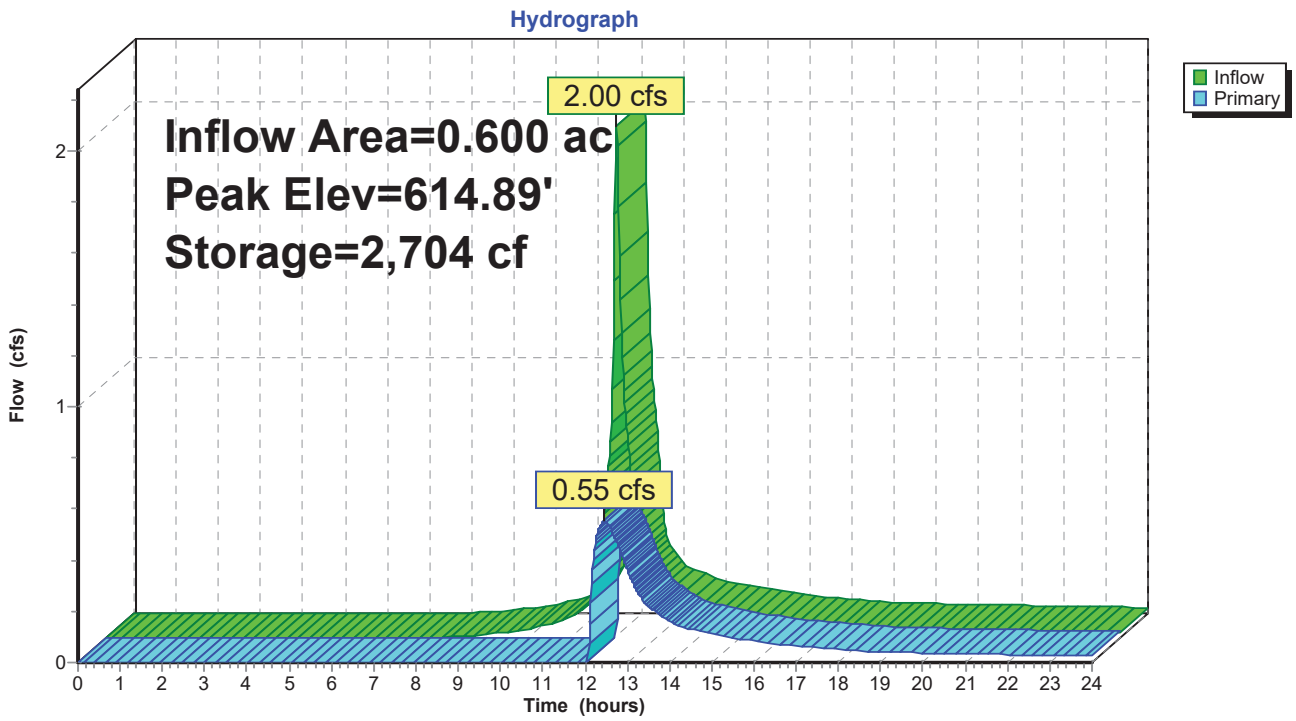
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

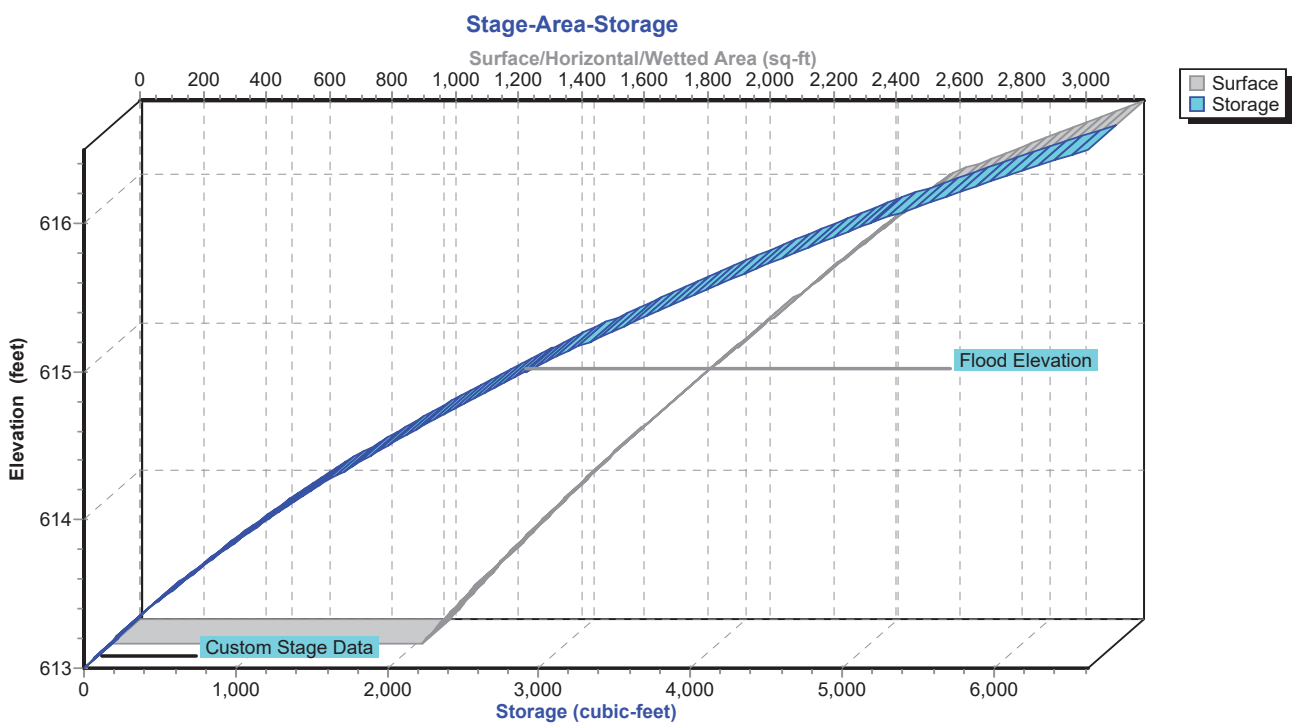
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.55 cfs @ 12.46 hrs HW=614.89' (Free Discharge)
└─**1=Culvert** (Passes 0.55 cfs of 2.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.55 cfs @ 2.81 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 2.96" for 10-YEAR event
Inflow = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af
Outflow = 1.15 cfs @ 12.48 hrs, Volume= 0.249 af, Atten= 77%, Lag= 23.9 min
Primary = 1.15 cfs @ 12.48 hrs, Volume= 0.249 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.67' @ 12.48 hrs Surf.Area= 5,184 sf Storage= 8,262 cf

Plug-Flow detention time= 203.6 min calculated for 0.248 af (69% of inflow)
Center-of-Mass det. time= 110.5 min (904.0 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.25'	6,164 cf	**32.00'W x 162.00'L x 4.50'H Field A** 23,328 cf Overall - 7,917 cf Embedded = 15,411 cf x 40.0% Voids
#2A	613.75'	7,917 cf	**CMP Round 36** x 56 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 7 Rows of 8 Chambers
#3	613.75'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		14,112 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.75' / 613.75' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.72'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.15 cfs @ 12.48 hrs HW=615.67' (Free Discharge)
└─**1=Culvert** (Passes 1.15 cfs of 6.01 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.79 cfs @ 4.03 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.36 cfs @ 1.99 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

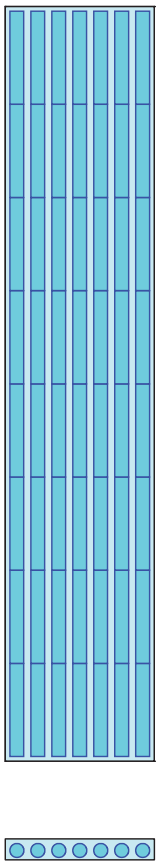
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
7 Rows x 36.0" Wide + 18.0" Spacing x 6 + 12.0" Side Stone x 2 = 32.00' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

56 Chambers x 141.4 cf = 7,916.8 cf Chamber Storage

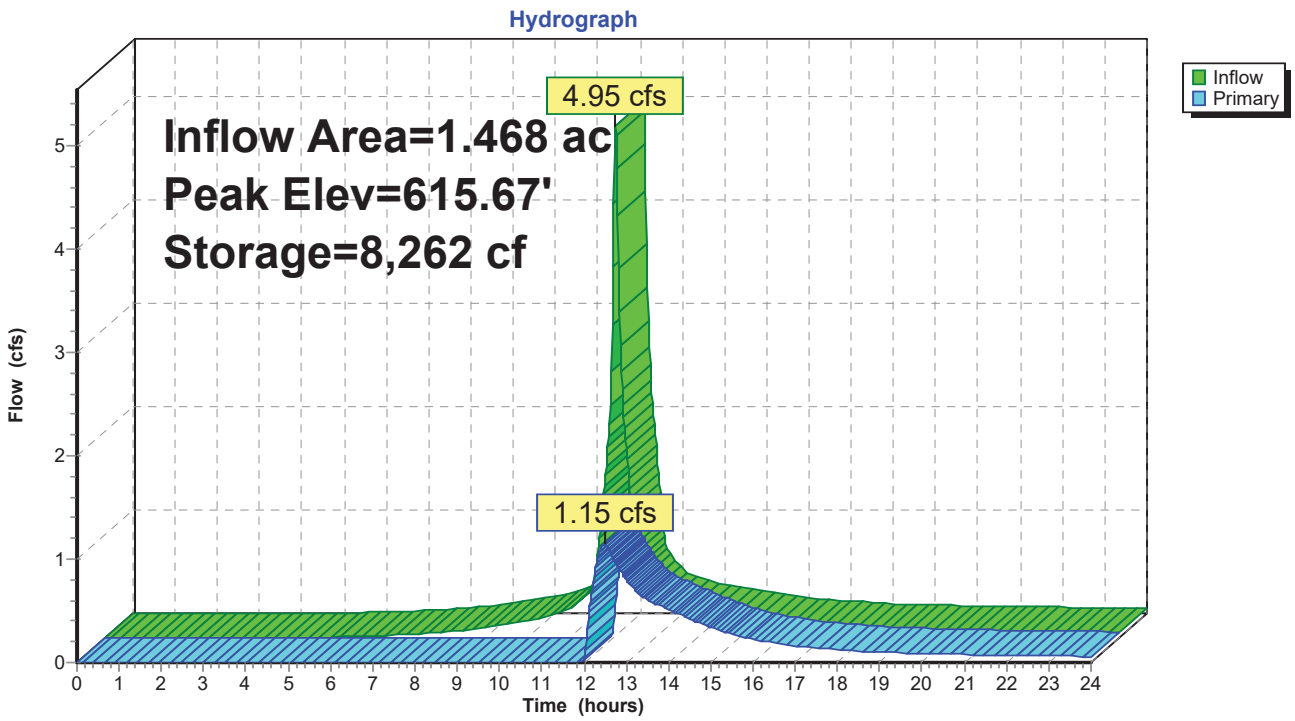
23,328.0 cf Field - 7,916.8 cf Chambers = 15,411.2 cf Stone x 40.0% Voids = 6,164.5 cf Stone Storage

Chamber Storage + Stone Storage = 14,081.3 cf = 0.323 af
Overall Storage Efficiency = 60.4%
Overall System Size = 162.00' x 32.00' x 4.50'

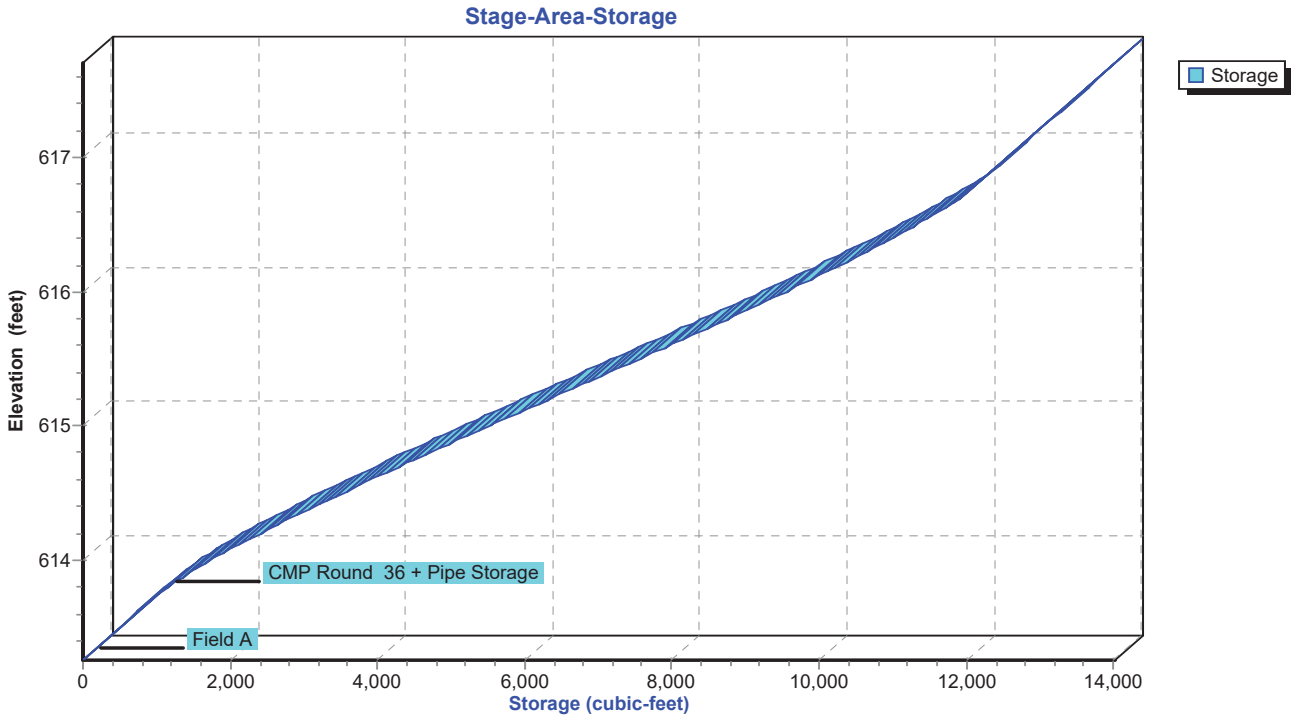
56 Chambers
864.0 cy Field
570.8 cy Stone



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.66' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,728 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

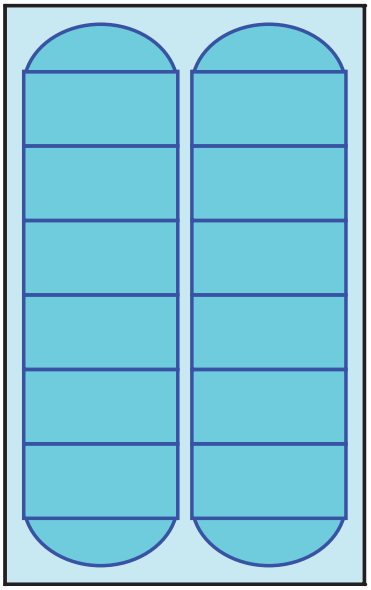
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

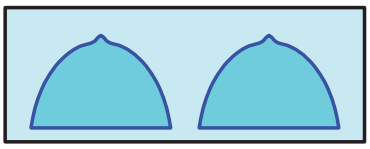
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

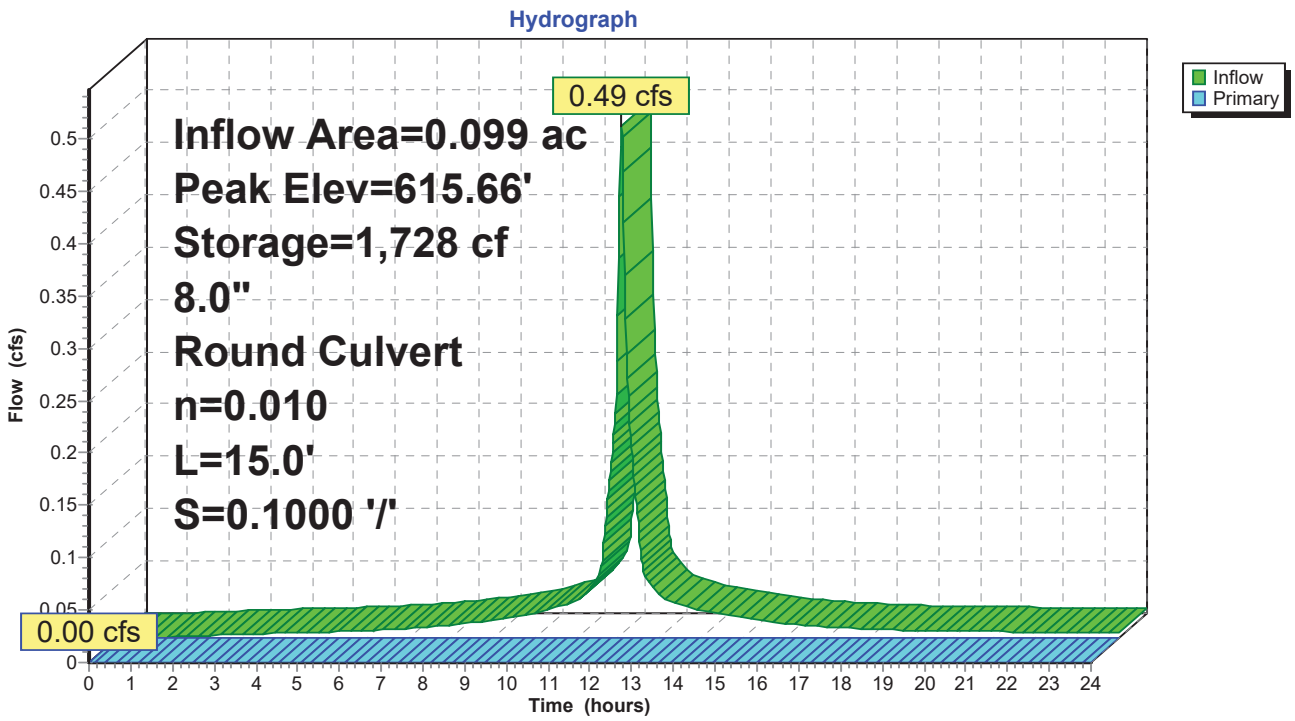
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

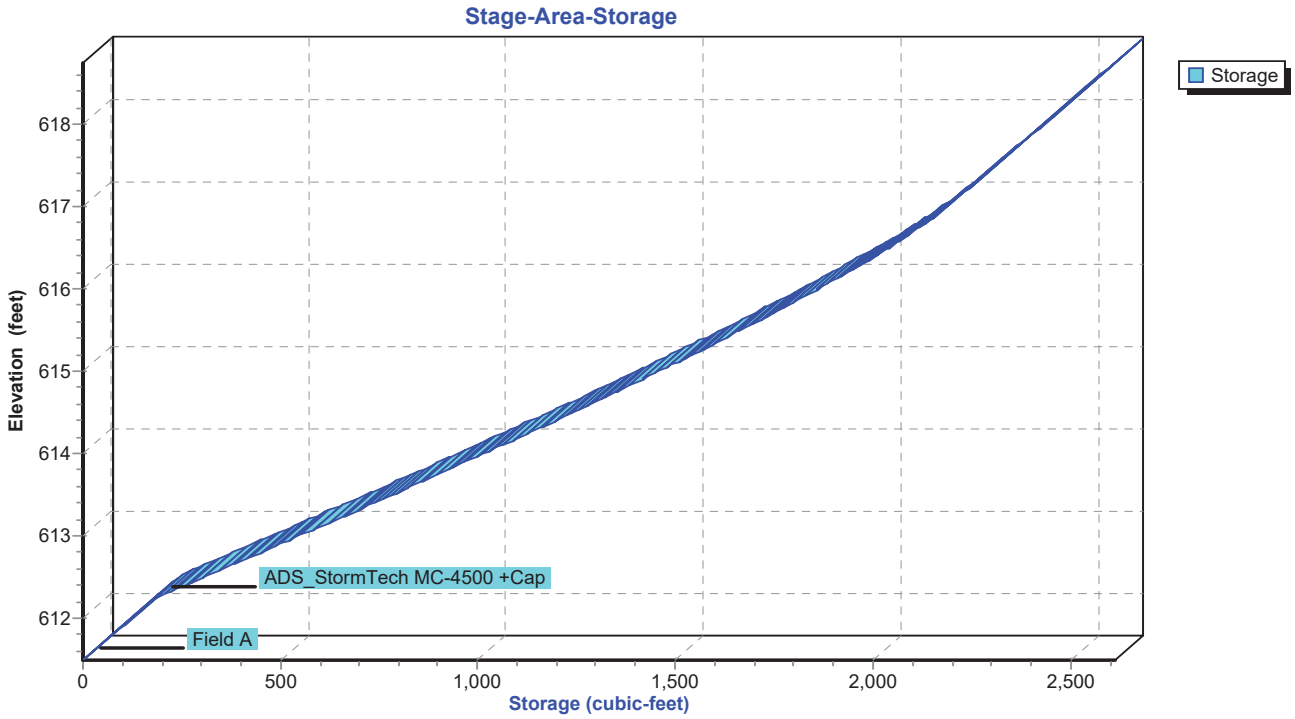




Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.86' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.131 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	612.17'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	612.92'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=612.17' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

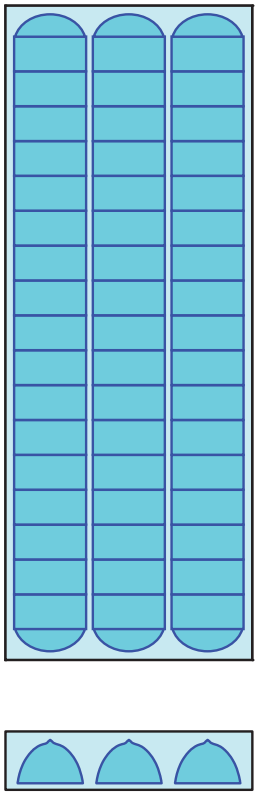
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

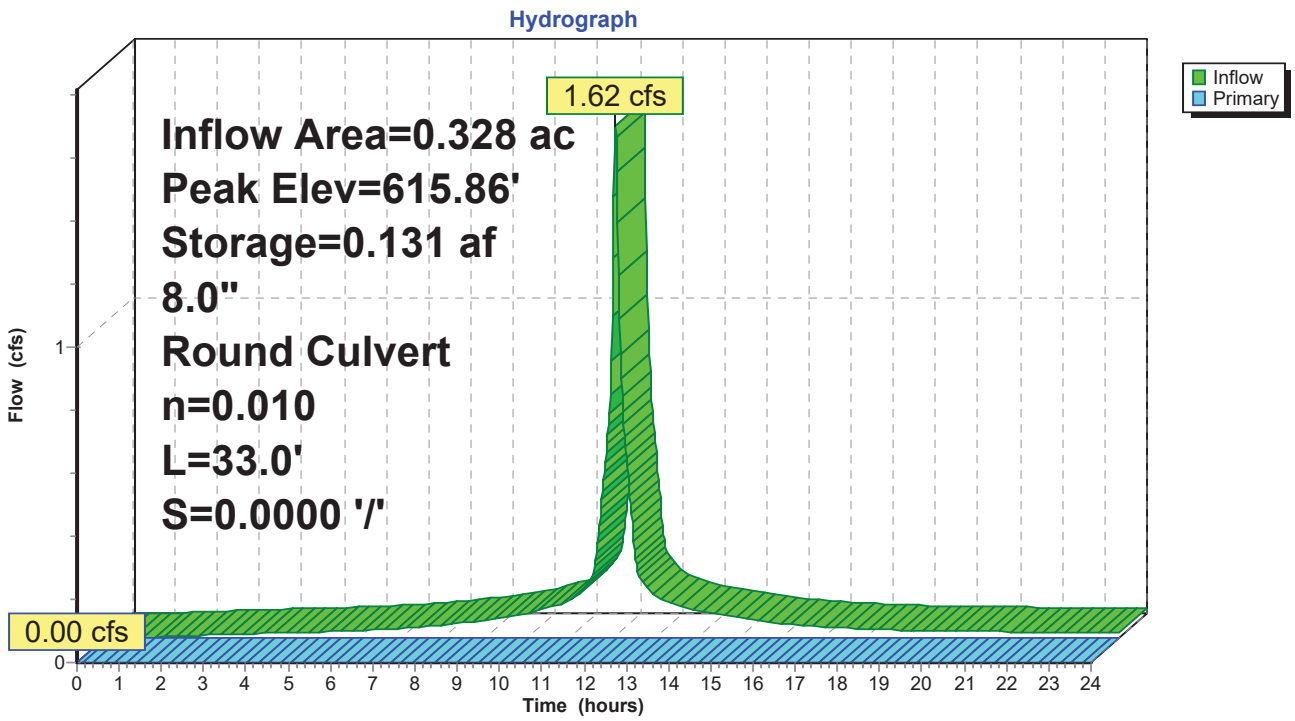
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

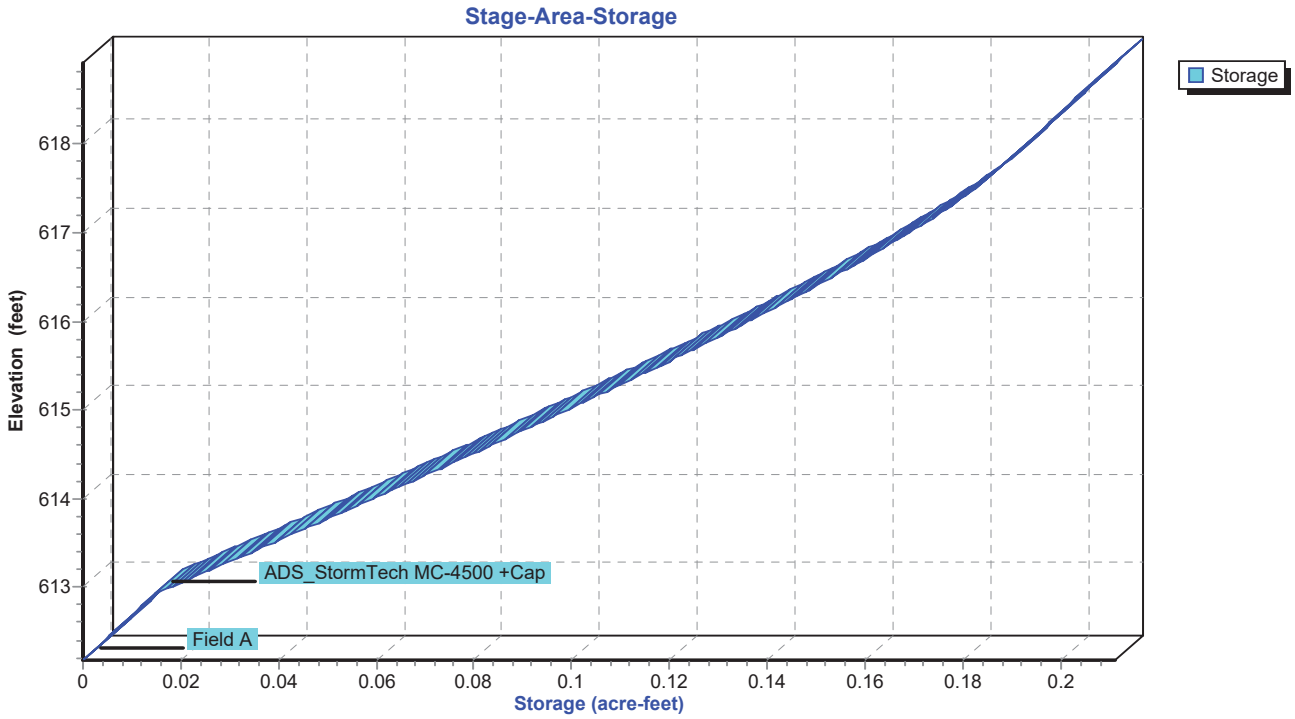
51 Chambers
538.2 cy Field
329.2 cy Stone



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=61 Runoff=0.33 cfs 0.024 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=79 Runoff=2.65 cfs 0.189 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=89 Runoff=6.21 cfs 0.461 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.67"
Tc=6.0 min CN=56 Runoff=2.22 cfs 0.173 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.044 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.059 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=3.99 cfs 0.666 af
Outflow=3.99 cfs 0.666 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=4.27 cfs 0.690 af
Outflow=4.27 cfs 0.690 af

Pond 1P: DETENTION BASIN Peak Elev=615.27' Storage=3,461 cf Inflow=2.65 cfs 0.189 af
Outflow=0.80 cfs 0.147 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=616.02' Storage=9,648 cf Inflow=6.21 cfs 0.461 af
Outflow=1.98 cfs 0.345 af

Pond 3P: ROOF INFILTRATION Peak Elev=616.73' Storage=2,112 cf Inflow=0.59 cfs 0.048 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.73' Storage=0.161 af Inflow=1.96 cfs 0.161 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.057 af Average Runoff Depth = 3.56"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

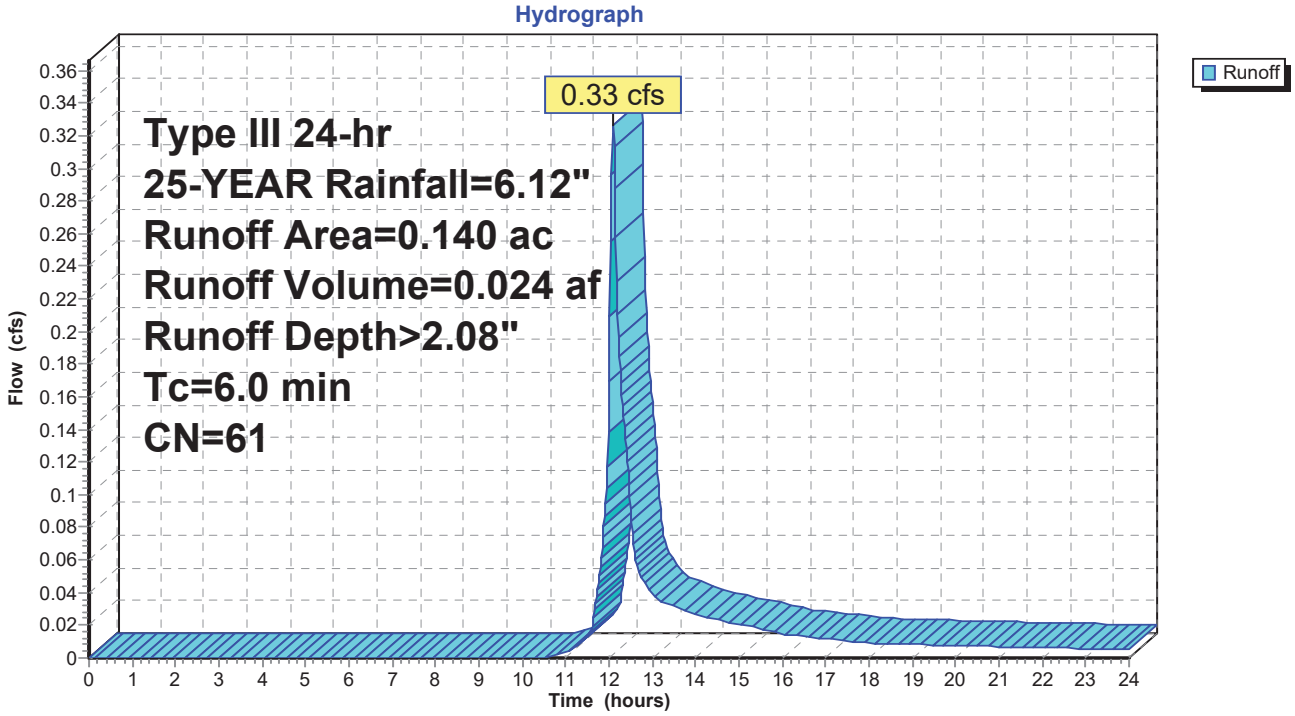
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

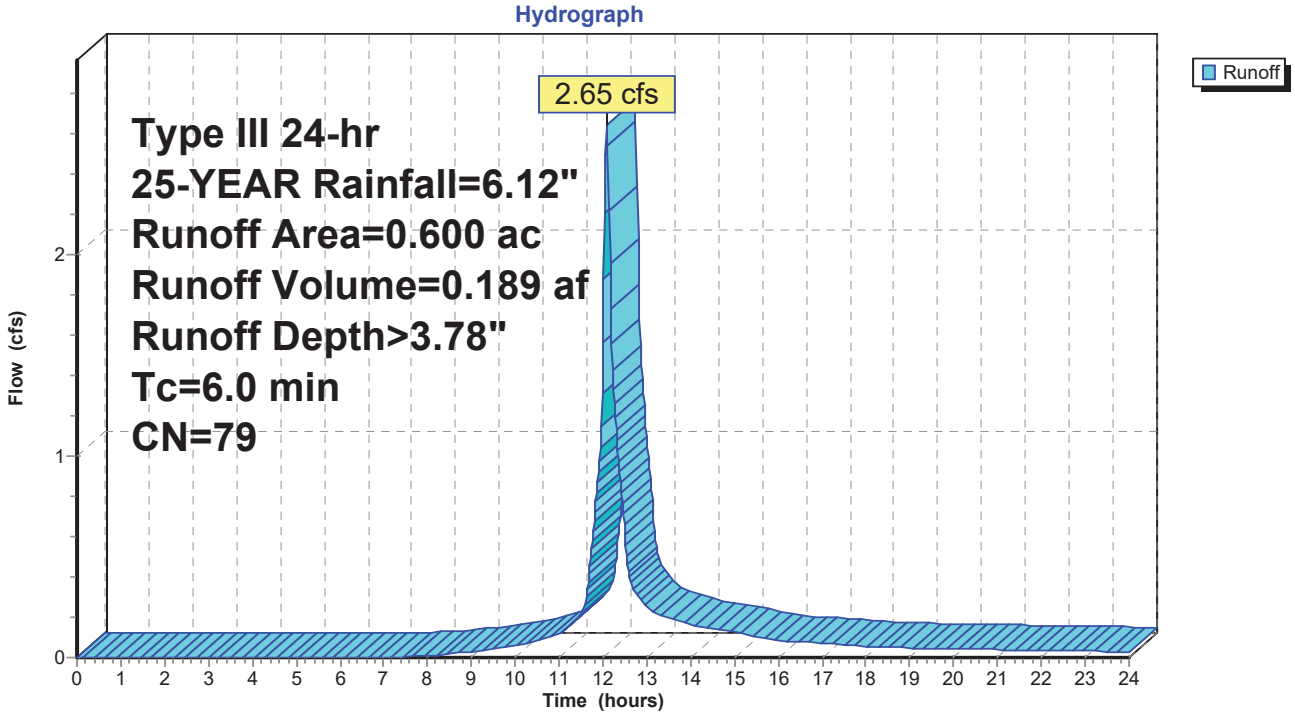
Runoff = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

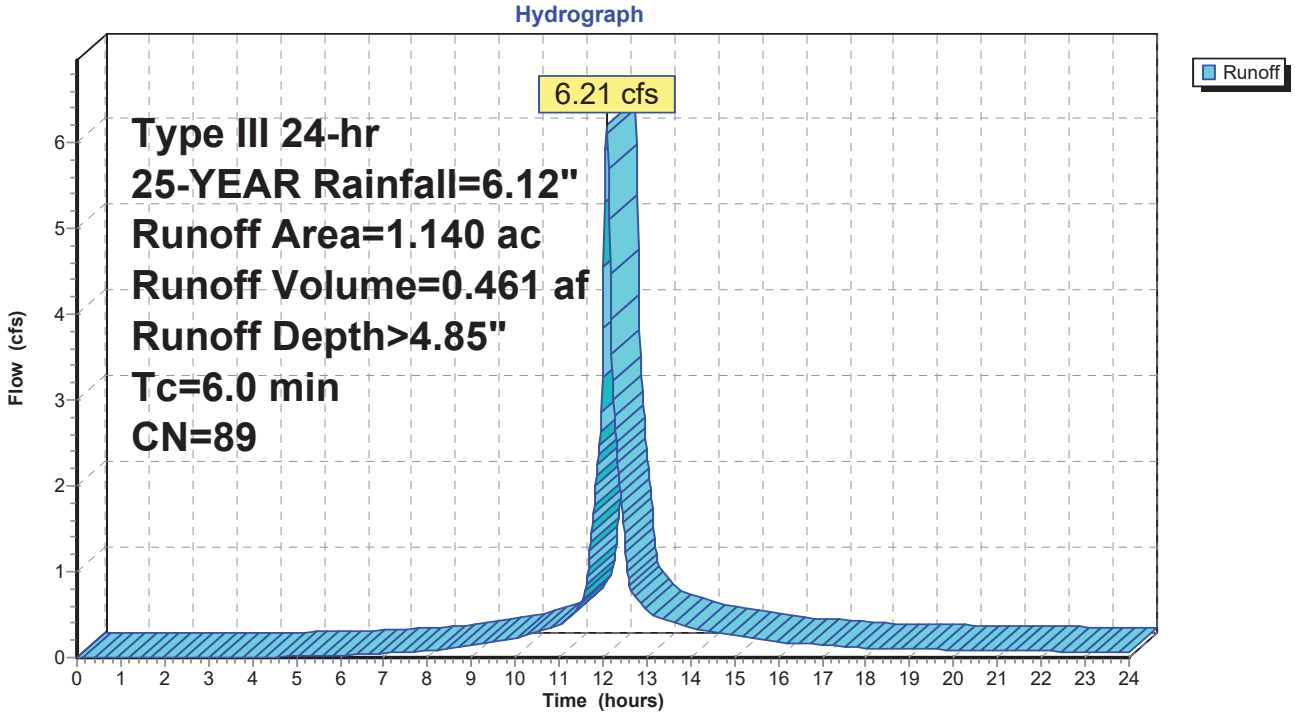
Runoff = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

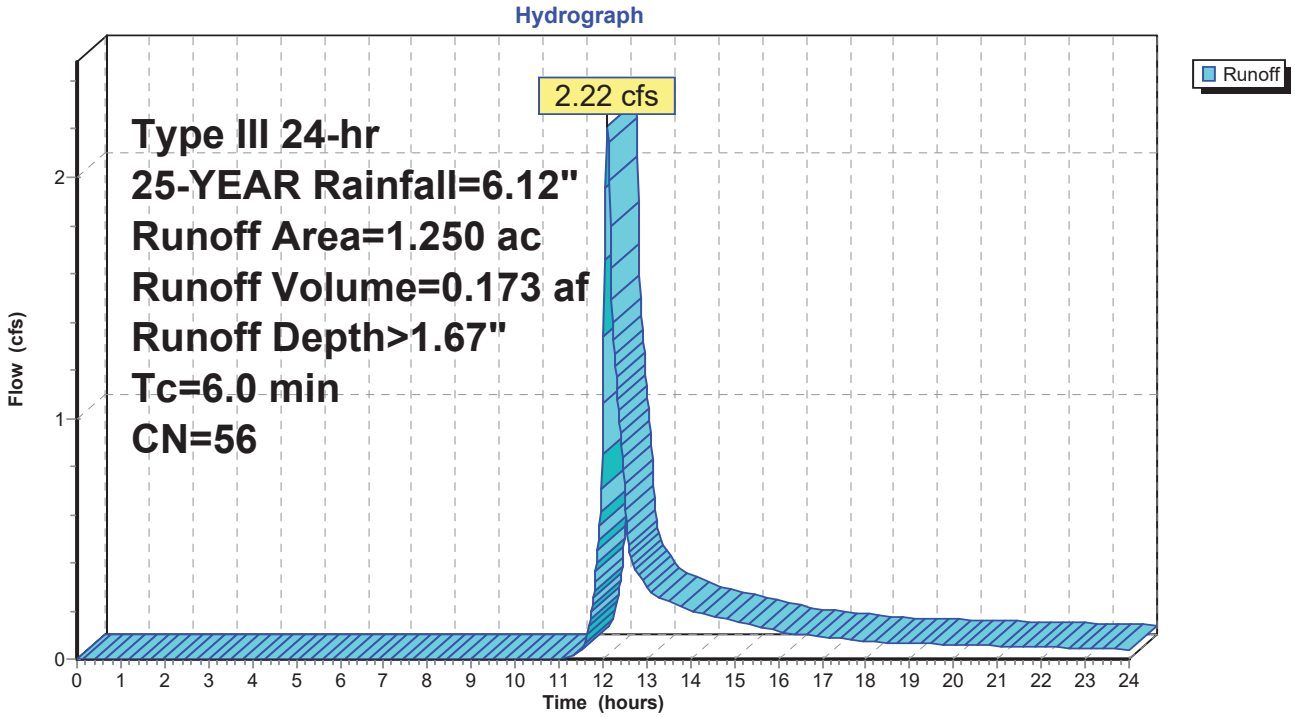
Runoff = 2.22 cfs @ 12.10 hrs, Volume= 0.173 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

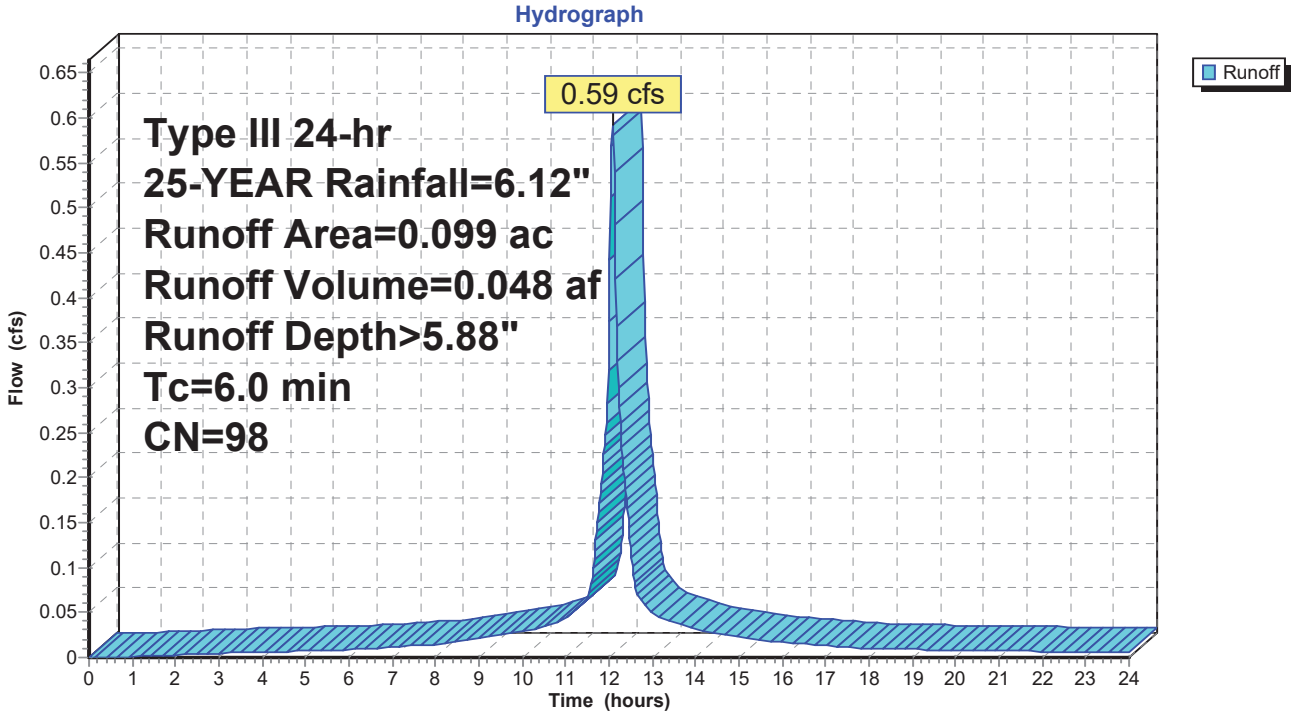
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

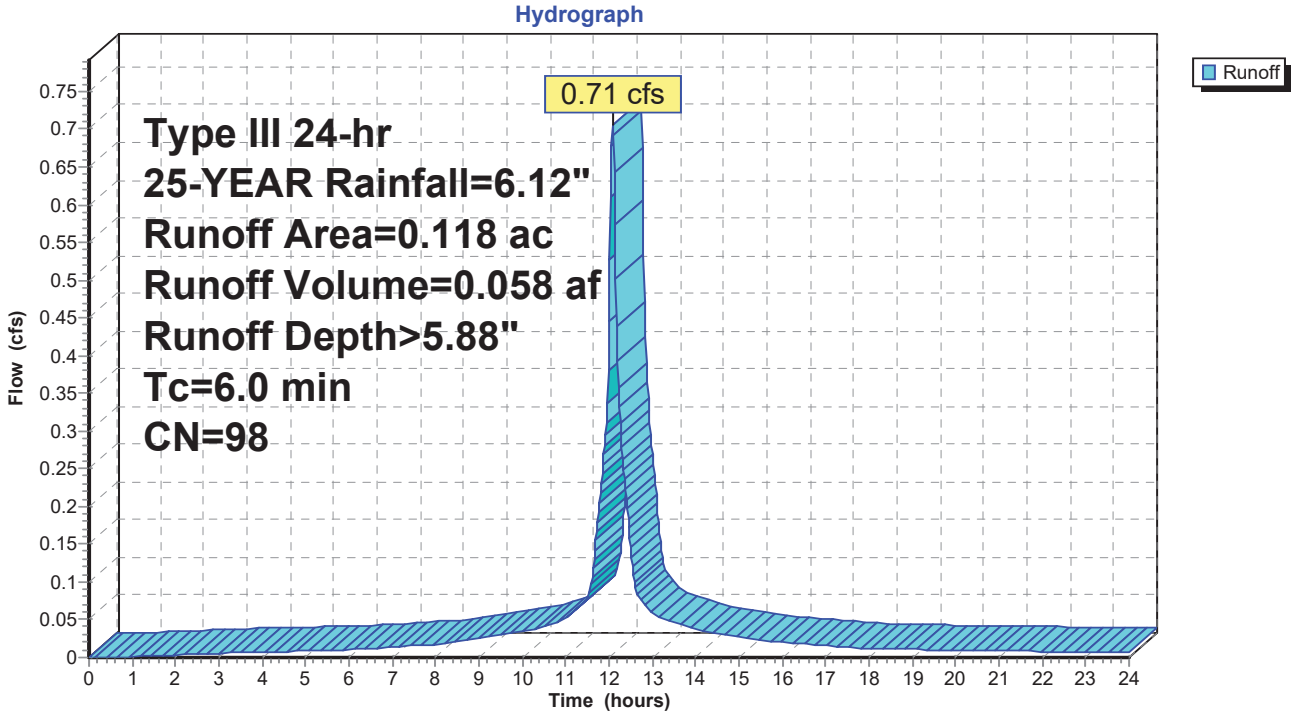
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.058 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

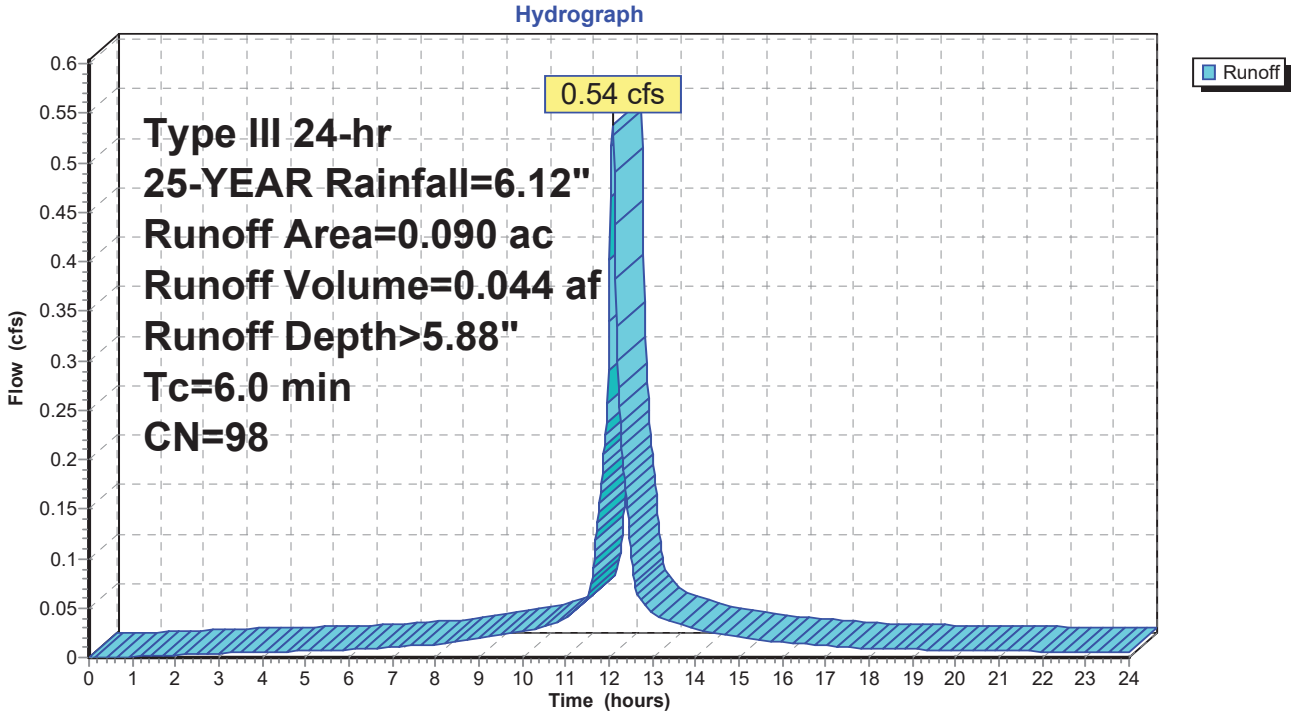
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

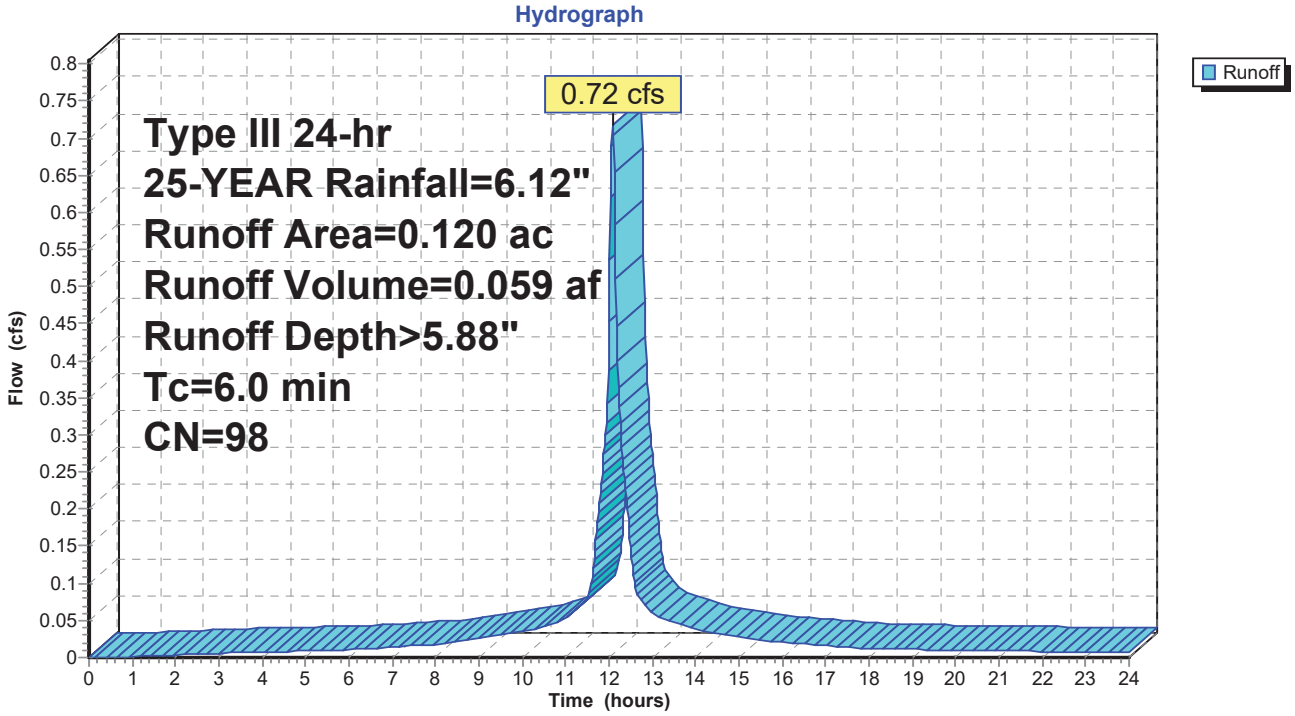
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



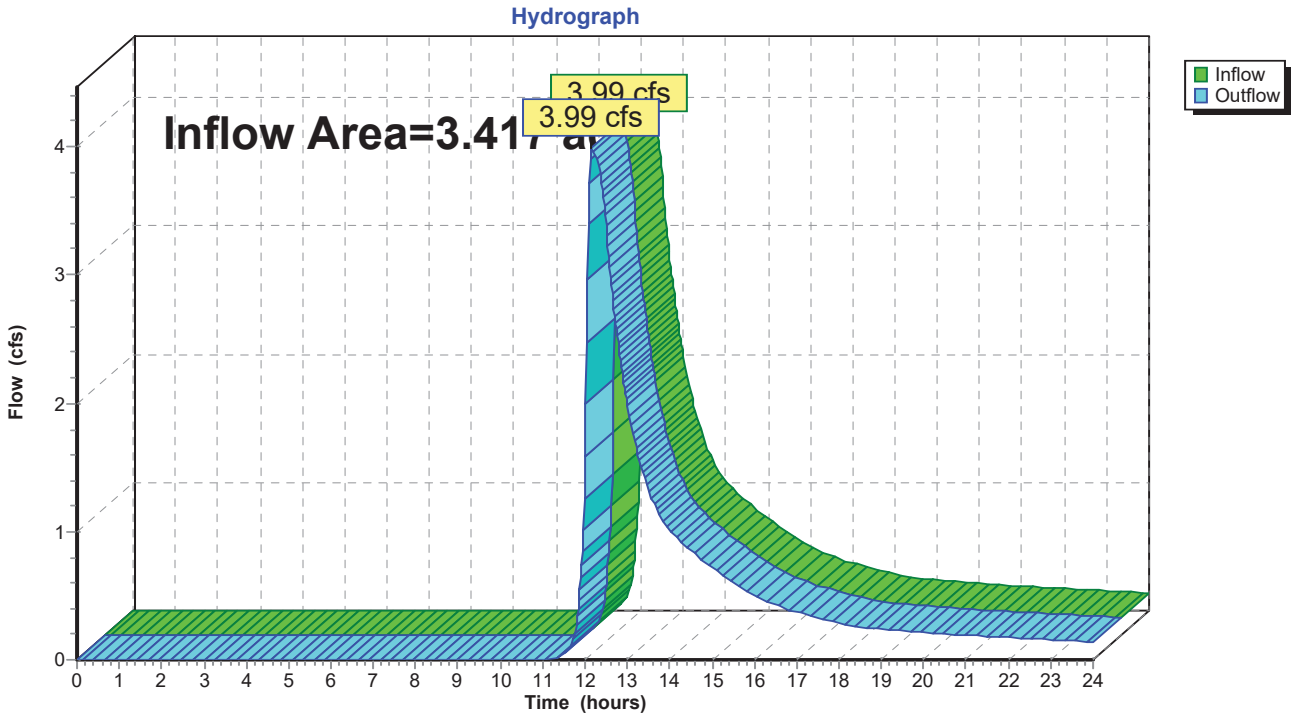
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 2.34" for 25-YEAR event
Inflow = 3.99 cfs @ 12.15 hrs, Volume= 0.666 af
Outflow = 3.99 cfs @ 12.15 hrs, Volume= 0.666 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



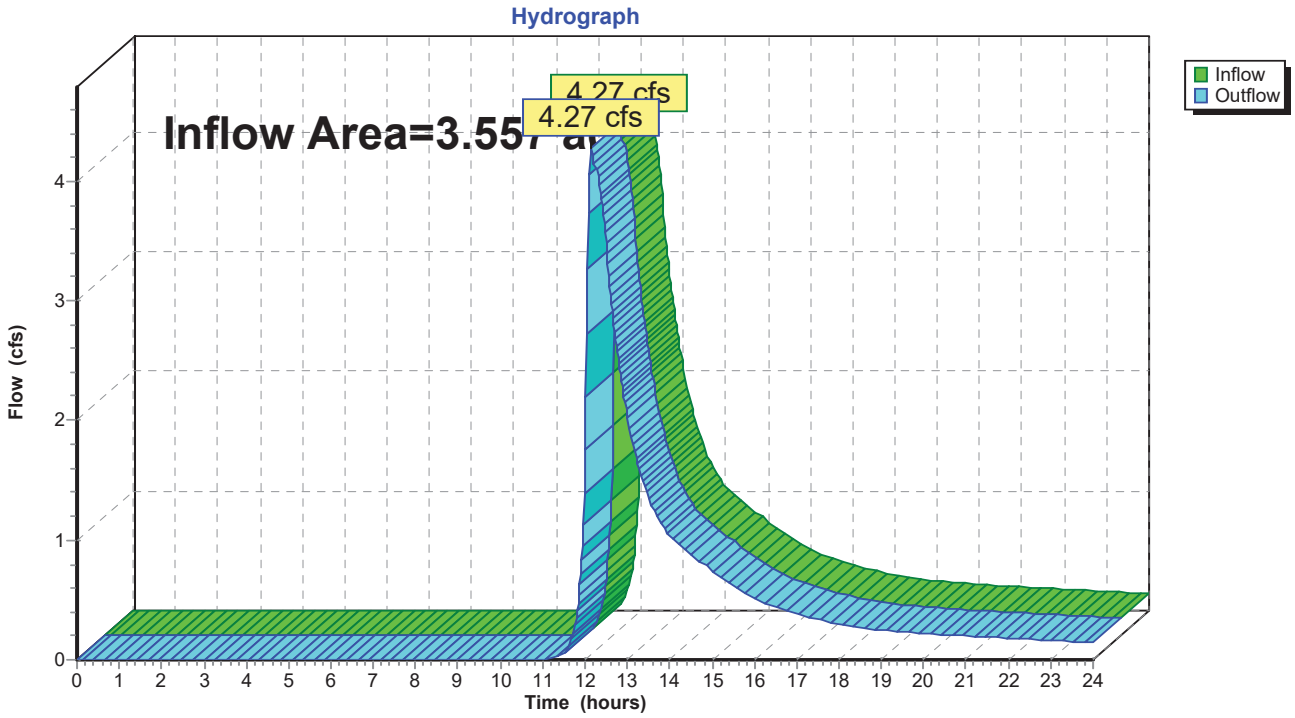
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 2.33" for 25-YEAR event
Inflow = 4.27 cfs @ 12.14 hrs, Volume= 0.690 af
Outflow = 4.27 cfs @ 12.14 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.33' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 3.78" for 25-YEAR event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af
Outflow = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af, Atten= 70%, Lag= 20.4 min
Primary = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.27' @ 12.43 hrs Surf.Area= 2,131 sf Storage= 3,461 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 147.6 min calculated for 0.147 af (78% of inflow)
Center-of-Mass det. time= 66.7 min (881.9 - 815.2)

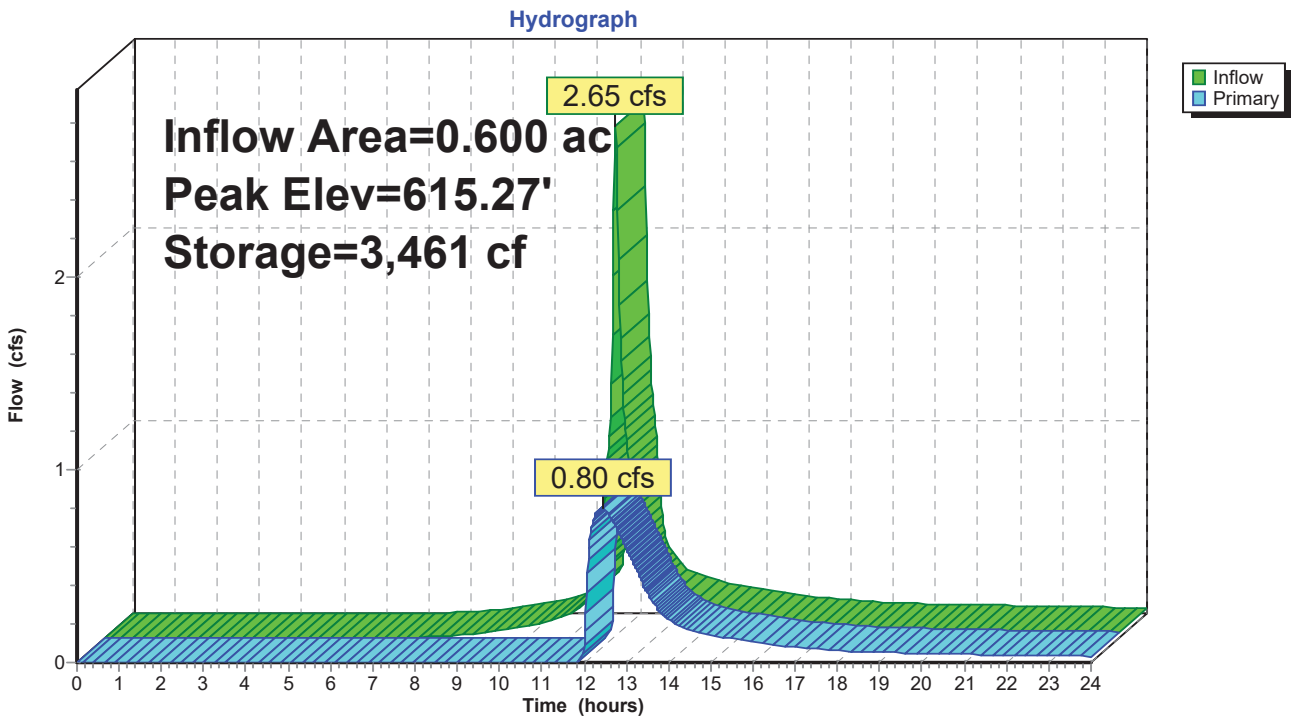
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

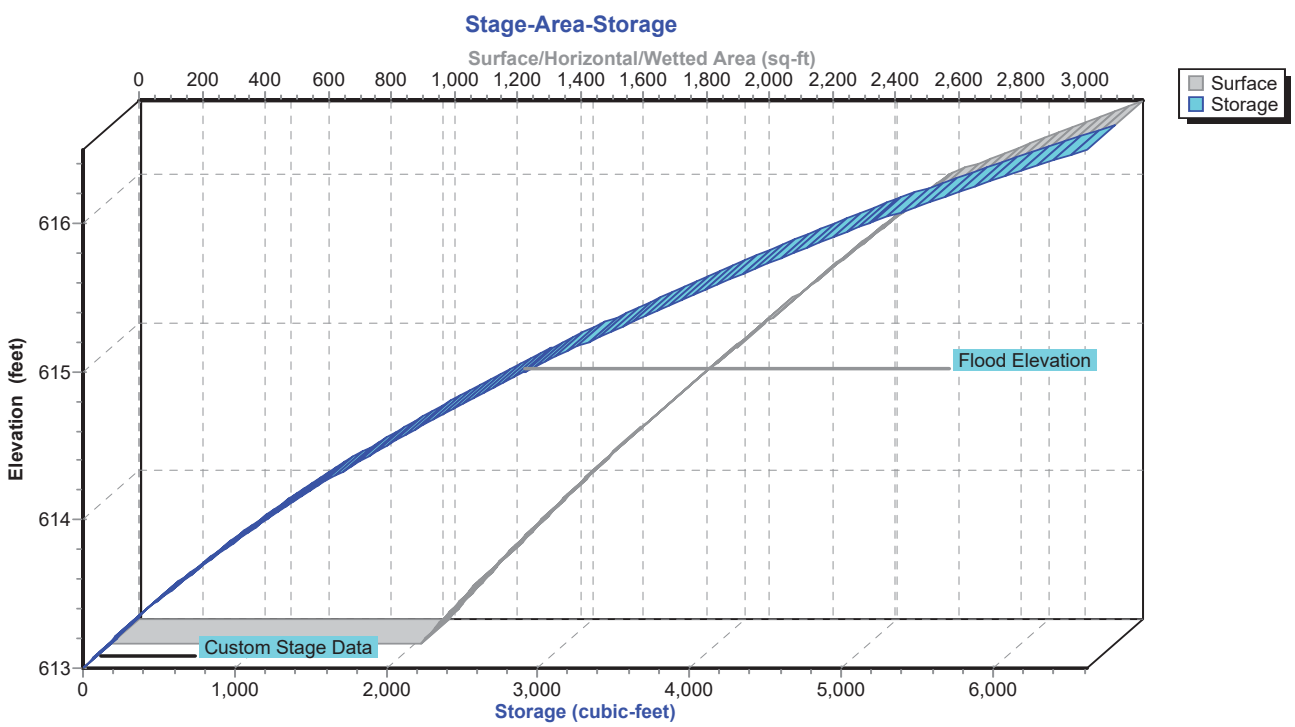
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.43 hrs HW=615.27' (Free Discharge)
└─**1=Culvert** (Passes 0.80 cfs of 4.57 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 3.76" for 25-YEAR event
Inflow = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af
Outflow = 1.98 cfs @ 12.39 hrs, Volume= 0.345 af, Atten= 68%, Lag= 18.2 min
Primary = 1.98 cfs @ 12.39 hrs, Volume= 0.345 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.02' @ 12.39 hrs Surf.Area= 5,184 sf Storage= 9,648 cf

Plug-Flow detention time= 180.6 min calculated for 0.345 af (75% of inflow)
Center-of-Mass det. time= 96.9 min (883.9 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.25'	6,164 cf	**32.00'W x 162.00'L x 4.50'H Field A** 23,328 cf Overall - 7,917 cf Embedded = 15,411 cf x 40.0% Voids
#2A	613.75'	7,917 cf	**CMP Round 36** x 56 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 7 Rows of 8 Chambers
#3	613.75'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		14,112 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.75' / 613.75' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.72'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.98 cfs @ 12.39 hrs HW=616.02' (Free Discharge)
└─**1=Culvert** (Passes 1.98 cfs of 7.43 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.97 cfs @ 4.94 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.01 cfs @ 2.89 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

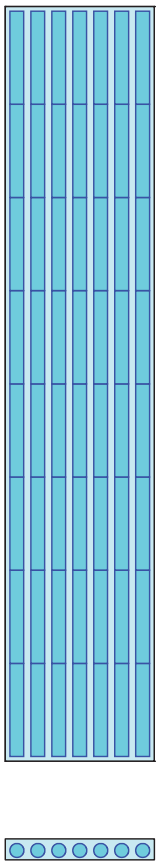
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
7 Rows x 36.0" Wide + 18.0" Spacing x 6 + 12.0" Side Stone x 2 = 32.00' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

56 Chambers x 141.4 cf = 7,916.8 cf Chamber Storage

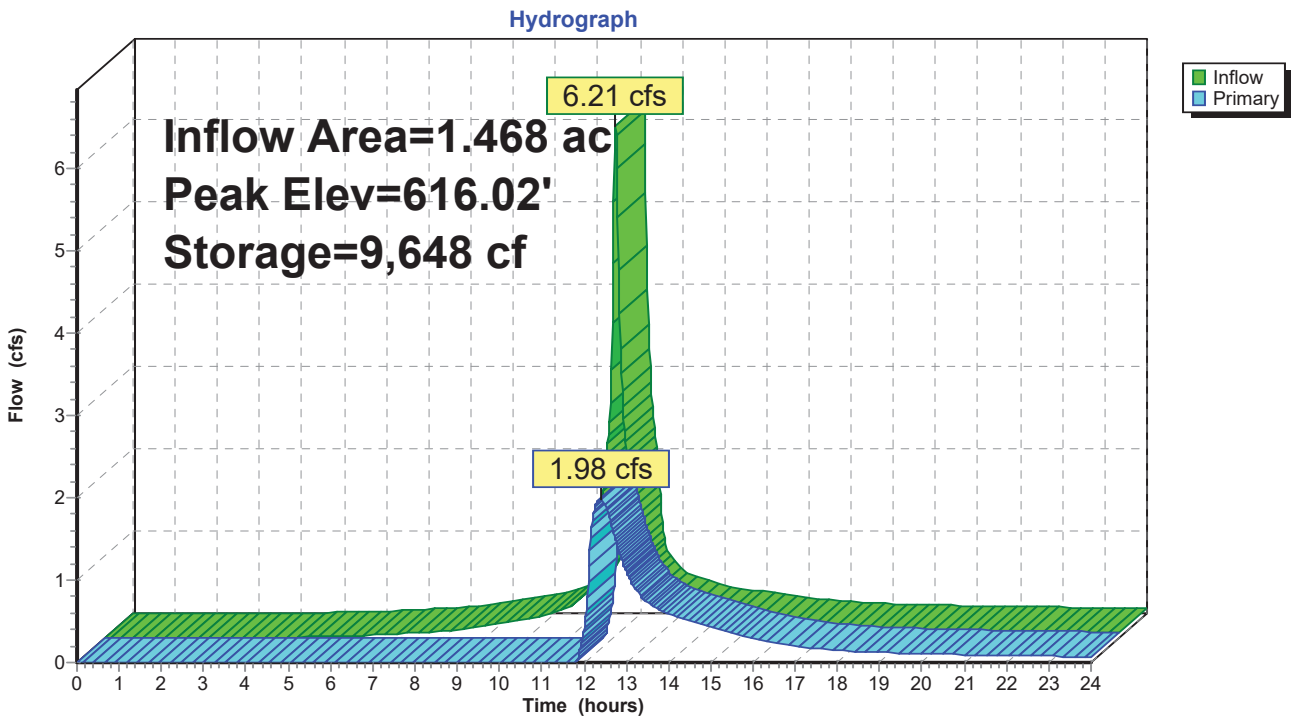
23,328.0 cf Field - 7,916.8 cf Chambers = 15,411.2 cf Stone x 40.0% Voids = 6,164.5 cf Stone Storage

Chamber Storage + Stone Storage = 14,081.3 cf = 0.323 af
Overall Storage Efficiency = 60.4%
Overall System Size = 162.00' x 32.00' x 4.50'

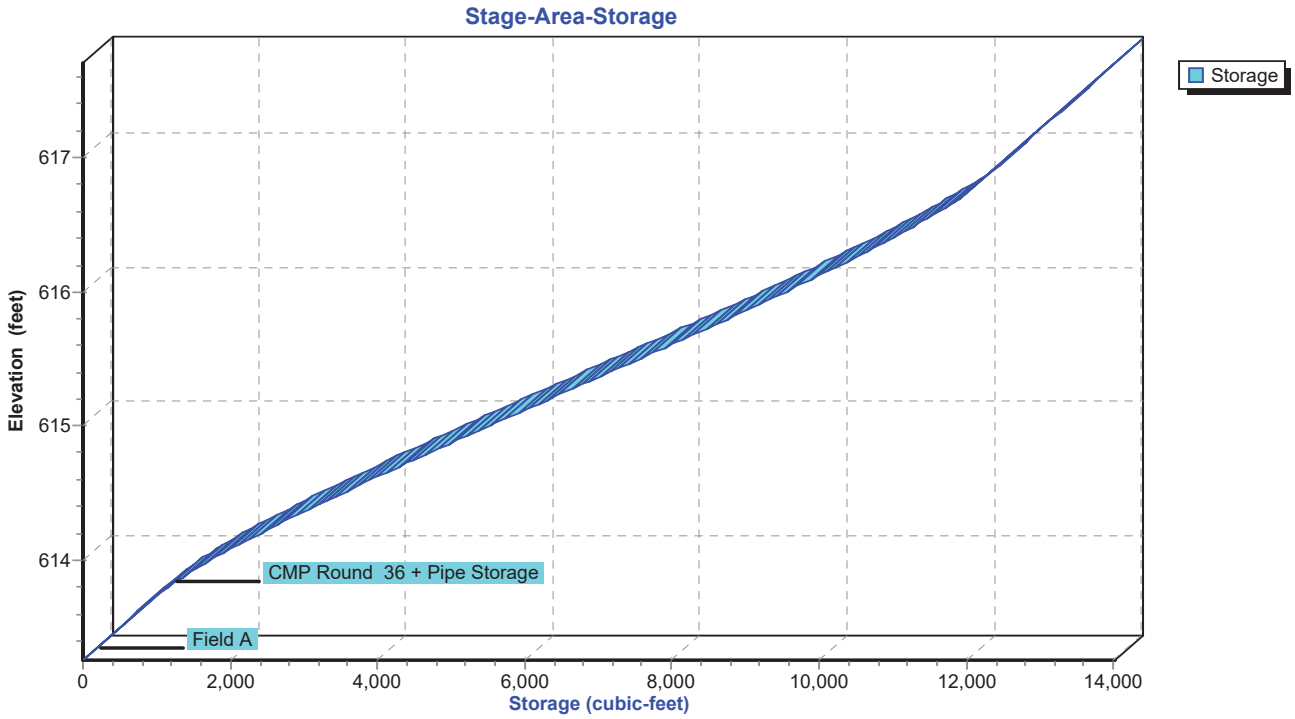
56 Chambers
864.0 cy Field
570.8 cy Stone



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.73' @ 24.00 hrs Surf.Area= 607 sf Storage= 2,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

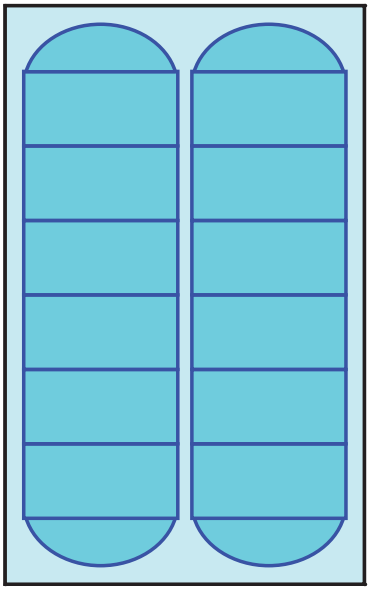
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

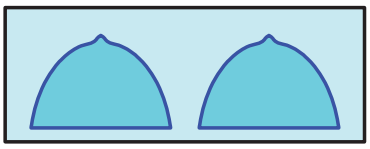
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

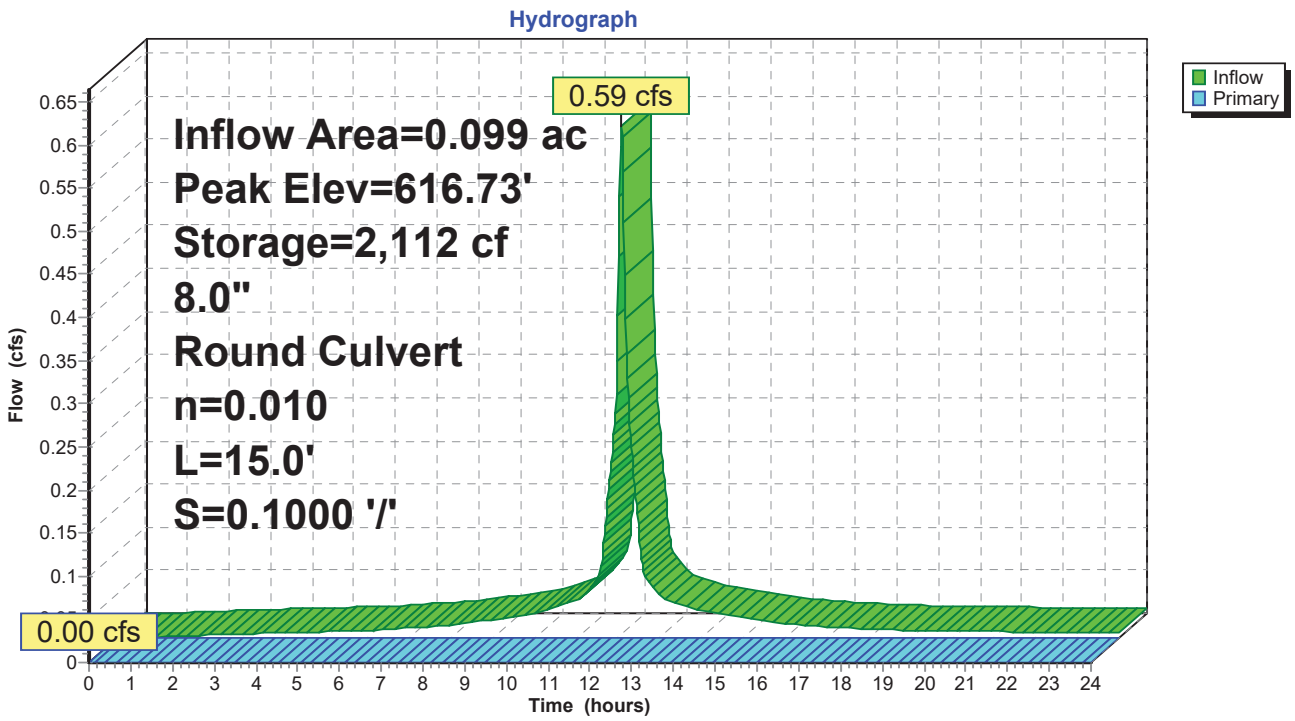
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

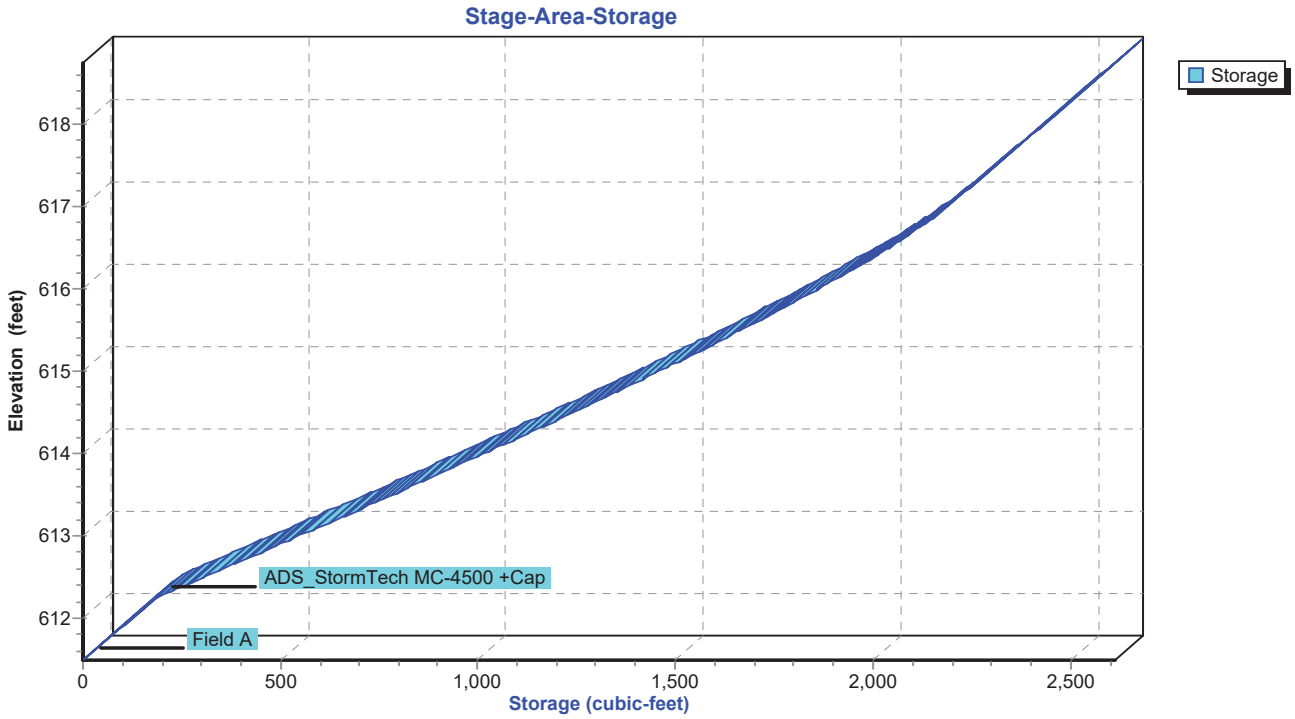




Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.73' @ 24.00 hrs Surf.Area= 0.049 ac Storage= 0.161 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	612.17'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	612.92'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=612.17' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

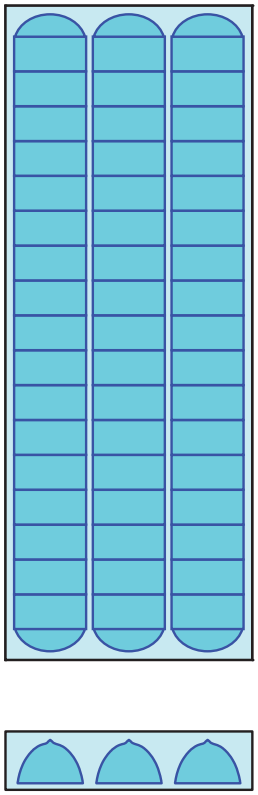
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

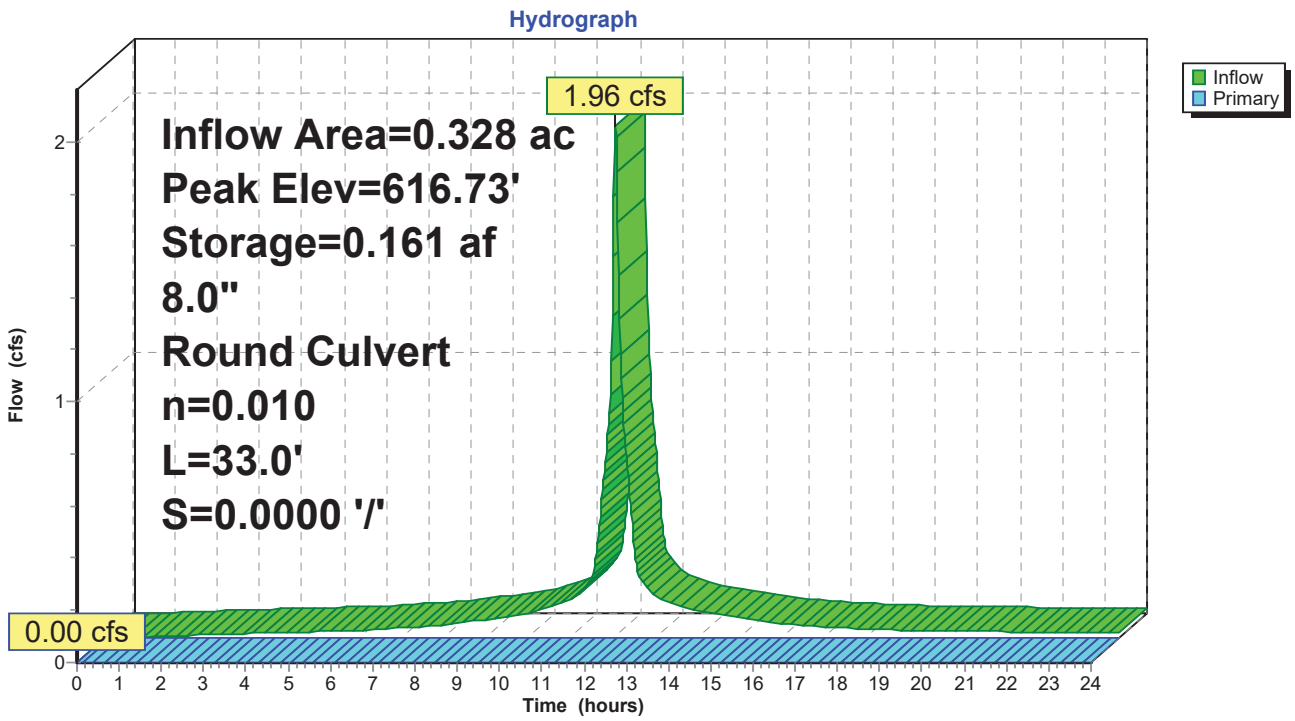
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

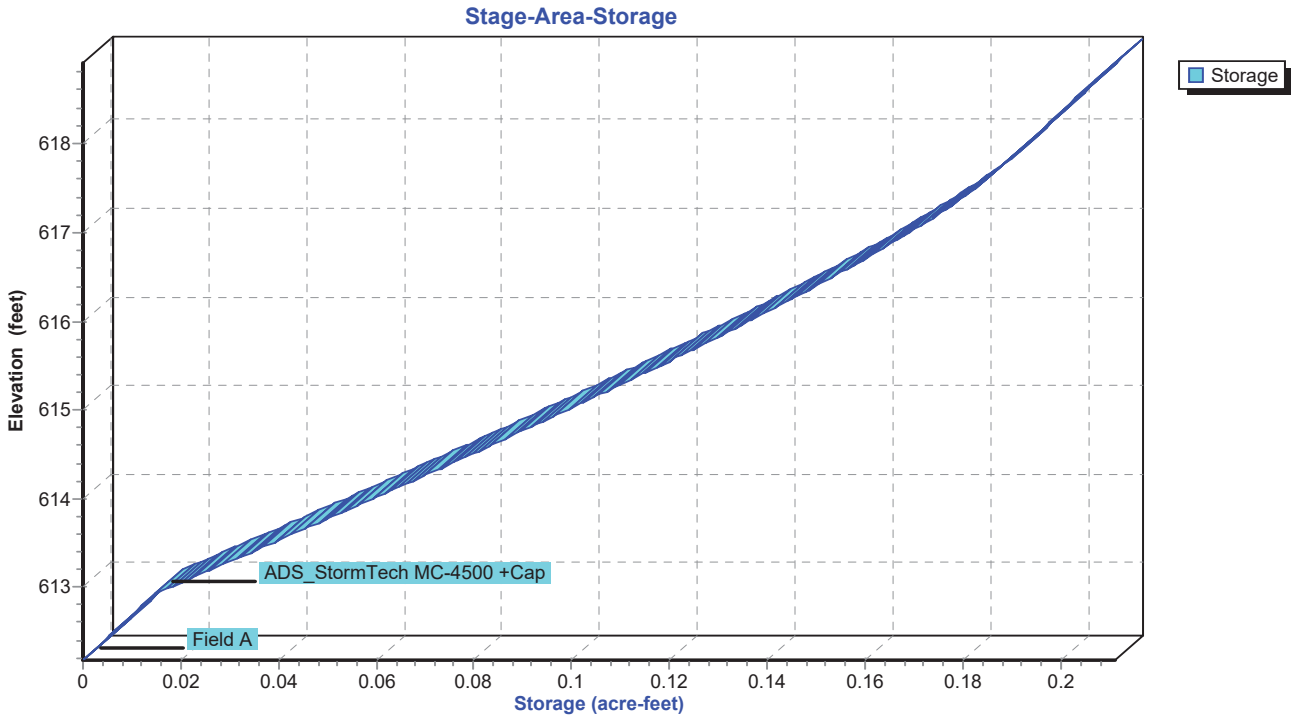
51 Chambers
538.2 cy Field
329.2 cy Stone



Pond 4P: ROOF INFILTRATION



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=61 Runoff=0.53 cfs 0.038 af

Subcatchment P2-1: DISCHARGE TO Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>5.30"
Tc=6.0 min CN=79 Runoff=3.68 cfs 0.265 af

Subcatchment P2-2: DISCHARGE TO Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>6.47"
Tc=6.0 min CN=89 Runoff=8.15 cfs 0.614 af

Subcatchment P2-3: DISCHARGE TO THE Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>2.74"
Tc=6.0 min CN=56 Runoff=3.86 cfs 0.285 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.062 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.074 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.057 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.92 cfs 0.075 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=6.97 cfs 1.044 af
Outflow=6.97 cfs 1.044 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=7.49 cfs 1.082 af
Outflow=7.49 cfs 1.082 af

Pond 1P: DETENTION BASIN Peak Elev=615.83' Storage=4,750 cf Inflow=3.68 cfs 0.265 af
Outflow=1.07 cfs 0.222 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=616.68' Storage=11,876 cf Inflow=8.15 cfs 0.647 af
Outflow=2.94 cfs 0.527 af

Pond 3P: ROOF INFILTRATION Peak Elev=617.59' Storage=2,331 cf Inflow=0.76 cfs 0.062 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.02 cfs 0.009 af

Pond 4P: ROOF INFILTRATION Peak Elev=617.23' Storage=0.176 af Inflow=2.50 cfs 0.206 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.07 cfs 0.033 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.471 af Average Runoff Depth = 4.96"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

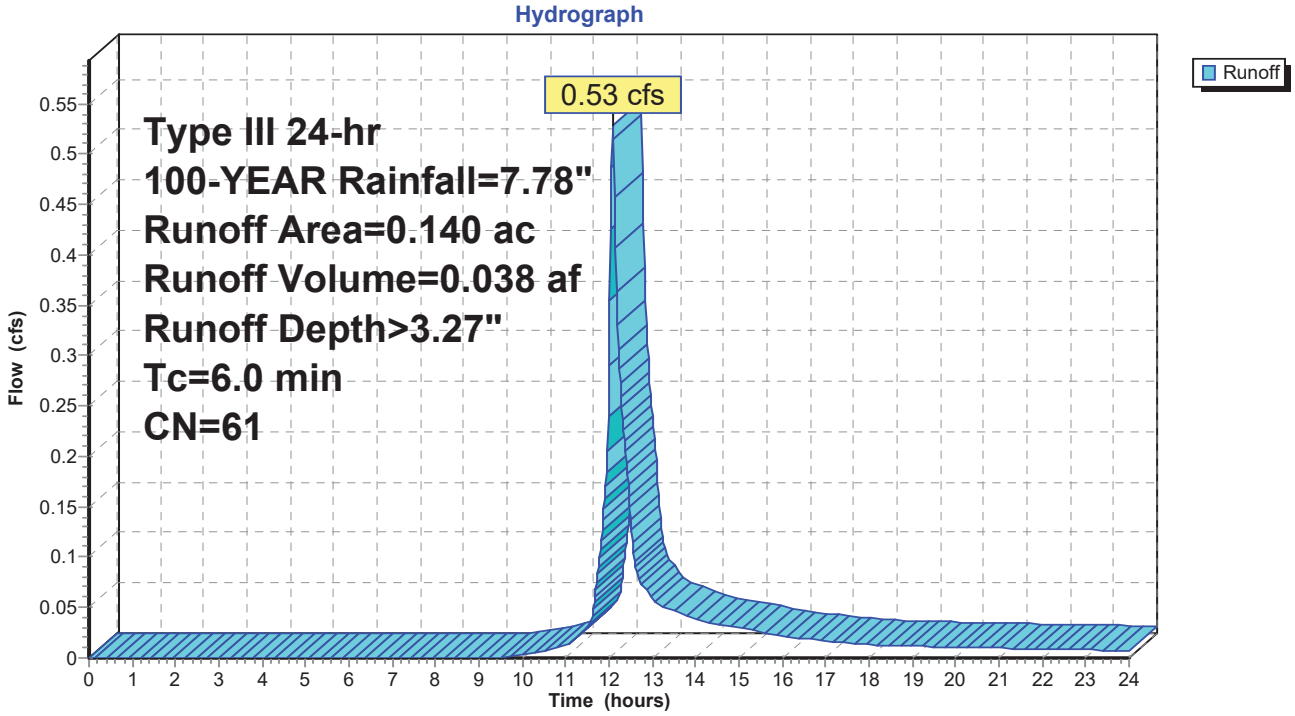
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

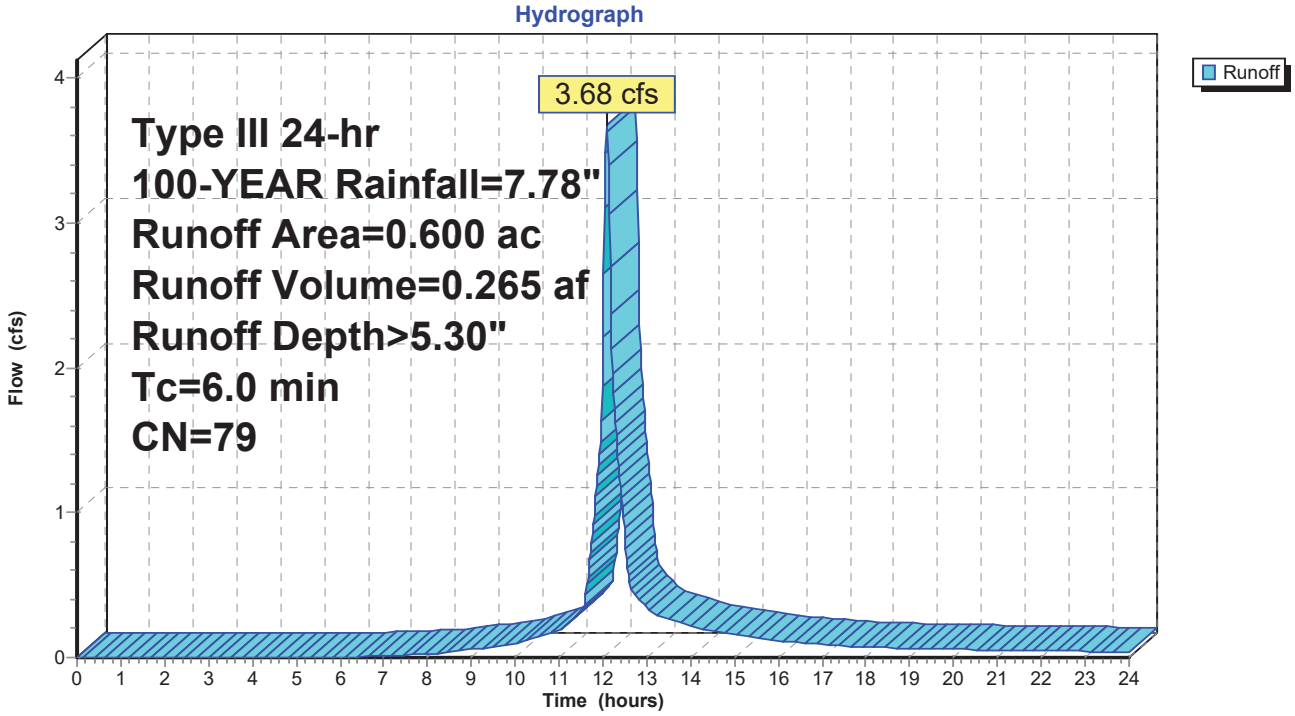
Runoff = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

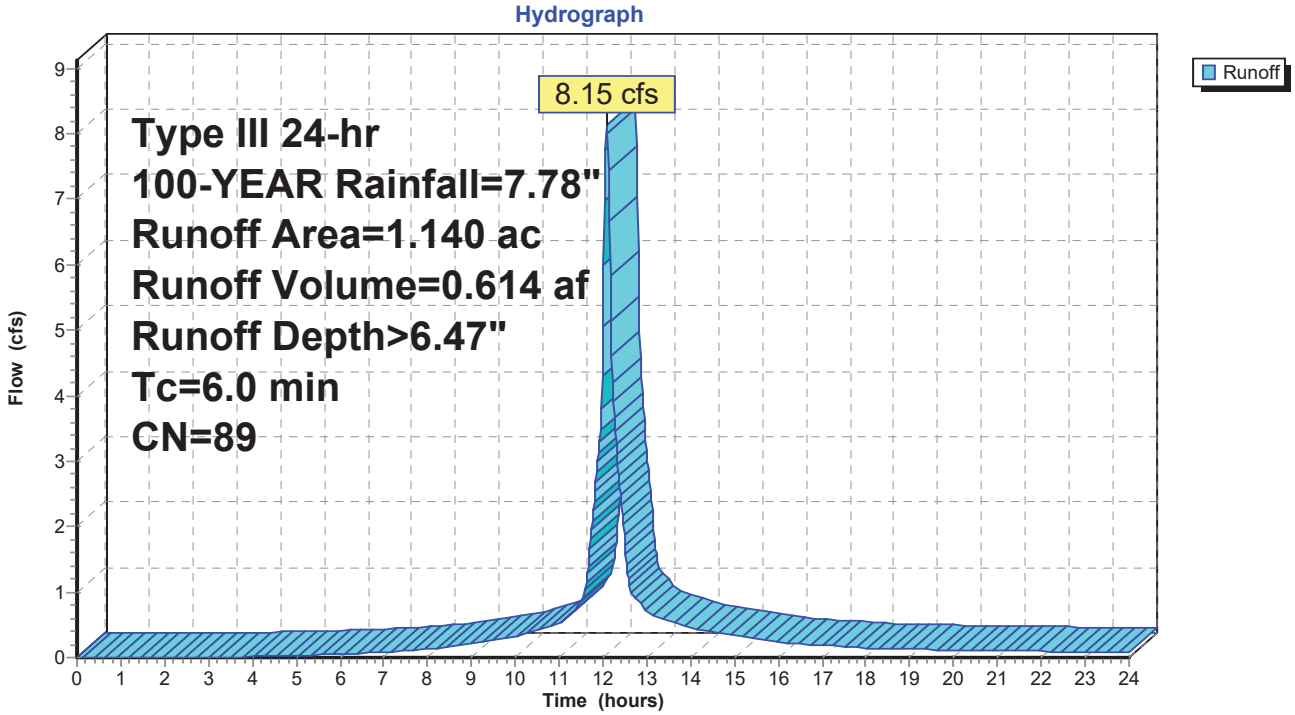
Runoff = 8.15 cfs @ 12.08 hrs, Volume= 0.614 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

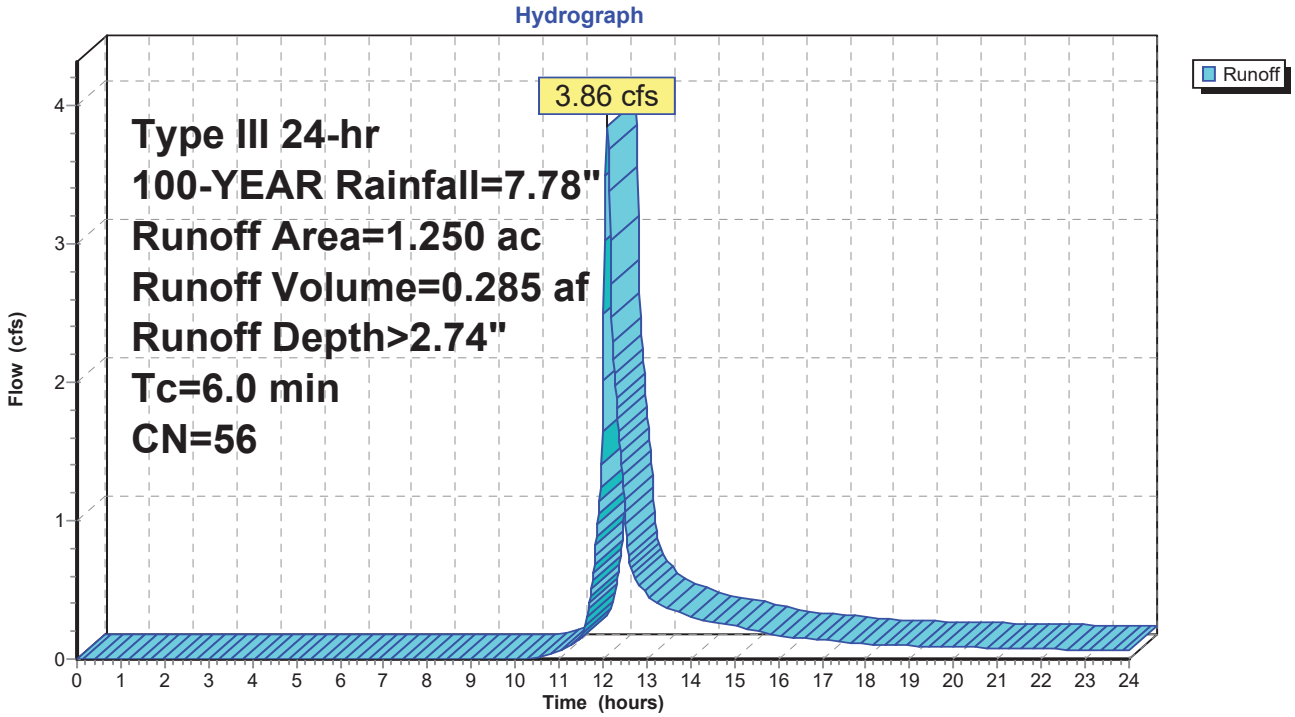
Runoff = 3.86 cfs @ 12.09 hrs, Volume= 0.285 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

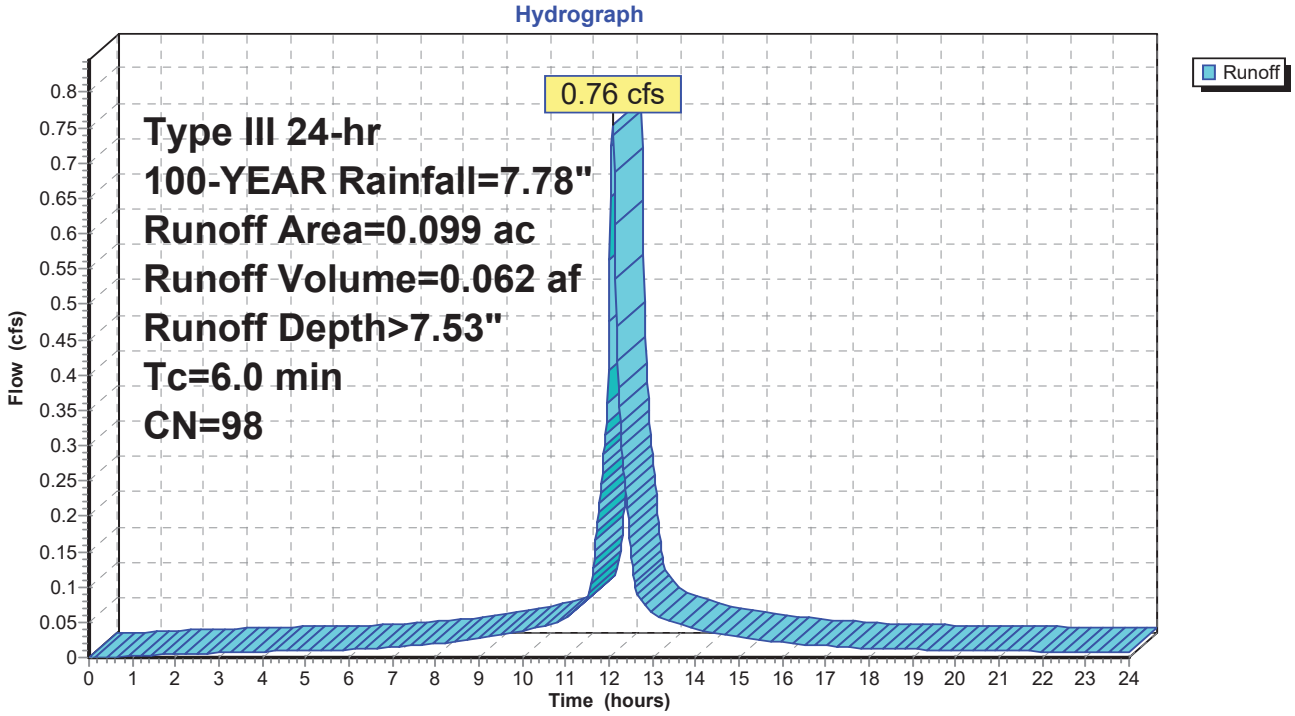
Runoff = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

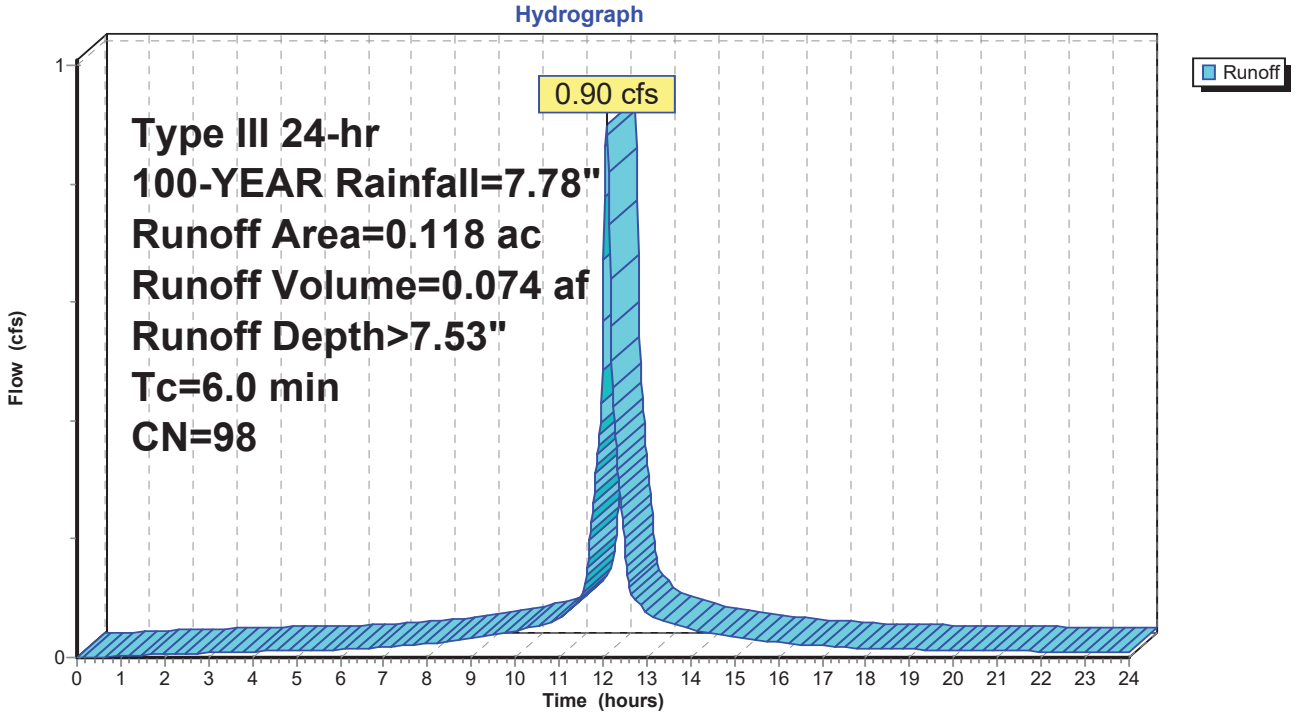
Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.074 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

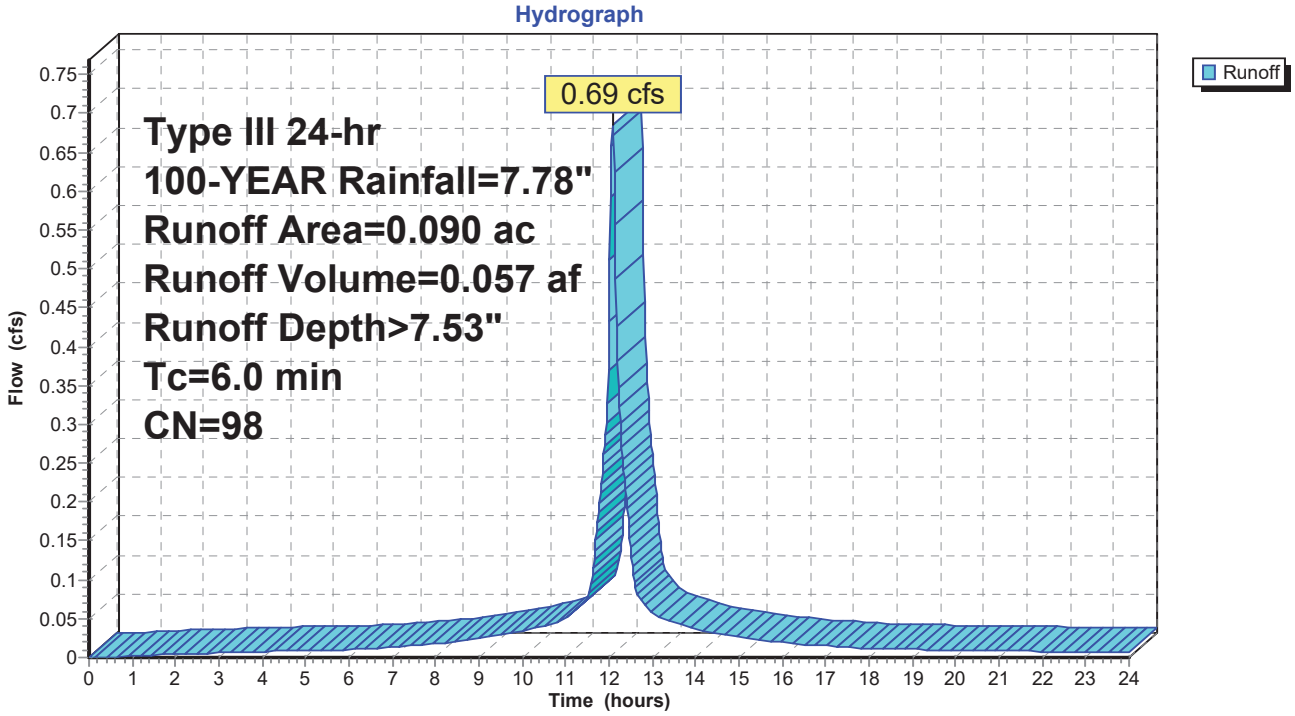
Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.057 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

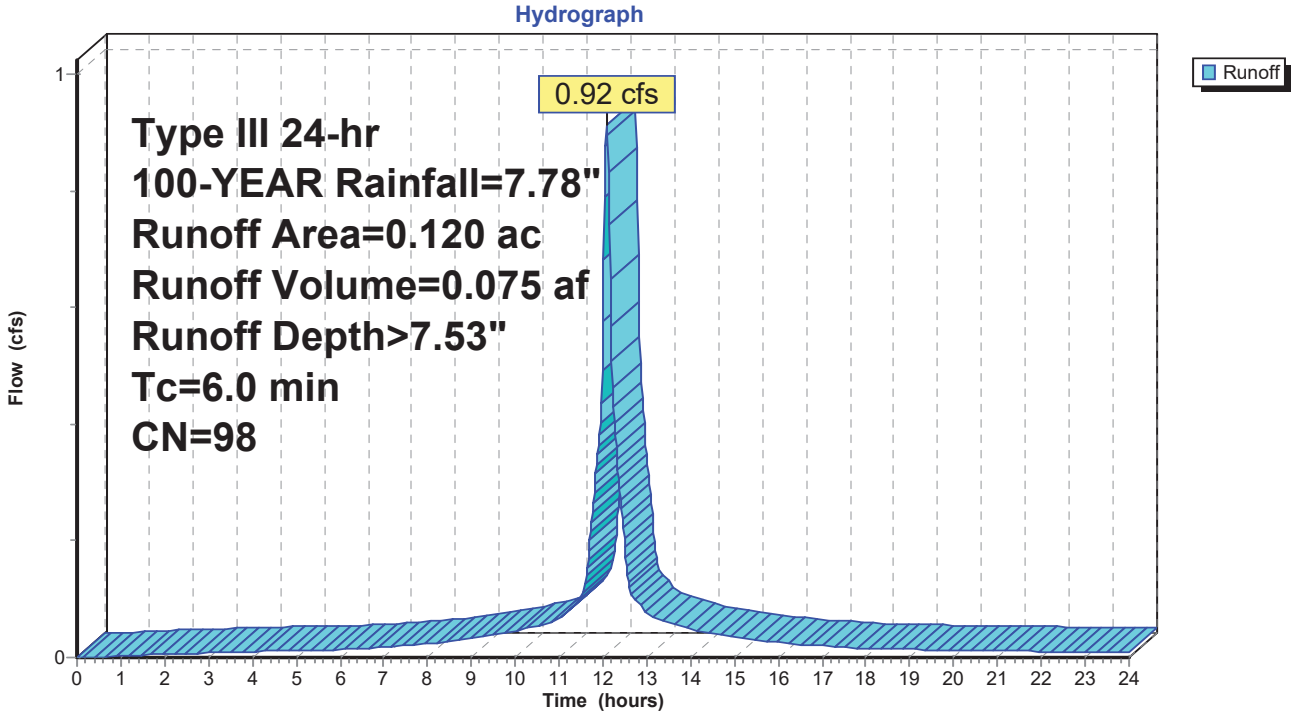
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 0.075 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



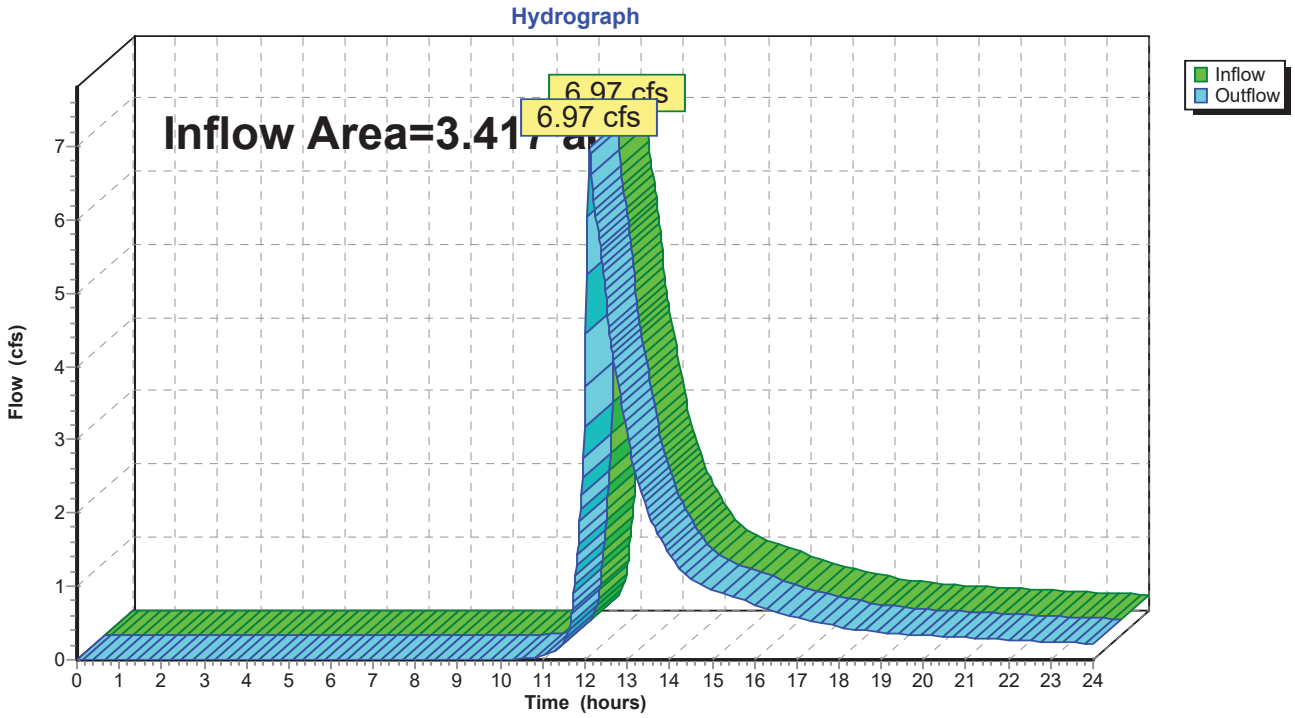
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 3.67" for 100-YEAR event
Inflow = 6.97 cfs @ 12.12 hrs, Volume= 1.044 af
Outflow = 6.97 cfs @ 12.12 hrs, Volume= 1.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



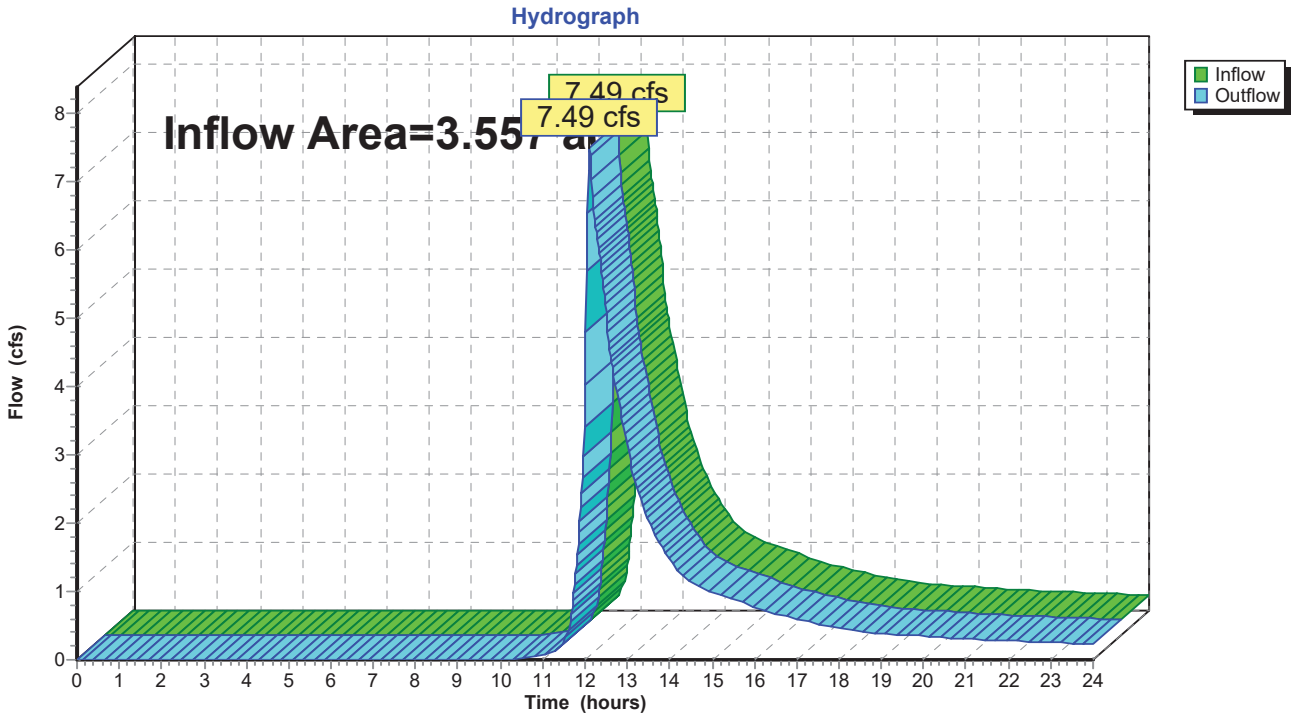
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 3.65" for 100-YEAR event
Inflow = 7.49 cfs @ 12.11 hrs, Volume= 1.082 af
Outflow = 7.49 cfs @ 12.11 hrs, Volume= 1.082 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.89' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 5.30" for 100-YEAR event
Inflow = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af
Outflow = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af, Atten= 71%, Lag= 20.7 min
Primary = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.83' @ 12.43 hrs Surf.Area= 2,463 sf Storage= 4,750 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 128.9 min calculated for 0.222 af (84% of inflow)
Center-of-Mass det. time= 62.8 min (868.5 - 805.7)

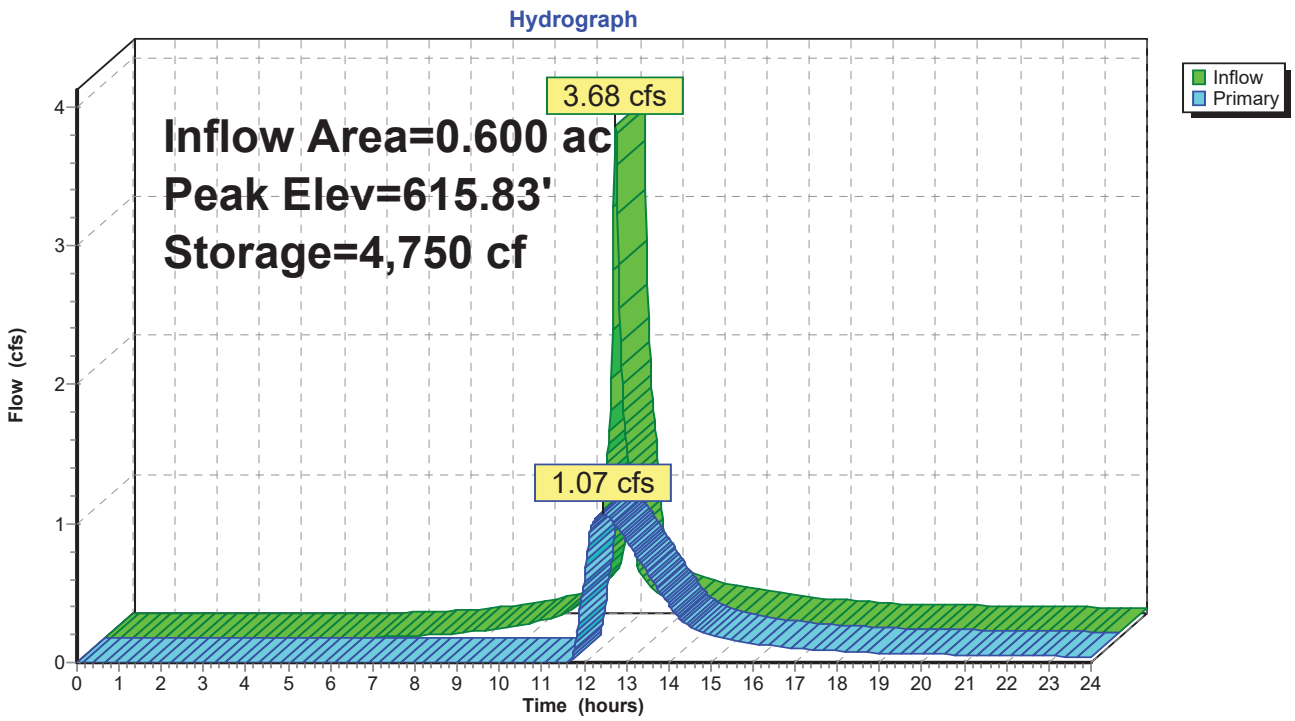
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

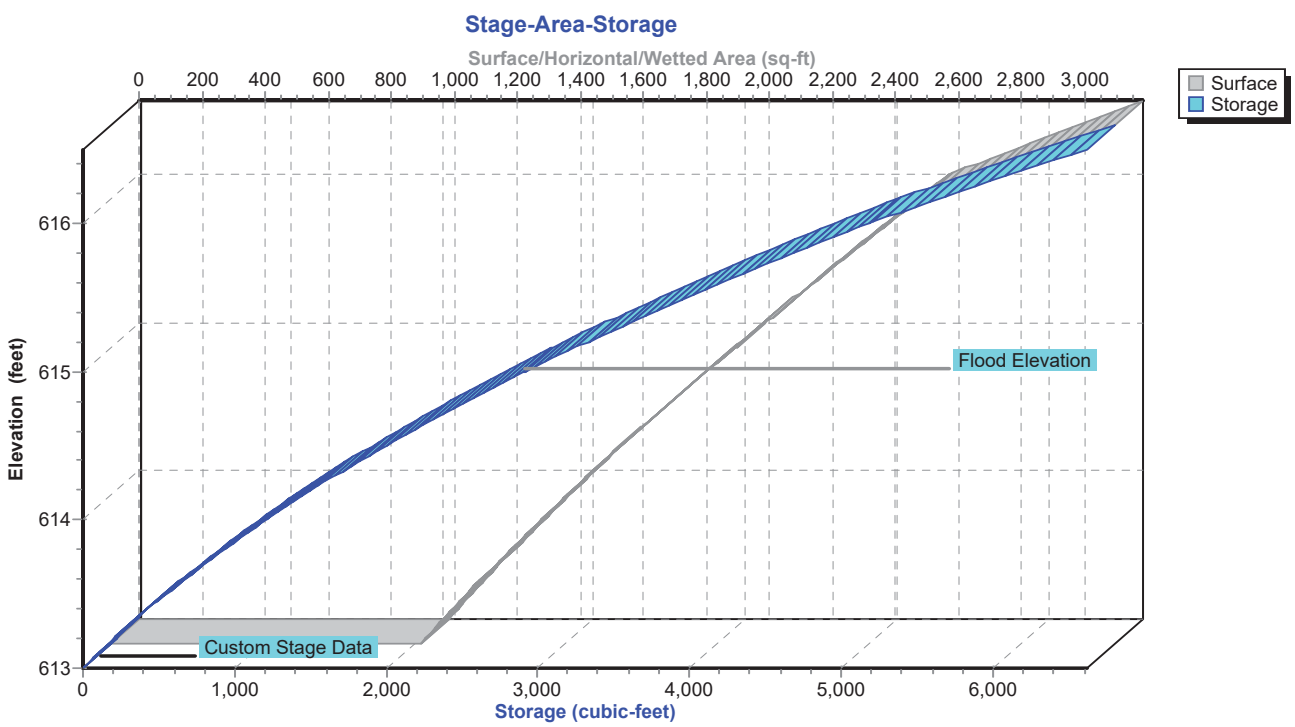
Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.07 cfs @ 12.43 hrs HW=615.83' (Free Discharge)
└─**1=Culvert** (Passes 1.07 cfs of 6.34 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.07 cfs @ 5.44 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 5.29" for 100-YEAR event
Inflow = 8.15 cfs @ 12.08 hrs, Volume= 0.647 af
Outflow = 2.94 cfs @ 12.34 hrs, Volume= 0.527 af, Atten= 64%, Lag= 15.4 min
Primary = 2.94 cfs @ 12.34 hrs, Volume= 0.527 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.68' @ 12.34 hrs Surf.Area= 5,184 sf Storage= 11,876 cf

Plug-Flow detention time= 164.4 min calculated for 0.527 af (81% of inflow)
Center-of-Mass det. time= 86.3 min (882.9 - 796.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.25'	6,164 cf	**32.00'W x 162.00'L x 4.50'H Field A** 23,328 cf Overall - 7,917 cf Embedded = 15,411 cf x 40.0% Voids
#2A	613.75'	7,917 cf	**CMP Round 36** x 56 Inside #1 Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf Overall Size= 36.0"W x 36.0"H x 20.00'L 7 Rows of 8 Chambers
#3	613.75'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		14,112 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.75' / 613.75' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.72'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.94 cfs @ 12.34 hrs HW=616.68' (Free Discharge)
└─**1=Culvert** (Passes 2.94 cfs of 8.98 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.24 cfs @ 6.30 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.70 cfs @ 4.87 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 36 (Round Corrugated Metal Pipe)
Effective Size= 36.0"W x 36.0"H => 7.07 sf x 20.00'L = 141.4 cf
Overall Size= 36.0"W x 36.0"H x 20.00'L

36.0" Wide + 18.0" Spacing = 54.0" C-C Row Spacing

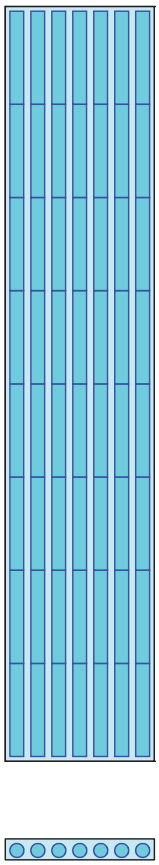
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
7 Rows x 36.0" Wide + 18.0" Spacing x 6 + 12.0" Side Stone x 2 = 32.00' Base Width
6.0" Base + 36.0" Chamber Height + 12.0" Cover = 4.50' Field Height

56 Chambers x 141.4 cf = 7,916.8 cf Chamber Storage

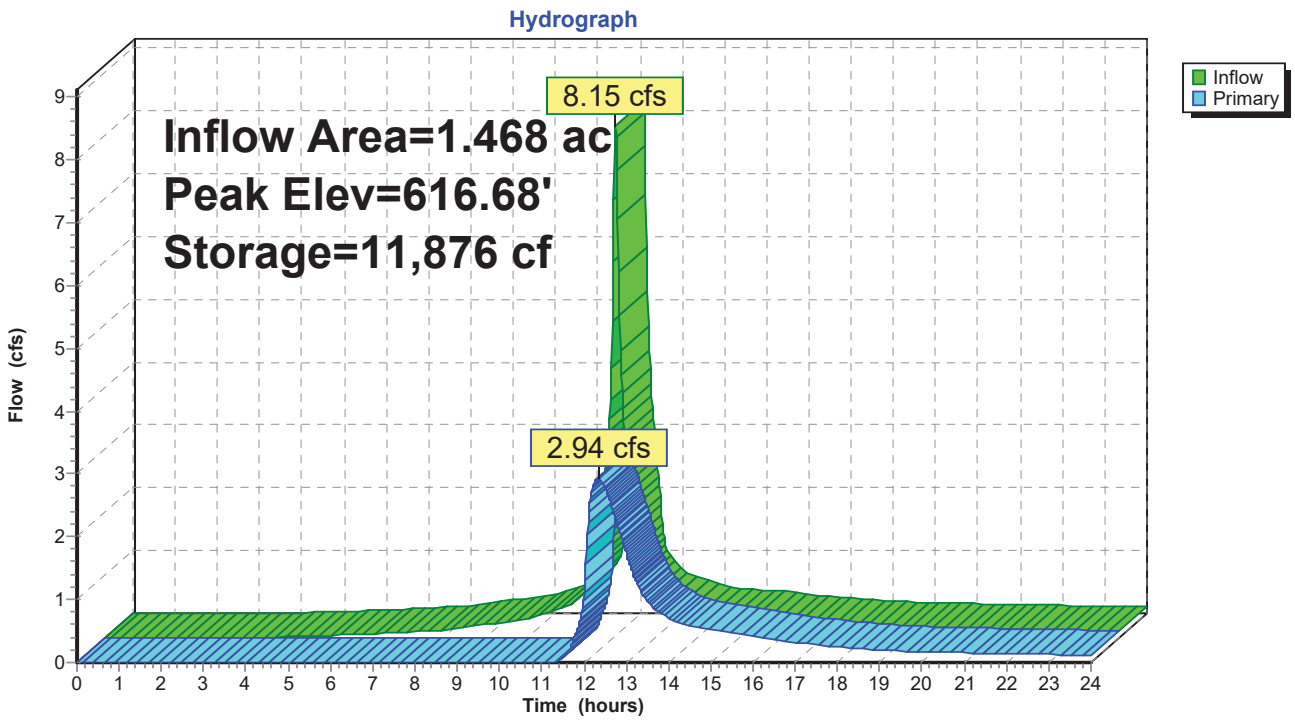
23,328.0 cf Field - 7,916.8 cf Chambers = 15,411.2 cf Stone x 40.0% Voids = 6,164.5 cf Stone Storage

Chamber Storage + Stone Storage = 14,081.3 cf = 0.323 af
Overall Storage Efficiency = 60.4%
Overall System Size = 162.00' x 32.00' x 4.50'

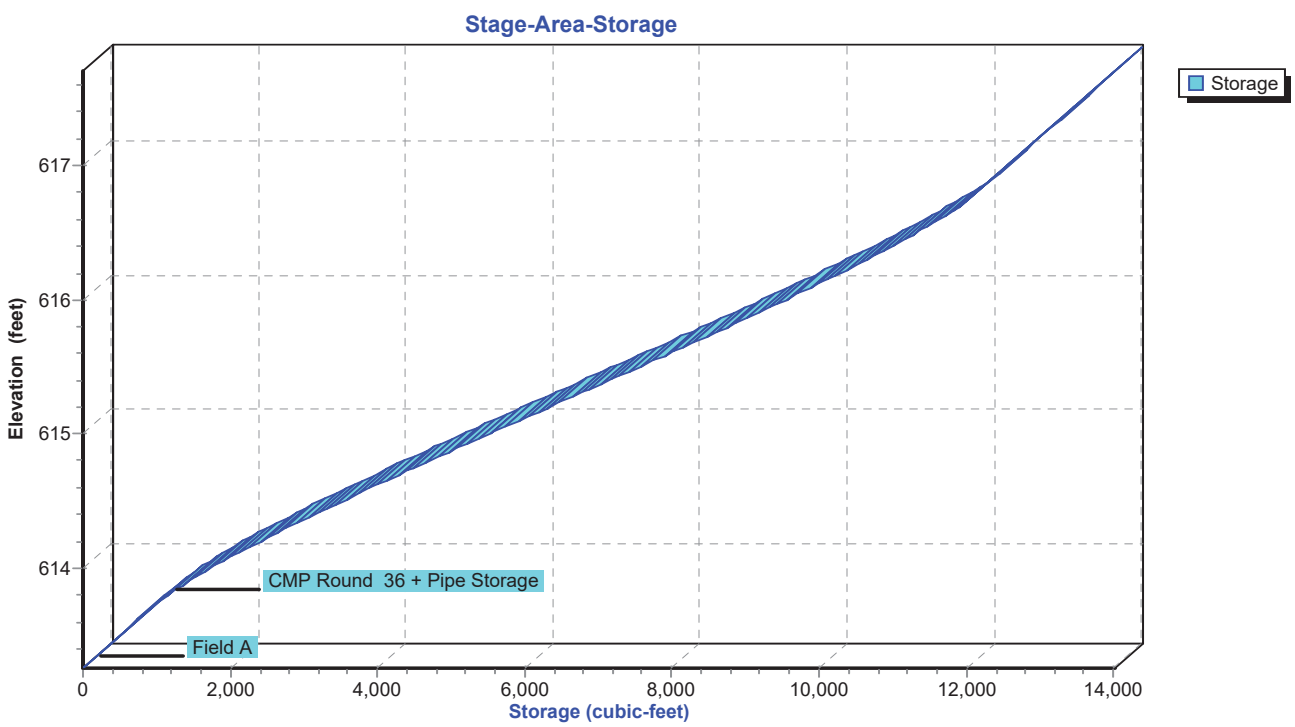
56 Chambers
864.0 cy Field
570.8 cy Stone



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af, Atten= 97%, Lag= 222.9 min
Primary = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.59' @ 15.80 hrs Surf.Area= 607 sf Storage= 2,331 cf

Plug-Flow detention time= 721.0 min calculated for 0.009 af (14% of inflow)
Center-of-Mass det. time= 385.3 min (1,126.3 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.02 cfs @ 15.80 hrs HW=617.59' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.02 cfs @ 0.81 fps)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

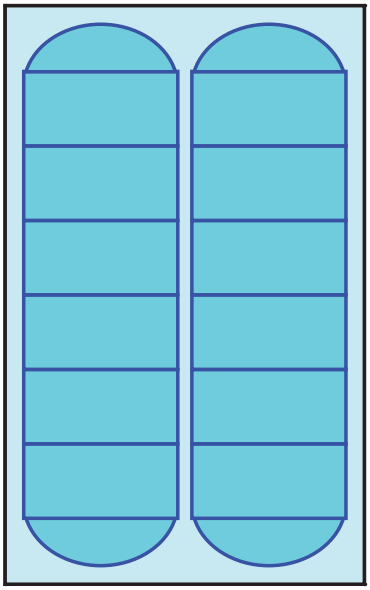
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

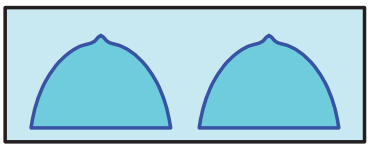
12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

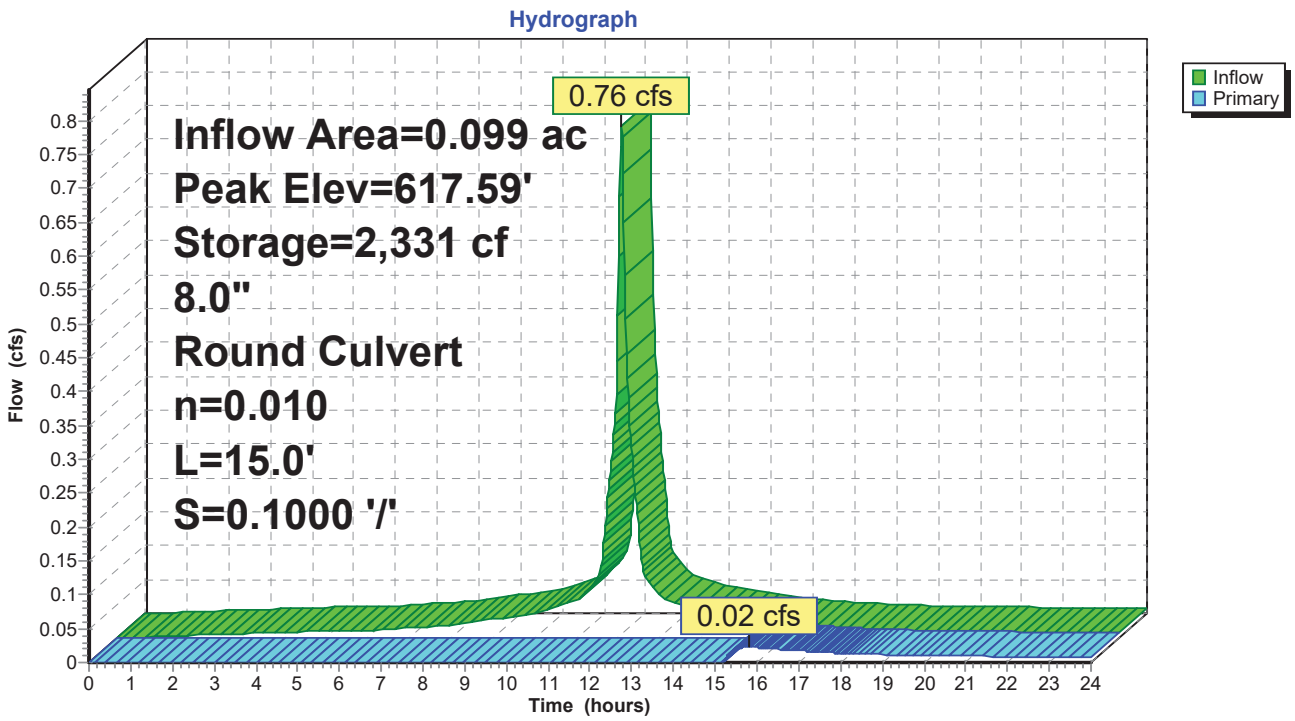
Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

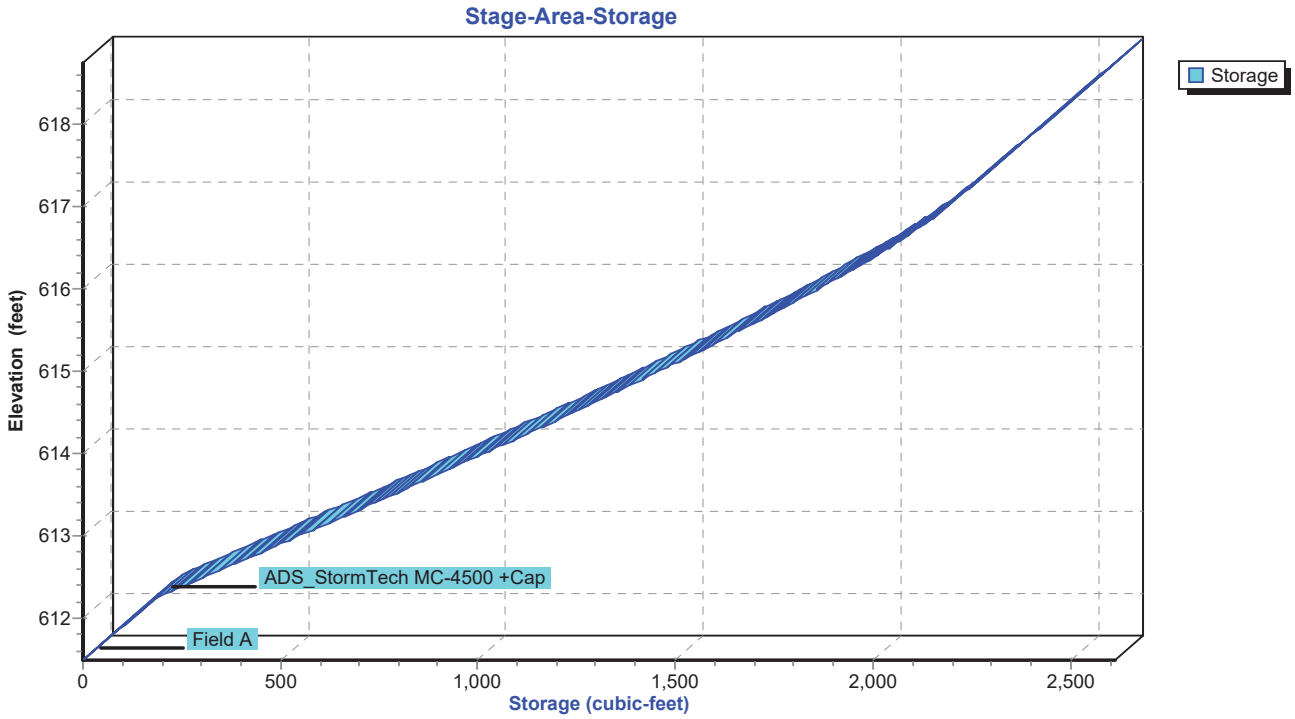




Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 2.50 cfs @ 12.08 hrs, Volume= 0.206 af
Outflow = 0.07 cfs @ 15.93 hrs, Volume= 0.033 af, Atten= 97%, Lag= 230.6 min
Primary = 0.07 cfs @ 15.93 hrs, Volume= 0.033 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.23' @ 15.93 hrs Surf.Area= 0.049 ac Storage= 0.176 af

Plug-Flow detention time= 694.9 min calculated for 0.033 af (16% of inflow)
Center-of-Mass det. time= 376.9 min (1,117.9 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	612.17'	0.082 af	**28.50'W x 75.54'L x 6.75'H Field A** 0.334 af Overall - 0.130 af Embedded = 0.204 af x 40.0% Voids
#2A	612.92'	0.130 af	**ADS_StormTech MC-4500 +Cap** x 51 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 3 Rows of 17 Chambers Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf
		0.211 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.07 cfs @ 15.93 hrs HW=617.23' (Free Discharge)
└─**1=Culvert** (Barrel Controls 0.07 cfs @ 0.98 fps)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 3 rows = 214.2 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

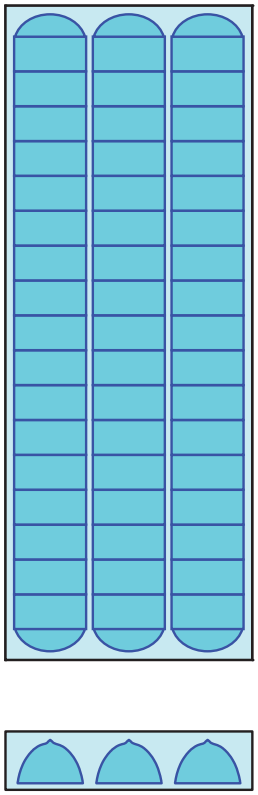
17 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 73.54' Row Length +12.0" End Stone x 2 = 75.54' Base Length
3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

51 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 3 Rows = 5,645.2 cf Chamber Storage

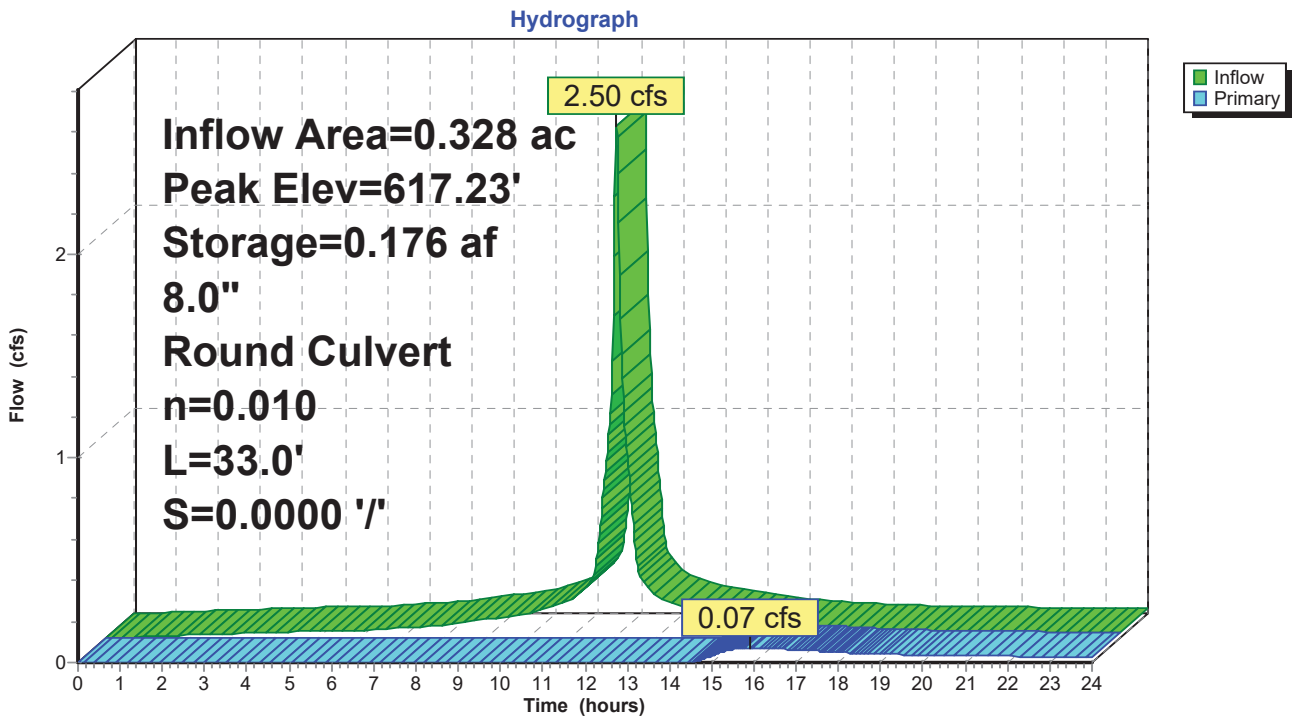
14,532.3 cf Field - 5,645.2 cf Chambers = 8,887.1 cf Stone x 40.0% Voids = 3,554.8 cf Stone Storage

Chamber Storage + Stone Storage = 9,200.1 cf = 0.211 af
Overall Storage Efficiency = 63.3%
Overall System Size = 75.54' x 28.50' x 6.75'

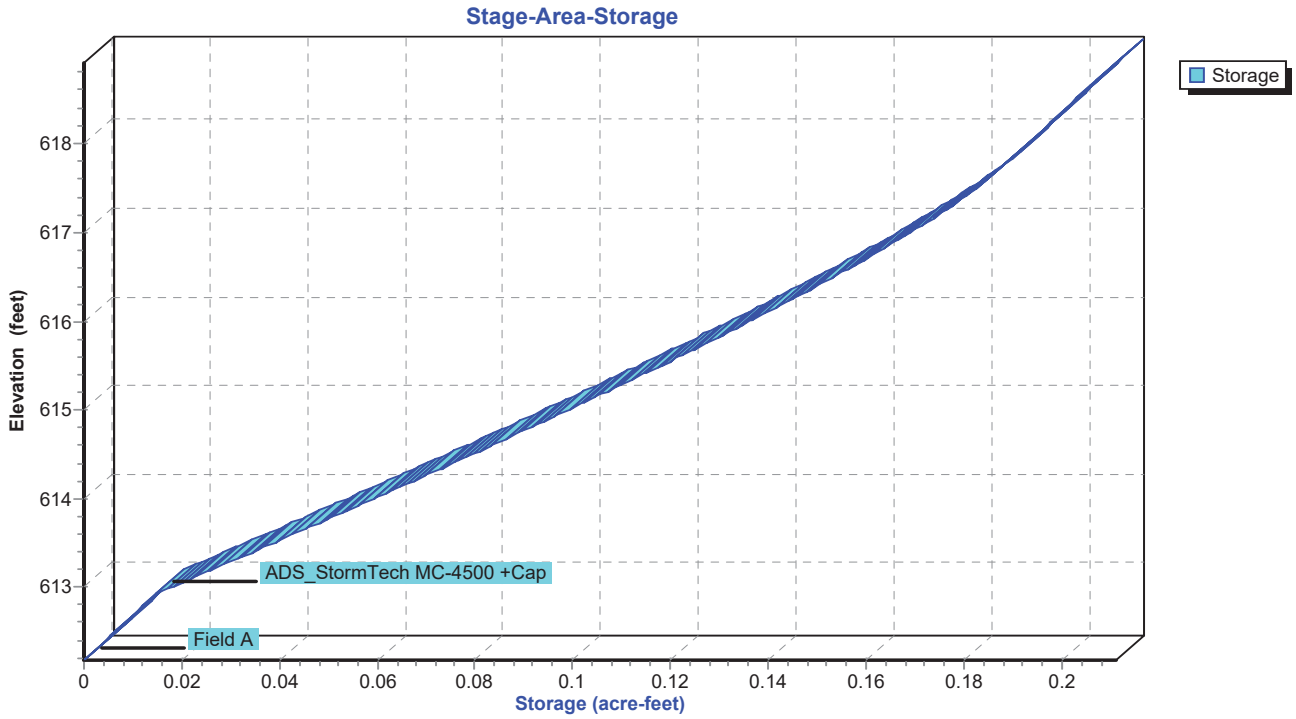
51 Chambers
538.2 cy Field
329.2 cy Stone



Pond 4P: ROOF INFILTRATION



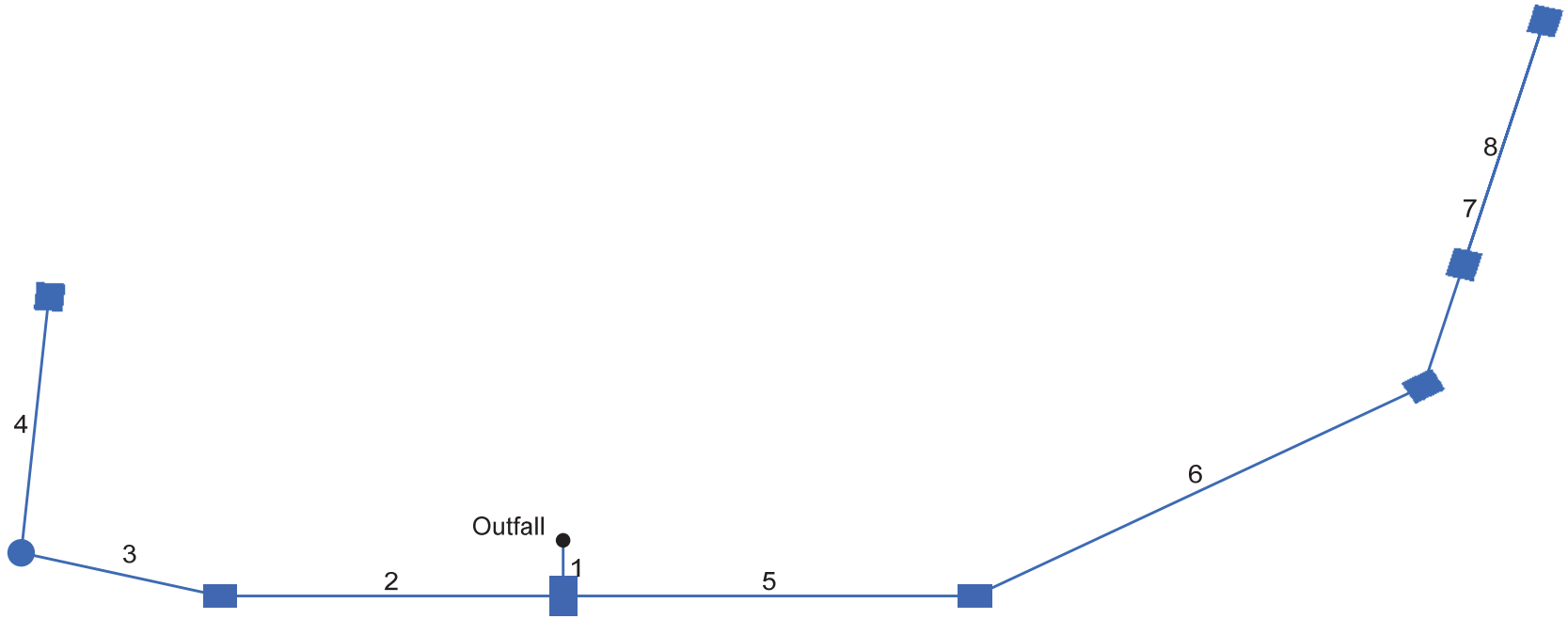
Pond 4P: ROOF INFILTRATION



APPENDIX C

Proposed Hydraulic Sizing Computations

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: HydraFlow.stm	Number of lines: 8	Date: 2/12/2020

Storm Sewers v10.514

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	CB-3	4.26	15	Cir	11.000	615.54	615.65	1.000	616.28	616.48	0.84	616.48	End	Combination
2	CB-2	2.45	12	Cir	55.000	615.75	616.16	0.745	616.48	616.83	n/a	616.98 j	1	Combination
3	DMH	1.96	12	Cir	33.000	616.16	616.41	0.758	616.82	616.94	n/a	616.94	2	Manhole
4	CB-1	2.02	12	Cir	51.000	616.41	616.85	0.863	616.94	617.39	n/a	617.39	3	Combination
5	CB-4	1.34	12	Cir	66.000	615.75	616.41	1.000	615.36	615.54	n/a	615.54	1	Combination
6	CB-5	0.93	12	Cir	83.000	615.41	616.24	1.000	614.48	614.90	n/a	614.90	5	Combination
7	CB-6	0.54	12	Cir	75.000	616.34	617.50	1.547	614.90	615.64	n/a	615.64	6	Combination
8	CB-7	0.27	12	Cir	50.000	617.60	617.90	0.600	615.64	617.80	n/a	617.80	7	Grate

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	11.000	0.30	1.12	0.76	0.23	0.85	5.0	10.4	5.0	4.26	6.46	5.25	15	1.00	615.54	615.65	616.28	616.48	0.00	617.75	CB-3
2	1	55.000	0.11	0.49	0.70	0.08	0.36	5.0	5.6	6.8	2.45	3.07	4.16	12	0.75	615.75	616.16	616.48	616.83	617.75	618.60	CB-2
3	2	33.000	0.00	0.38	0.00	0.00	0.29	0.0	5.3	6.9	1.96	0.00	3.25	12	0.76	616.16	616.41	616.82	616.94	618.60	618.97	DMH
4	3	51.000	0.38	0.38	0.75	0.29	0.29	5.0	5.0	7.1	2.02	0.00	3.76	12	0.86	616.41	616.85	616.94	617.39	618.97	618.85	CB-1
5	1	66.000	0.11	0.33	0.80	0.09	0.26	5.0	9.9	5.1	1.34	0.00	3.74	12	1.00	615.75	616.41	615.36	615.54	617.75	618.54	CB-4
6	5	83.000	0.10	0.22	0.82	0.08	0.17	5.0	9.0	5.4	0.93	0.00	2.84	12	1.00	615.41	616.24	614.48	614.90	618.54	618.50	CB-5
7	6	75.000	0.07	0.12	0.74	0.05	0.09	5.0	7.4	5.9	0.54	0.00	2.79	12	1.55	616.34	617.50	614.90	615.64	618.50	619.50	CB-6
8	7	50.000	0.05	0.05	0.77	0.04	0.04	5.0	5.0	7.1	0.27	0.00	2.66	12	0.60	617.60	617.90	615.64	617.80	619.50	620.24	CB-7

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES:Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period =Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	CB-3	1.61	0.00	1.61	0.00	Comb	5.0	2.73	6.24	4.62	1.35	Sag	12.00	0.023	0.023	0.000	0.10	8.00	0.35	8.00	3.0	Off
2	CB-2	0.54	0.00	0.54	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.013	0.013	0.013	0.09	6.95	0.25	0.01	3.0	1
3	DMH	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	CB-1	2.02	0.00	2.02	0.00	Comb	5.0	2.73	3.12	2.31	1.35	Sag	12.00	0.017	0.017	0.000	-0.02	6.11	0.23	6.11	3.0	Off
5	CB-4	0.62	0.00	0.62	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.010	12.00	0.016	0.016	0.013	0.10	6.42	0.25	0.01	3.0	1
6	CB-5	0.58	0.00	0.58	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.009	12.00	0.024	0.024	0.013	0.12	4.95	0.25	0.00	3.0	5
7	CB-6	0.37	0.13	0.49	0.00	Comb	5.0	2.73	0.00	2.31	1.35	0.027	12.00	0.010	0.010	0.013	0.07	6.56	0.25	0.01	3.0	6
8	CB-7	0.27	0.00	0.14	0.13	Grate	0.0	0.00	0.00	2.31	1.35	0.010	12.00	0.011	0.011	0.013	0.07	5.95	0.30	4.48	3.0	7

Project File: HydraFlow.stm | Number of lines: 8 | Run Date: 2/12/2020

NOTES: Inlet N-Values = 0.016; Intensity = 32.36 / (Inlet time + 3.60) ^ 0.71; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

APPENDIX D
Water Quality Computations

PROJECT NAME: EAGLEVILLE GREEN
DATE: 11/25/2019
CALCS BY: MS
CHECKED BY: RN

P2-1

WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.29
IMPERVIOUS AREA (%) =	48.35%
TOTAL AREA (ac) =	0.60
R =	0.49
WQV (ac-ft) =	0.024
WQV (cf) =	1,049

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.48
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	0.60
GRV (ac-ft) =	0.01
GRV (cf) =	261

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.364
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	91
I_a (in) =	0.198
I_a/P =	0.2
T_c (min) =	
T_c (hr) =	0.0
q_u (cfs/mi^2/in) =	
A (mi^2) =	0.00093
WQF (cfs) =	0.00

EFFECTIVE WQV = 788 cf
0.018 ac-ft

WATER QUALITY VOLUME PROVIDED IN POND = 1,664 cf

P2-2

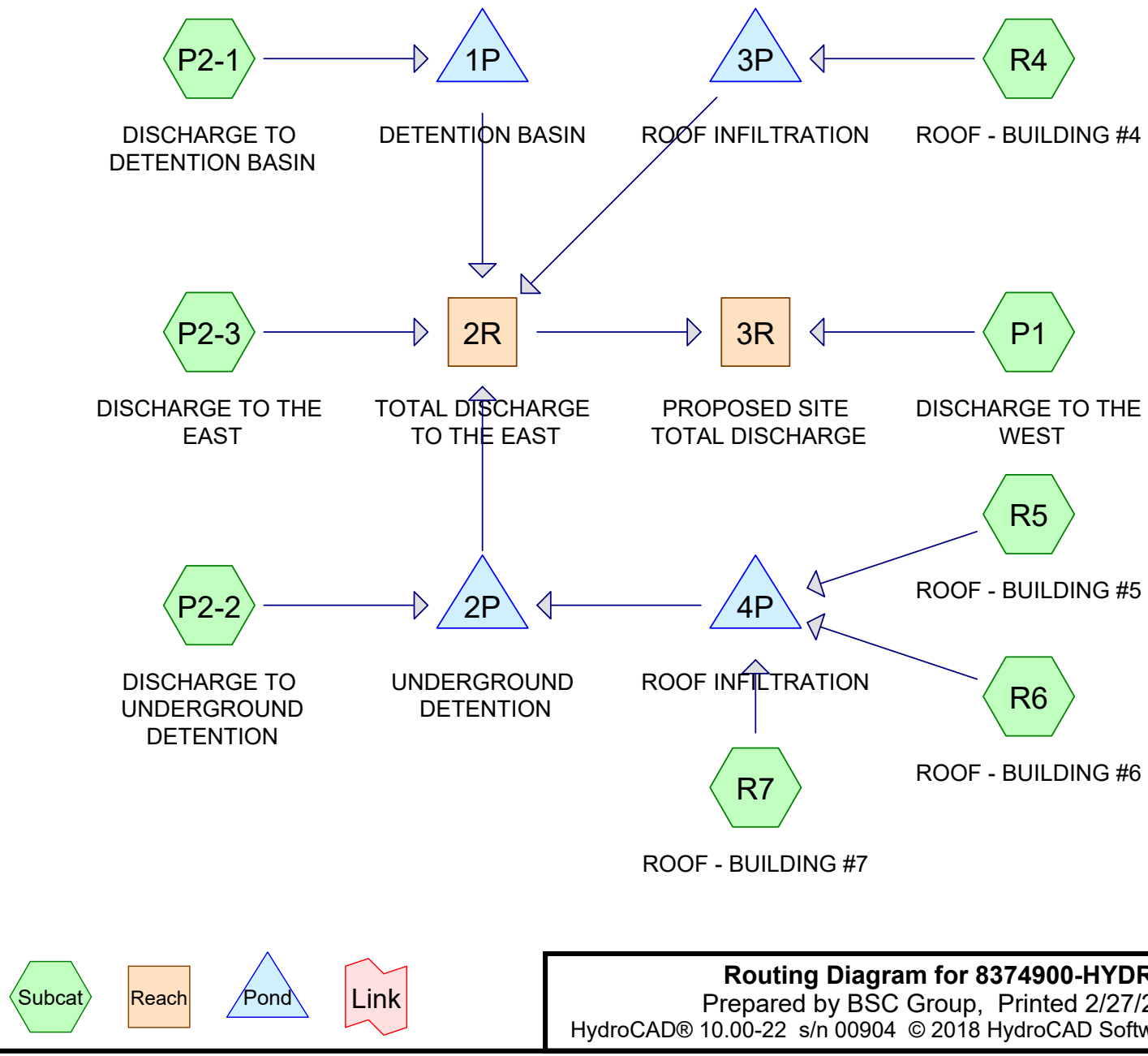
WATER QUALITY VOLUME	
IMPERVIOUS AREA (ac) =	0.86
IMPERVIOUS AREA (%) =	75.71%
TOTAL AREA (ac) =	1.14
R =	0.73
WQV (ac-ft) =	0.070
WQV (cf) =	3,030

GROUNDWATER RECHARGE VOLUME	
IMPERVIOUS AREA =	0.76
SOIL GROUP =	B
RECHARGE DEPTH (D) =	0.25
TOTAL AREA =	1.14
GRV (ac-ft) =	0.02
GRV (cf) =	784

EFFECTIVE WQV =	2,246 cf 0.052 ac-ft

WATER QUALITY VOLUME PROVIDED IN DETENTION = 2,541 cf

WATER QUALITY FLOW	
RUNOFF DEPTH (in) =	0.542
DESIGN PRECIPITATION (in) =	1.0
RUNOFF CURVE NUMBER =	95
I_a (in) =	0.105
I_a/P =	0.1
T_c (min) =	6.0
T_c (hr) =	0.1
q_u (cfs/mi^2/in) =	650
A (mi^2) =	0.00178
WQF (cfs) =	0.63



Routing Diagram for 8374900-HYDRO2
Prepared by BSC Group, Printed 2/27/2020
HydroCAD® 10.00-22 s/n 00904 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.400	61	>75% Grass cover, Good, HSG B (P1, P2-1, P2-2, P2-3)
0.550	48	Brush, Good, HSG B (P2-3)
1.180	98	Paved parking, HSG B (P2-1, P2-2, P2-3)
0.427	98	Unconnected roofs, HSG B (R4, R5, R6, R7)
3.557	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.557	HSG B	P1, P2-1, P2-2, P2-3, R4, R5, R6, R7
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.557		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.400	0.000	0.000	0.000	1.400	>75% Grass cover, Good	P1, P2-1, P2-2, P2-3
0.000	0.550	0.000	0.000	0.000	0.550	Brush, Good	P2-3
0.000	1.180	0.000	0.000	0.000	1.180	Paved parking	P2-1, P2-2, P2-3
0.000	0.427	0.000	0.000	0.000	0.427	Unconnected roofs	R4, R5, R6, R7
0.000	**3.557**	**0.000**	**0.000**	**0.000**	**3.557**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	614.05	613.00	105.0	0.0100	0.011	15.0	0.0	0.0
2	2P	613.25	613.75	18.0	-0.0278	0.011	15.0	0.0	0.0
3	3P	617.50	616.00	15.0	0.1000	0.010	8.0	0.0	0.0
4	4P	617.00	617.00	33.0	0.0000	0.010	8.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>0.50"
Tc=6.0 min CN=61 Runoff=0.05 cfs 0.006 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>1.43"
Tc=6.0 min CN=79 Runoff=1.00 cfs 0.072 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>2.20"
Tc=6.0 min CN=89 Runoff=2.91 cfs 0.209 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=56 Runoff=0.19 cfs 0.033 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.026 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>3.09"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.031 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=0.34 cfs 0.181 af
Outflow=0.34 cfs 0.181 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=0.37 cfs 0.187 af
Outflow=0.37 cfs 0.187 af

Pond 1P: DETENTION BASIN Peak Elev=614.45' Storage=1,915 cf Inflow=1.00 cfs 0.072 af
Outflow=0.07 cfs 0.031 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.31' Storage=5,415 cf Inflow=2.91 cfs 0.209 af
Outflow=0.22 cfs 0.117 af

Pond 3P: ROOF INFILTRATION Peak Elev=614.22' Storage=1,112 cf Inflow=0.32 cfs 0.026 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=615.12' Storage=0.085 af Inflow=1.06 cfs 0.085 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.430 af Average Runoff Depth = 1.45"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

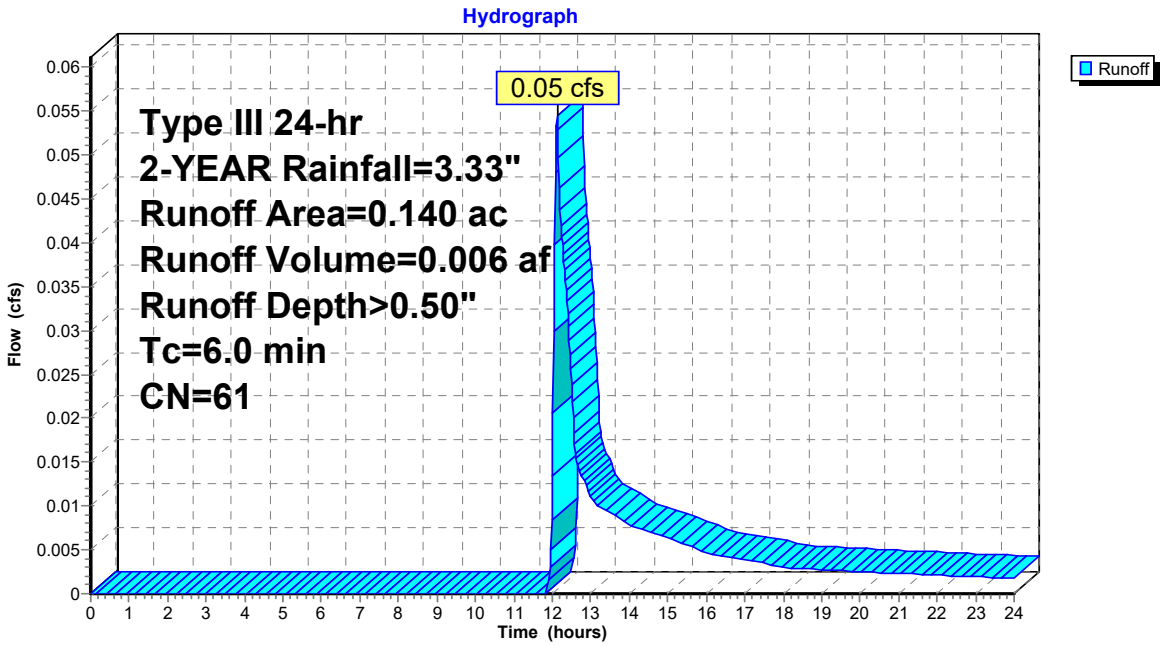
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.006 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

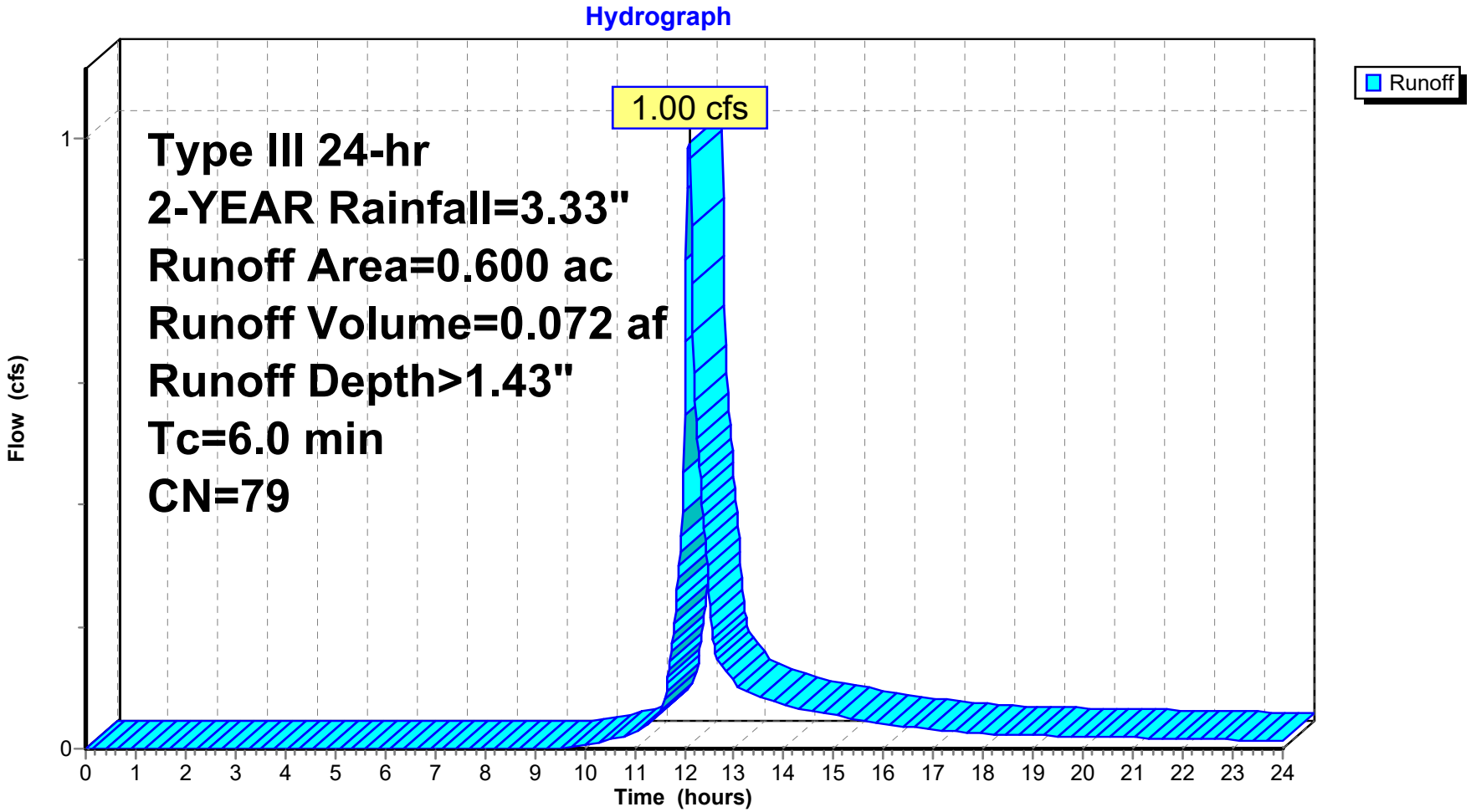
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

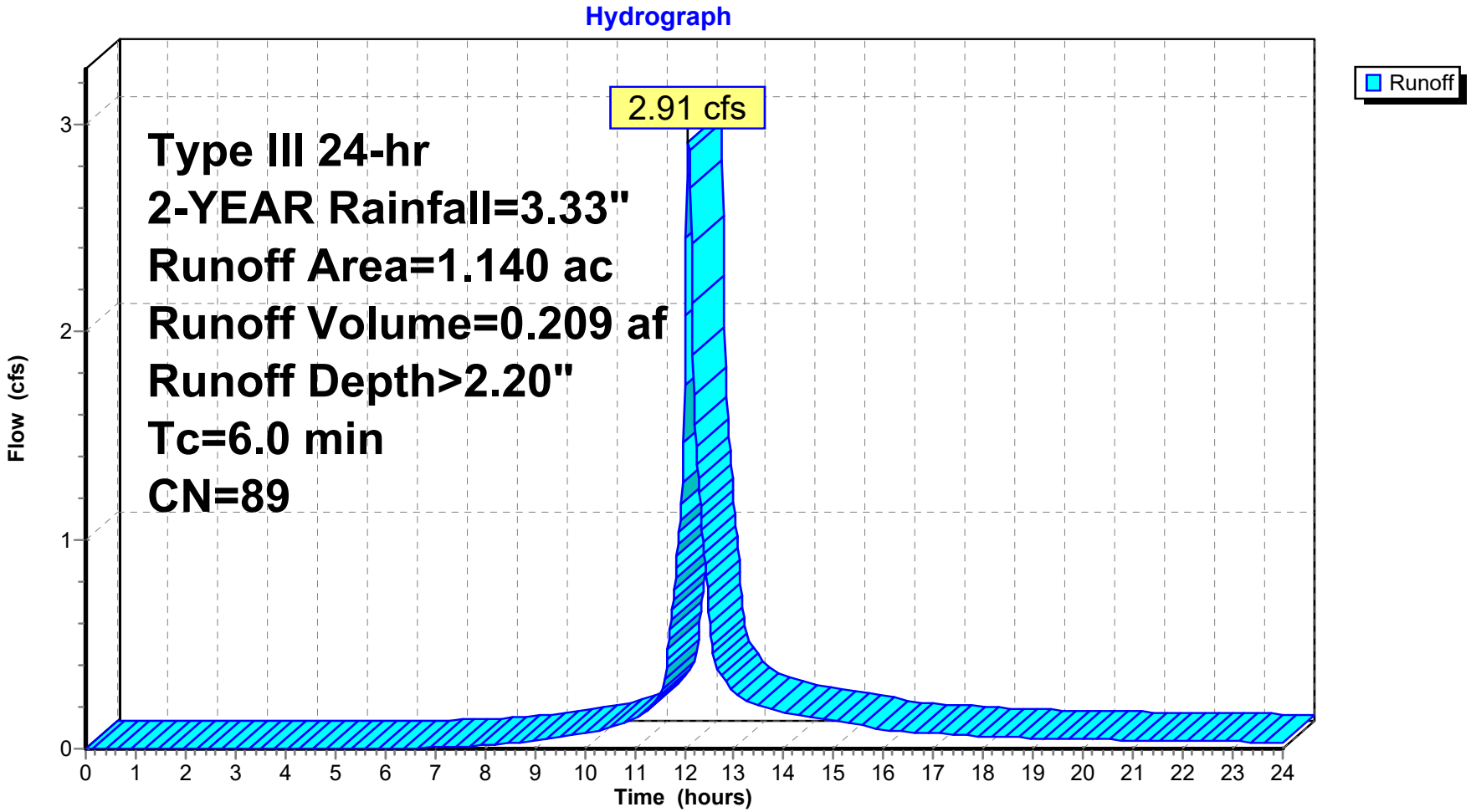
Runoff = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

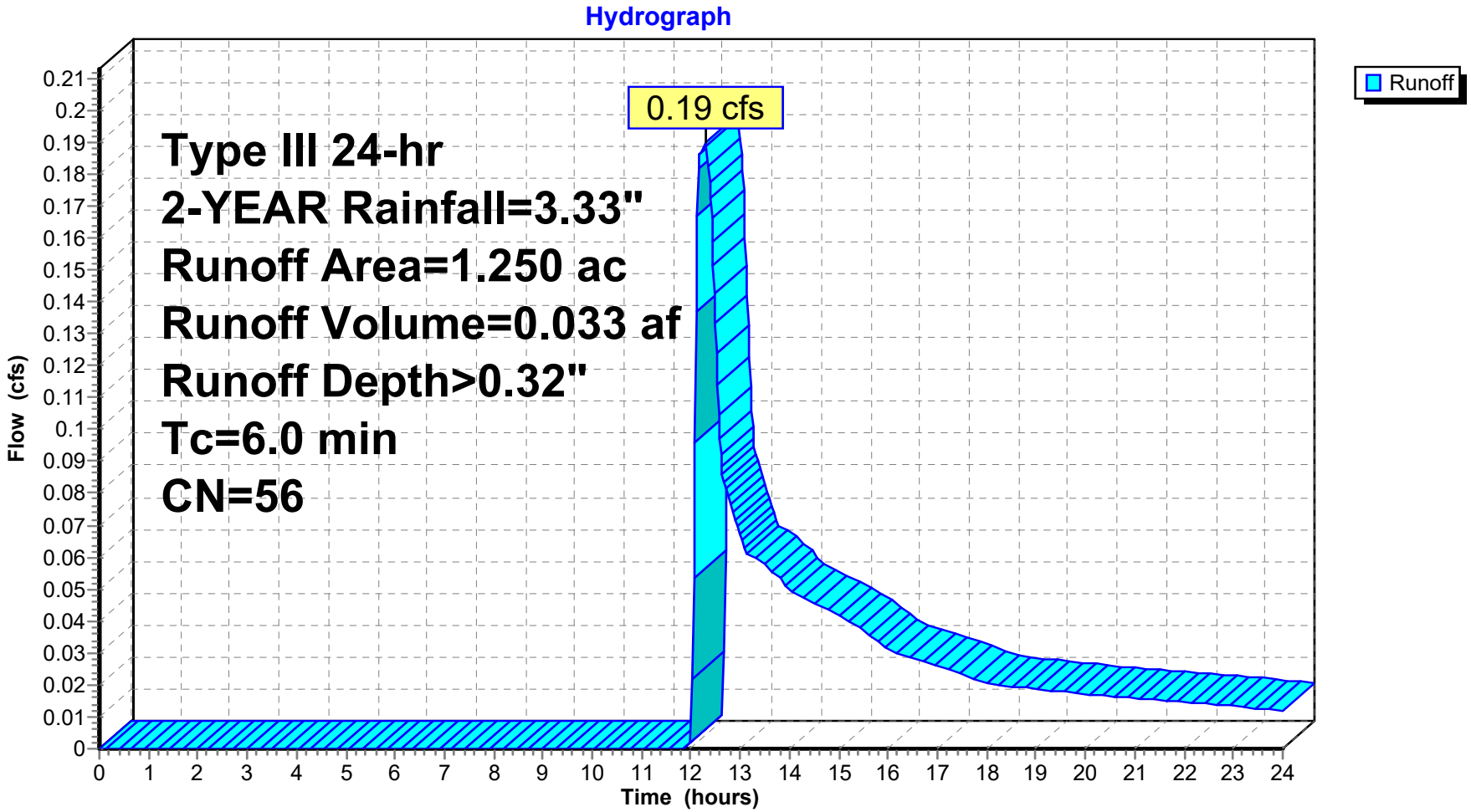
Runoff = 0.19 cfs @ 12.28 hrs, Volume= 0.033 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

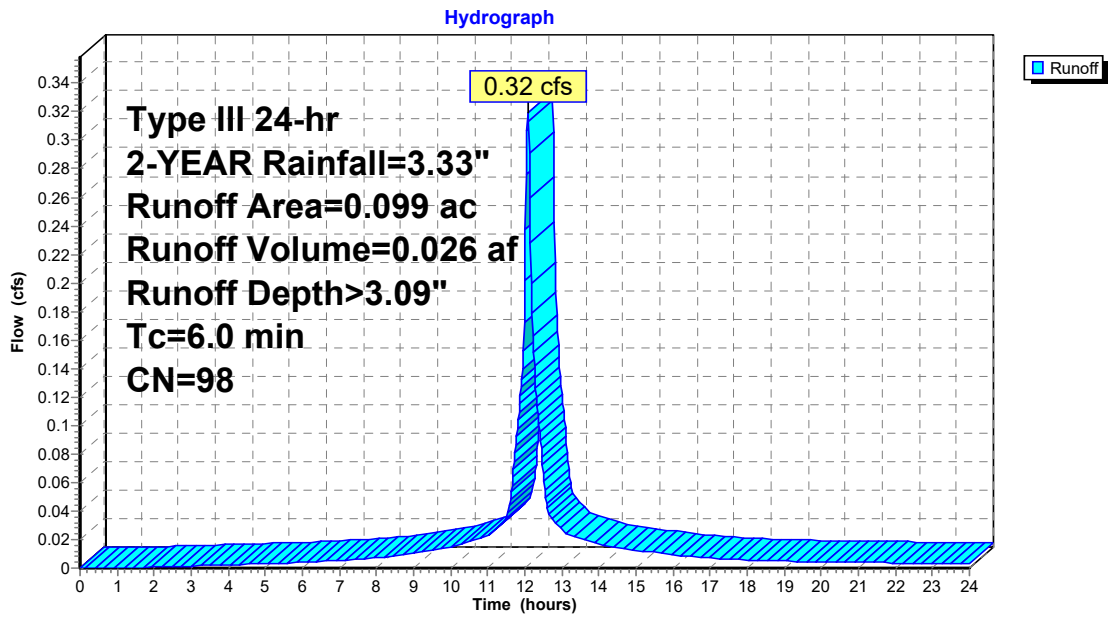
Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

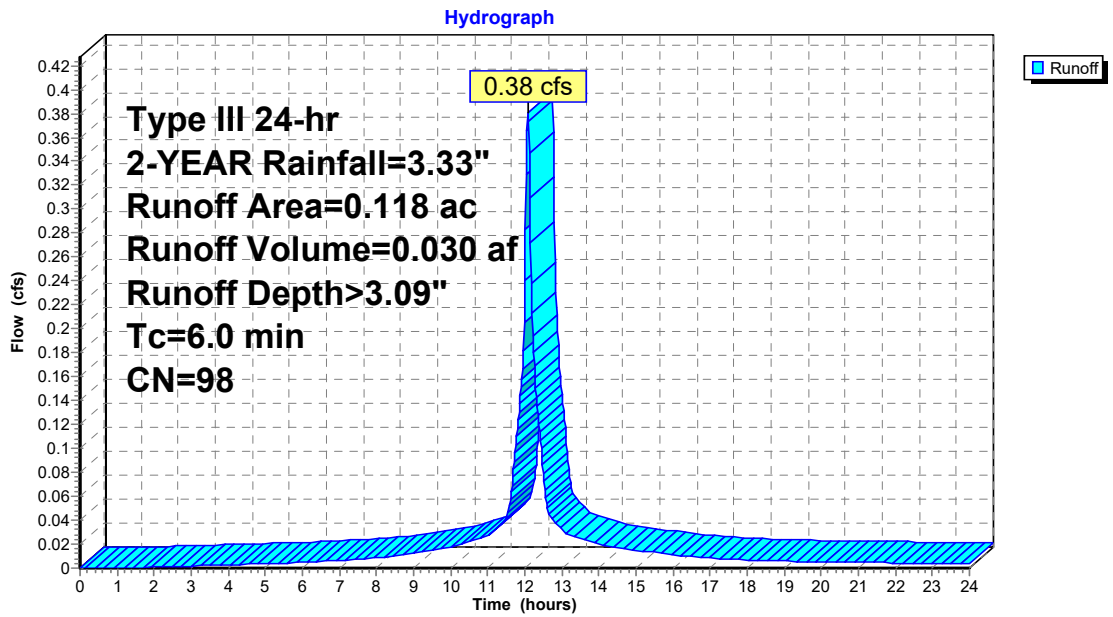
Runoff = 0.38 cfs @ 12.08 hrs, Volume= 0.030 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

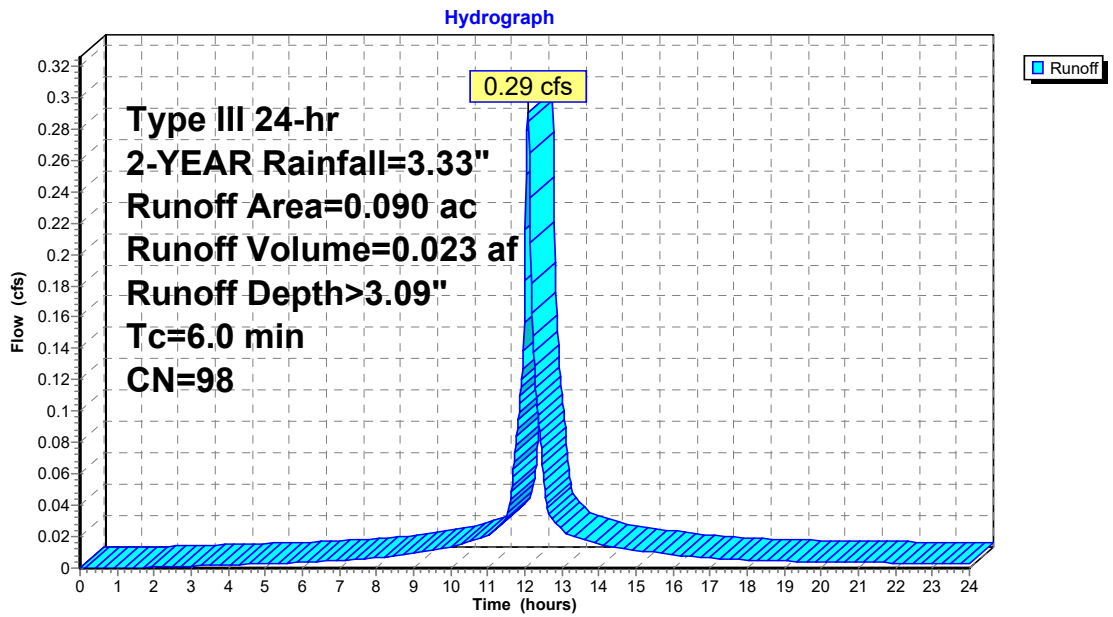
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

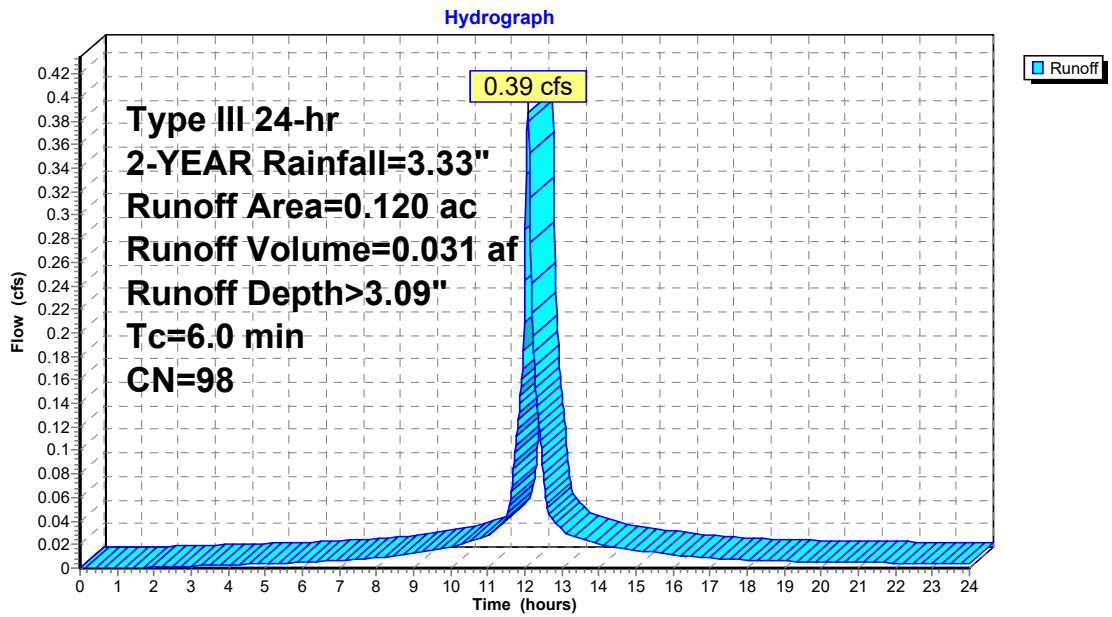
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.031 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-YEAR Rainfall=3.33"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



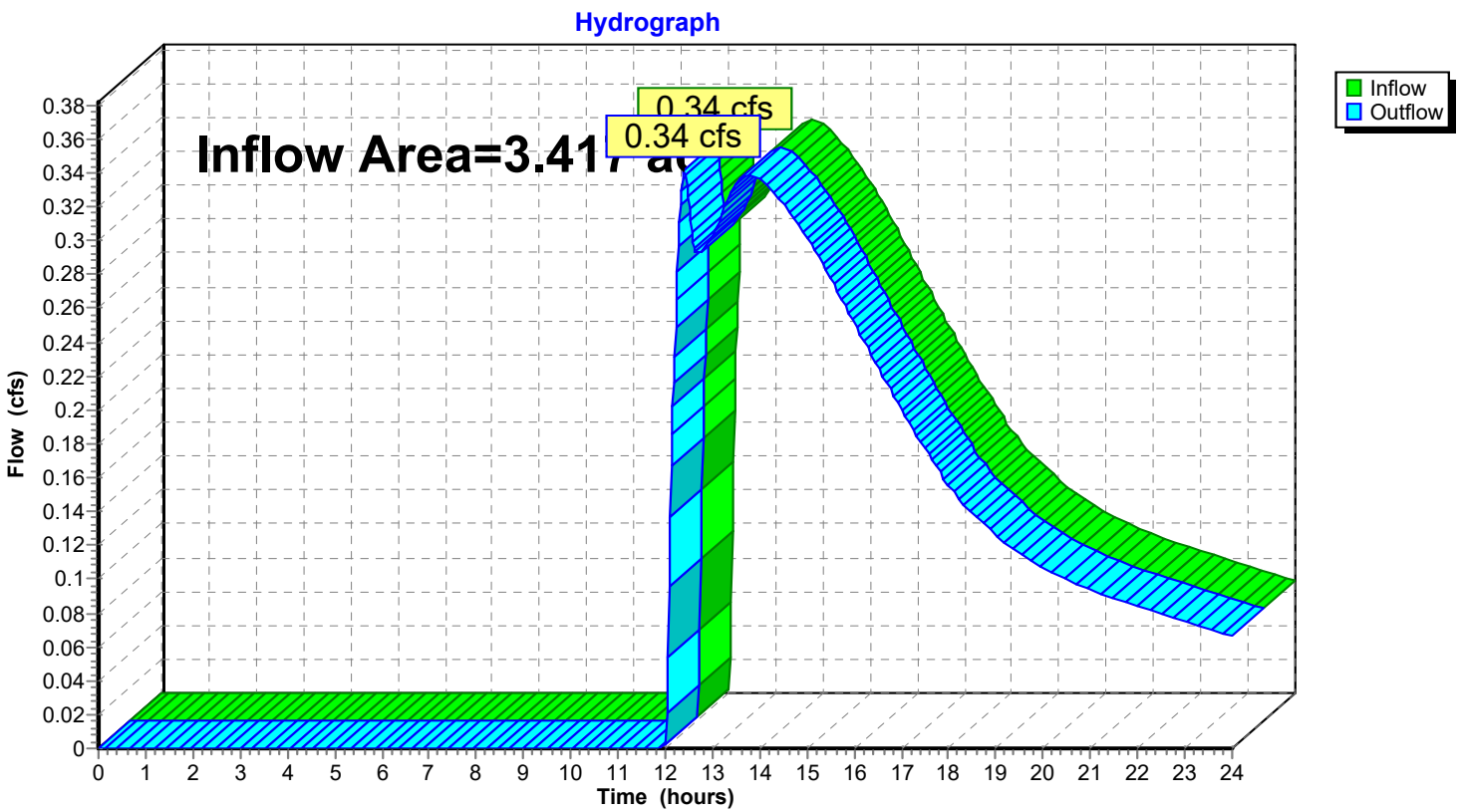
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 0.64" for 2-YEAR event
Inflow = 0.34 cfs @ 12.40 hrs, Volume= 0.181 af
Outflow = 0.34 cfs @ 12.40 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



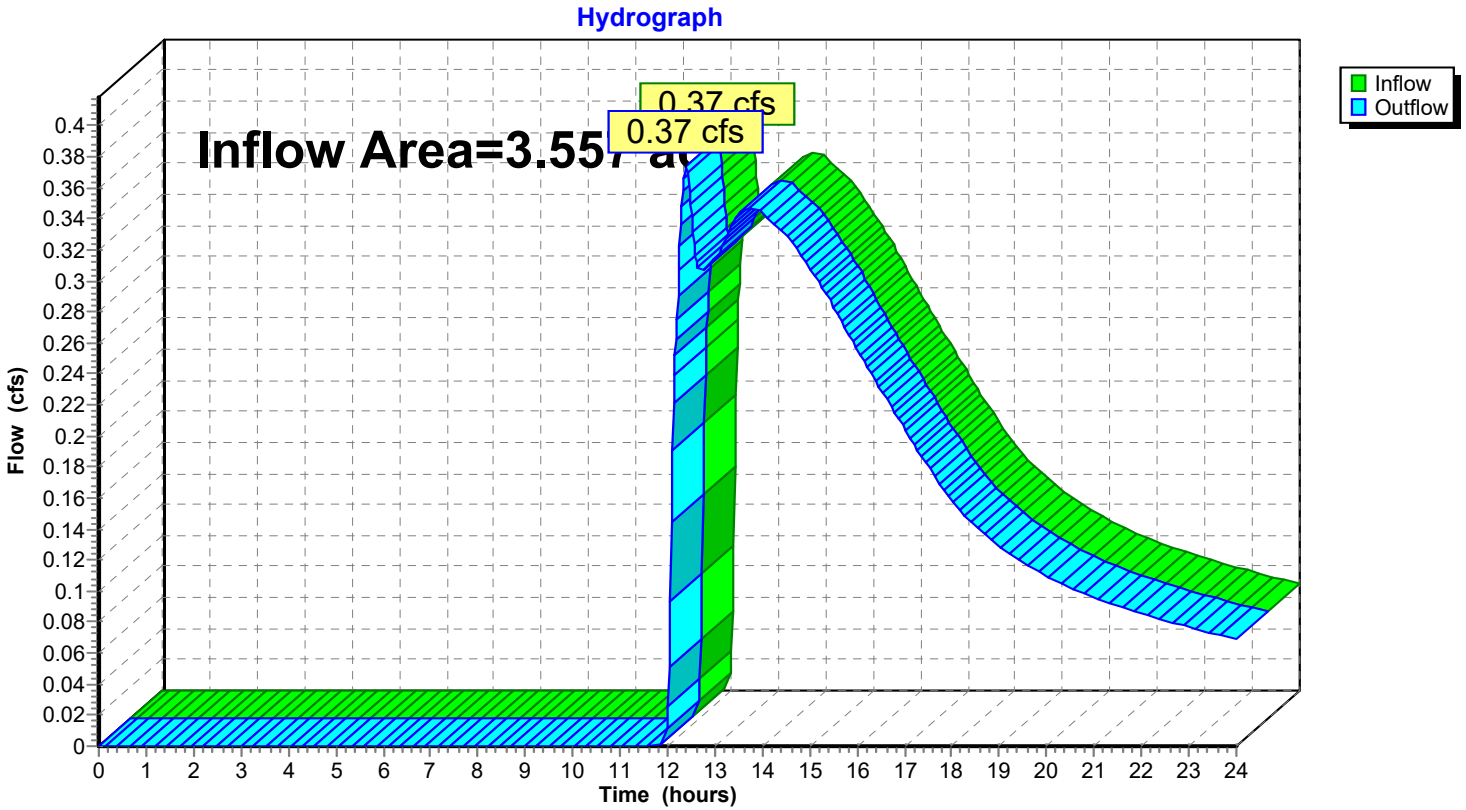
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 0.63" for 2-YEAR event
Inflow = 0.37 cfs @ 12.39 hrs, Volume= 0.187 af
Outflow = 0.37 cfs @ 12.39 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 1.43" for 2-YEAR event
Inflow = 1.00 cfs @ 12.09 hrs, Volume= 0.072 af
Outflow = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af, Atten= 93%, Lag= 122.0 min
Primary = 0.07 cfs @ 14.13 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.45' @ 14.13 hrs Surf.Area= 1,679 sf Storage= 1,915 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 306.2 min calculated for 0.031 af (43% of inflow)
Center-of-Mass det. time= 180.6 min (1,023.7 - 843.1)

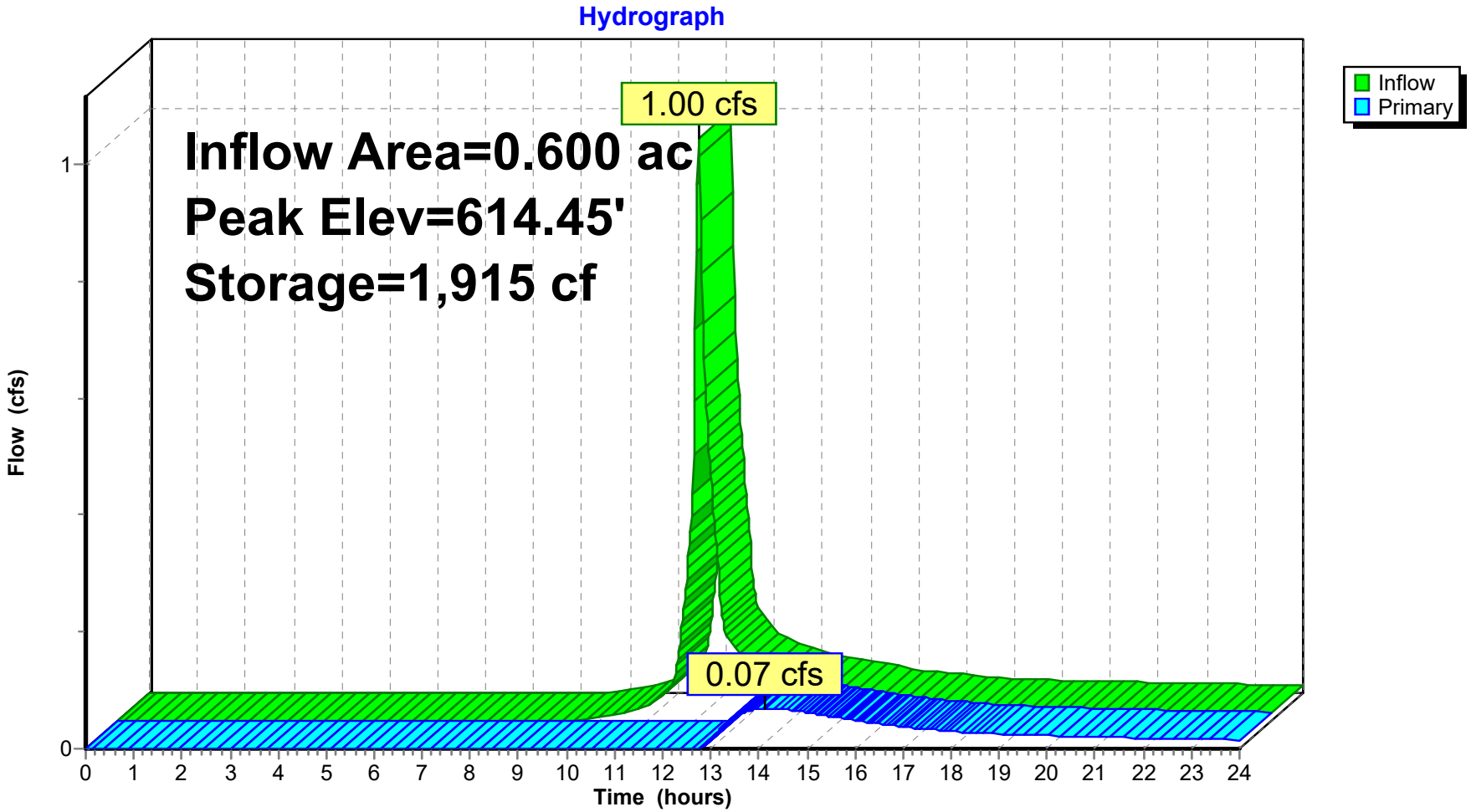
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

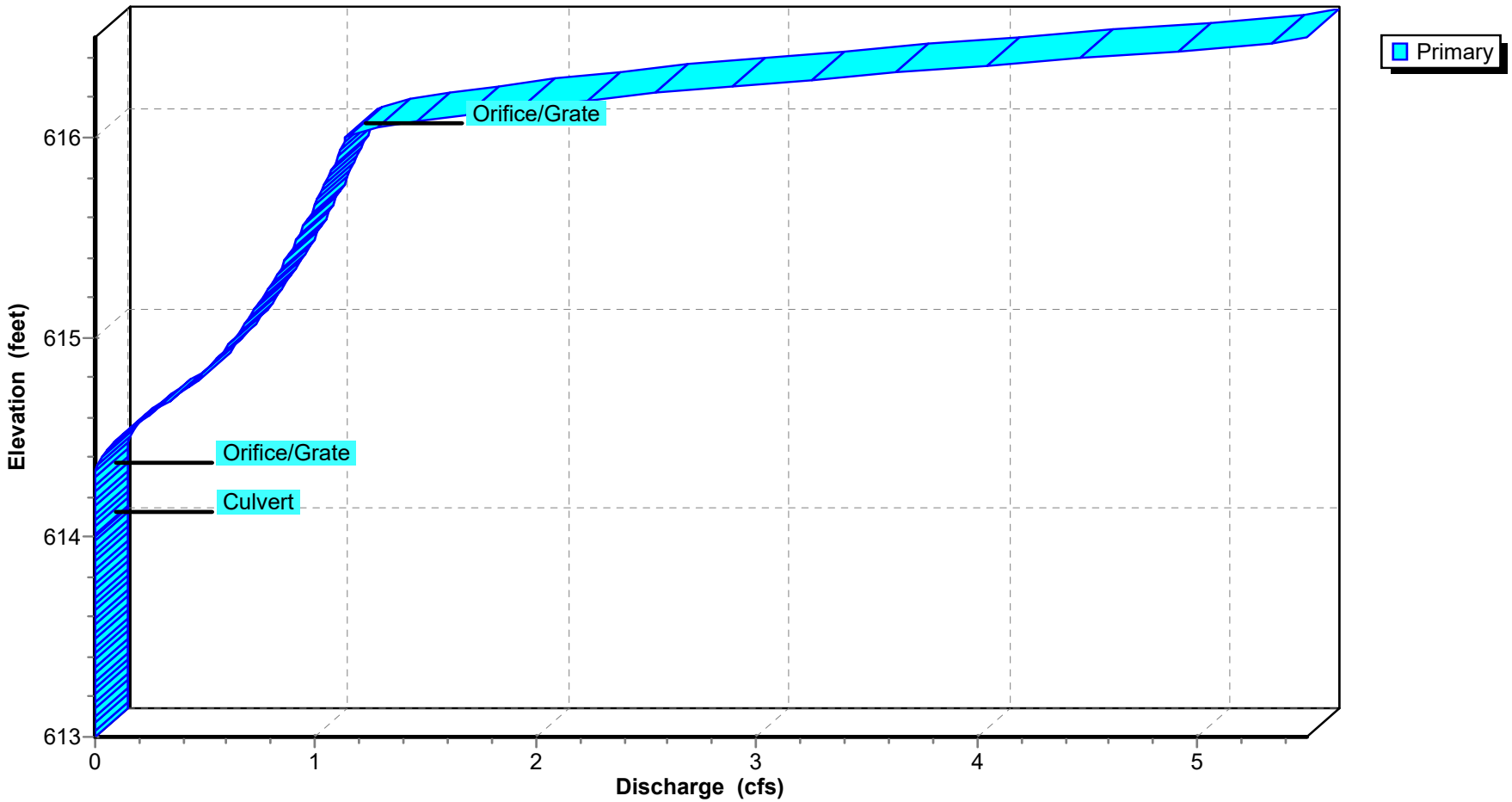
Primary OutFlow Max=0.07 cfs @ 14.13 hrs HW=614.45' (Free Discharge)
└─**1=Culvert** (Passes 0.07 cfs of 0.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.33 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

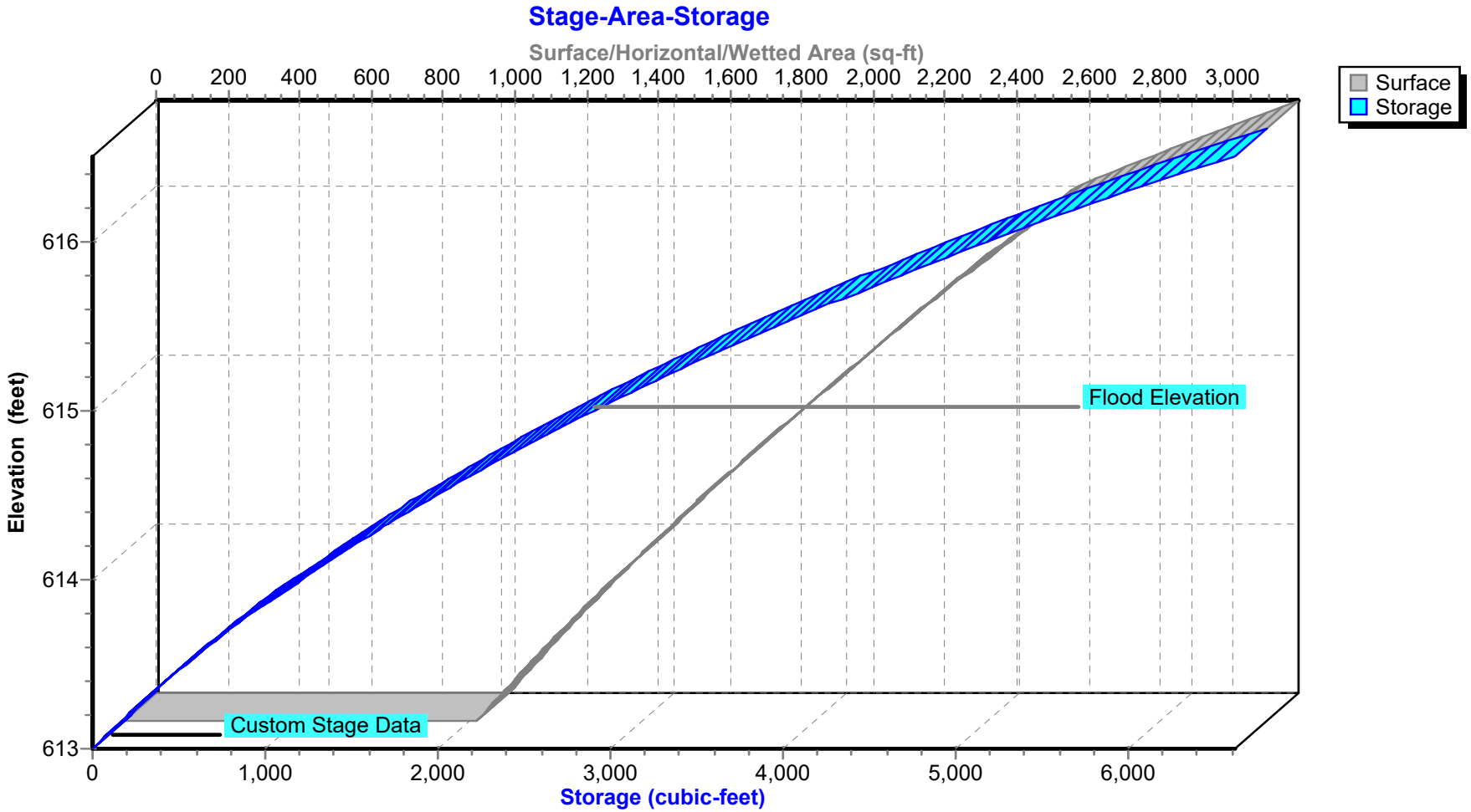


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 1.71" for 2-YEAR event
Inflow = 2.91 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 0.22 cfs @ 13.38 hrs, Volume= 0.117 af, Atten= 92%, Lag= 77.6 min
Primary = 0.22 cfs @ 13.38 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.31' @ 13.38 hrs Surf.Area= 5,936 sf Storage= 5,415 cf

Plug-Flow detention time= 278.9 min calculated for 0.117 af (56% of inflow)
Center-of-Mass det. time= 171.8 min (980.7 - 808.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 13.38 hrs HW=615.31' (Free Discharge)
└─**1=Culvert** (Passes 0.22 cfs of 5.70 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 2.55 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

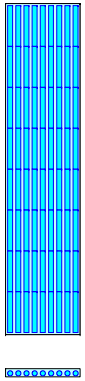
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

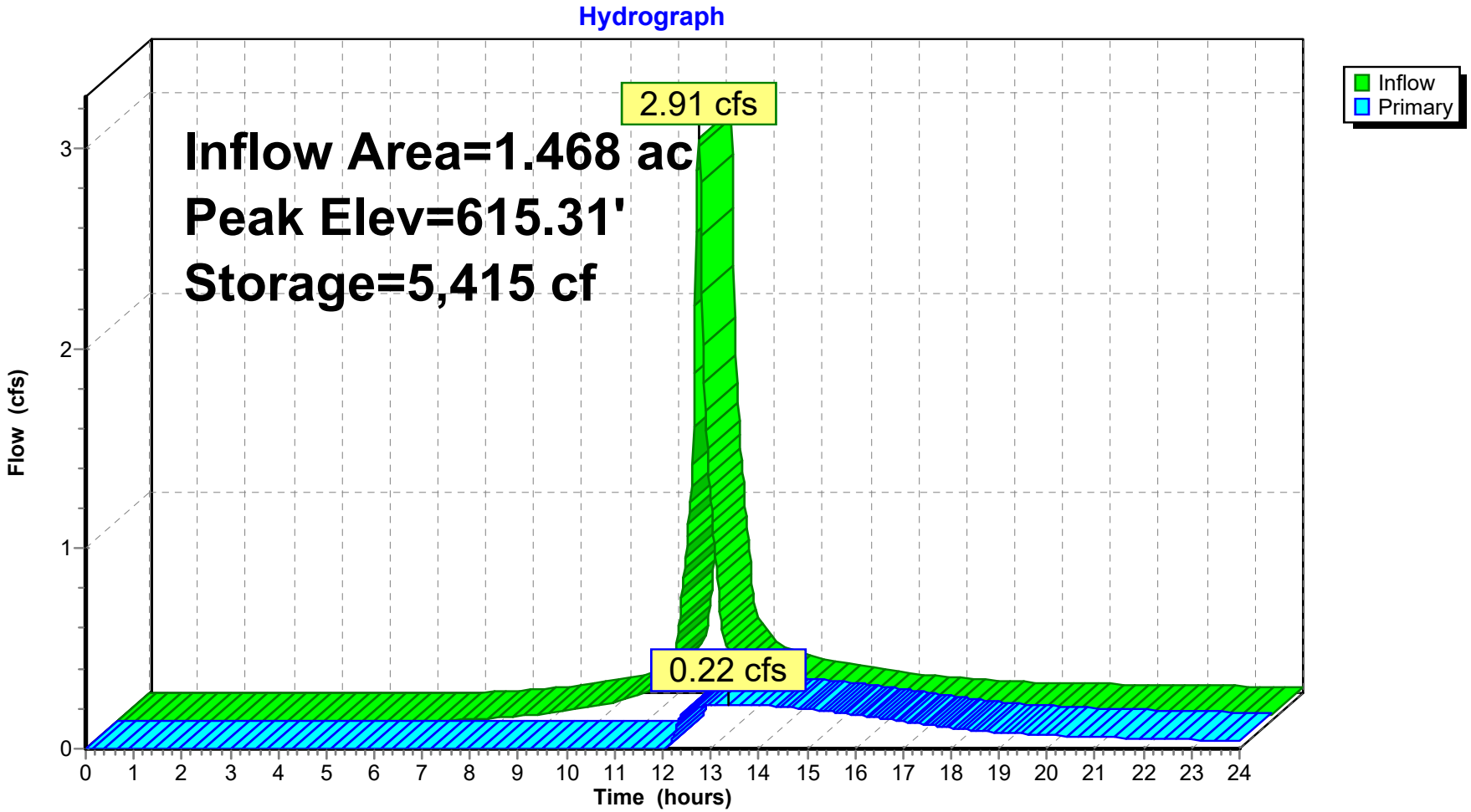
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

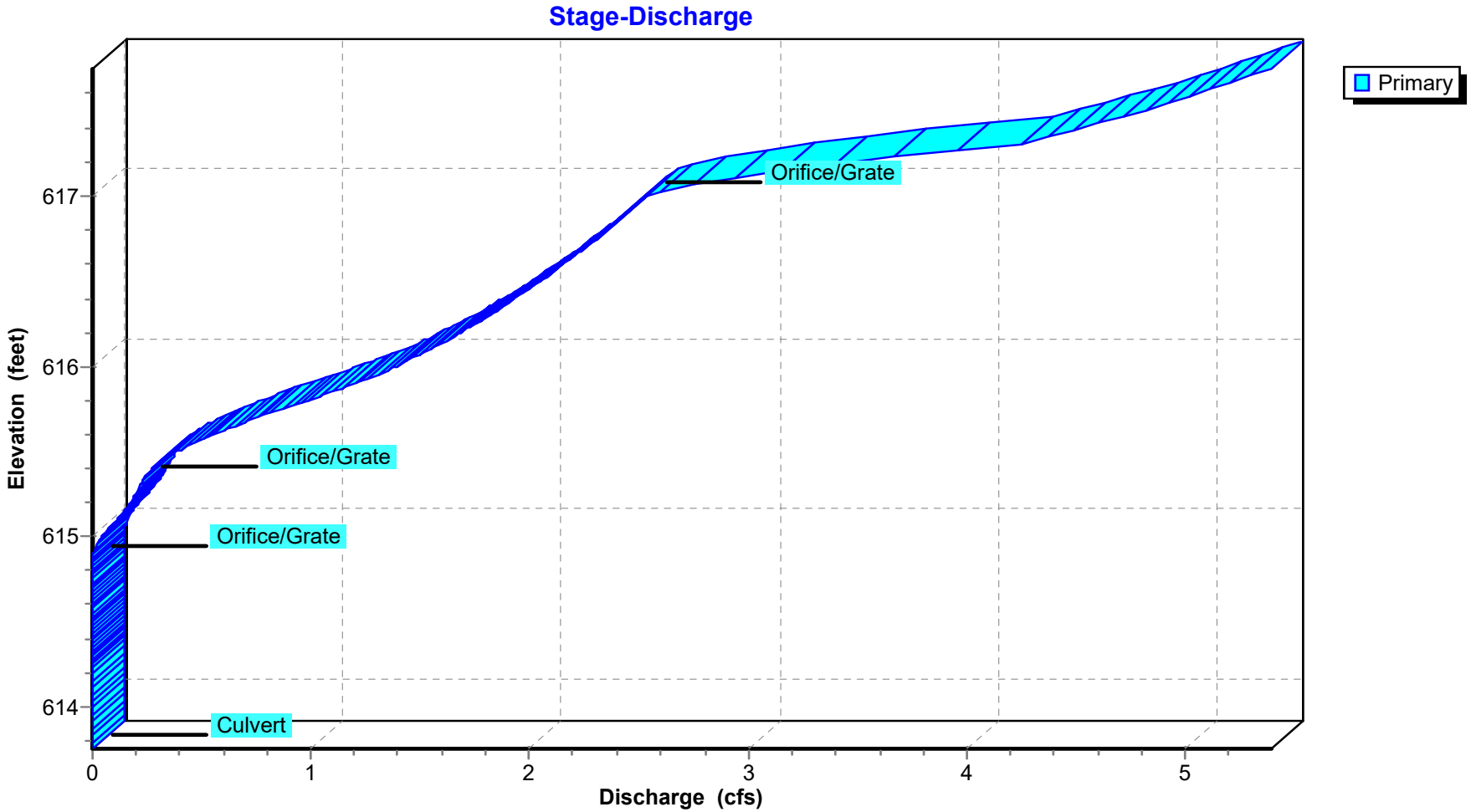
72 Chambers
876.0 cy Field
614.2 cy Stone



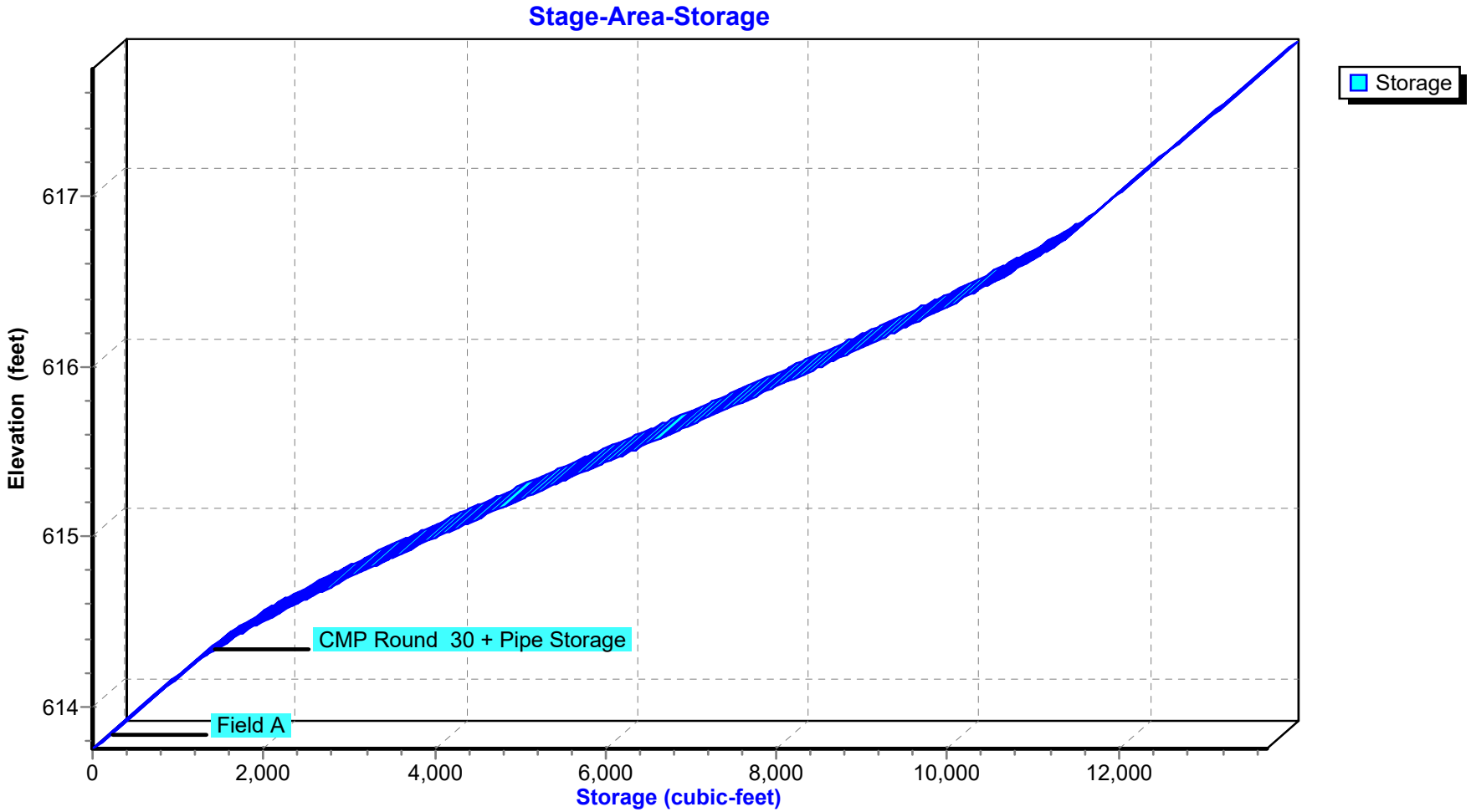
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.22' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

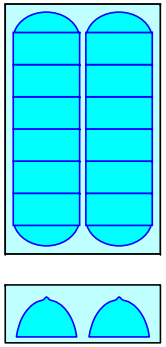
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

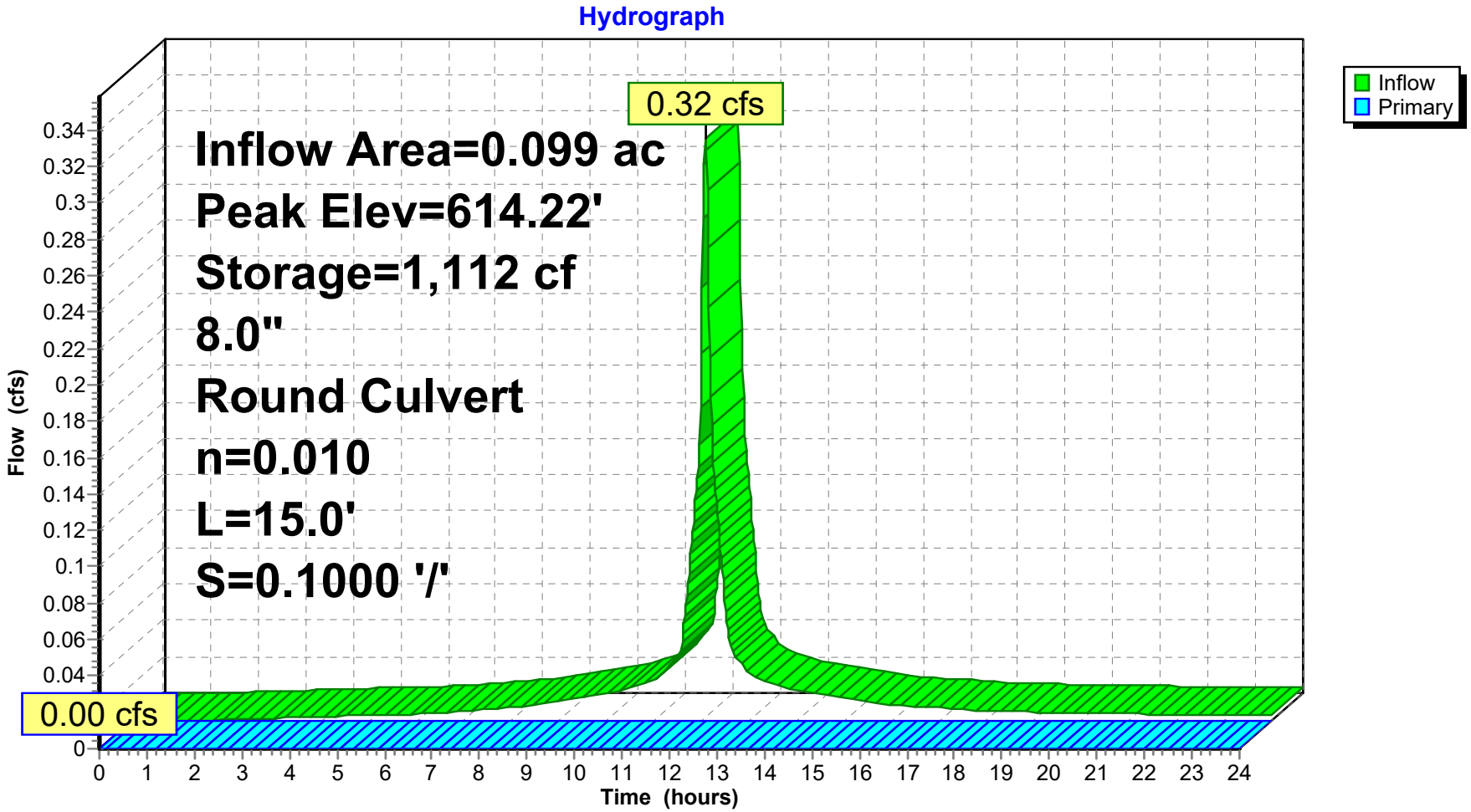
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

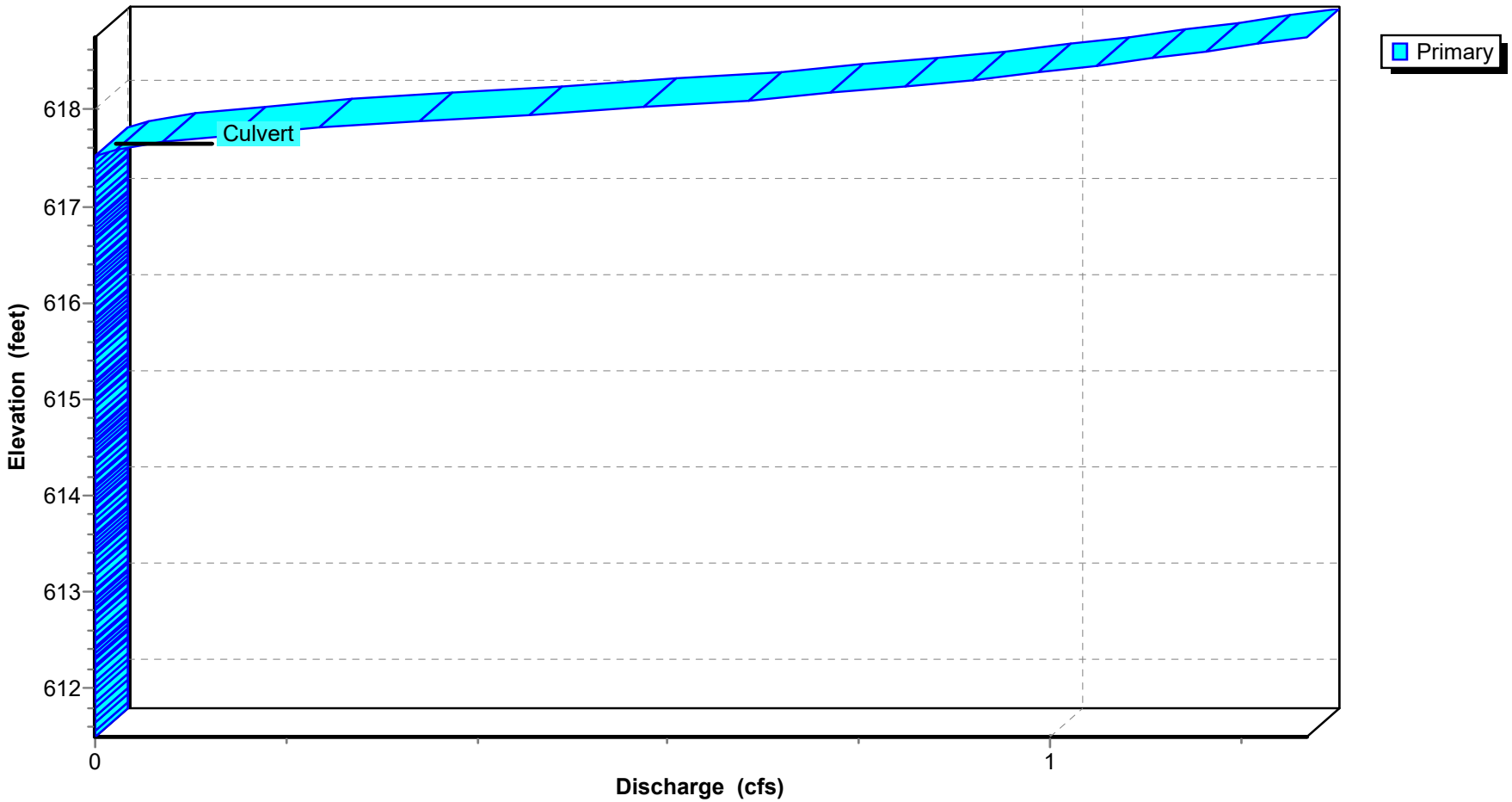


Pond 3P: ROOF INFILTRATION

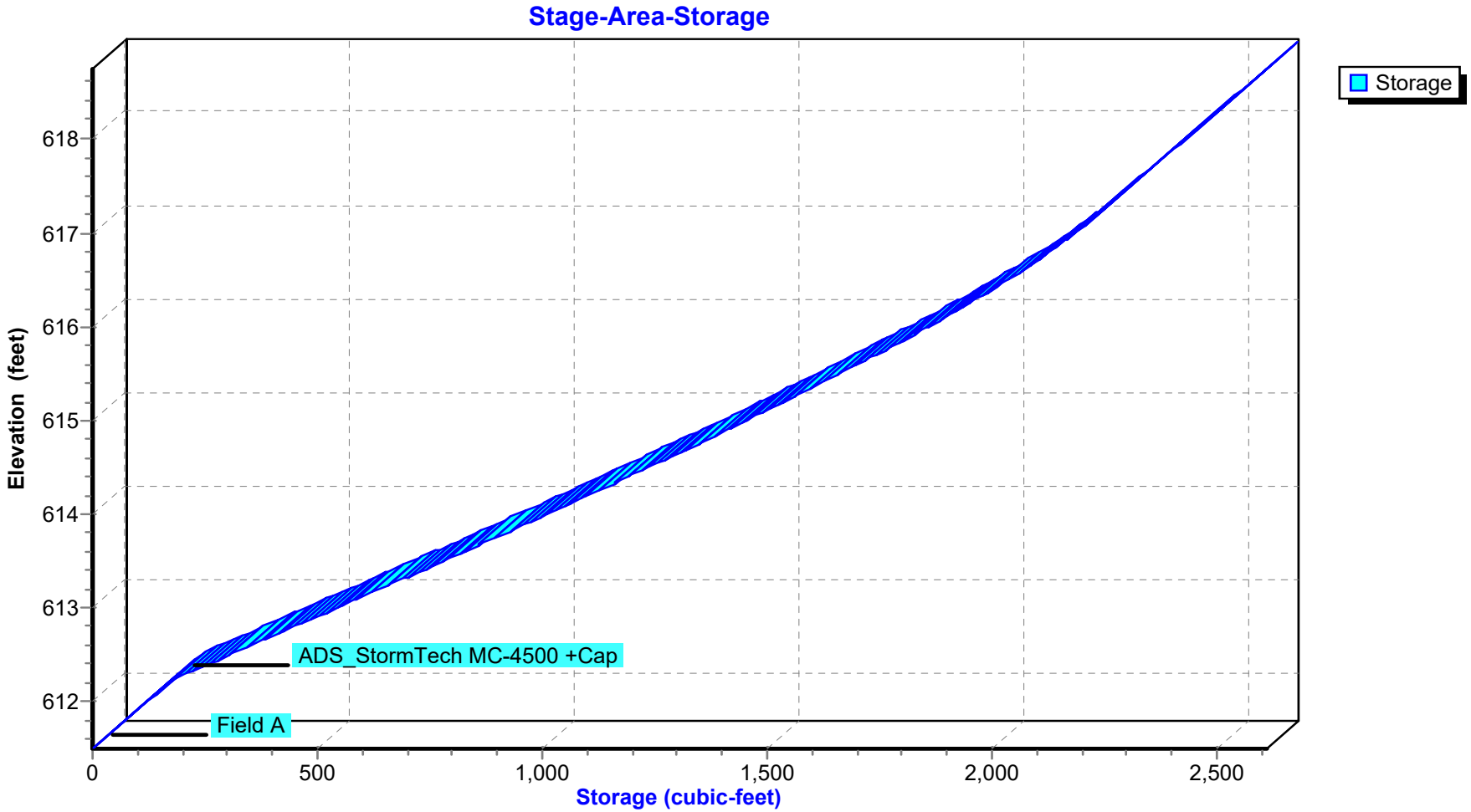


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 3.09" for 2-YEAR event
Inflow = 1.06 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.12' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.085 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

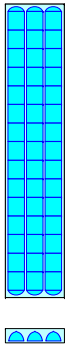
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

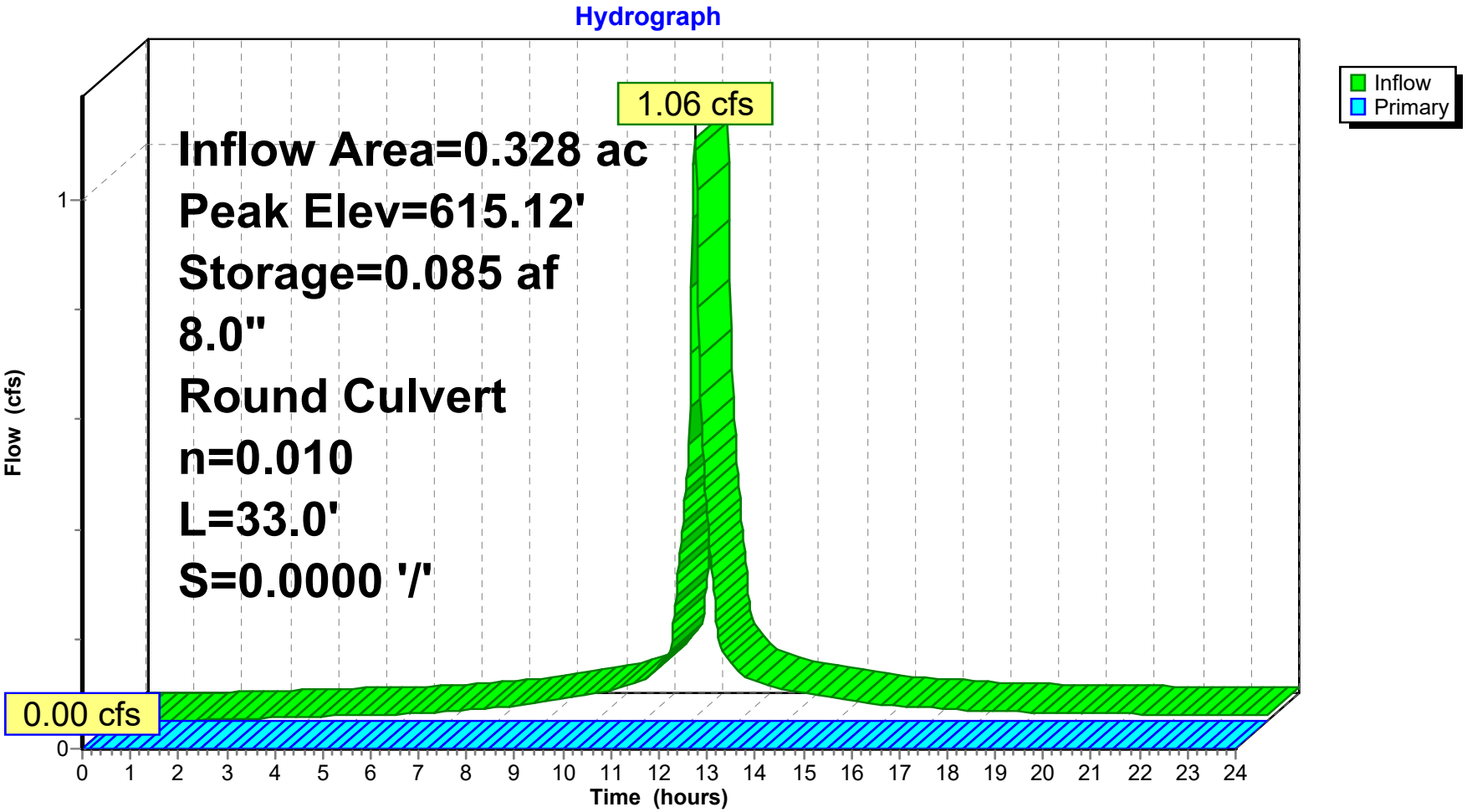
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

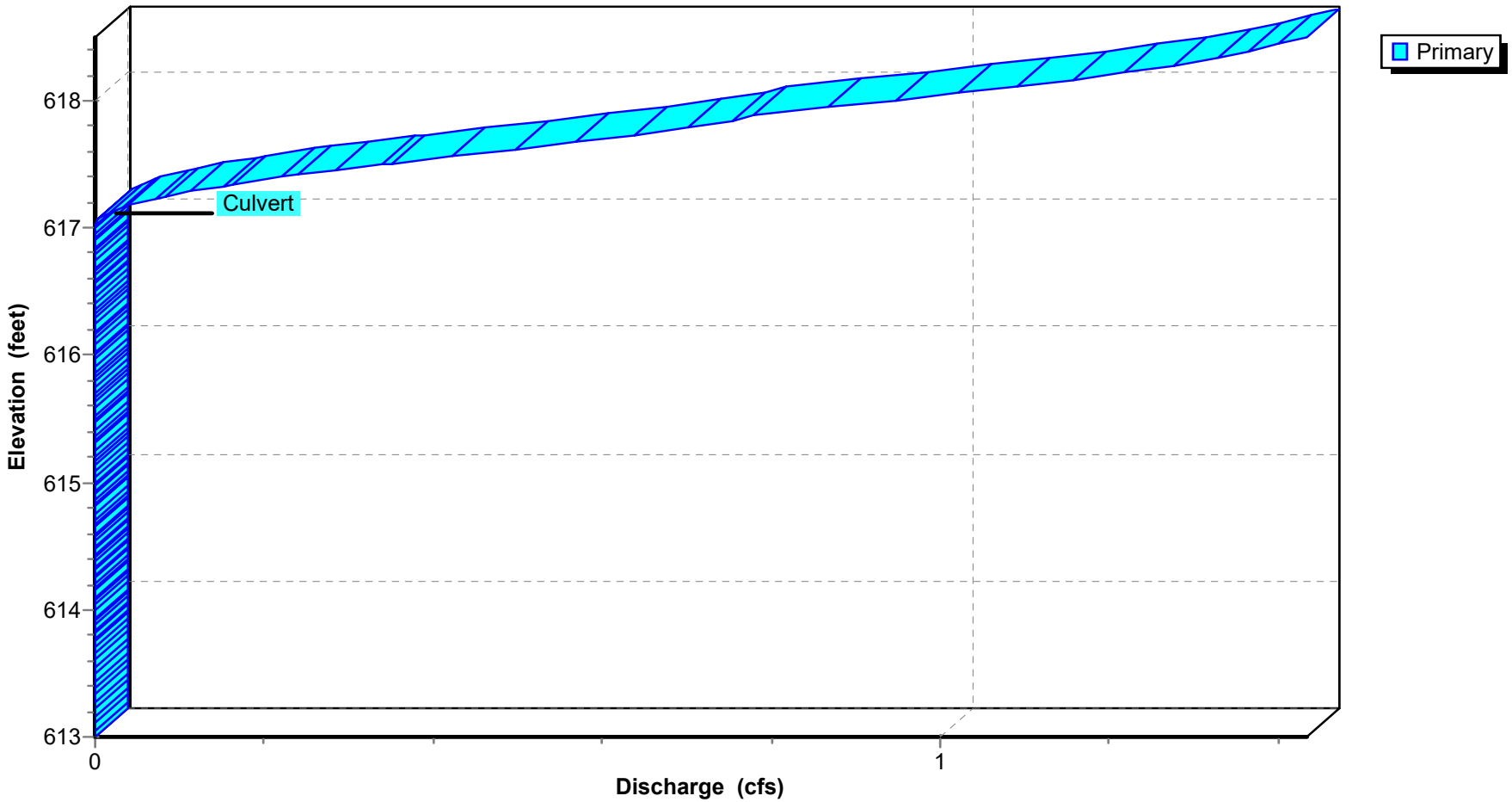


Pond 4P: ROOF INFILTRATION

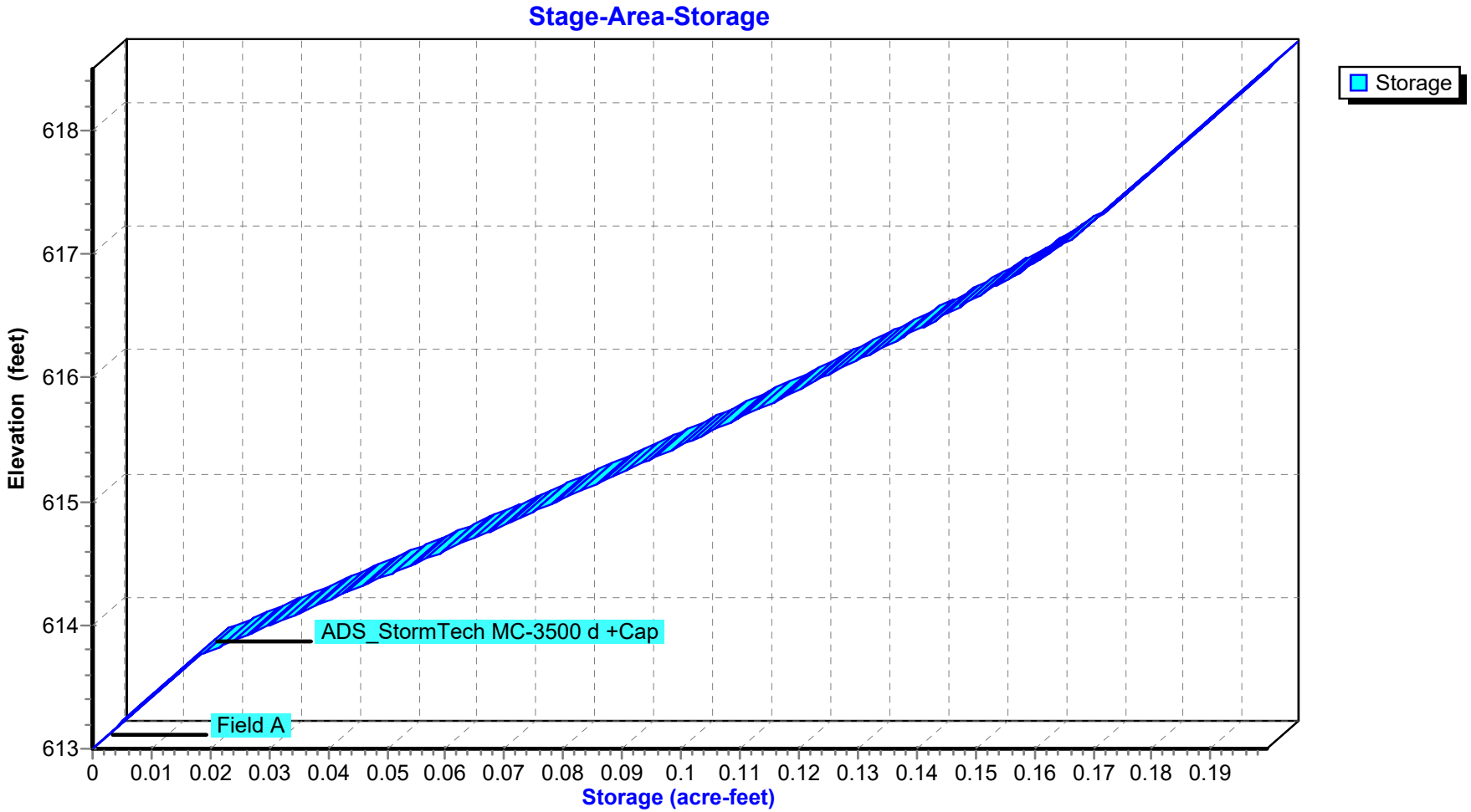


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>1.40"
Tc=6.0 min CN=61 Runoff=0.21 cfs 0.016 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>2.84"
Tc=6.0 min CN=79 Runoff=2.00 cfs 0.142 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>3.82"
Tc=6.0 min CN=89 Runoff=4.95 cfs 0.363 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.07"
Tc=6.0 min CN=56 Runoff=1.29 cfs 0.111 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.49 cfs 0.040 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.047 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=2.37 cfs 0.478 af
Outflow=2.37 cfs 0.478 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=2.47 cfs 0.495 af
Outflow=2.47 cfs 0.495 af

Pond 1P: DETENTION BASIN Peak Elev=614.89' Storage=2,704 cf Inflow=2.00 cfs 0.142 af
Outflow=0.55 cfs 0.101 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=615.90' Storage=8,102 cf Inflow=4.95 cfs 0.363 af
Outflow=1.22 cfs 0.267 af

Pond 3P: ROOF INFILTRATION Peak Elev=615.66' Storage=1,728 cf Inflow=0.49 cfs 0.040 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.18' Storage=0.131 af Inflow=1.62 cfs 0.131 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 0.803 af Average Runoff Depth = 2.71"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

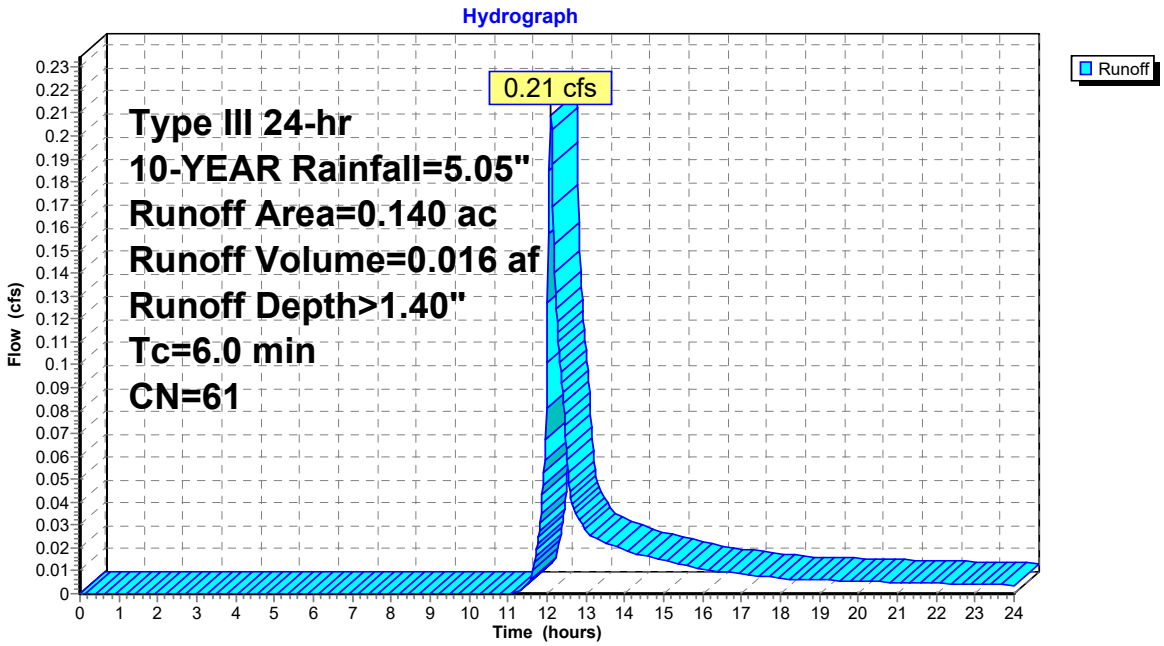
Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.016 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

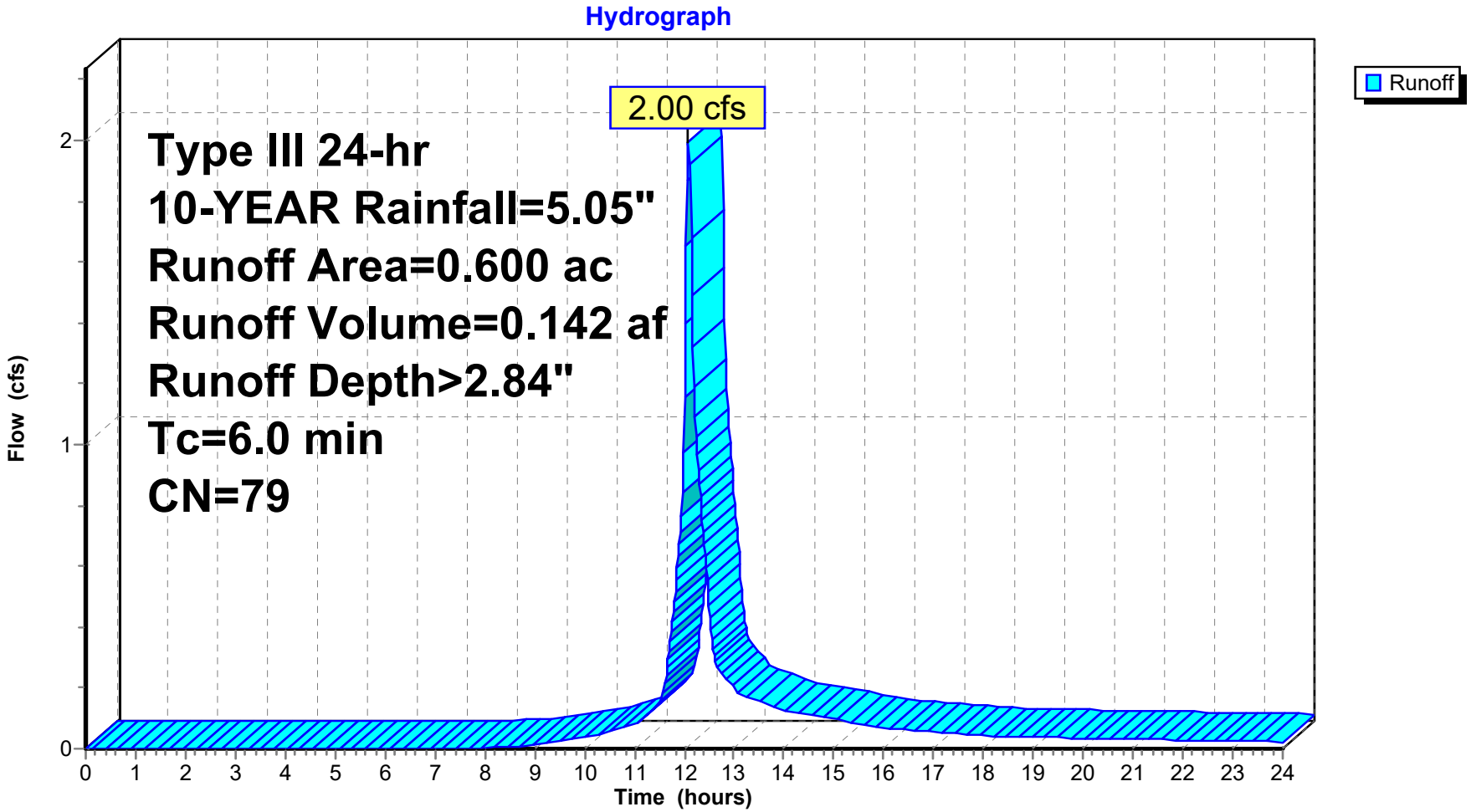
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

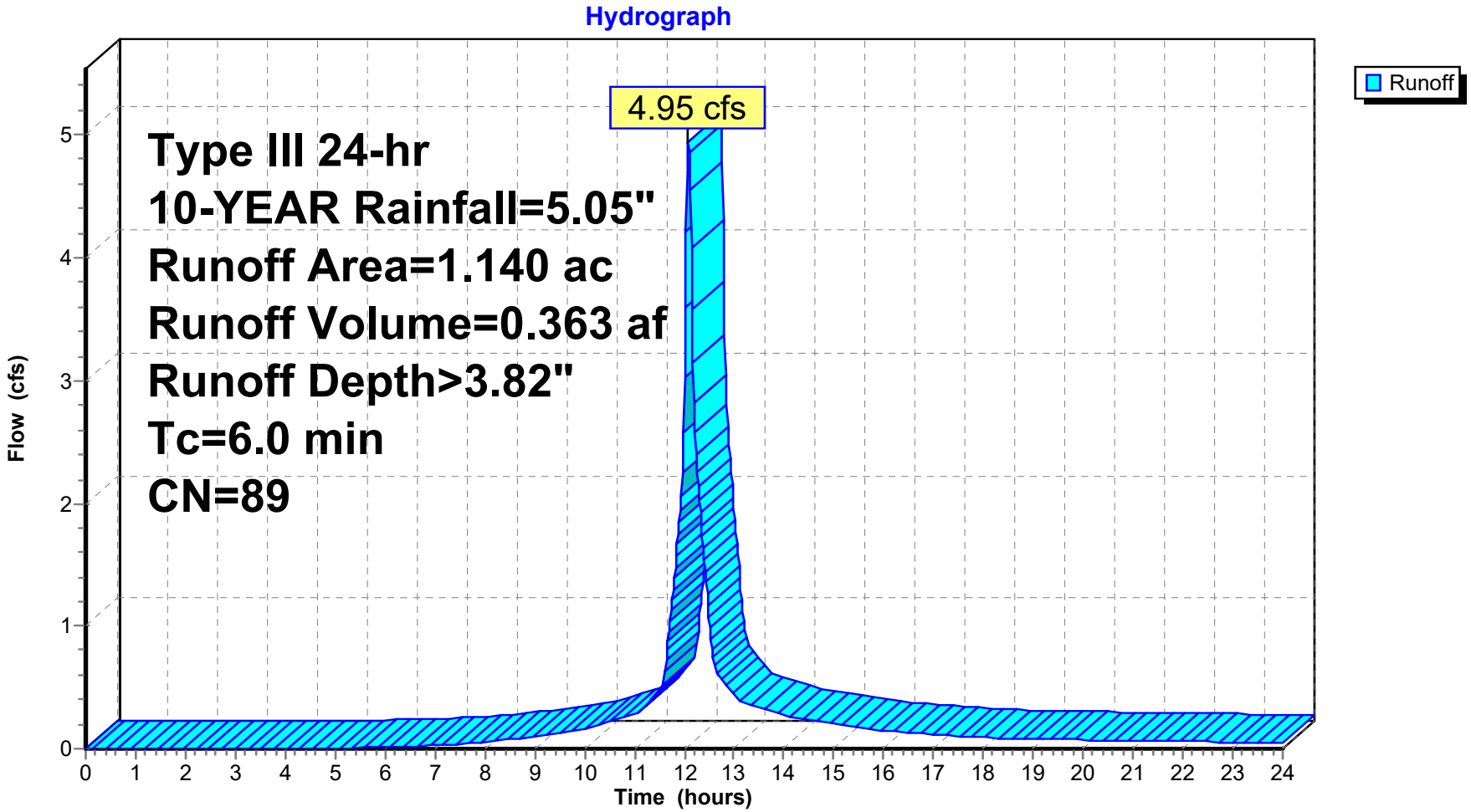
Runoff = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

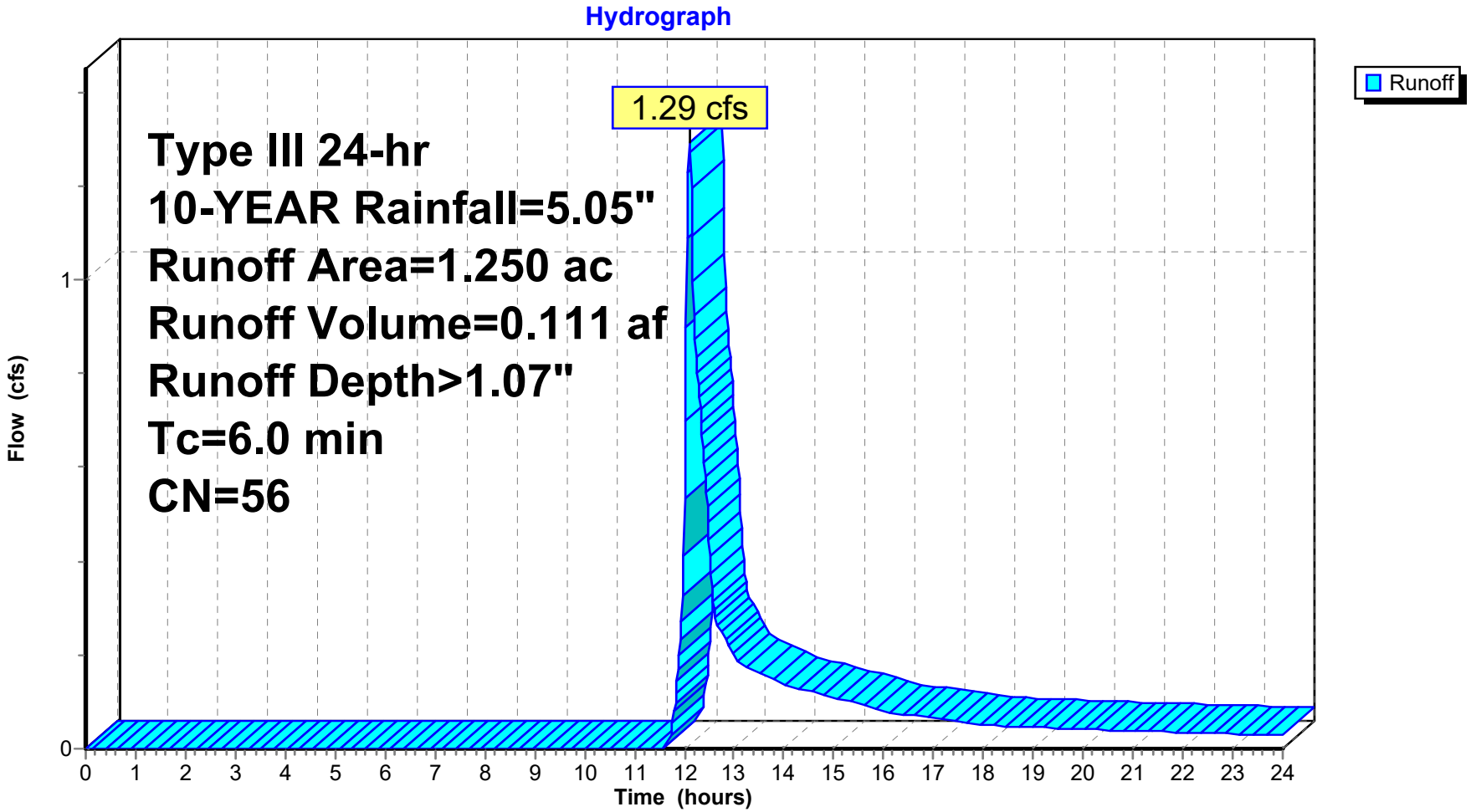
Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.111 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

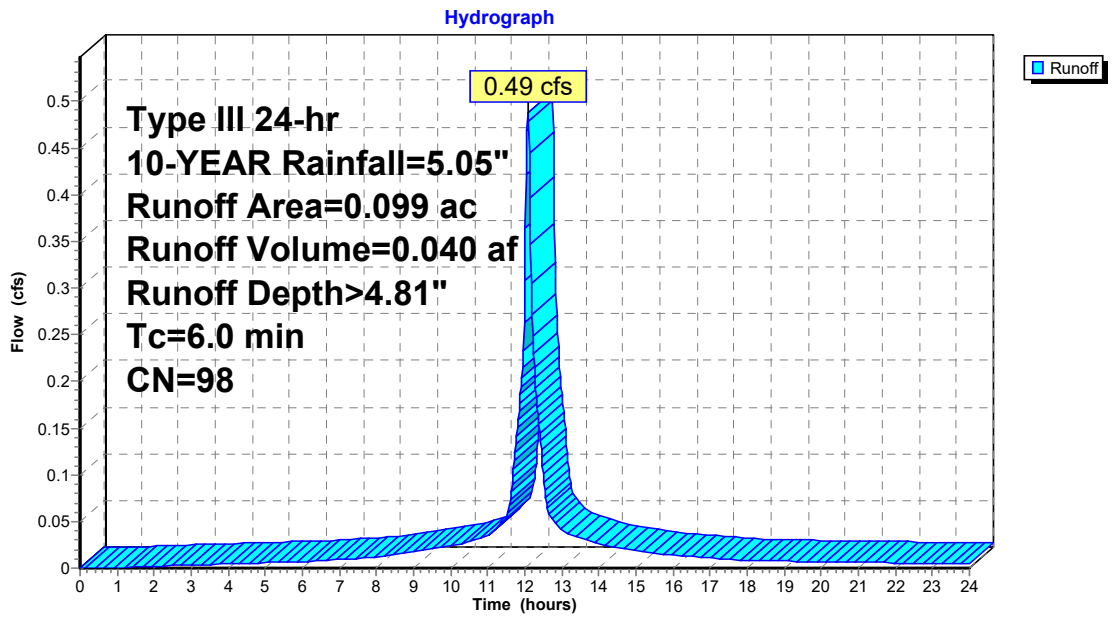
Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

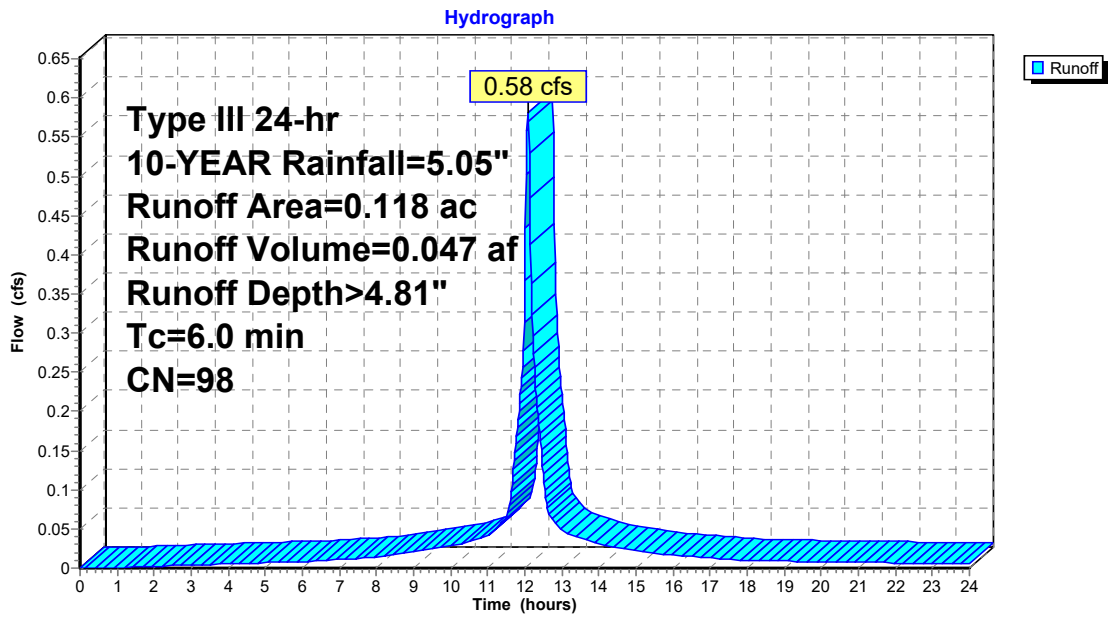
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

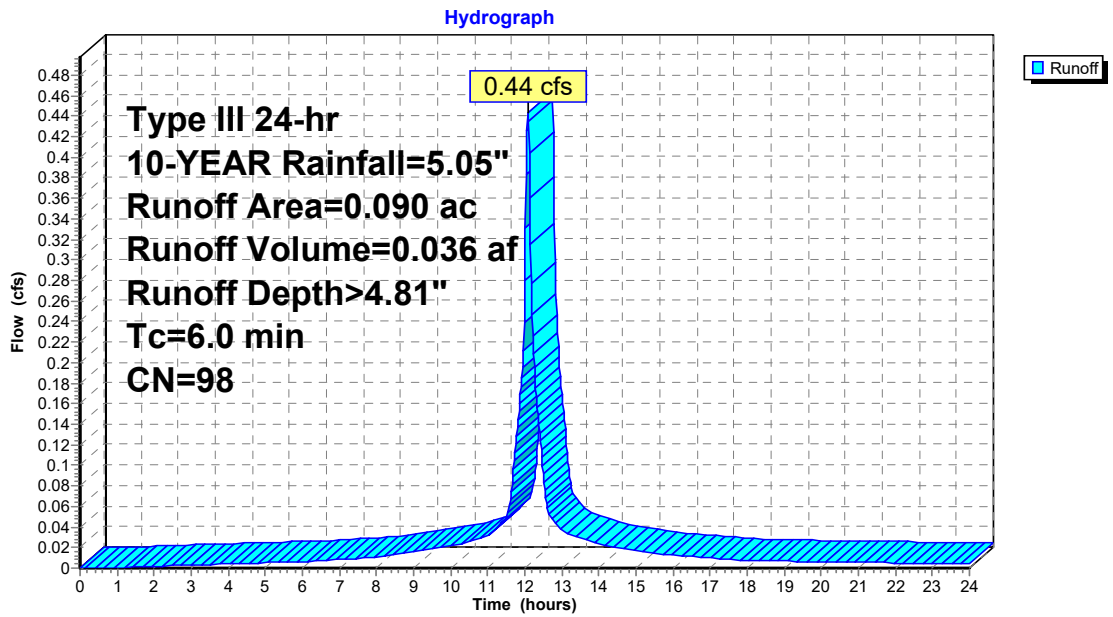
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

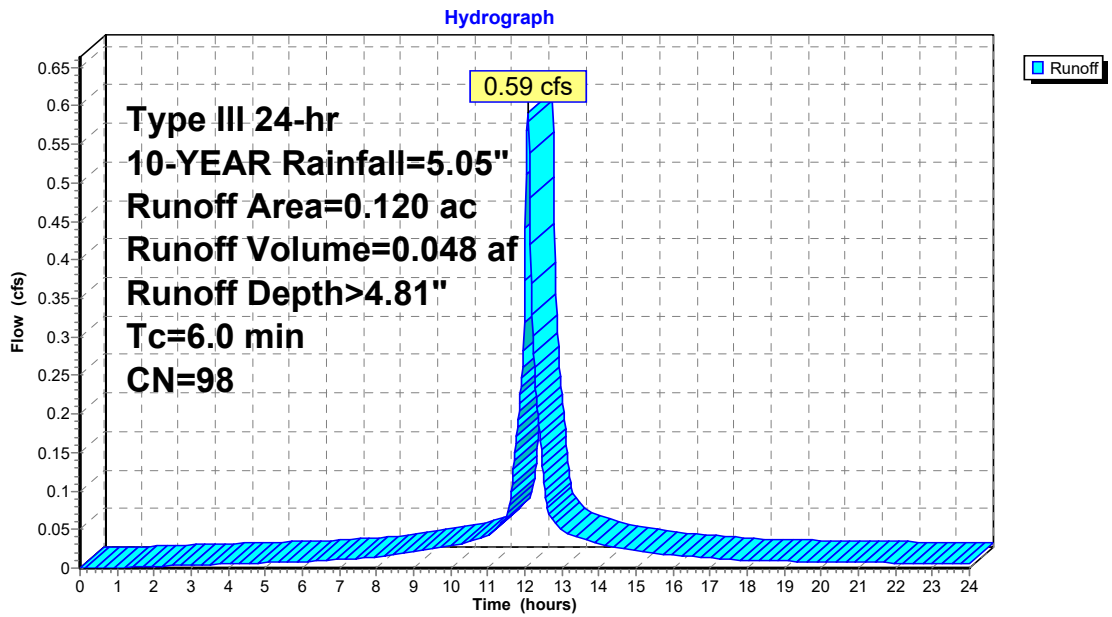
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-YEAR Rainfall=5.05"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



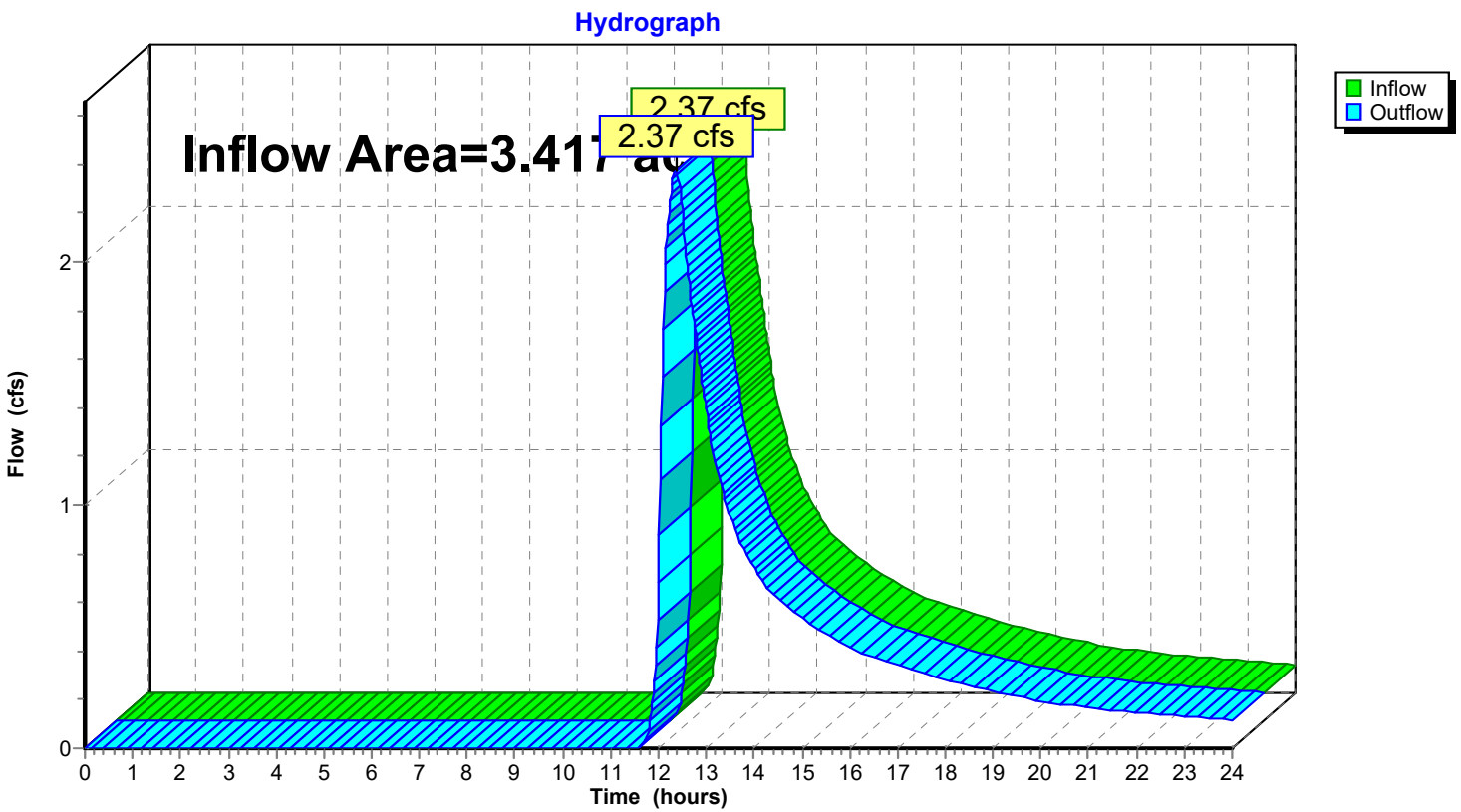
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 1.68" for 10-YEAR event
Inflow = 2.37 cfs @ 12.36 hrs, Volume= 0.478 af
Outflow = 2.37 cfs @ 12.36 hrs, Volume= 0.478 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



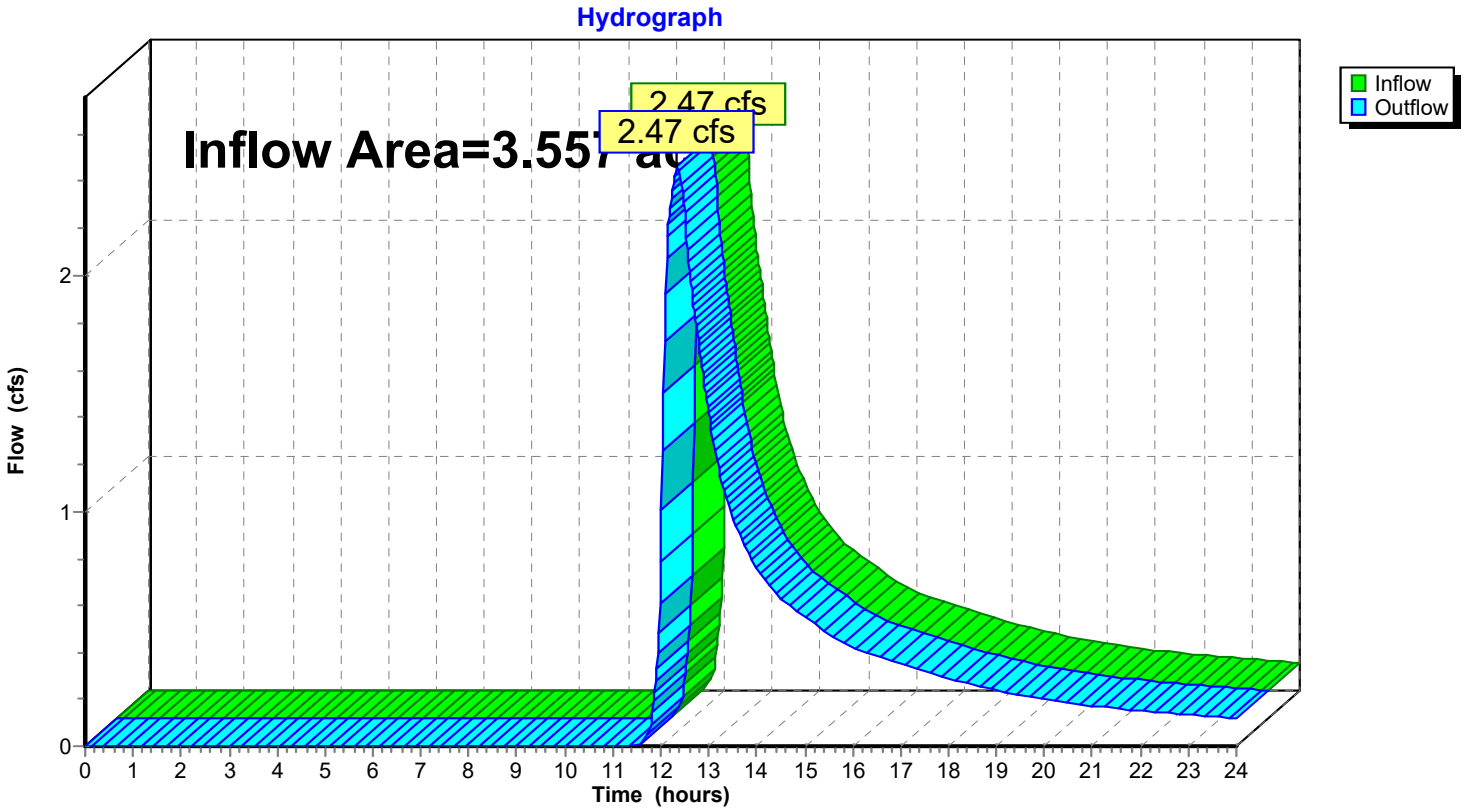
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 1.67" for 10-YEAR event
Inflow = 2.47 cfs @ 12.35 hrs, Volume= 0.495 af
Outflow = 2.47 cfs @ 12.35 hrs, Volume= 0.495 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 2.84" for 10-YEAR event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af, Atten= 72%, Lag= 22.3 min
Primary = 0.55 cfs @ 12.46 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 614.89' @ 12.46 hrs Surf.Area= 1,921 sf Storage= 2,704 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 172.5 min calculated for 0.101 af (71% of inflow)
Center-of-Mass det. time= 78.2 min (901.5 - 823.4)

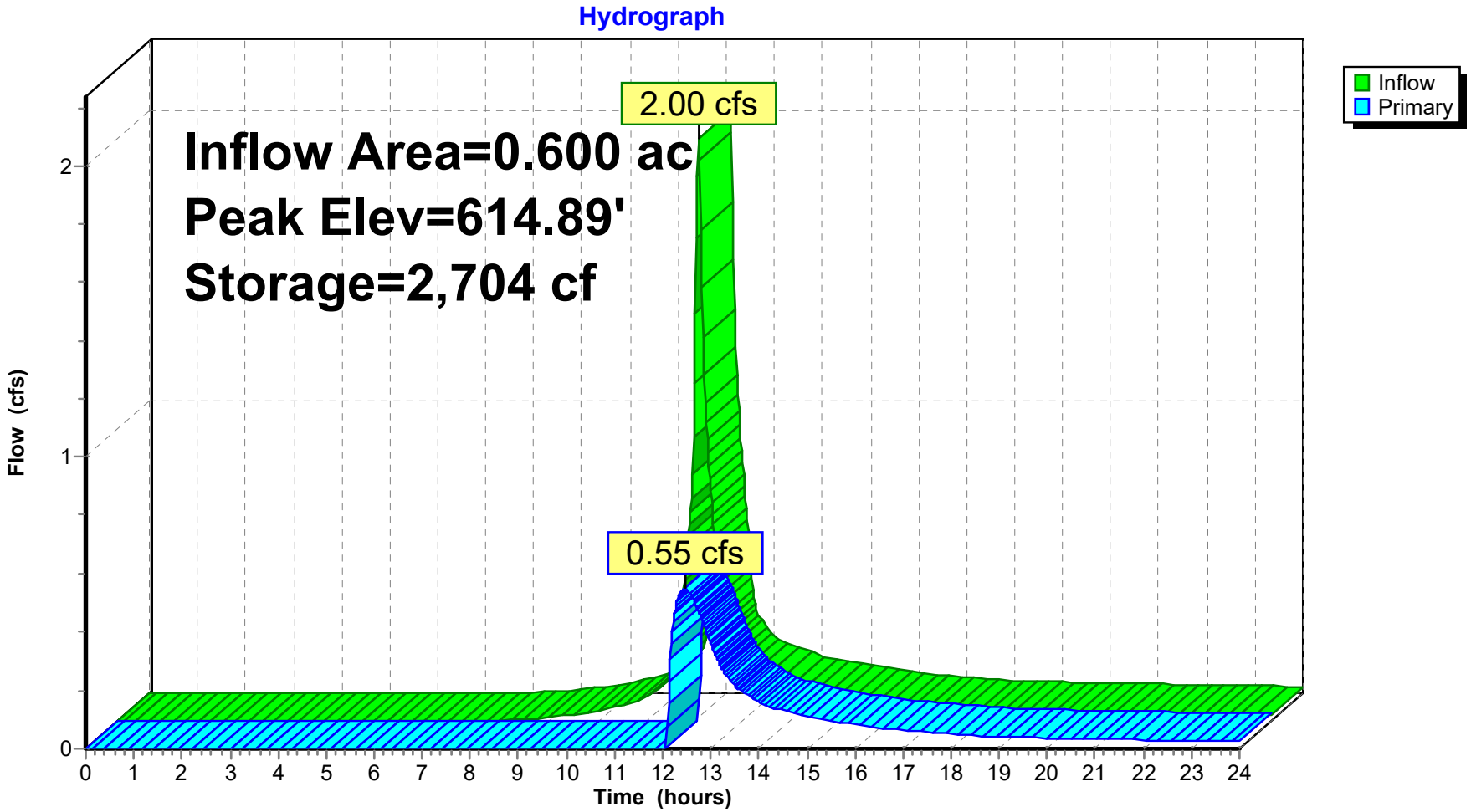
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

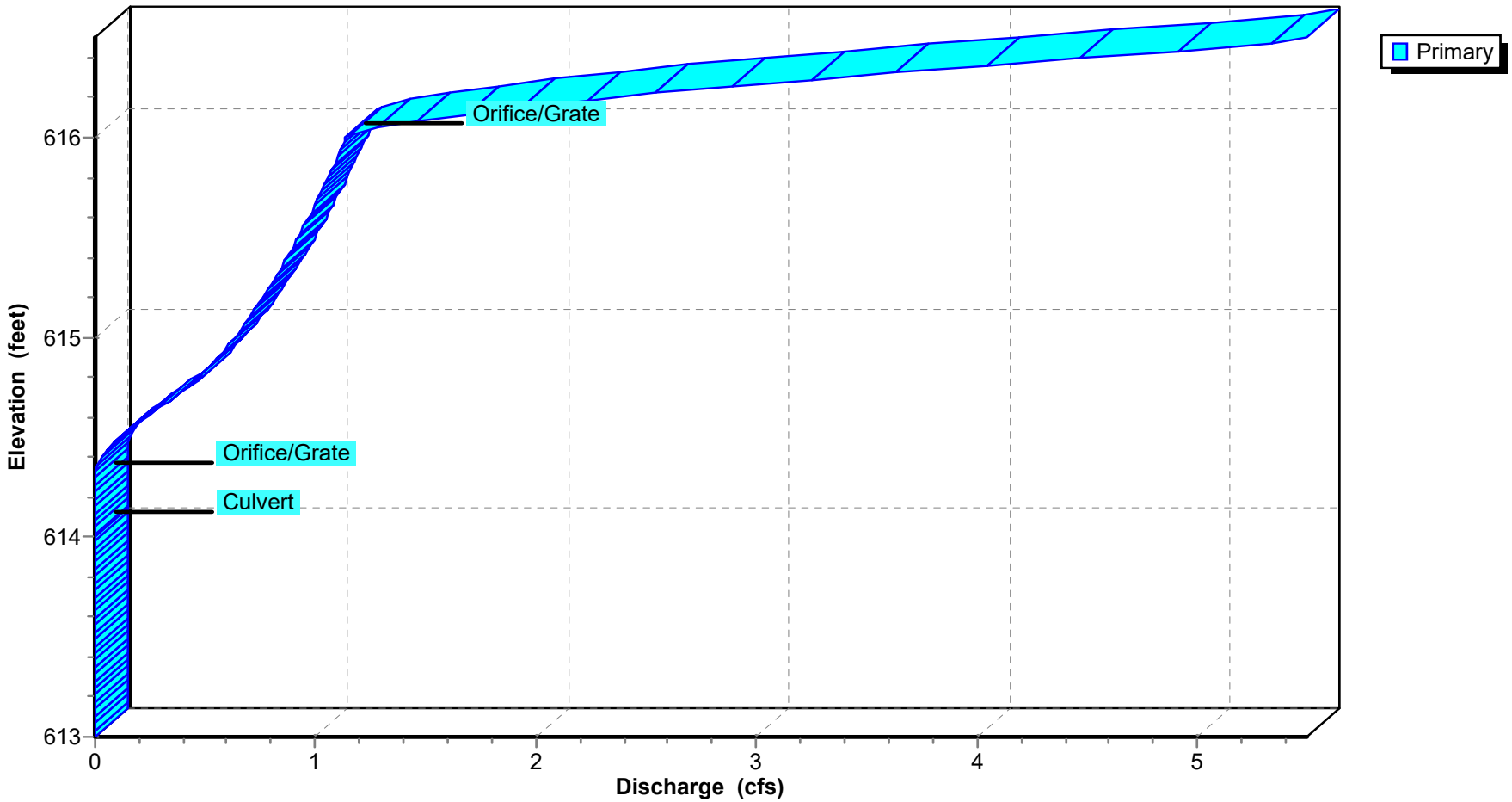
Primary OutFlow Max=0.55 cfs @ 12.46 hrs HW=614.89' (Free Discharge)
└─**1=Culvert** (Passes 0.55 cfs of 2.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.55 cfs @ 2.81 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

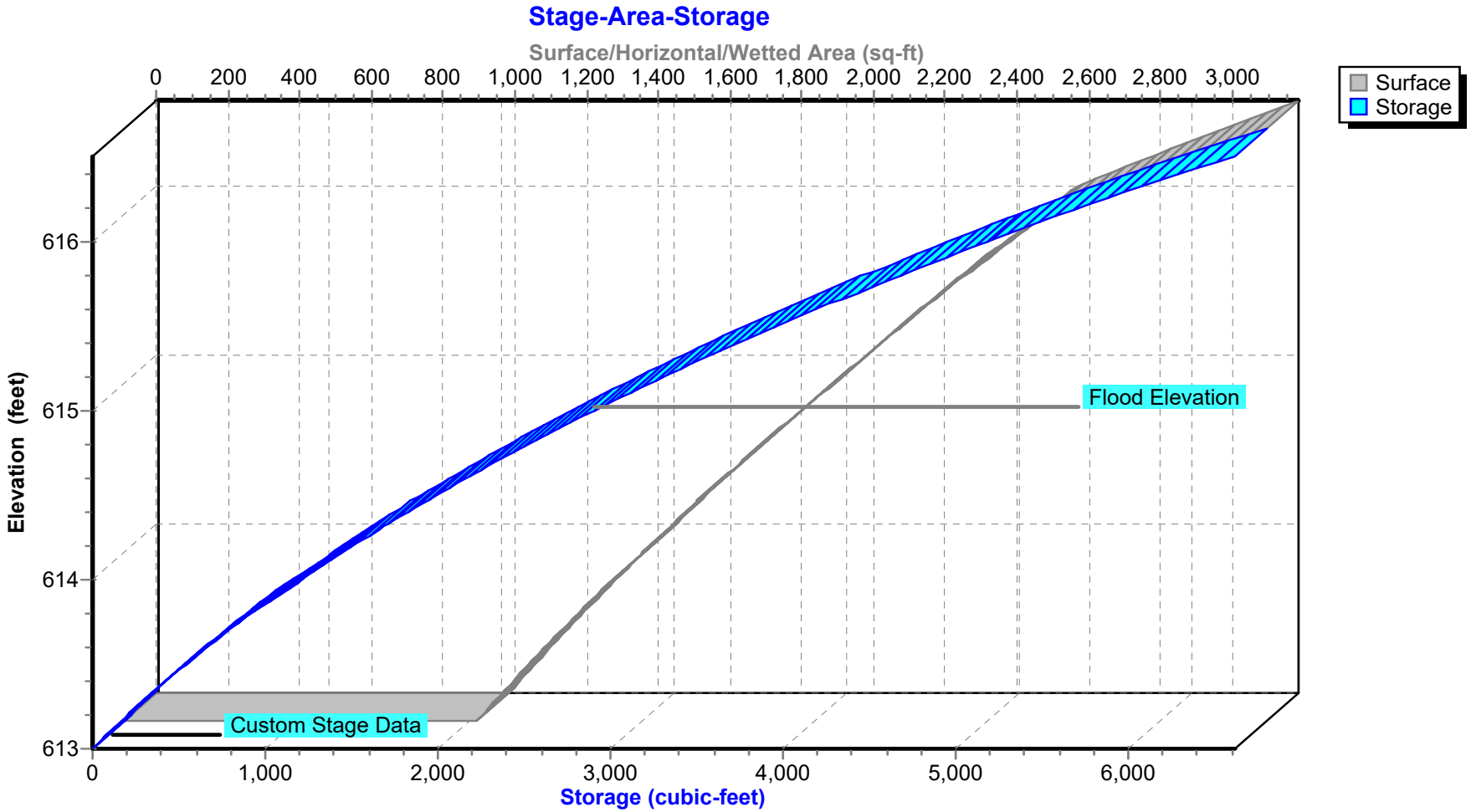


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 2.96" for 10-YEAR event
Inflow = 4.95 cfs @ 12.09 hrs, Volume= 0.363 af
Outflow = 1.22 cfs @ 12.47 hrs, Volume= 0.267 af, Atten= 75%, Lag= 23.0 min
Primary = 1.22 cfs @ 12.47 hrs, Volume= 0.267 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.90' @ 12.47 hrs Surf.Area= 5,913 sf Storage= 8,102 cf

Plug-Flow detention time= 210.8 min calculated for 0.267 af (74% of inflow)
Center-of-Mass det. time= 124.6 min (918.1 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.22 cfs @ 12.47 hrs HW=615.90' (Free Discharge)
└─**1=Culvert** (Passes 1.22 cfs of 7.31 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 4.51 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.82 cfs @ 2.58 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

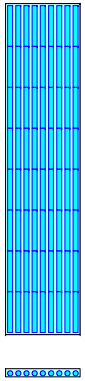
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

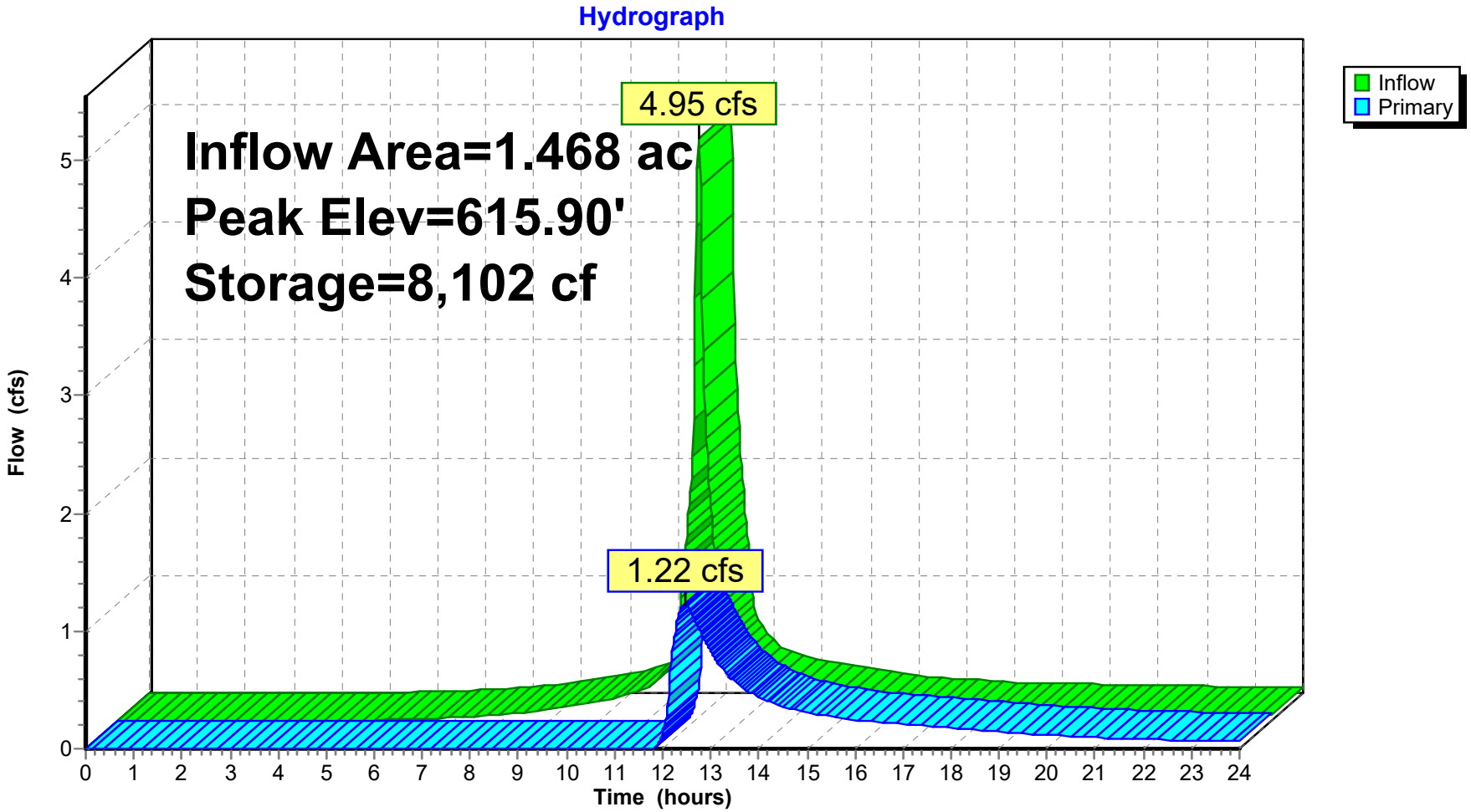
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

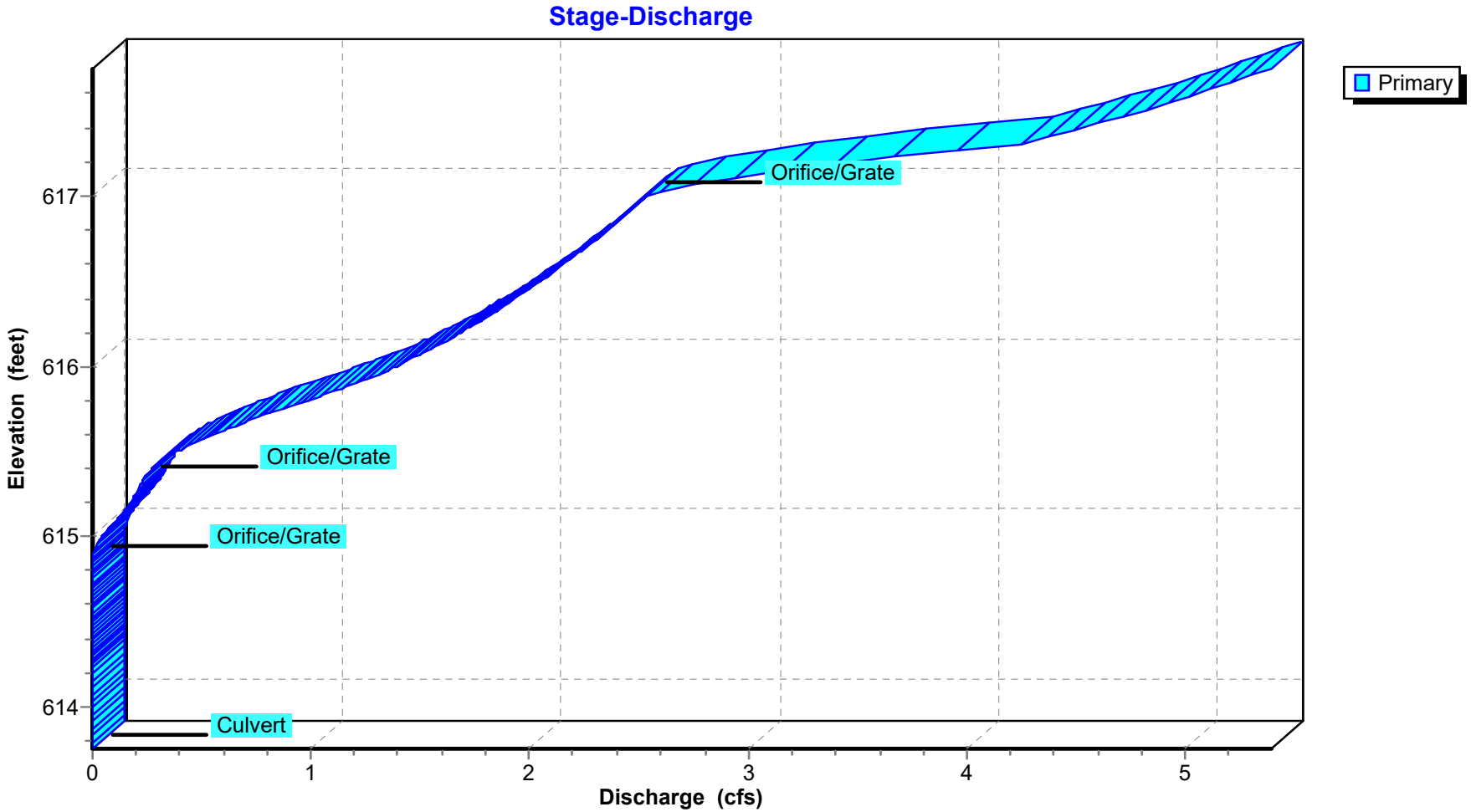
72 Chambers
876.0 cy Field
614.2 cy Stone



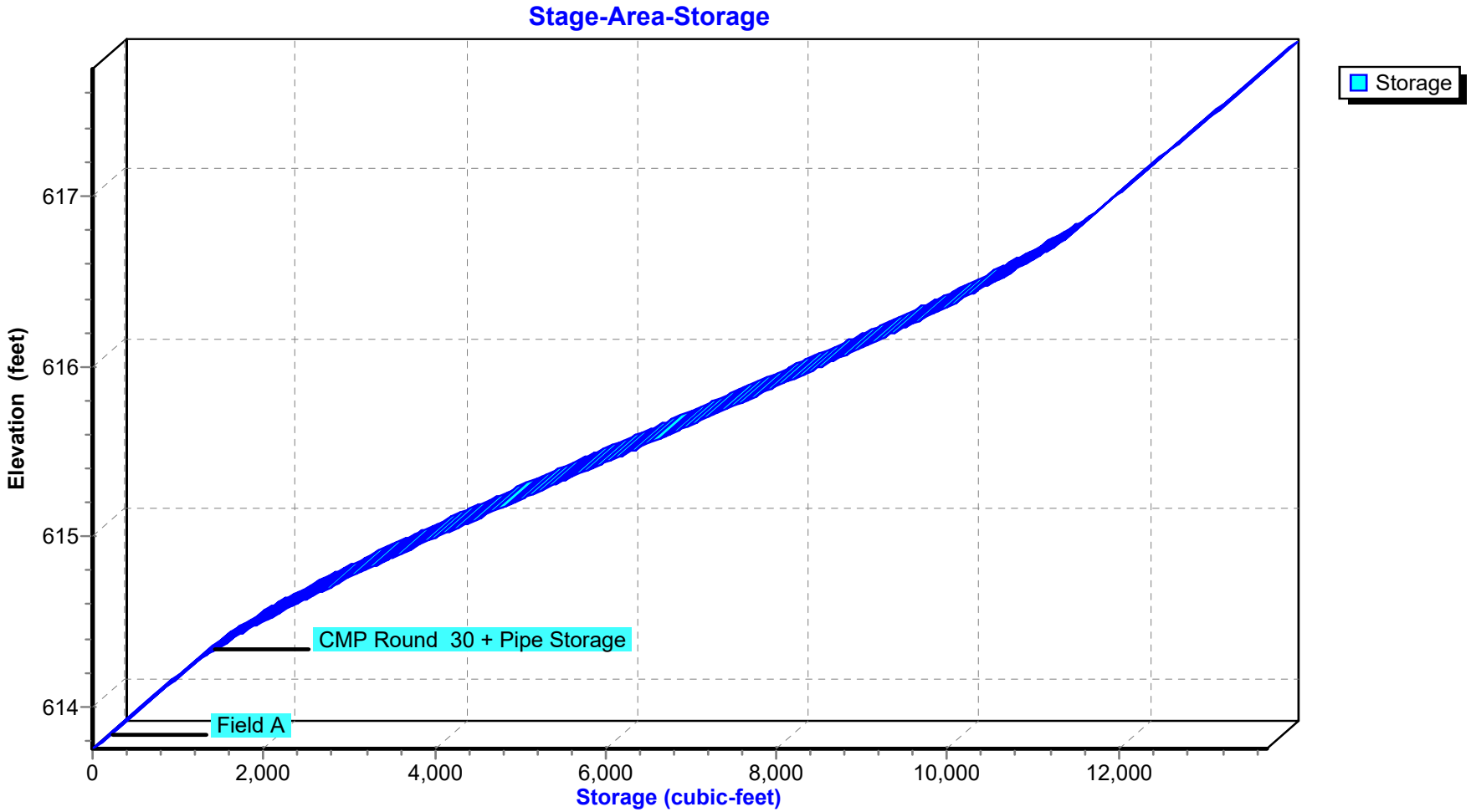
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 0.49 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.66' @ 24.00 hrs Surf.Area= 607 sf Storage= 1,728 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

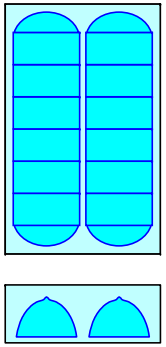
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

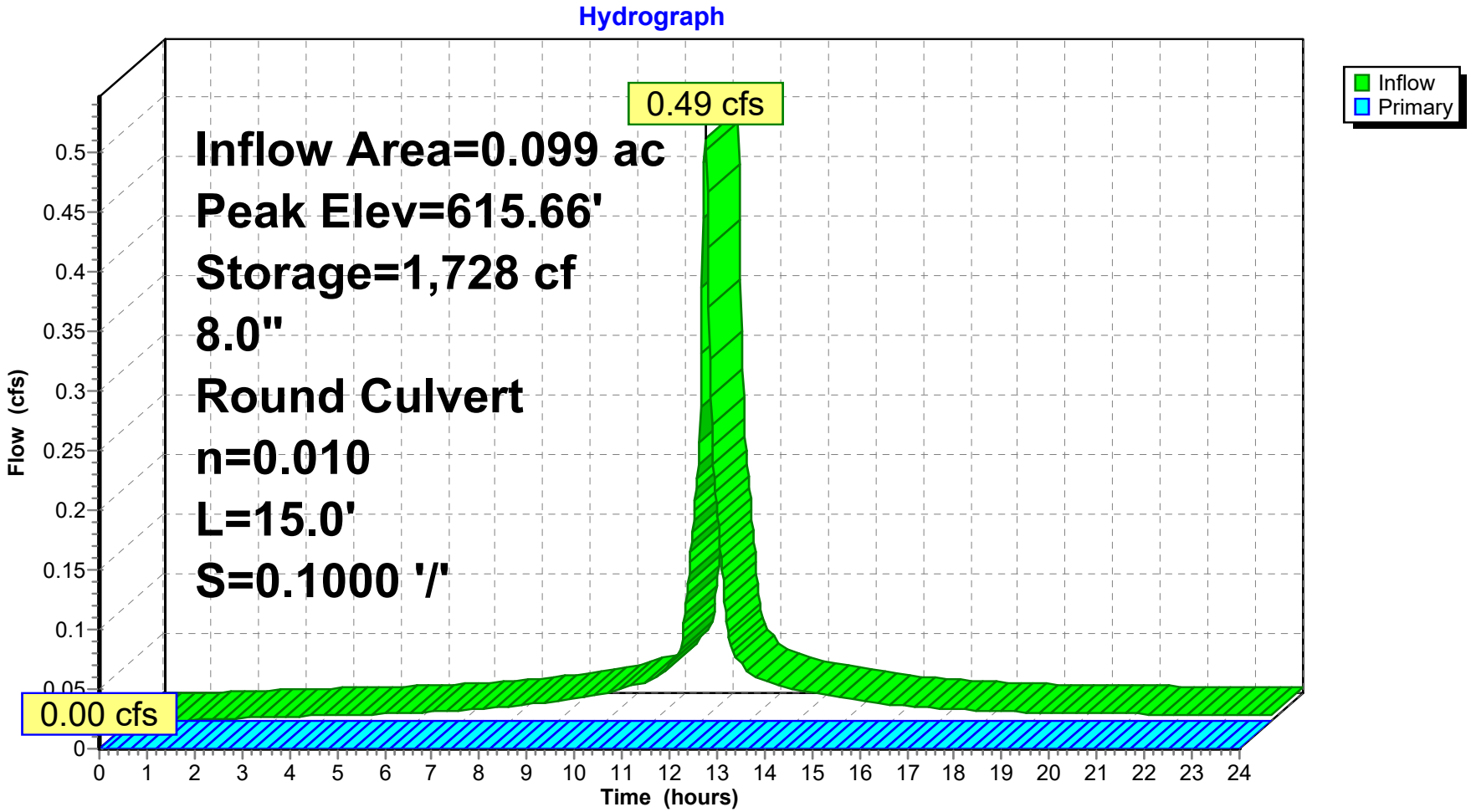
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

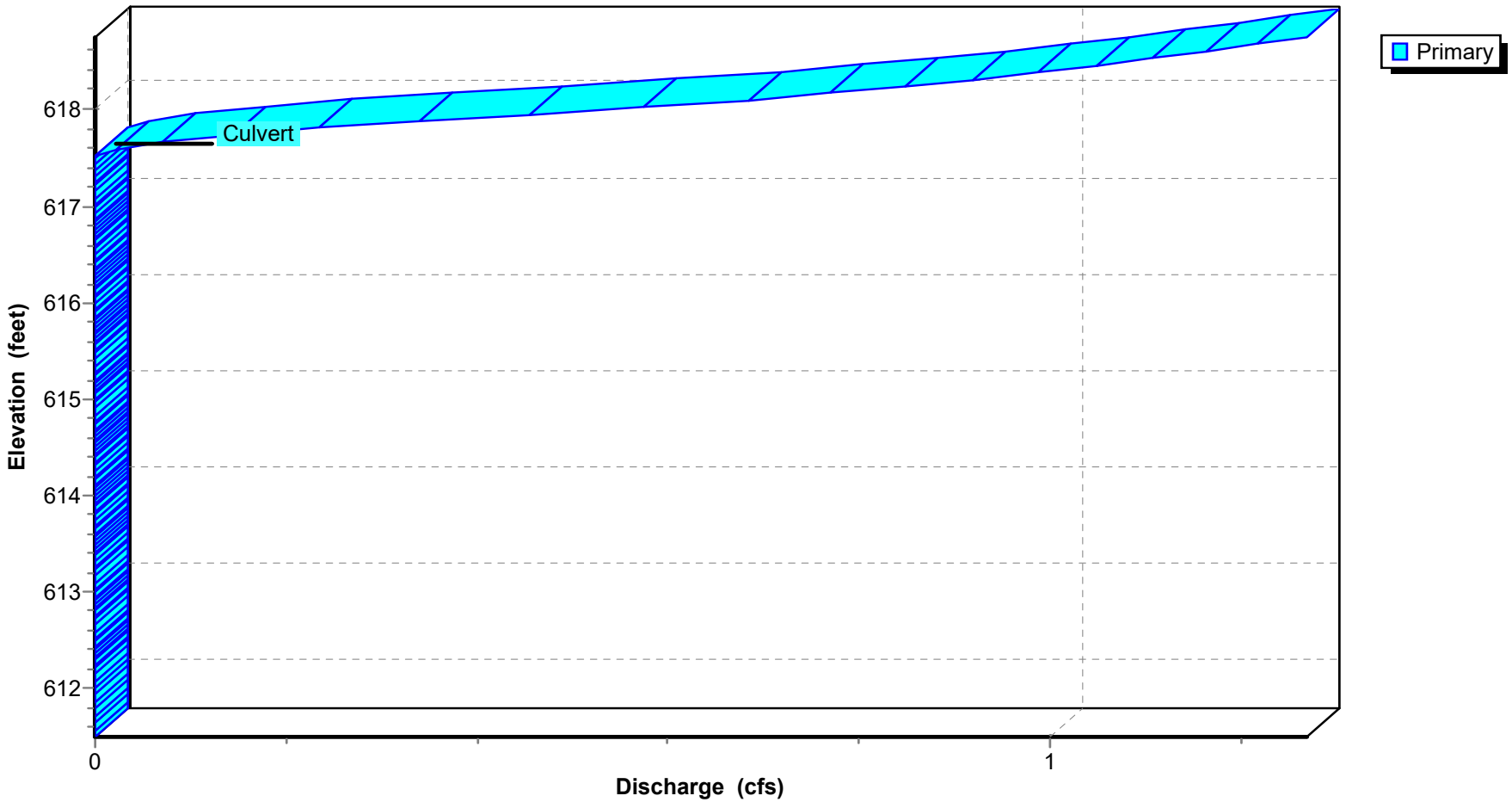


Pond 3P: ROOF INFILTRATION

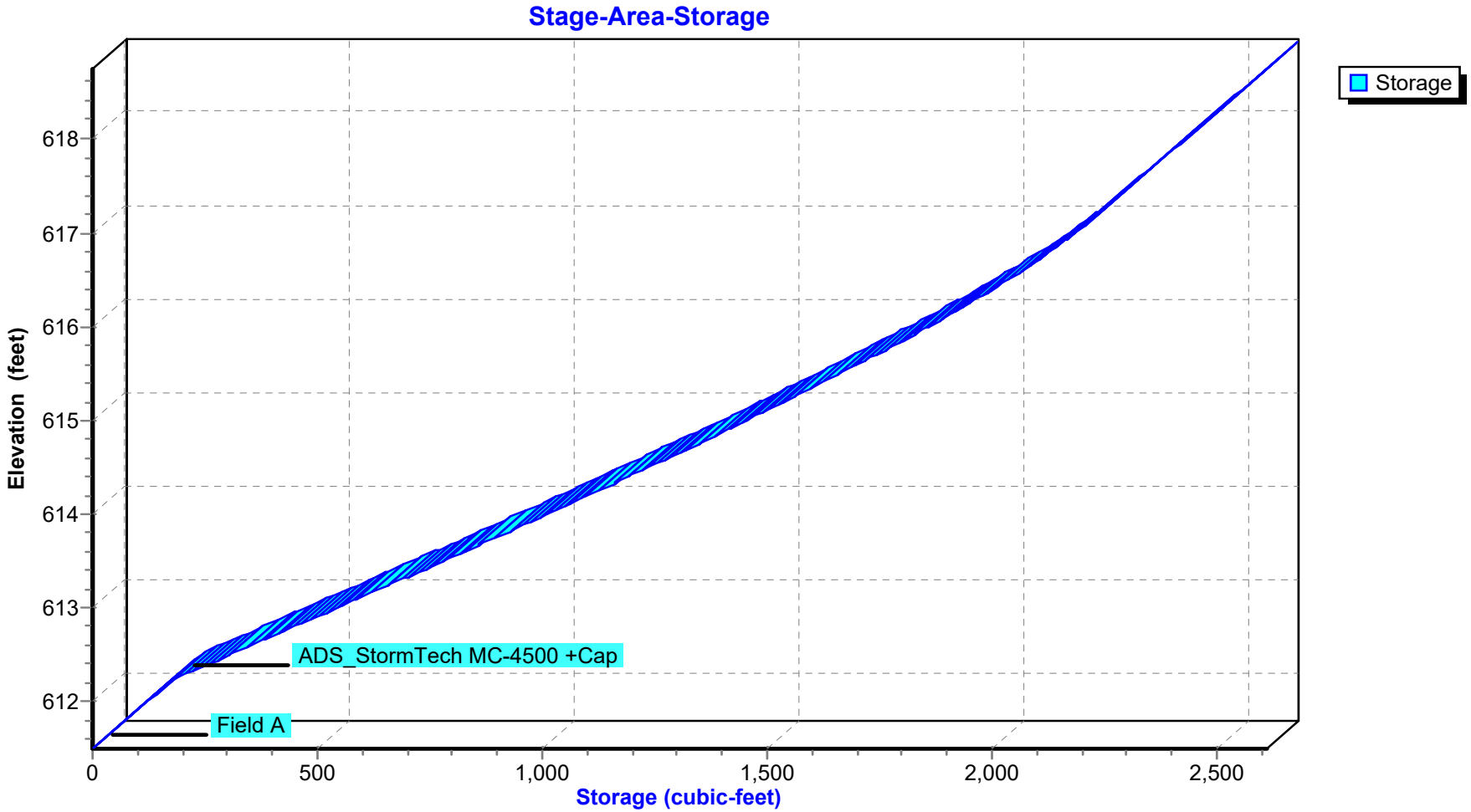


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-YEAR event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.18' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.131 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

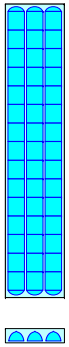
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

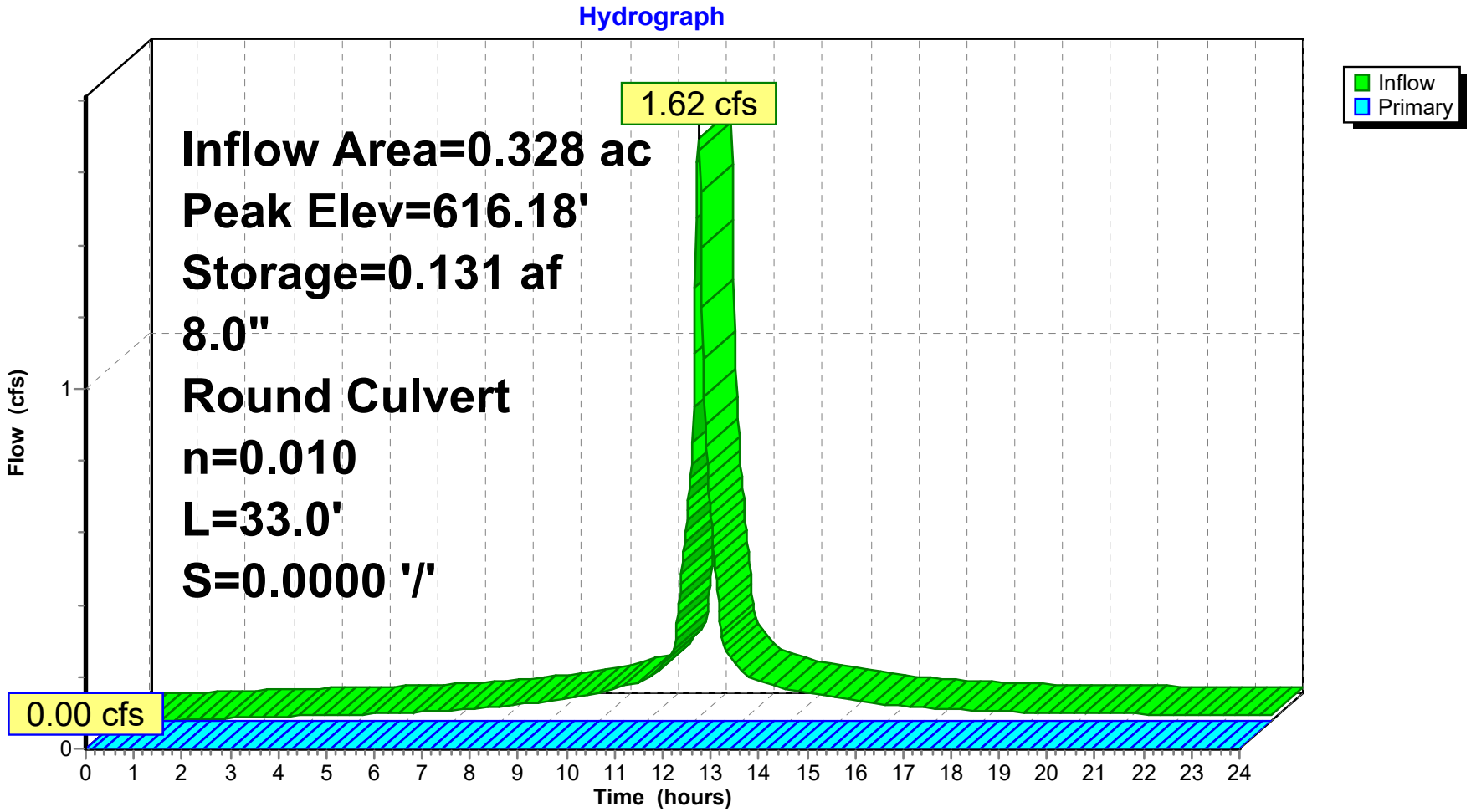
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

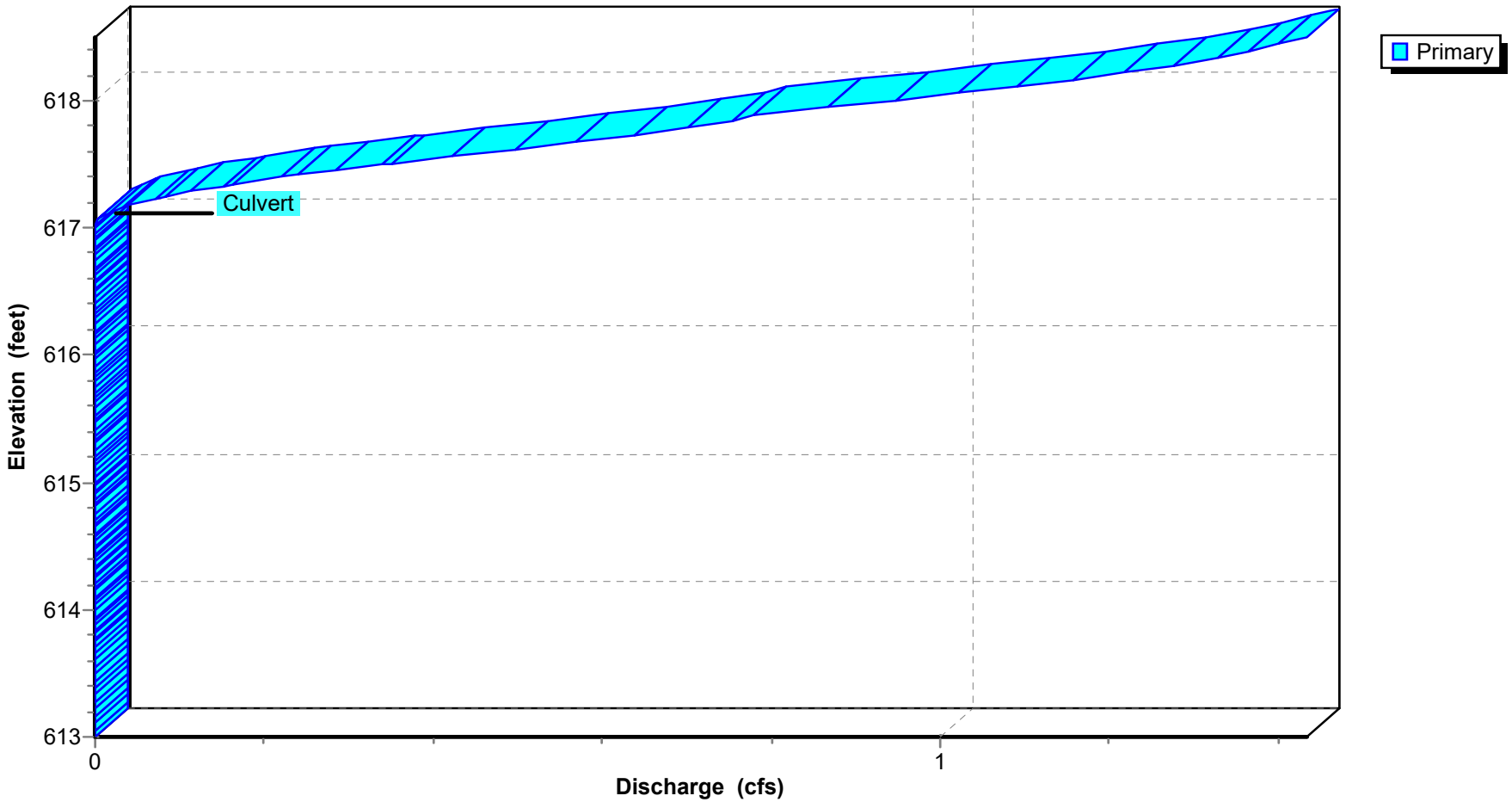


Pond 4P: ROOF INFILTRATION

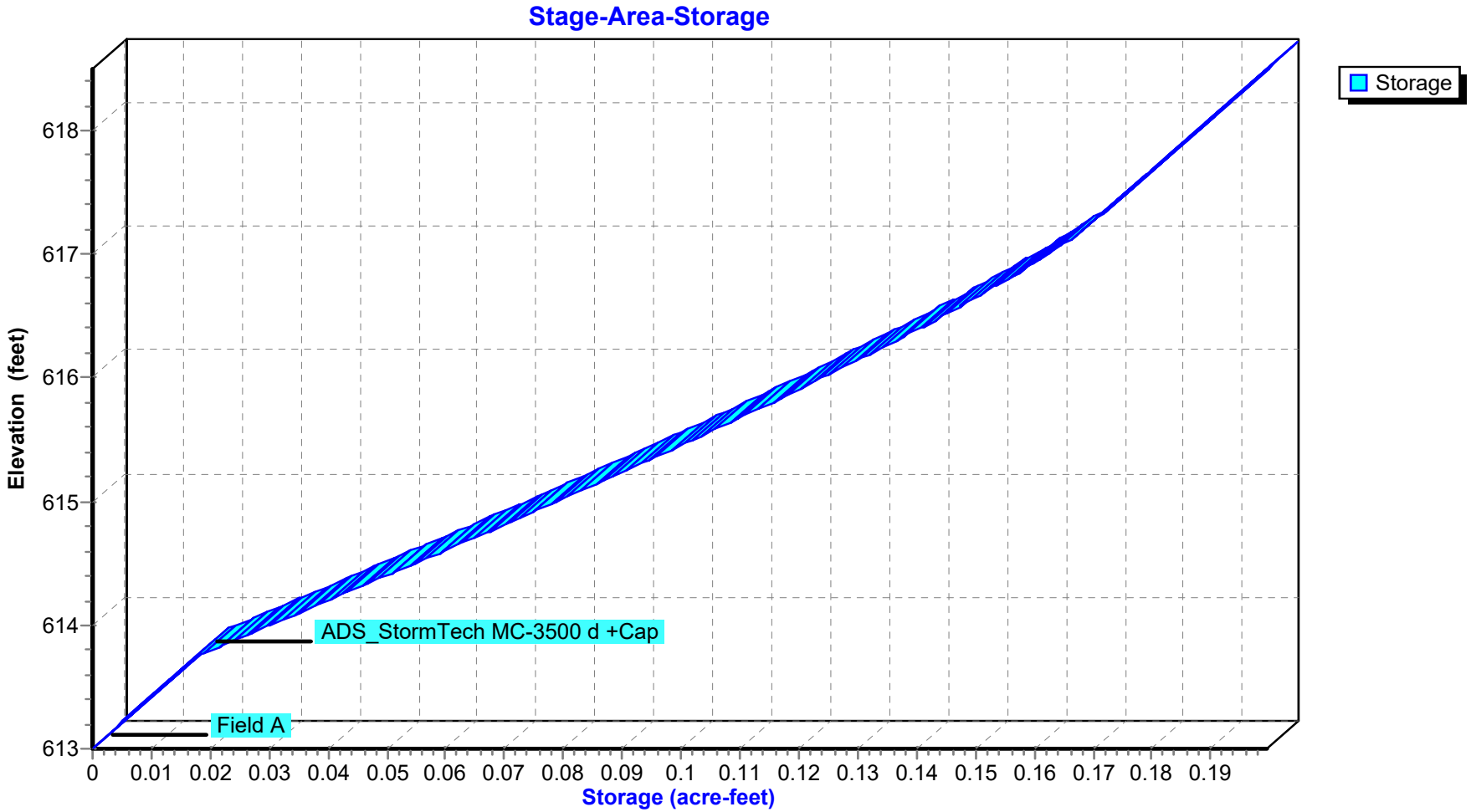


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=61 Runoff=0.33 cfs 0.024 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>3.78"
Tc=6.0 min CN=79 Runoff=2.65 cfs 0.189 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>4.85"
Tc=6.0 min CN=89 Runoff=6.21 cfs 0.461 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>1.67"
Tc=6.0 min CN=56 Runoff=2.22 cfs 0.173 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.044 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.059 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=4.02 cfs 0.683 af
Outflow=4.02 cfs 0.683 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=4.33 cfs 0.708 af
Outflow=4.33 cfs 0.708 af

Pond 1P: DETENTION BASIN Peak Elev=615.27' Storage=3,461 cf Inflow=2.65 cfs 0.189 af
Outflow=0.80 cfs 0.147 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=616.28' Storage=9,705 cf Inflow=6.21 cfs 0.461 af
Outflow=1.79 cfs 0.363 af

Pond 3P: ROOF INFILTRATION Peak Elev=616.73' Storage=2,112 cf Inflow=0.59 cfs 0.048 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.00 cfs 0.000 af

Pond 4P: ROOF INFILTRATION Peak Elev=616.95' Storage=0.161 af Inflow=1.96 cfs 0.161 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.00 cfs 0.000 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.057 af Average Runoff Depth = 3.56"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

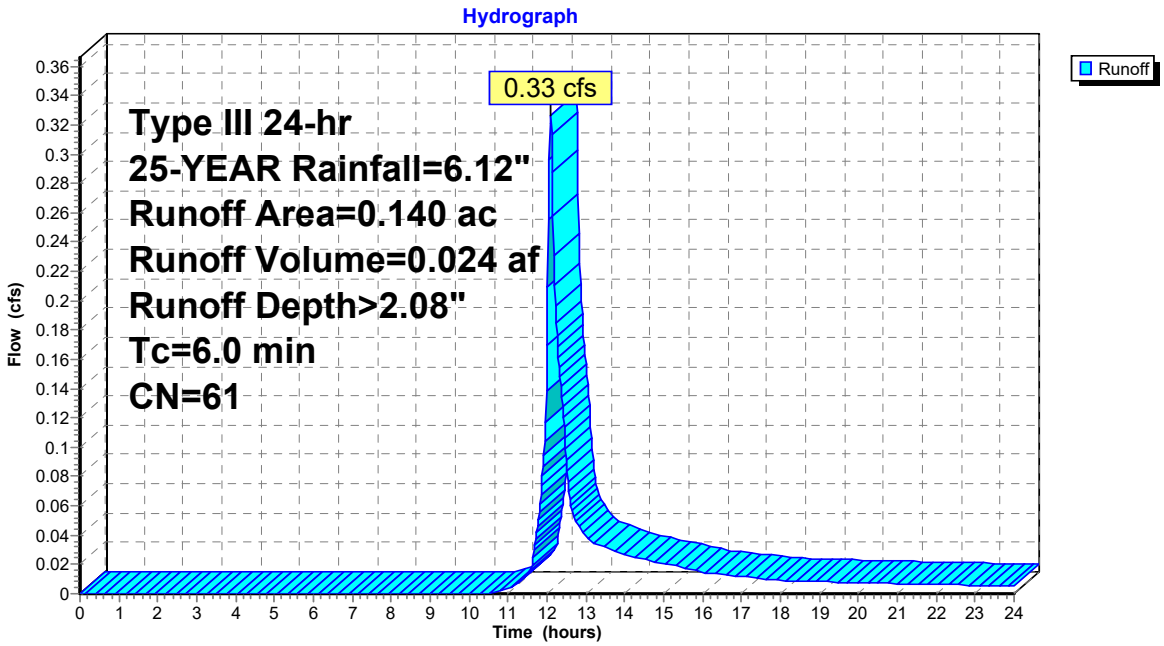
Runoff = 0.33 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

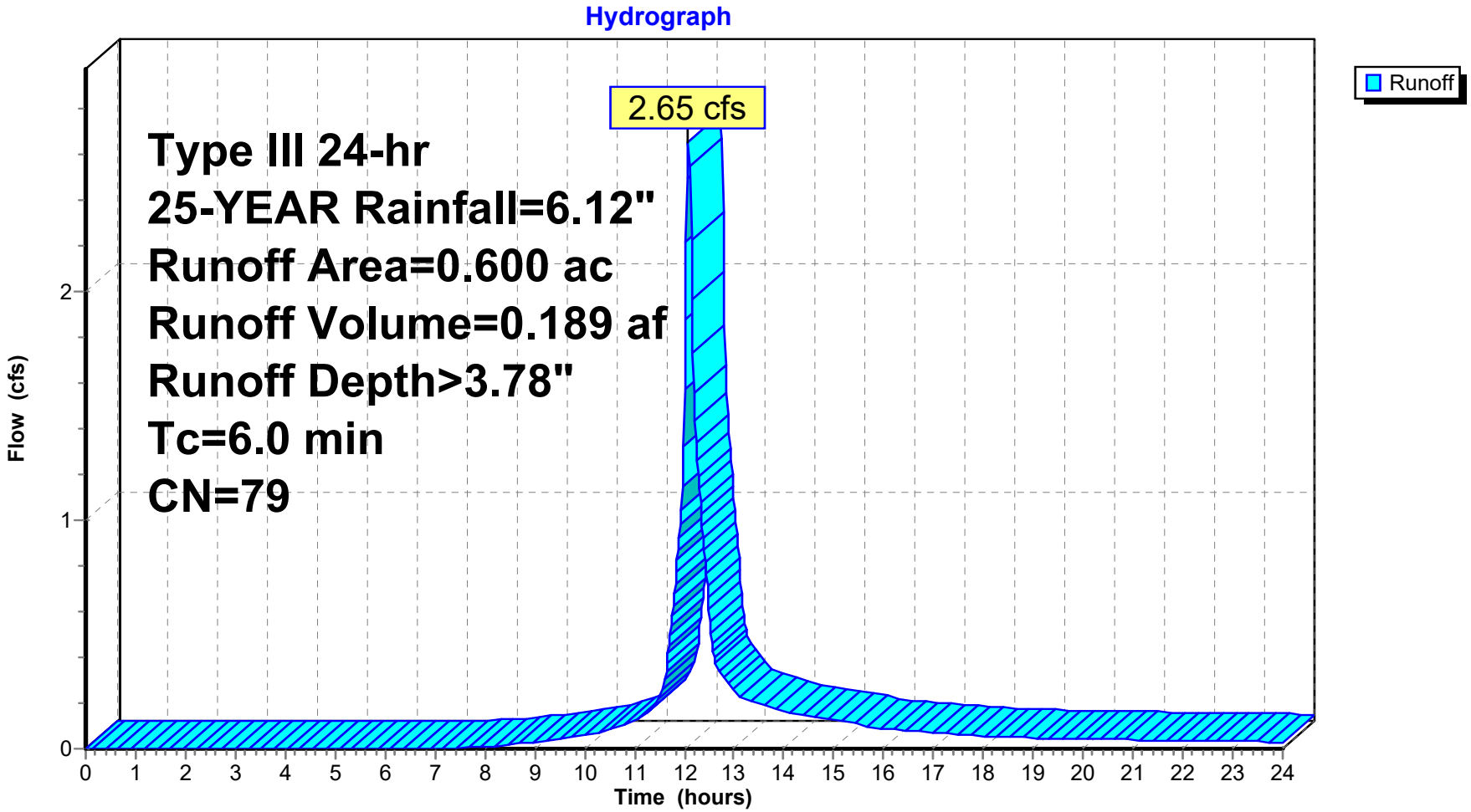
Runoff = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af, Depth> 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

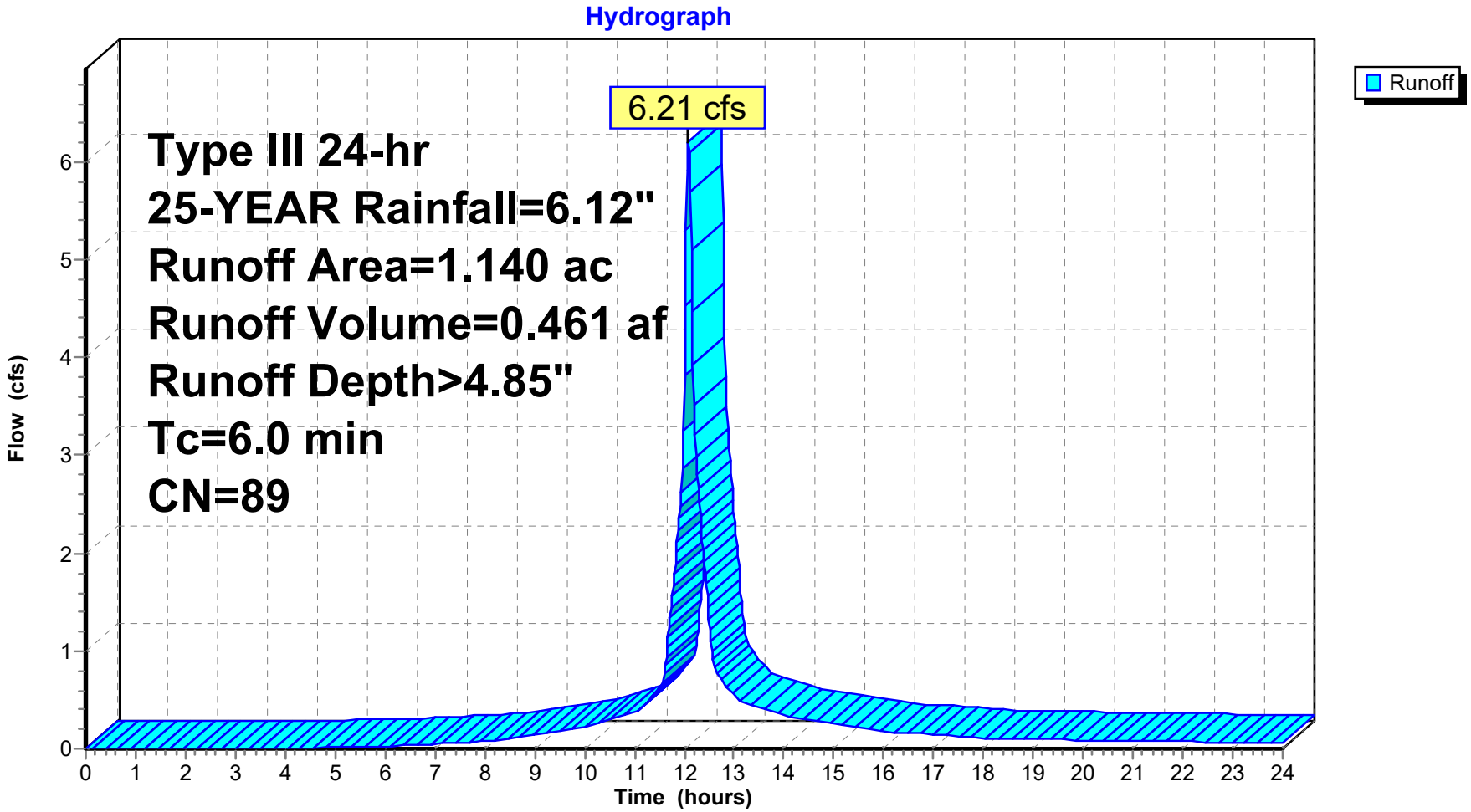
Runoff = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

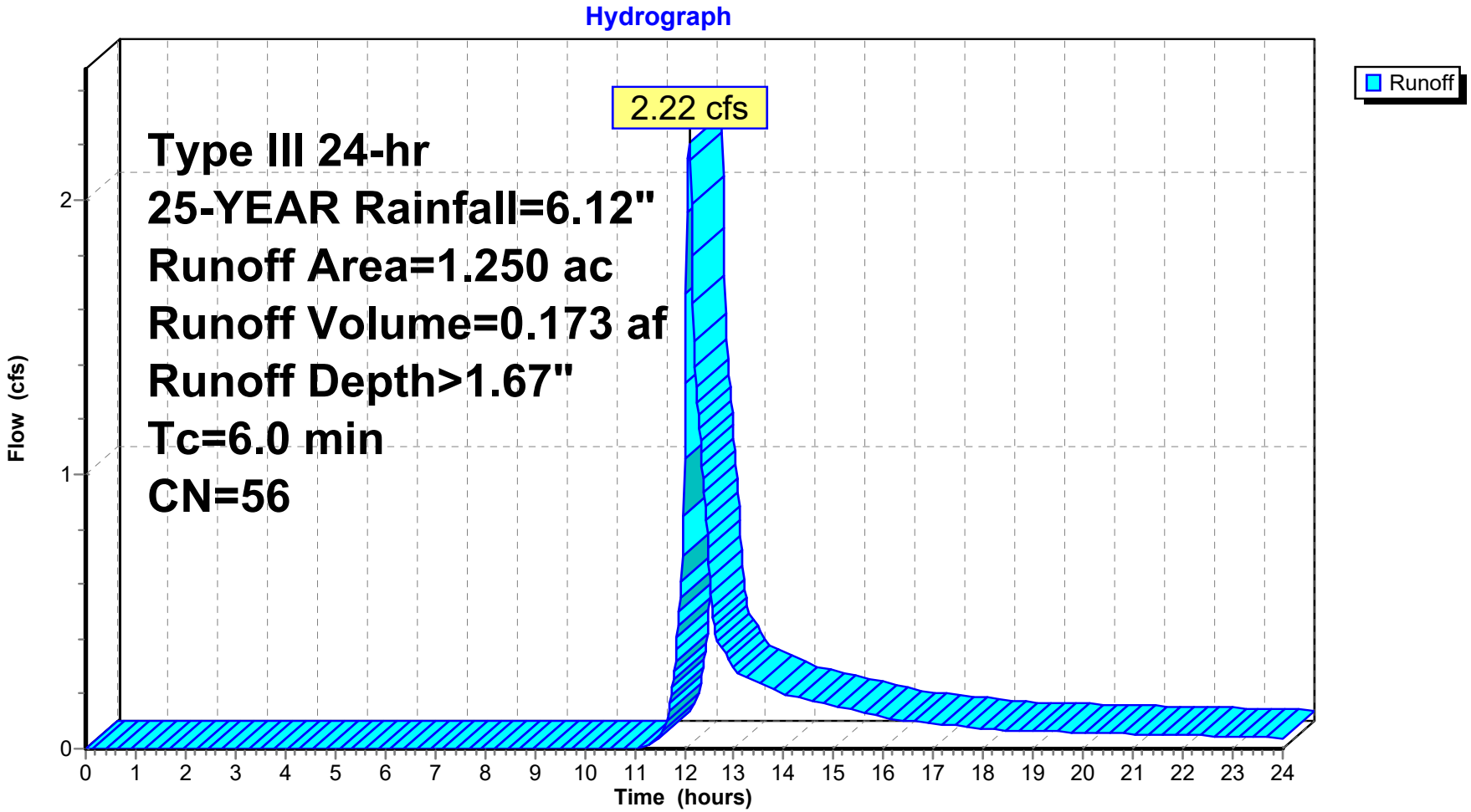
Runoff = 2.22 cfs @ 12.10 hrs, Volume= 0.173 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

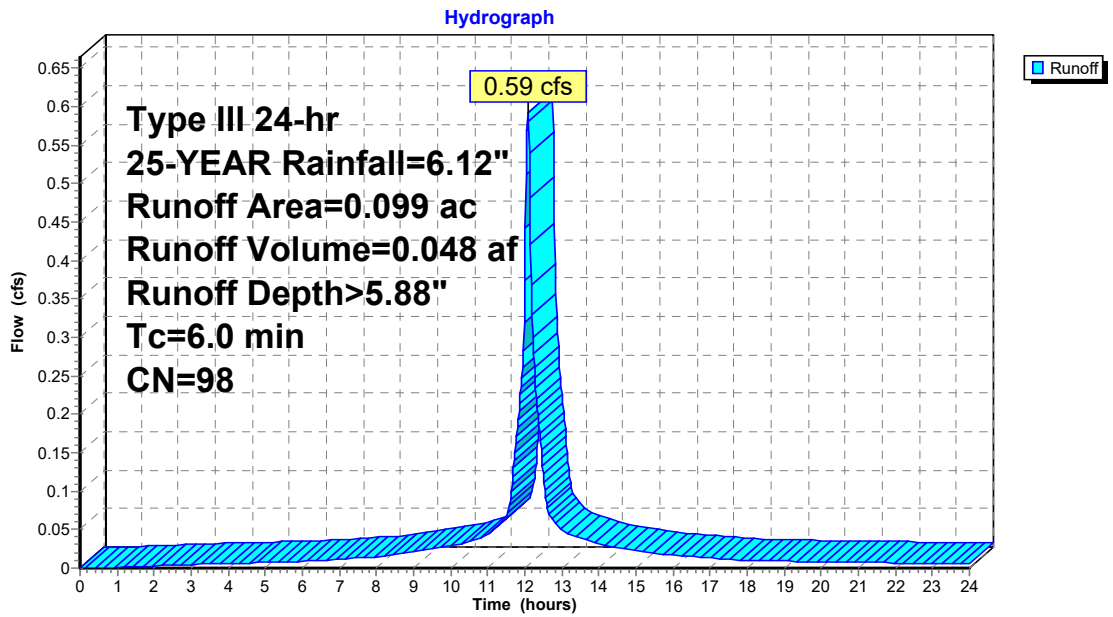
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

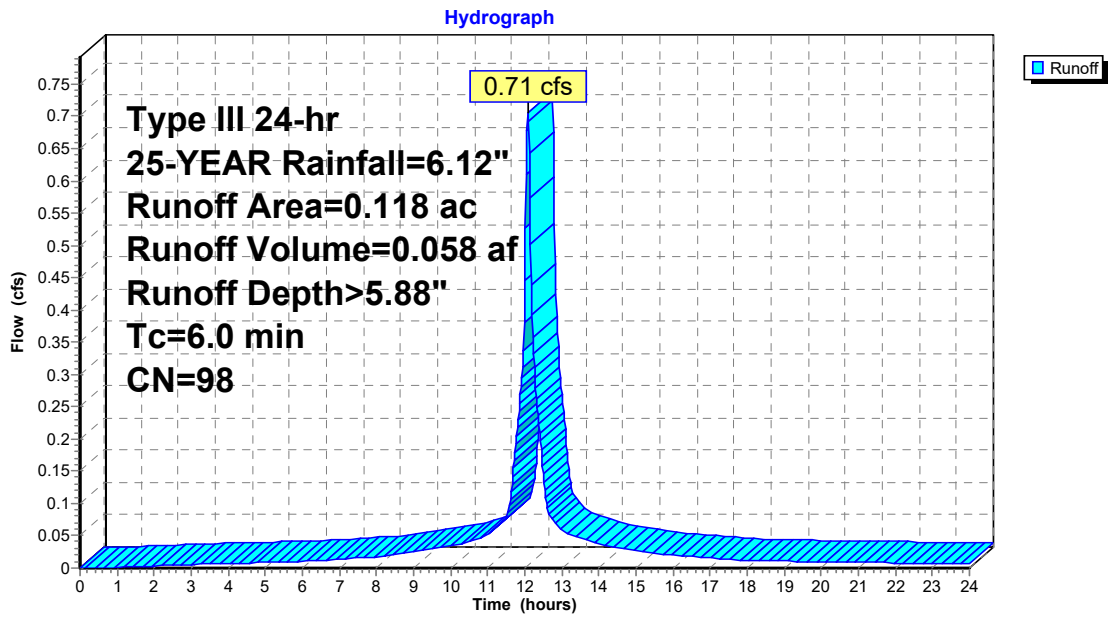
Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.058 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

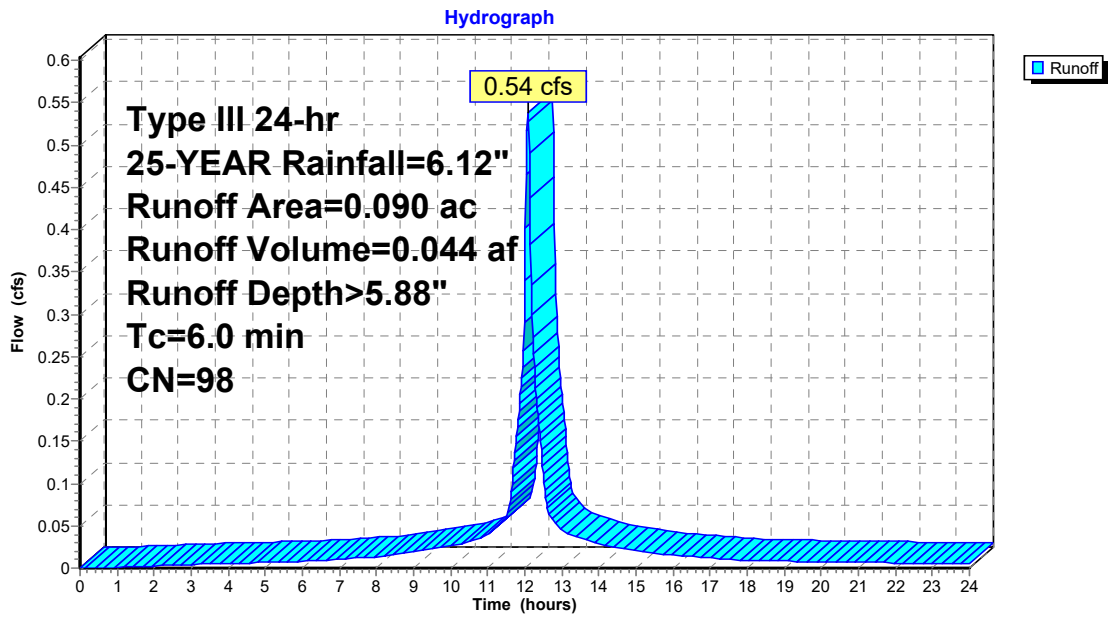
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

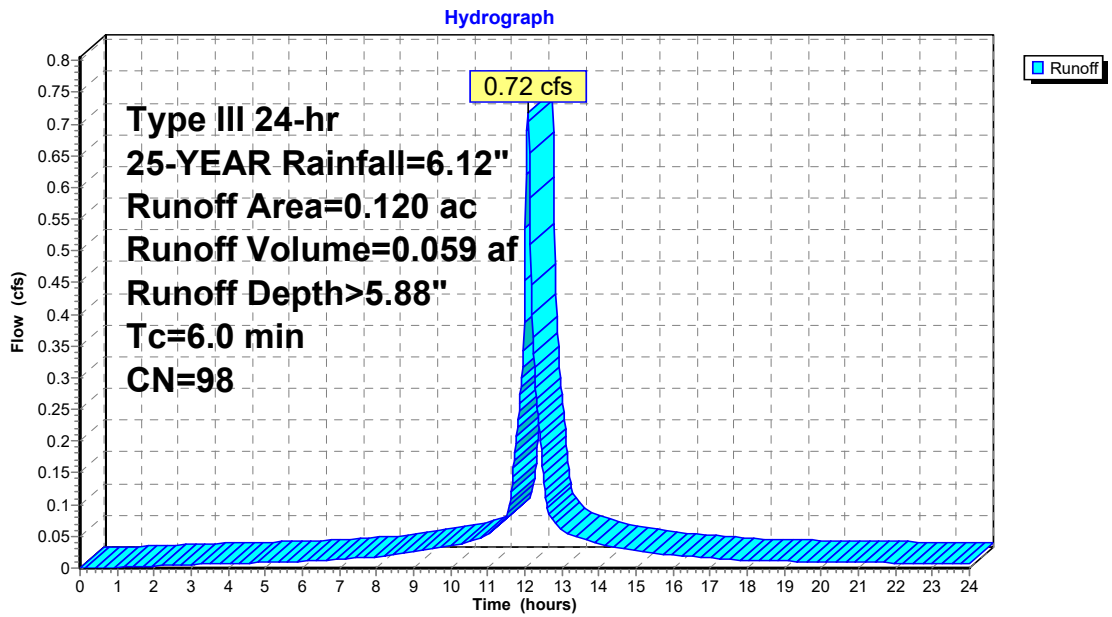
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 5.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-YEAR Rainfall=6.12"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



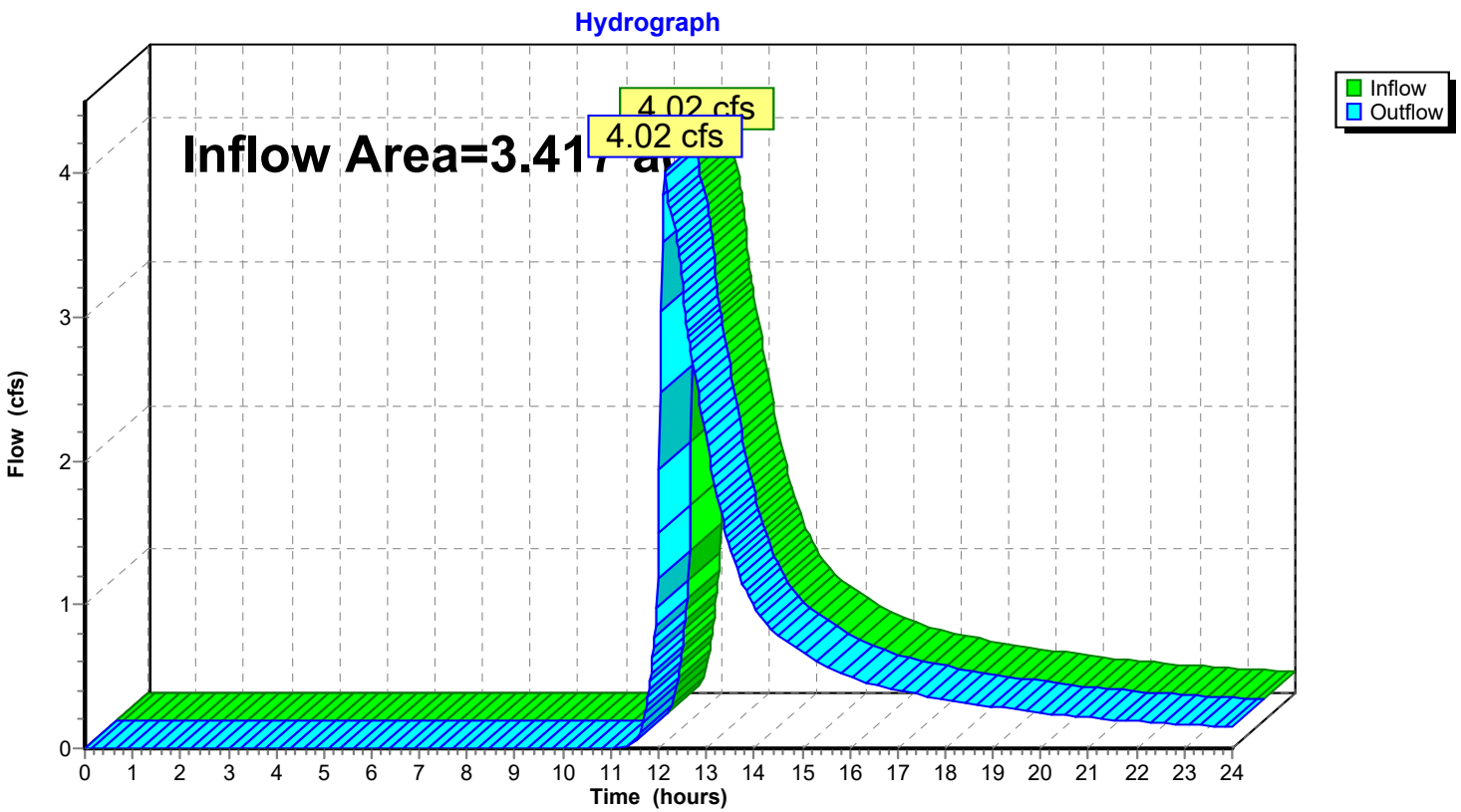
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 2.40" for 25-YEAR event
Inflow = 4.02 cfs @ 12.13 hrs, Volume= 0.683 af
Outflow = 4.02 cfs @ 12.13 hrs, Volume= 0.683 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



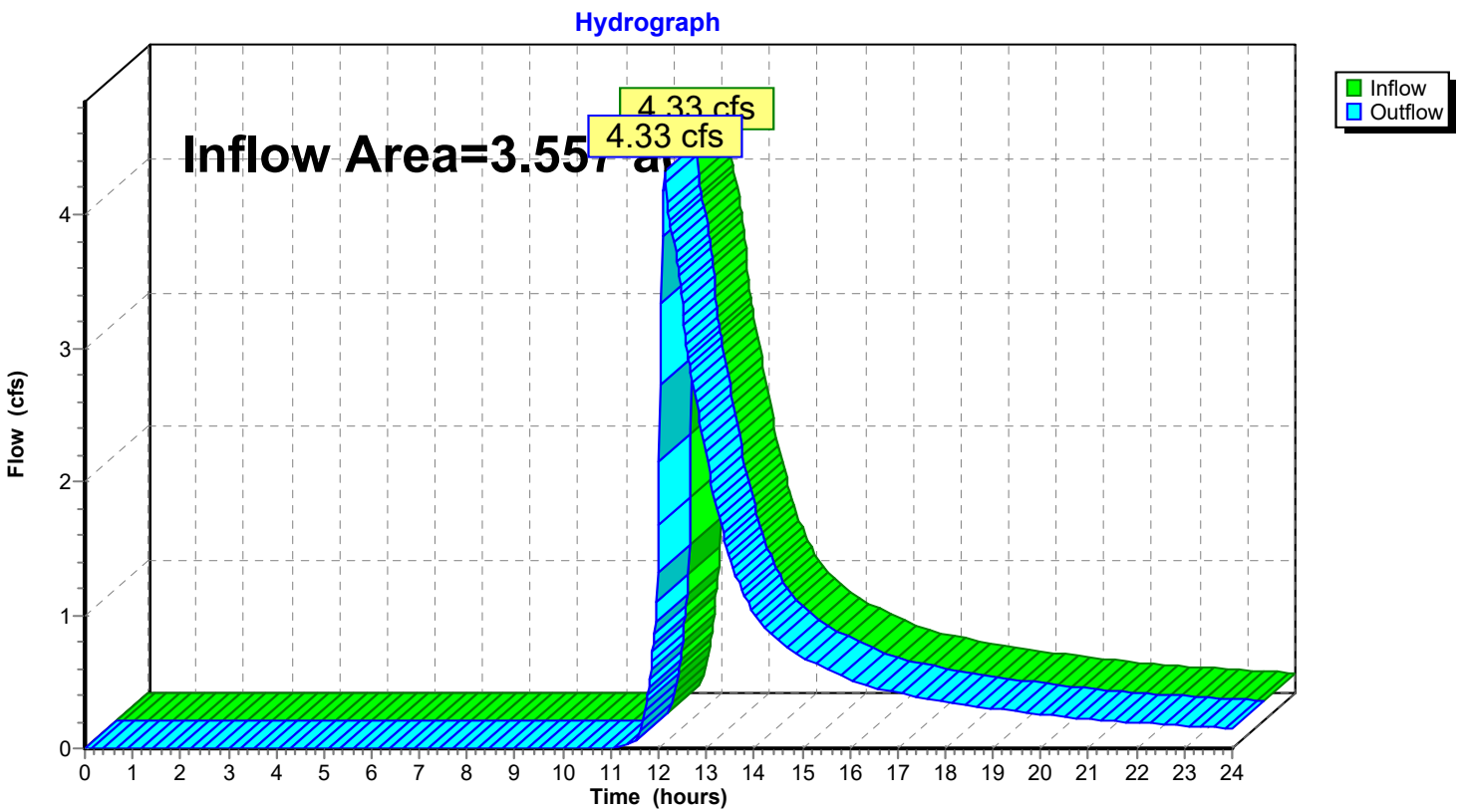
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 2.39" for 25-YEAR event
Inflow = 4.33 cfs @ 12.13 hrs, Volume= 0.708 af
Outflow = 4.33 cfs @ 12.13 hrs, Volume= 0.708 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.33' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 3.78" for 25-YEAR event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 0.189 af
Outflow = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af, Atten= 70%, Lag= 20.4 min
Primary = 0.80 cfs @ 12.43 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.27' @ 12.43 hrs Surf.Area= 2,131 sf Storage= 3,461 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 147.6 min calculated for 0.147 af (78% of inflow)
Center-of-Mass det. time= 66.7 min (881.9 - 815.2)

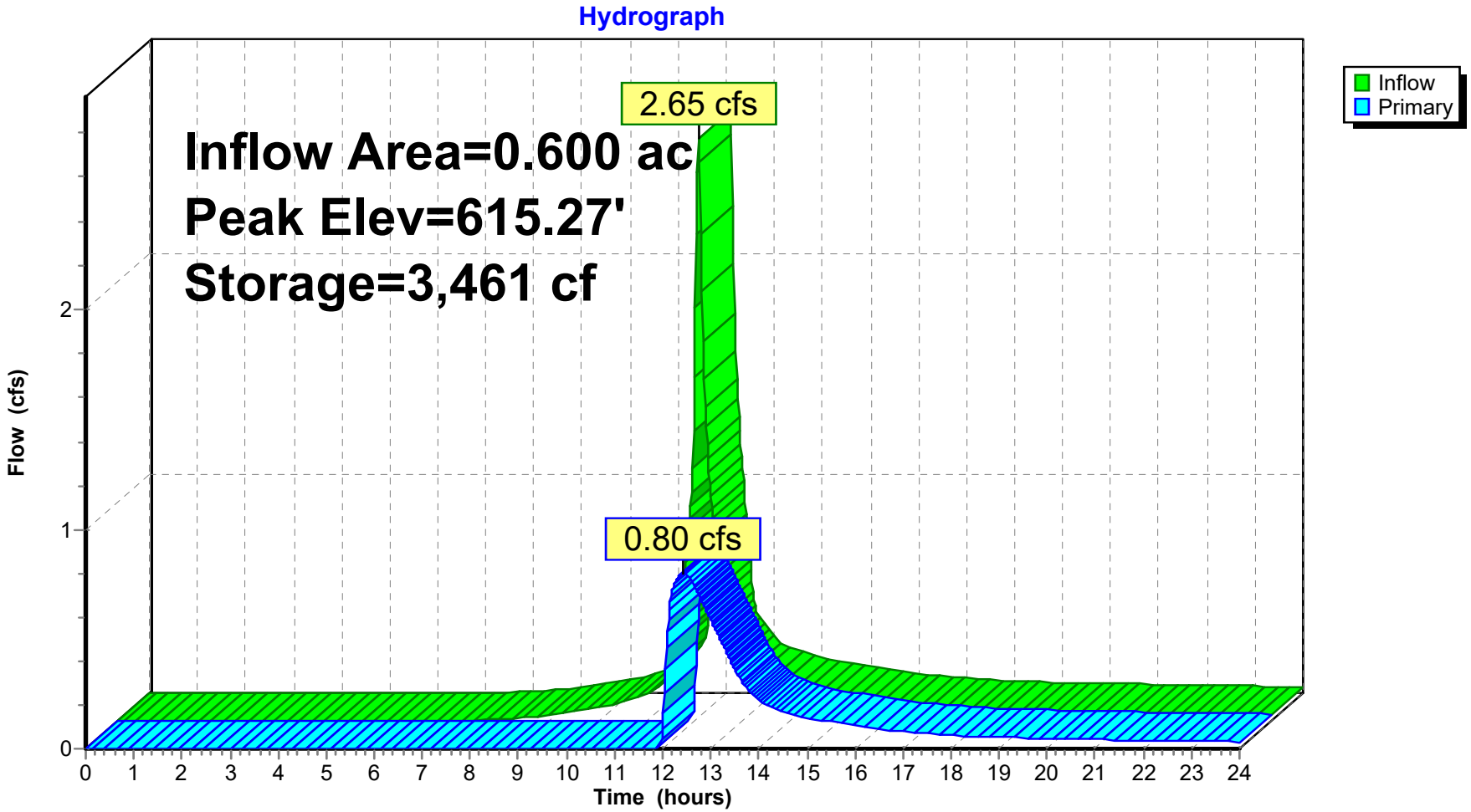
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

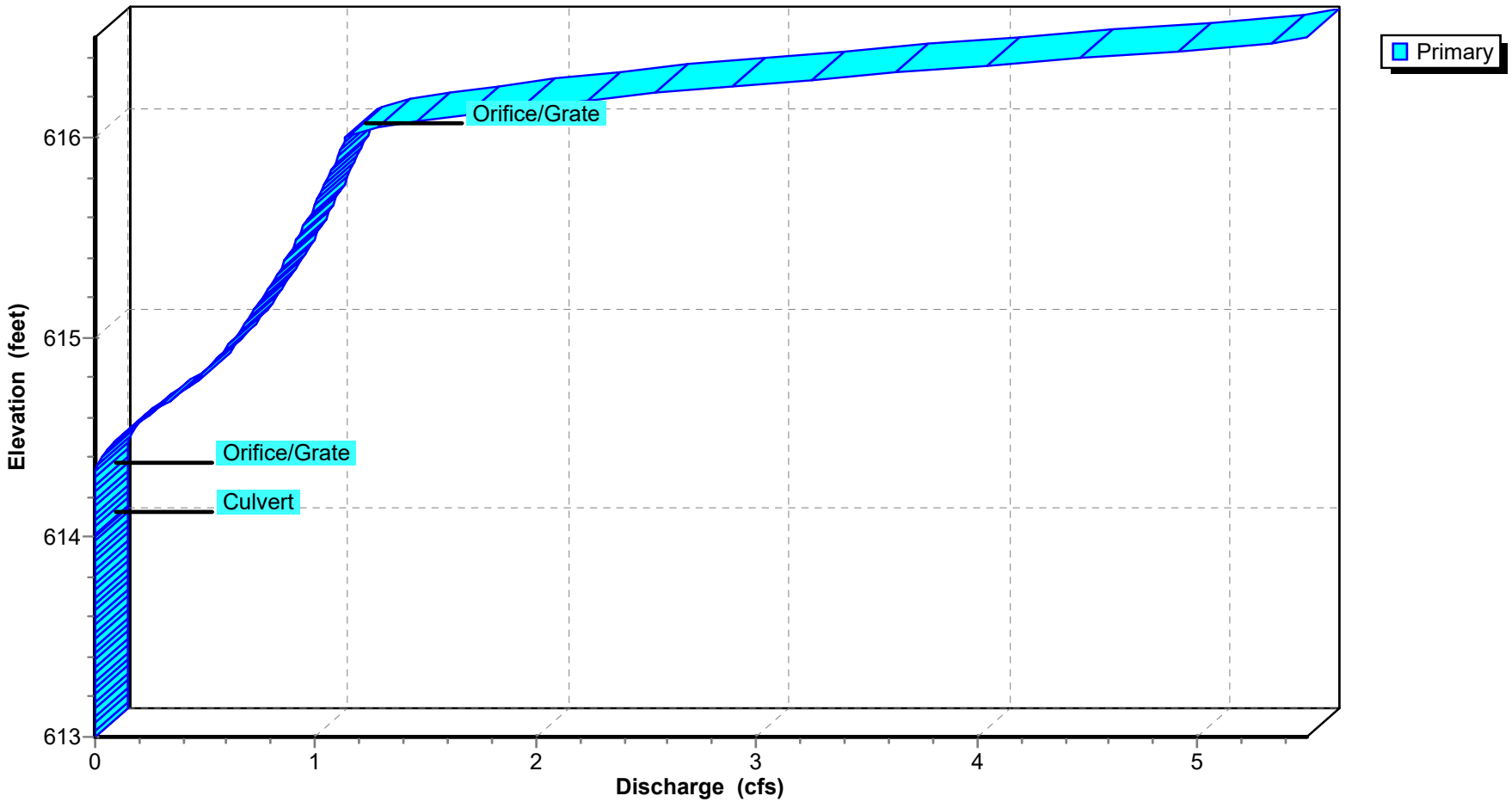
Primary OutFlow Max=0.80 cfs @ 12.43 hrs HW=615.27' (Free Discharge)
└─**1=Culvert** (Passes 0.80 cfs of 4.57 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

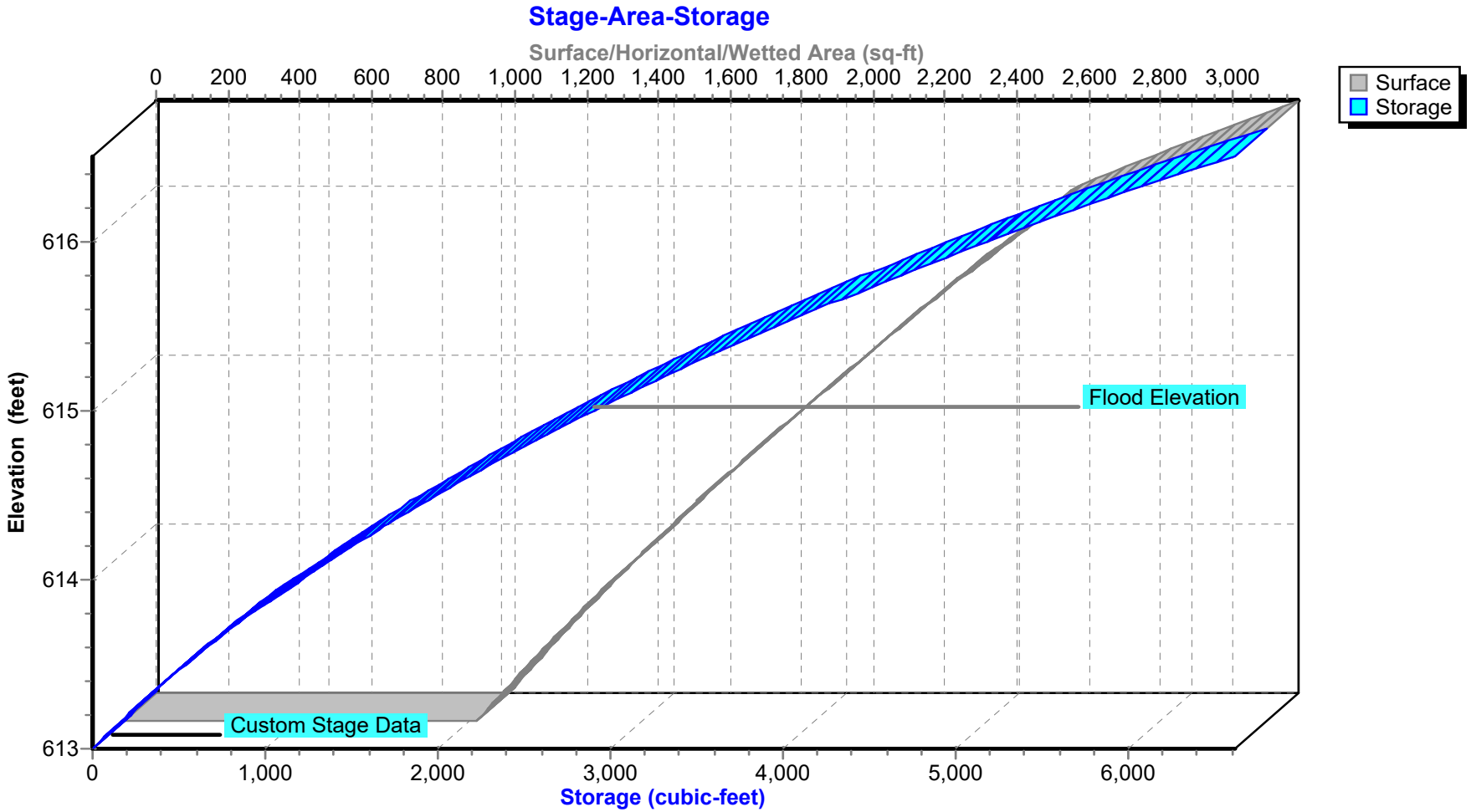


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 3.76" for 25-YEAR event
Inflow = 6.21 cfs @ 12.08 hrs, Volume= 0.461 af
Outflow = 1.79 cfs @ 12.42 hrs, Volume= 0.363 af, Atten= 71%, Lag= 20.1 min
Primary = 1.79 cfs @ 12.42 hrs, Volume= 0.363 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.28' @ 12.42 hrs Surf.Area= 5,913 sf Storage= 9,705 cf

Plug-Flow detention time= 187.5 min calculated for 0.362 af (79% of inflow)
Center-of-Mass det. time= 110.6 min (897.5 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.79 cfs @ 12.42 hrs HW=616.28' (Free Discharge)
└─**1=Culvert** (Passes 1.79 cfs of 8.16 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.32 cfs @ 3.78 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

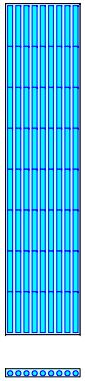
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

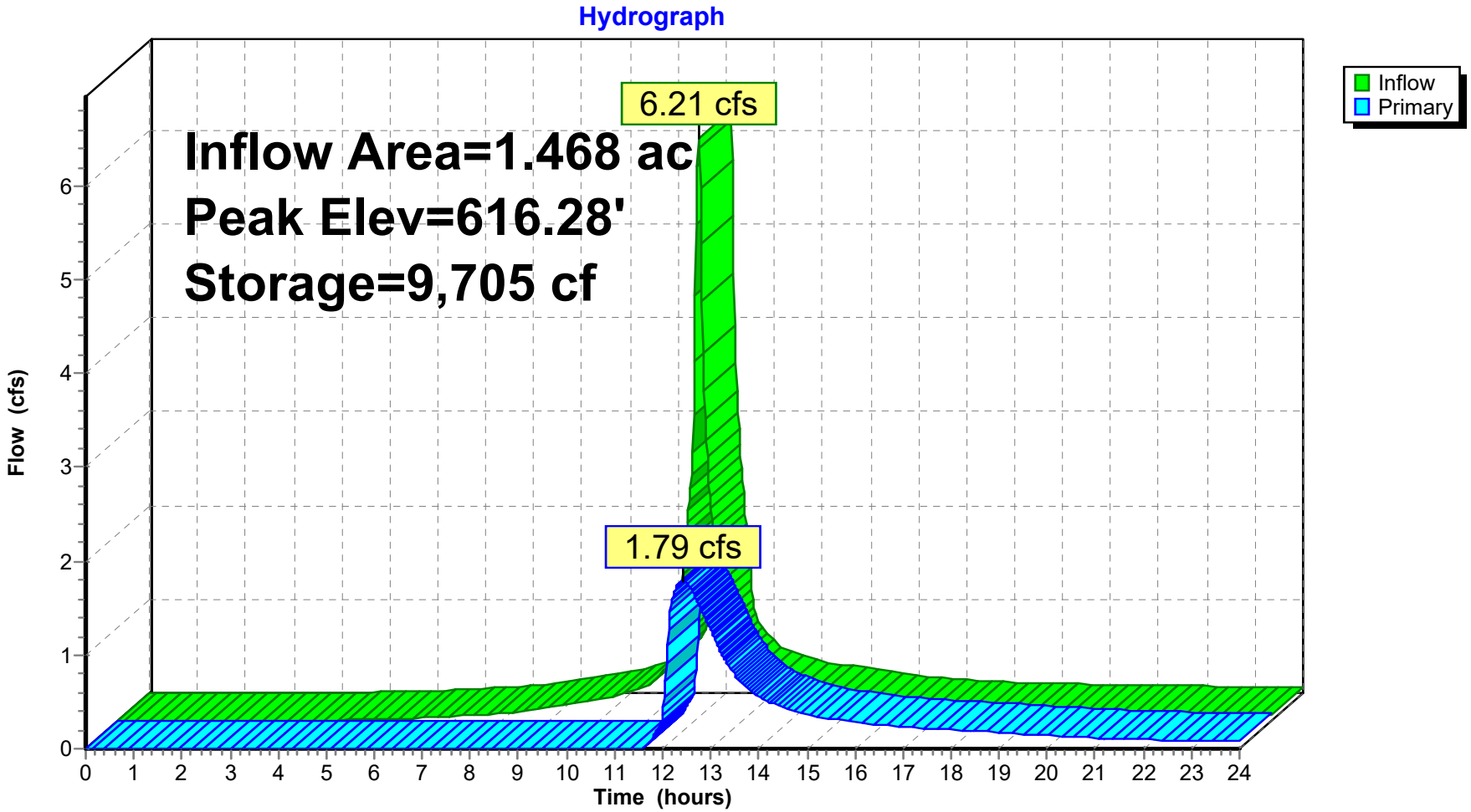
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

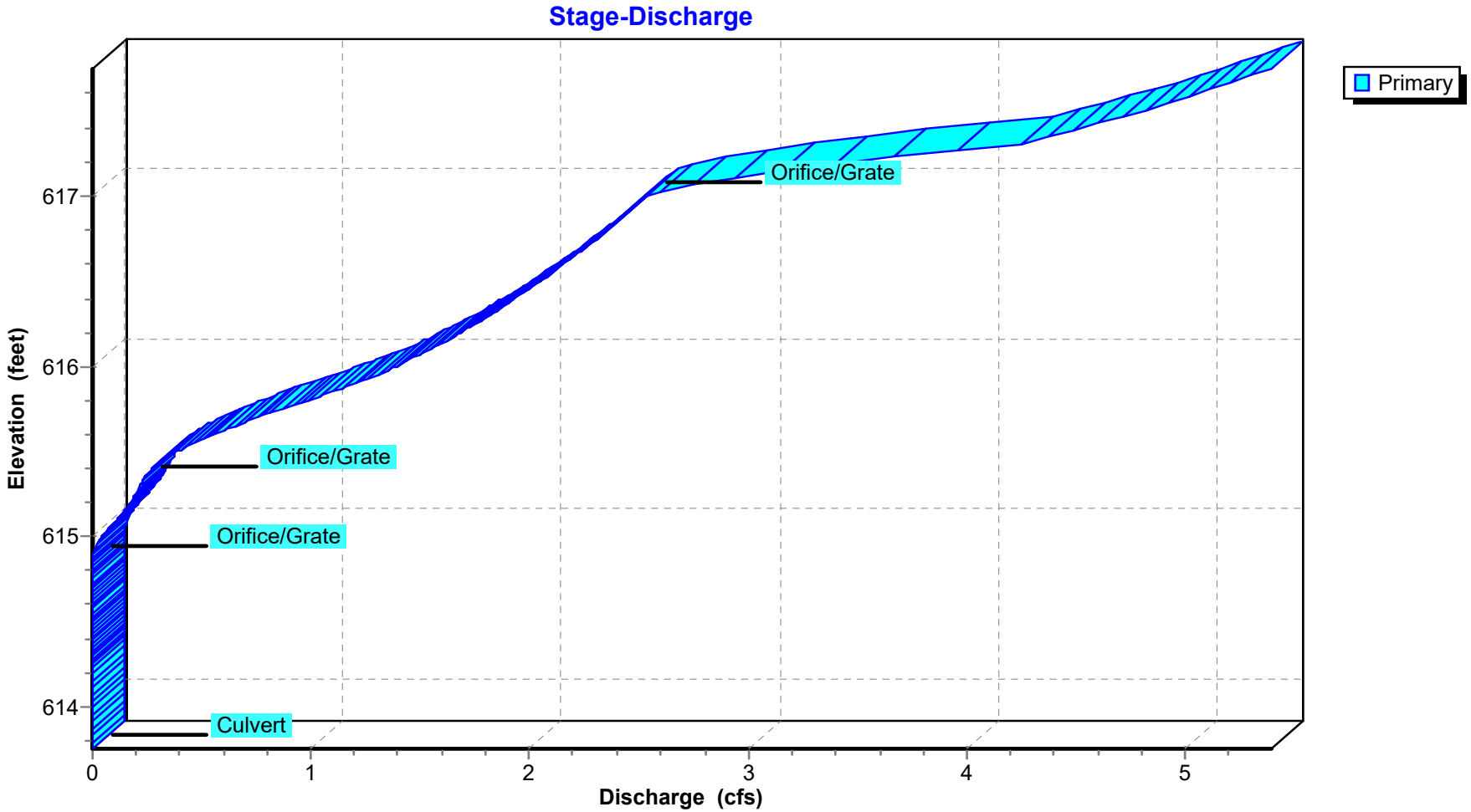
72 Chambers
876.0 cy Field
614.2 cy Stone



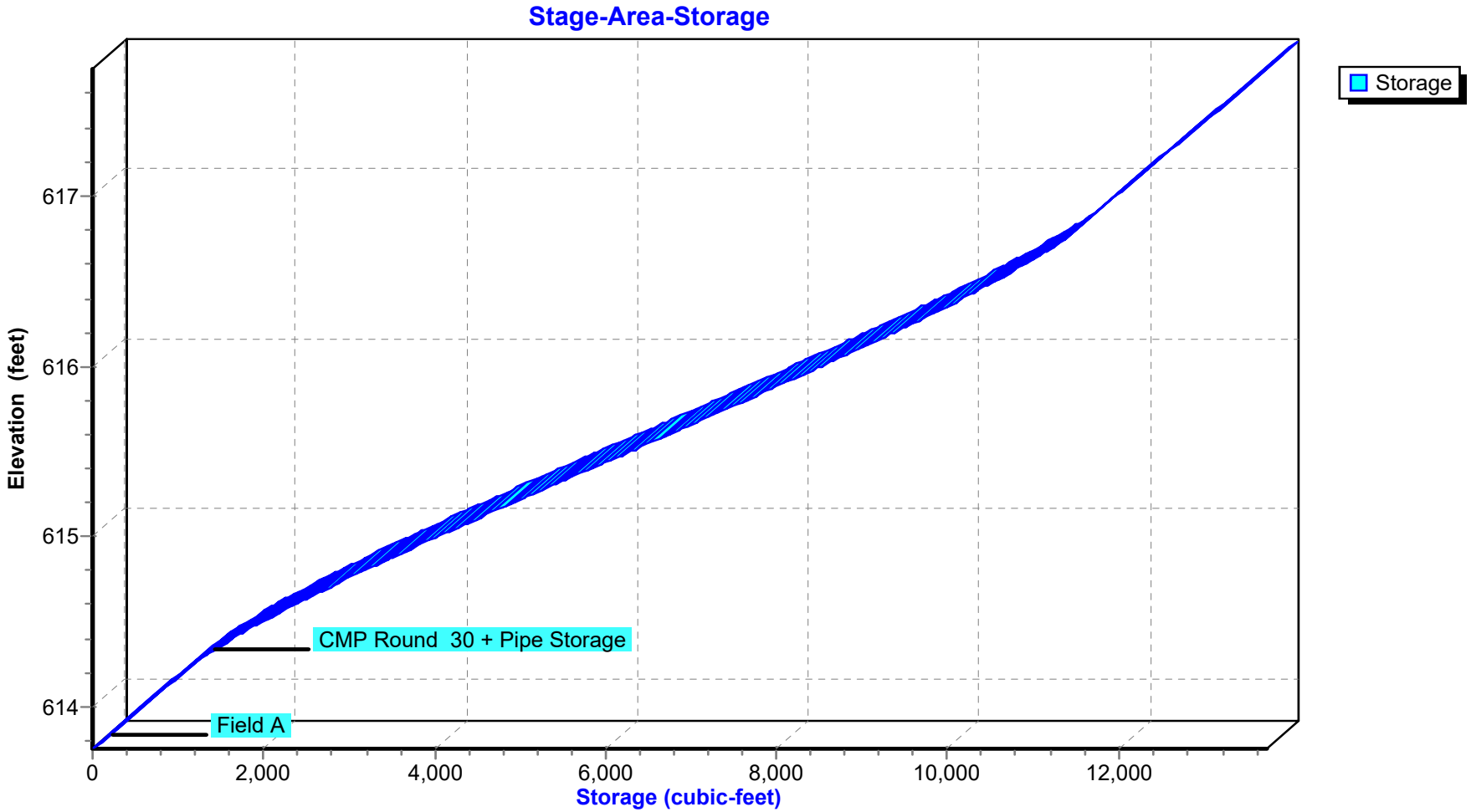
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.73' @ 24.00 hrs Surf.Area= 607 sf Storage= 2,112 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.50' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

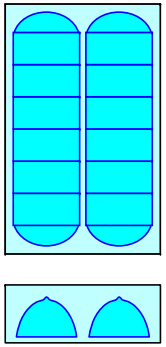
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

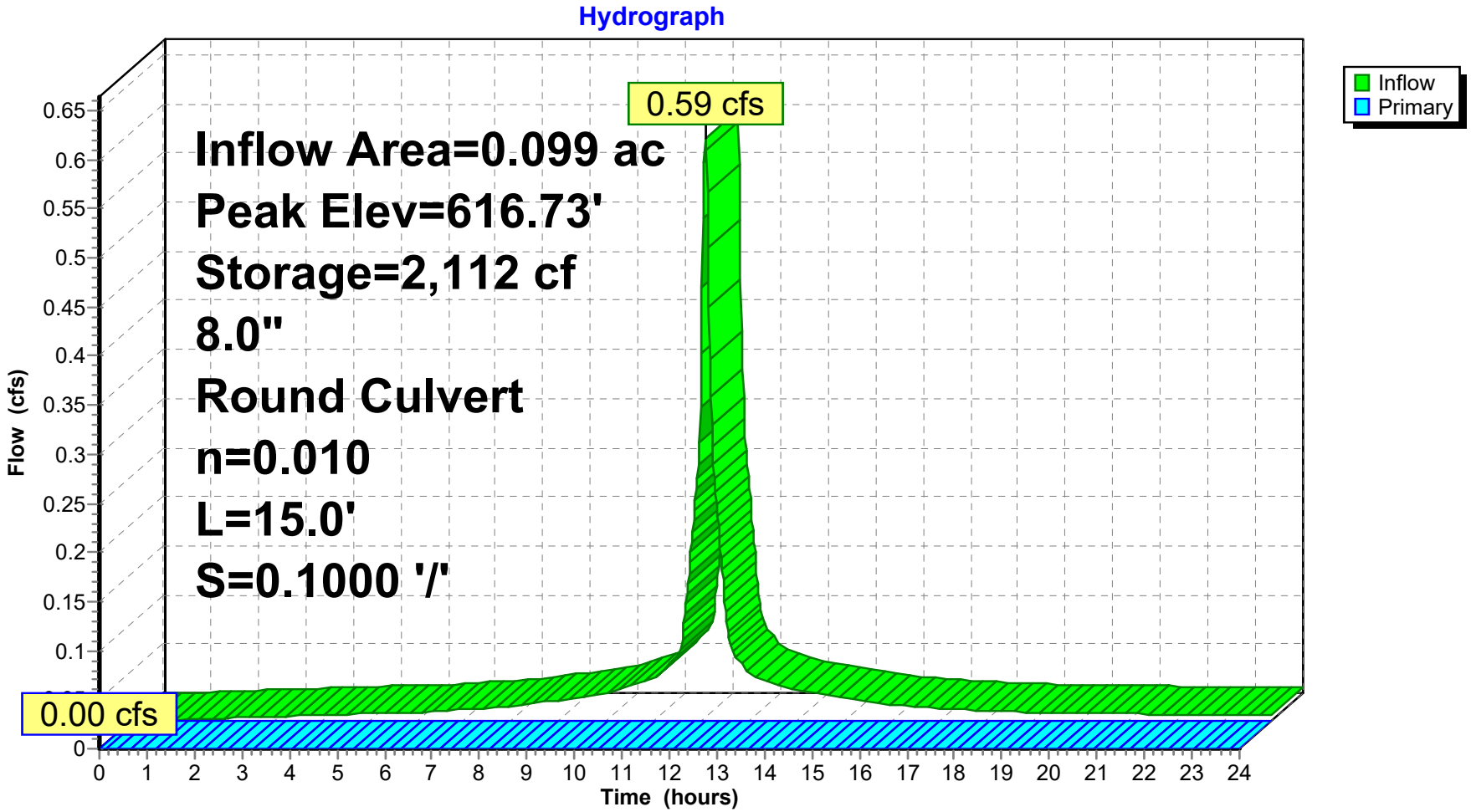
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

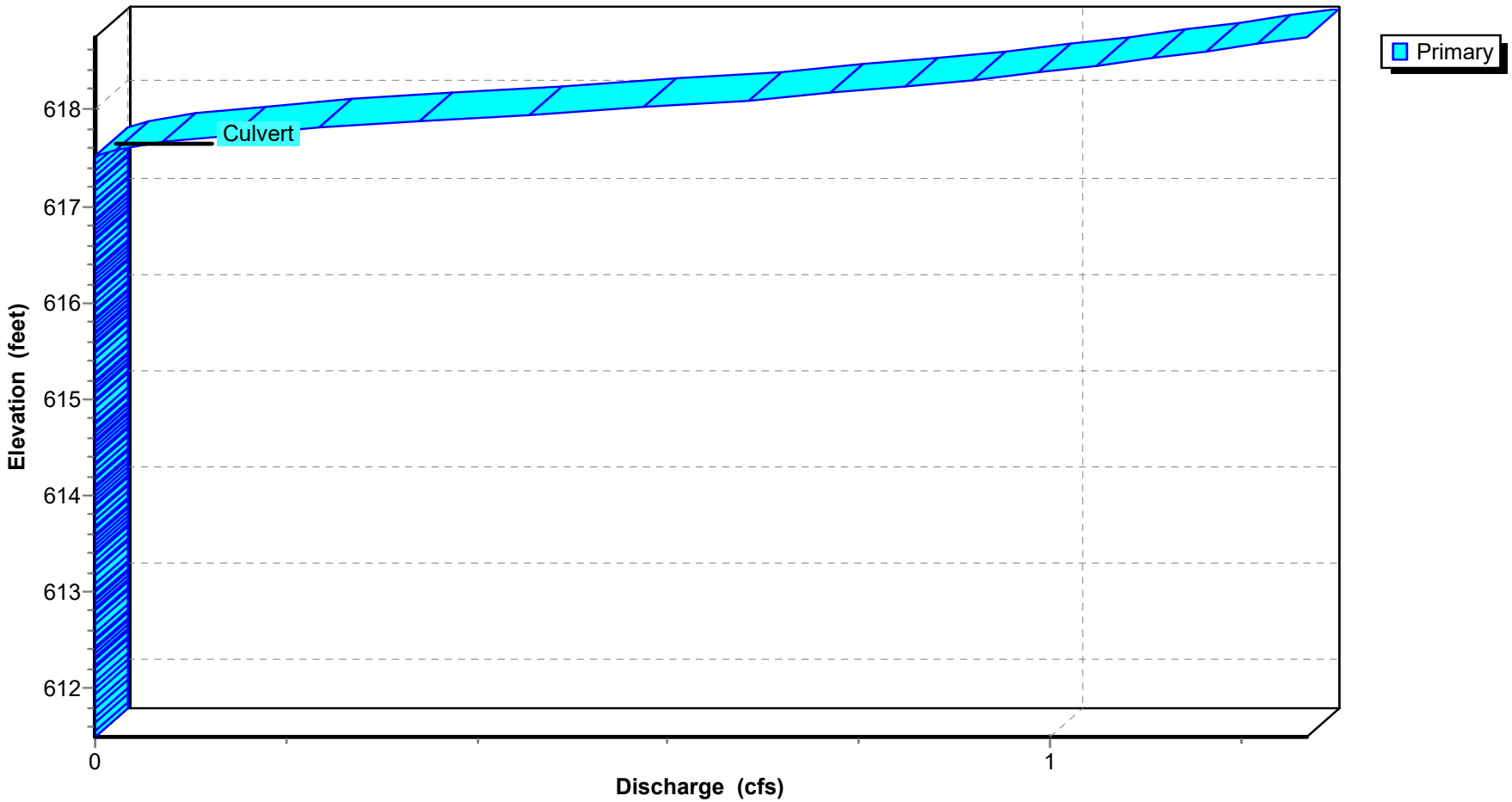


Pond 3P: ROOF INFILTRATION

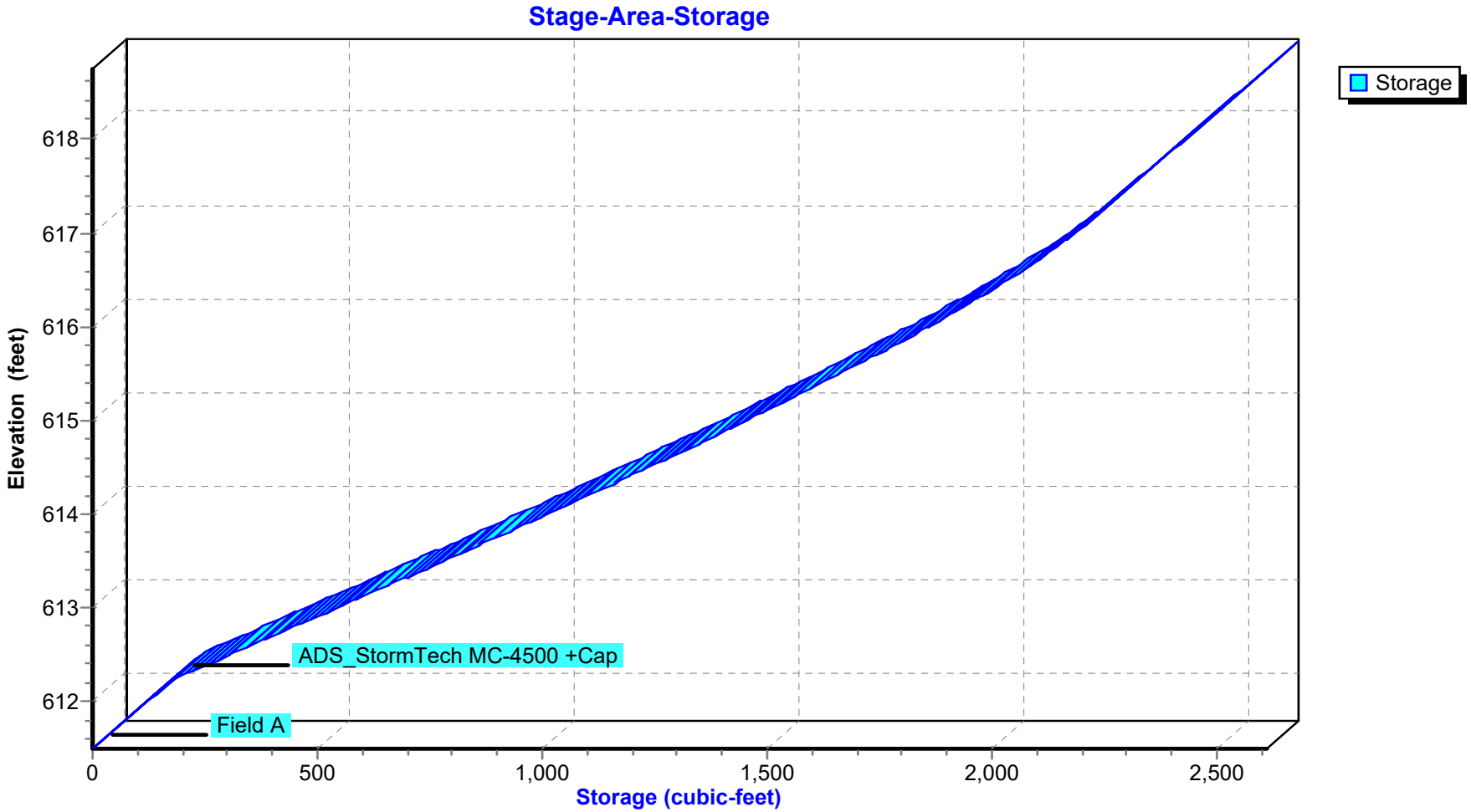


Pond 3P: ROOF INFILTRATION

Stage-Discharge



Pond 3P: ROOF INFILTRATION



Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 5.88" for 25-YEAR event
Inflow = 1.96 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 616.95' @ 24.00 hrs Surf.Area= 0.059 ac Storage= 0.161 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=613.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

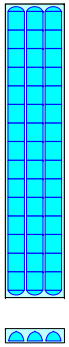
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

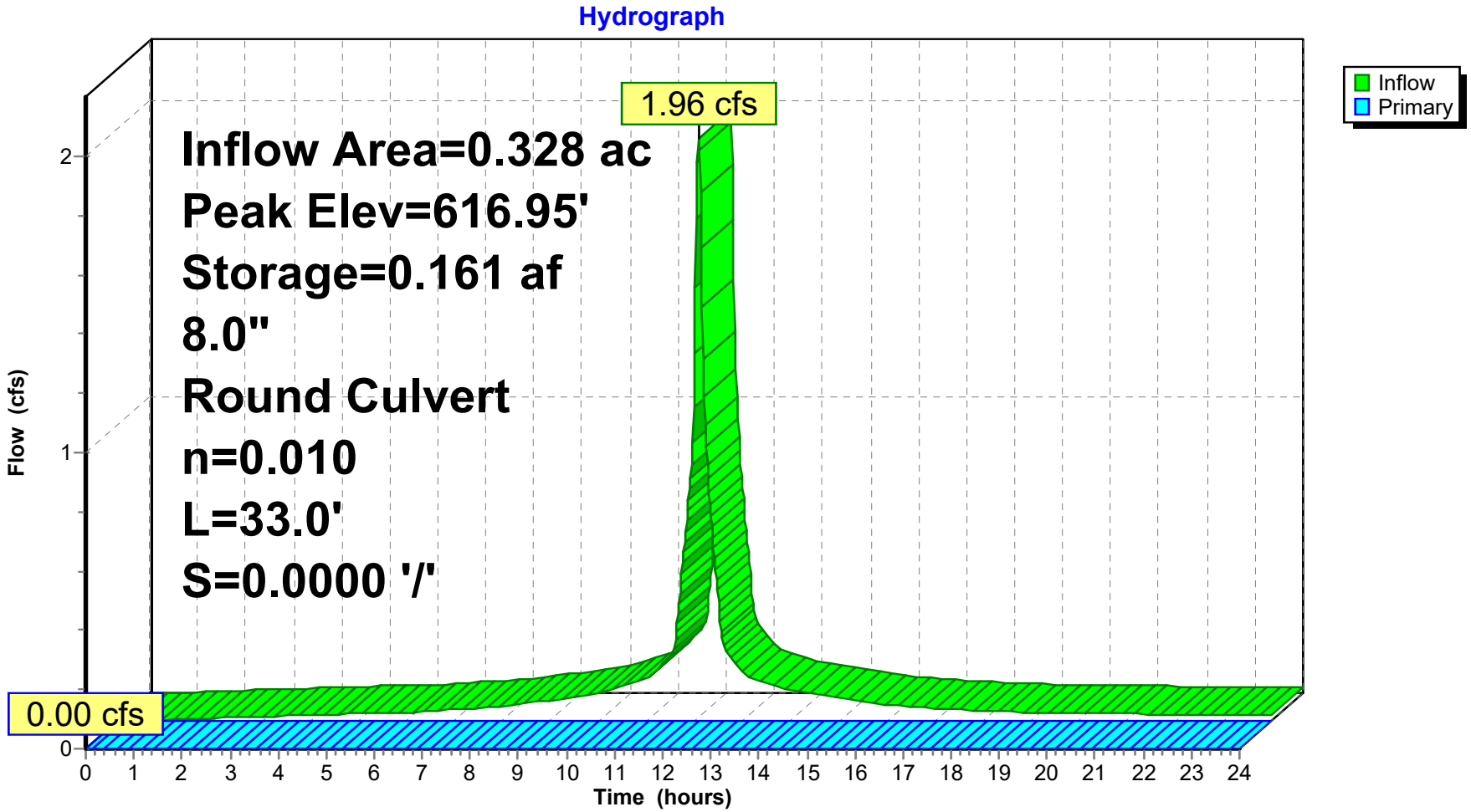
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

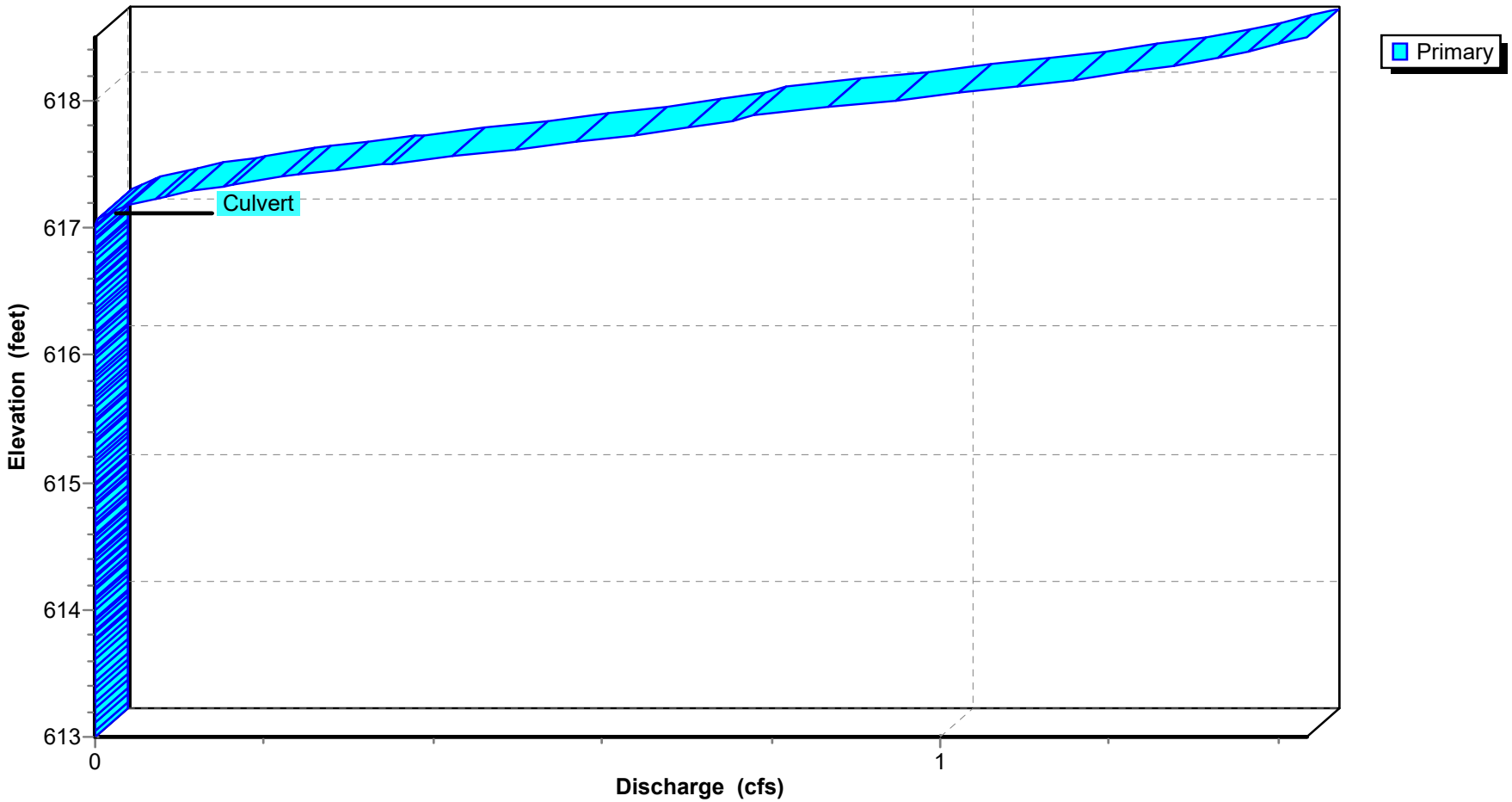


Pond 4P: ROOF INFILTRATION

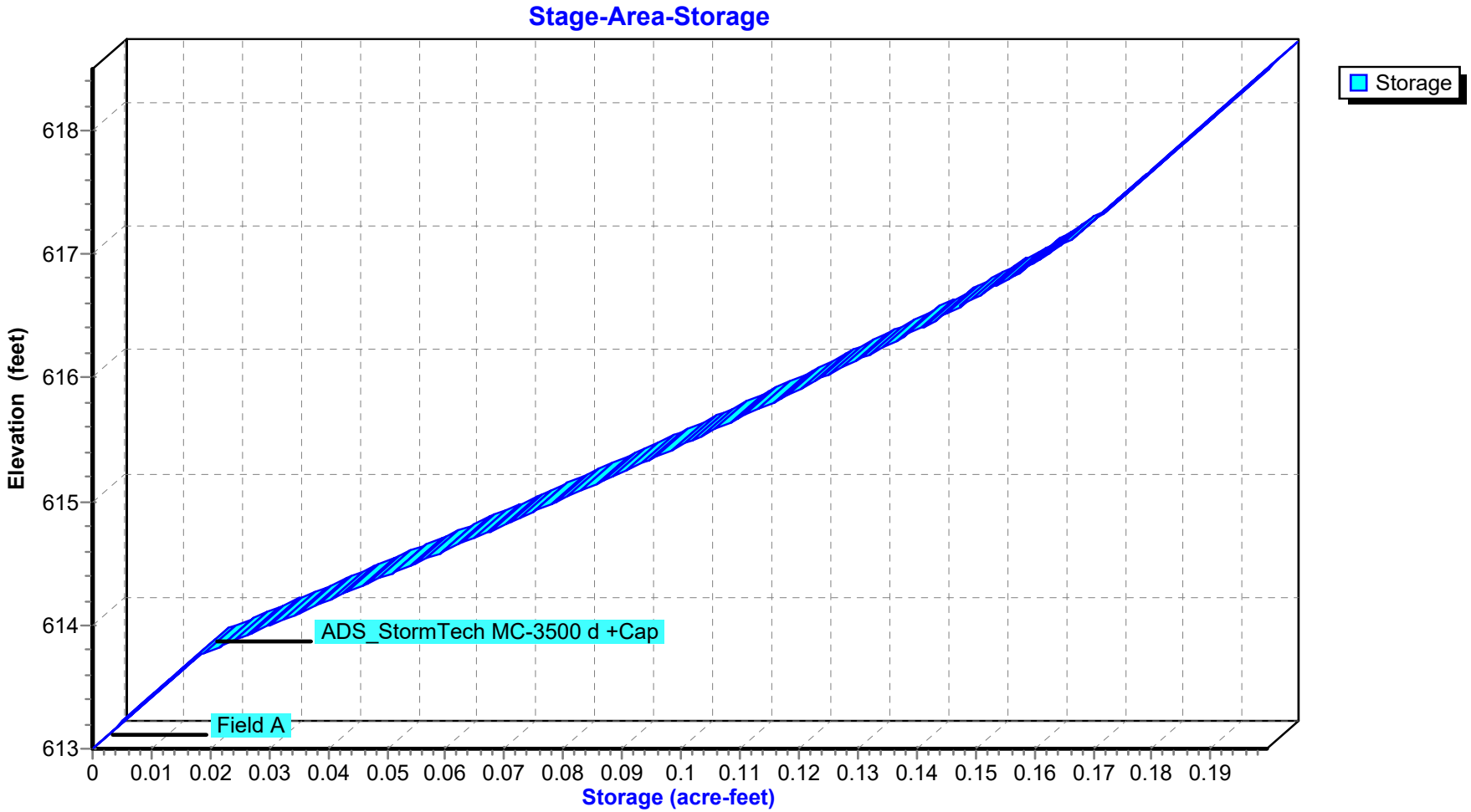


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: DISCHARGE TO THE WEST Runoff Area=0.140 ac 0.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=61 Runoff=0.53 cfs 0.038 af

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN Runoff Area=0.600 ac 48.33% Impervious Runoff Depth>5.30"
Tc=6.0 min CN=79 Runoff=3.68 cfs 0.265 af

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION Runoff Area=1.140 ac 75.44% Impervious Runoff Depth>6.47"
Tc=6.0 min CN=89 Runoff=8.15 cfs 0.614 af

Subcatchment P2-3: DISCHARGE TO THE EAST Runoff Area=1.250 ac 2.40% Impervious Runoff Depth>2.74"
Tc=6.0 min CN=56 Runoff=3.86 cfs 0.285 af

Subcatchment R4: ROOF - BUILDING #4 Runoff Area=0.099 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.062 af

Subcatchment R5: ROOF - BUILDING #5 Runoff Area=0.118 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.074 af

Subcatchment R6: ROOF - BUILDING #6 Runoff Area=0.090 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.057 af

Subcatchment R7: ROOF - BUILDING #7 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>7.53"
Tc=6.0 min CN=98 Runoff=0.92 cfs 0.075 af

Reach 2R: TOTAL DISCHARGE TO THE EAST Inflow=6.62 cfs 1.064 af
Outflow=6.62 cfs 1.064 af

Reach 3R: PROPOSED SITE TOTAL DISCHARGE Inflow=7.15 cfs 1.102 af
Outflow=7.15 cfs 1.102 af

Pond 1P: DETENTION BASIN Peak Elev=615.83' Storage=4,750 cf Inflow=3.68 cfs 0.265 af
Outflow=1.07 cfs 0.222 af

Pond 2P: UNDERGROUND DETENTION Peak Elev=617.06' Storage=12,093 cf Inflow=8.15 cfs 0.653 af
Outflow=2.70 cfs 0.547 af

Pond 3P: ROOF INFILTRATION Peak Elev=617.59' Storage=2,331 cf Inflow=0.76 cfs 0.062 af
8.0" Round Culvert n=0.010 L=15.0' S=0.1000 '/' Outflow=0.02 cfs 0.009 af

Pond 4P: ROOF INFILTRATION Peak Elev=617.26' Storage=0.170 af Inflow=2.50 cfs 0.206 af
8.0" Round Culvert n=0.010 L=33.0' S=0.0000 '/' Outflow=0.09 cfs 0.039 af

Total Runoff Area = 3.557 ac Runoff Volume = 1.471 af Average Runoff Depth = 4.96"
54.82% Pervious = 1.950 ac 45.18% Impervious = 1.607 ac

Summary for Subcatchment P1: DISCHARGE TO THE WEST

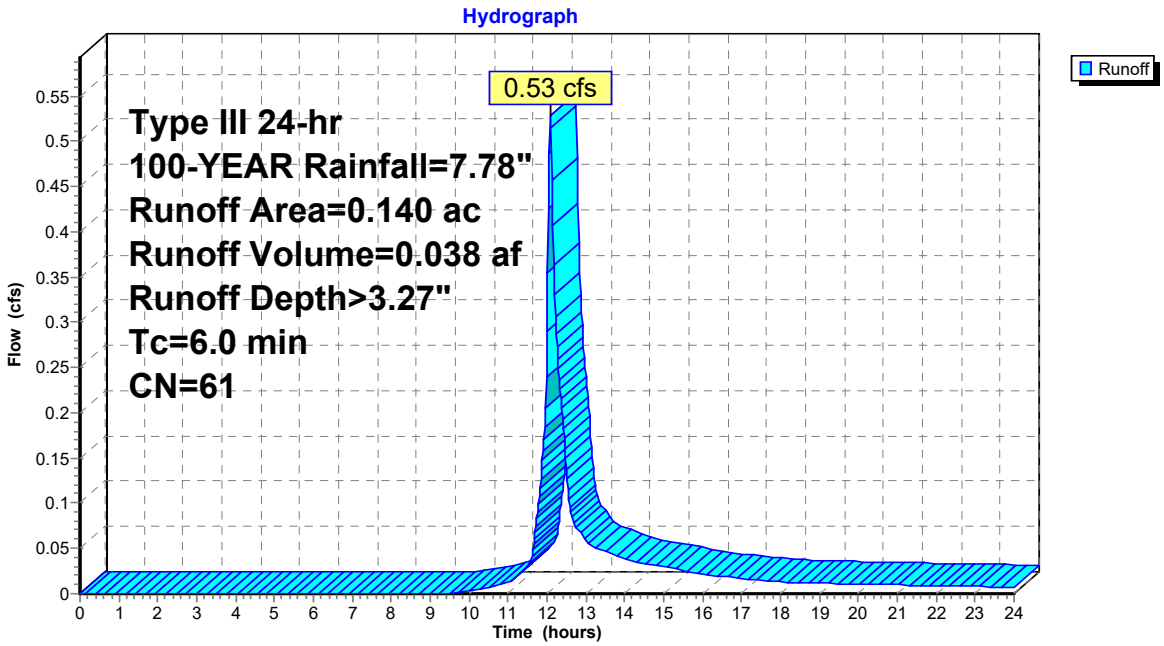
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.140	61	>75% Grass cover, Good, HSG B
0.140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: DISCHARGE TO THE WEST



Summary for Subcatchment P2-1: DISCHARGE TO DETENTION BASIN

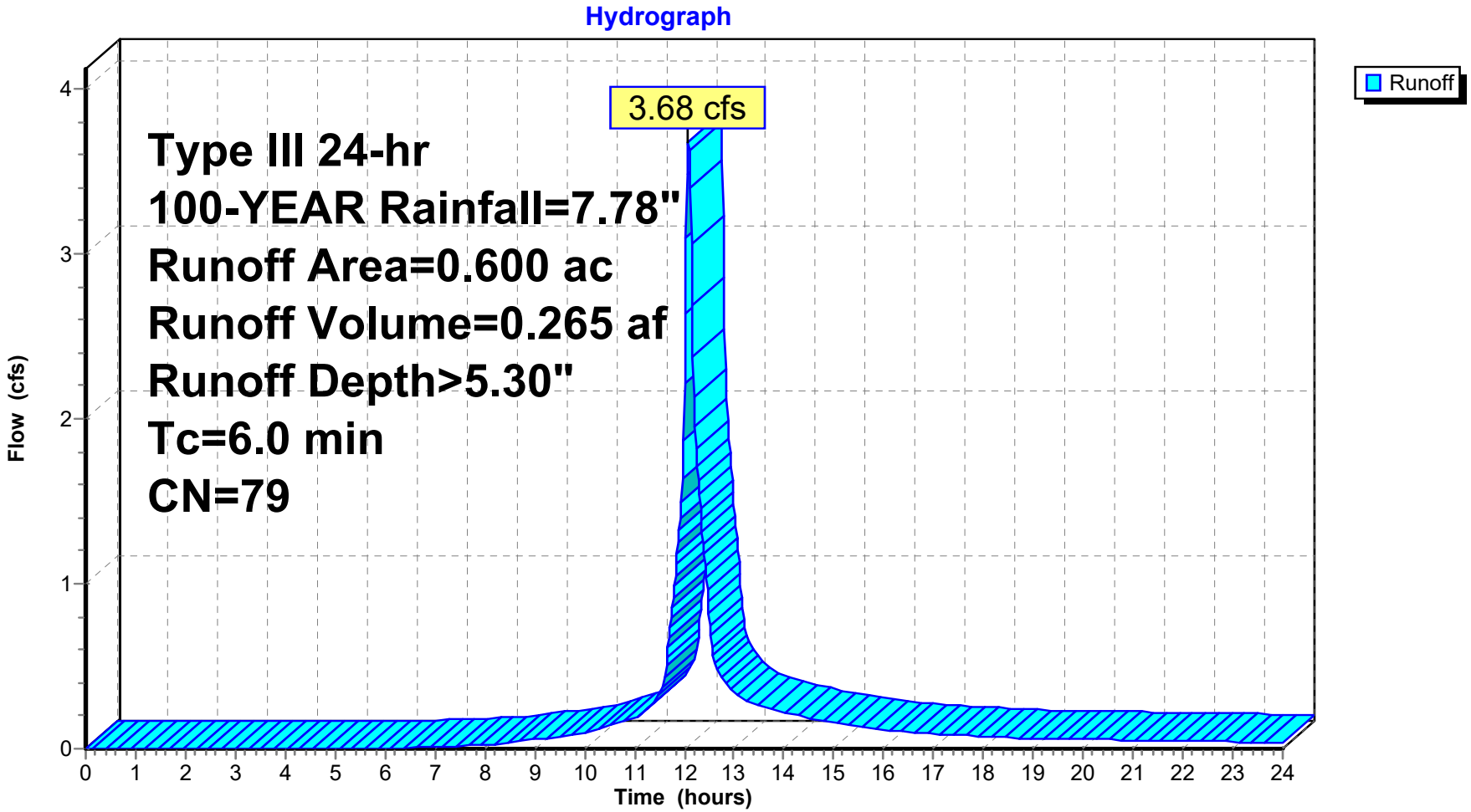
Runoff = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.310	61	>75% Grass cover, Good, HSG B
0.290	98	Paved parking, HSG B
0.600	79	Weighted Average
0.310		51.67% Pervious Area
0.290		48.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-1: DISCHARGE TO DETENTION BASIN



Summary for Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION

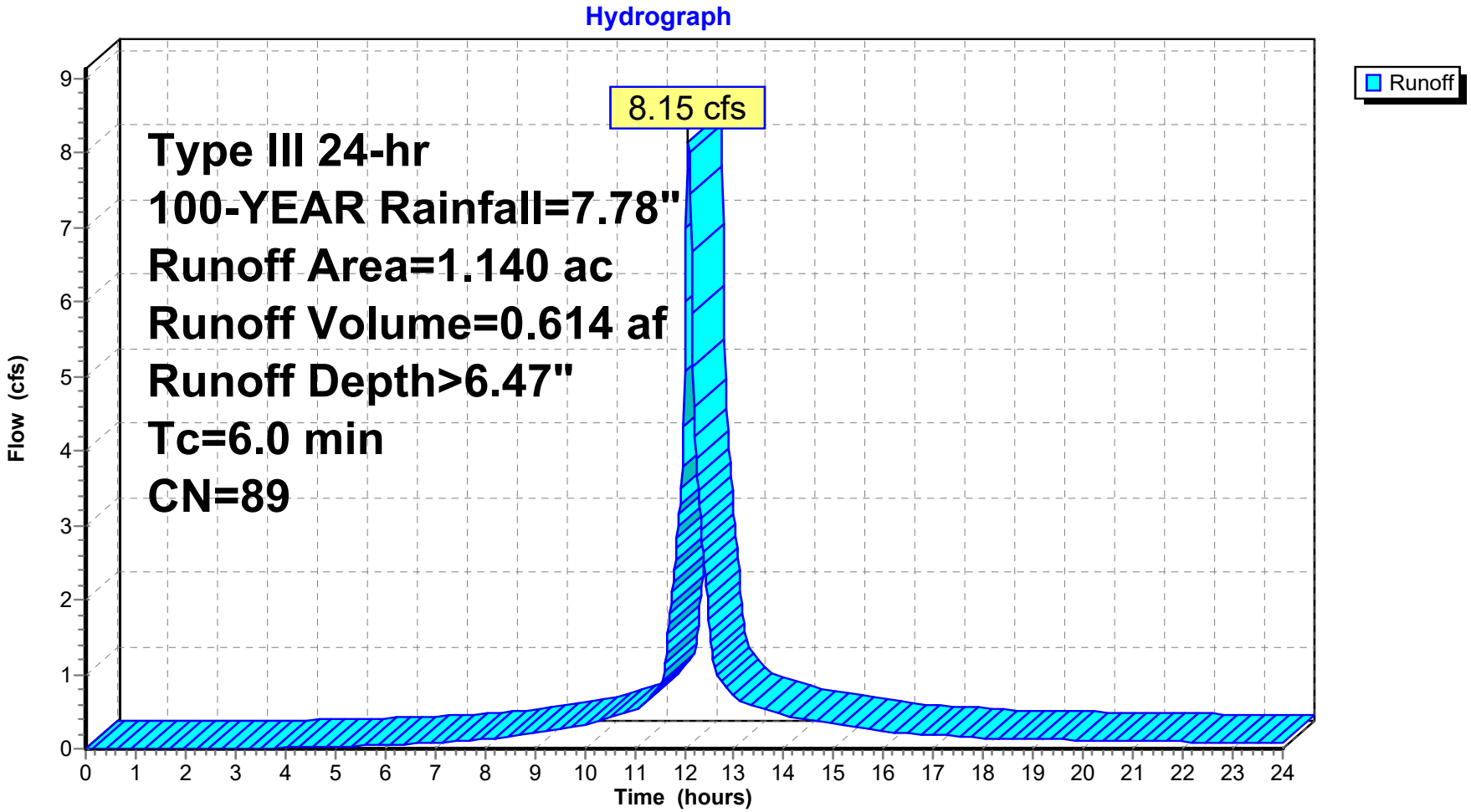
Runoff = 8.15 cfs @ 12.08 hrs, Volume= 0.614 af, Depth> 6.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.280	61	>75% Grass cover, Good, HSG B
0.860	98	Paved parking, HSG B
1.140	89	Weighted Average
0.280		24.56% Pervious Area
0.860		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-2: DISCHARGE TO UNDERGROUND DETENTION



Summary for Subcatchment P2-3: DISCHARGE TO THE EAST

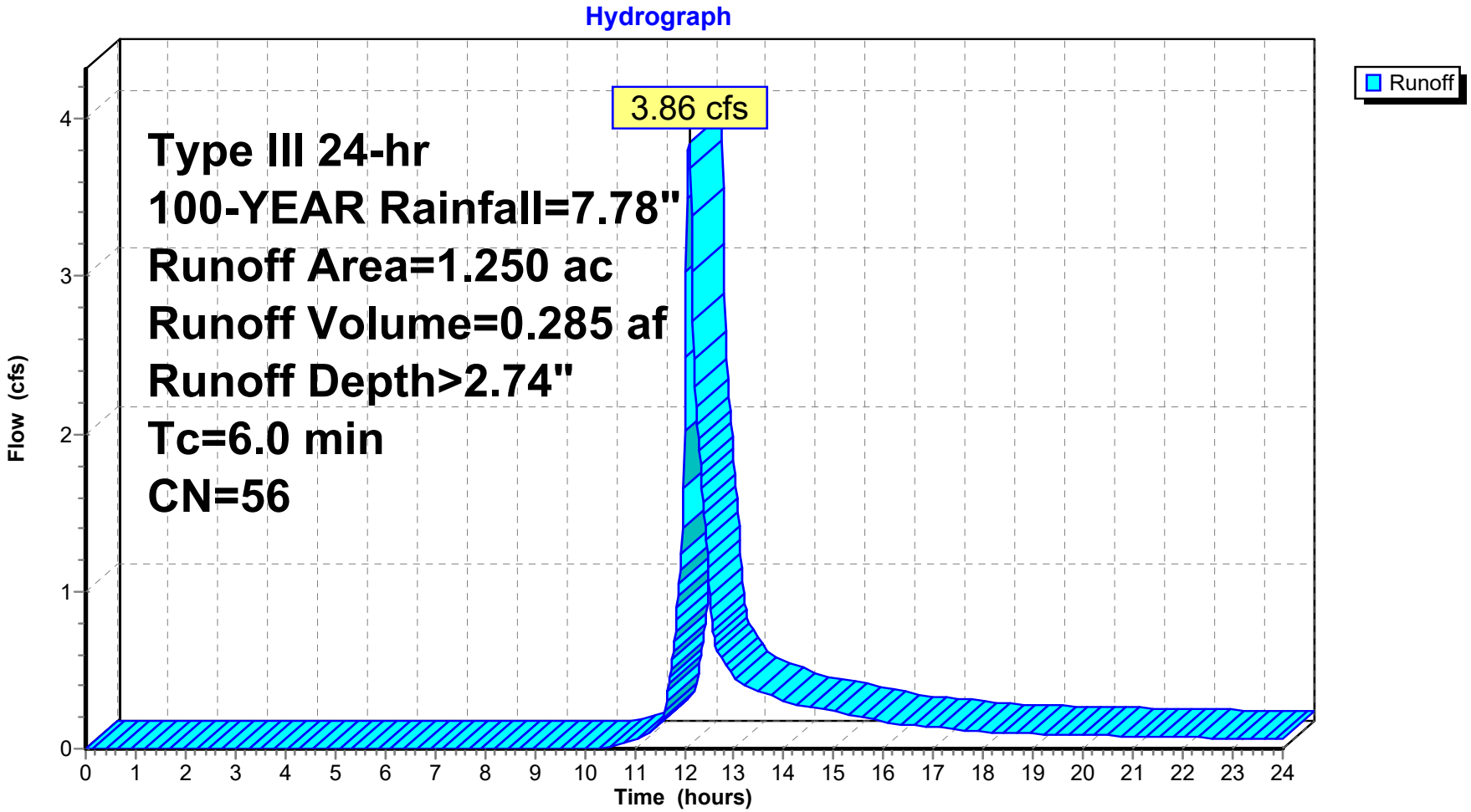
Runoff = 3.86 cfs @ 12.09 hrs, Volume= 0.285 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.670	61	>75% Grass cover, Good, HSG B
0.550	48	Brush, Good, HSG B
0.030	98	Paved parking, HSG B
1.250	56	Weighted Average
1.220		97.60% Pervious Area
0.030		2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P2-3: DISCHARGE TO THE EAST



Summary for Subcatchment R4: ROOF - BUILDING #4

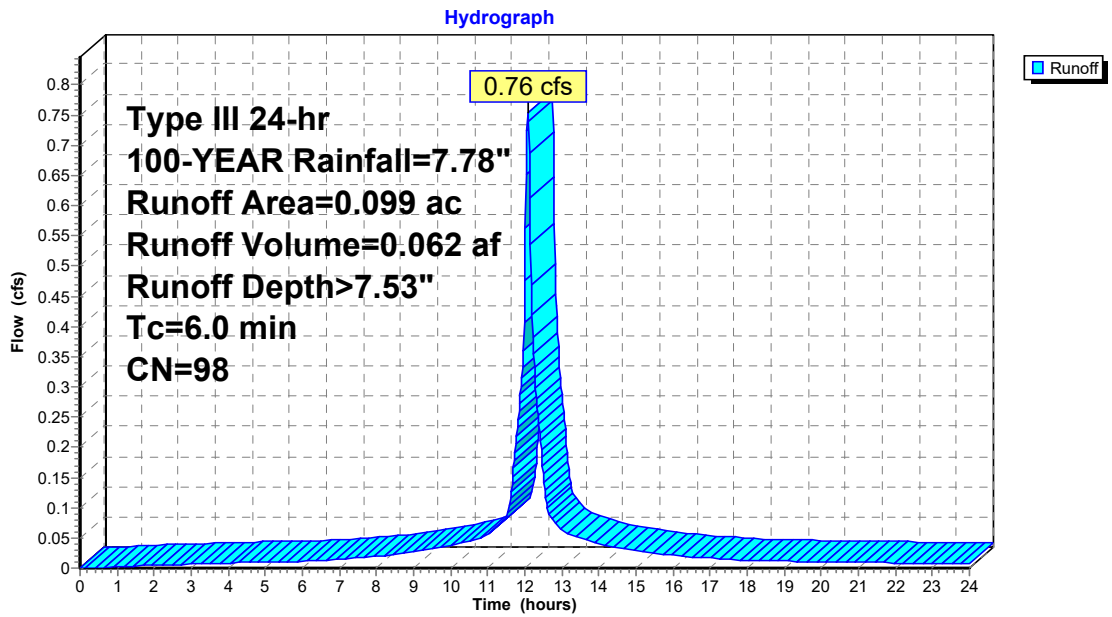
Runoff = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.099	98	Unconnected roofs, HSG B
0.099		100.00% Impervious Area
0.099		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R4: ROOF - BUILDING #4



Summary for Subcatchment R5: ROOF - BUILDING #5

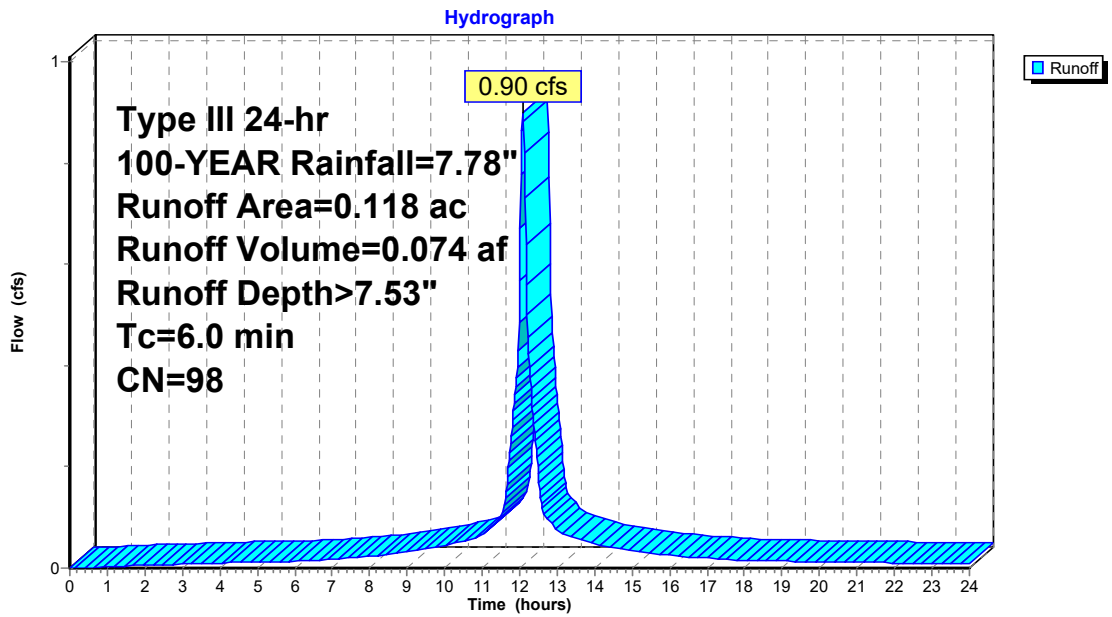
Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.074 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.118	98	Unconnected roofs, HSG B
0.118		100.00% Impervious Area
0.118		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R5: ROOF - BUILDING #5



Summary for Subcatchment R6: ROOF - BUILDING #6

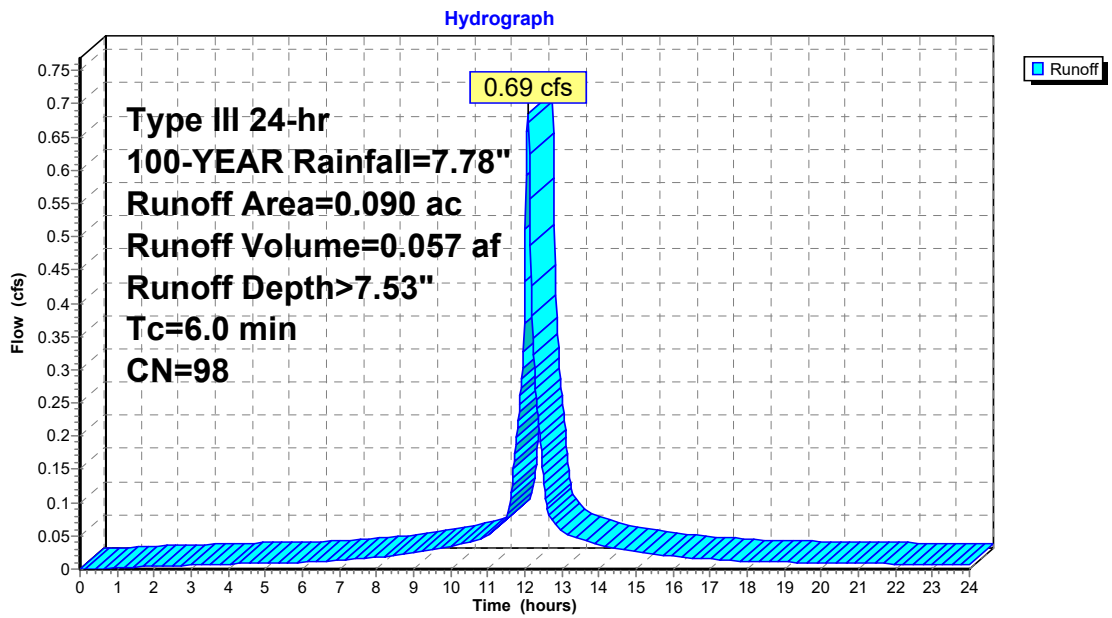
Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.057 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.090	98	Unconnected roofs, HSG B
0.090		100.00% Impervious Area
0.090		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R6: ROOF - BUILDING #6



Summary for Subcatchment R7: ROOF - BUILDING #7

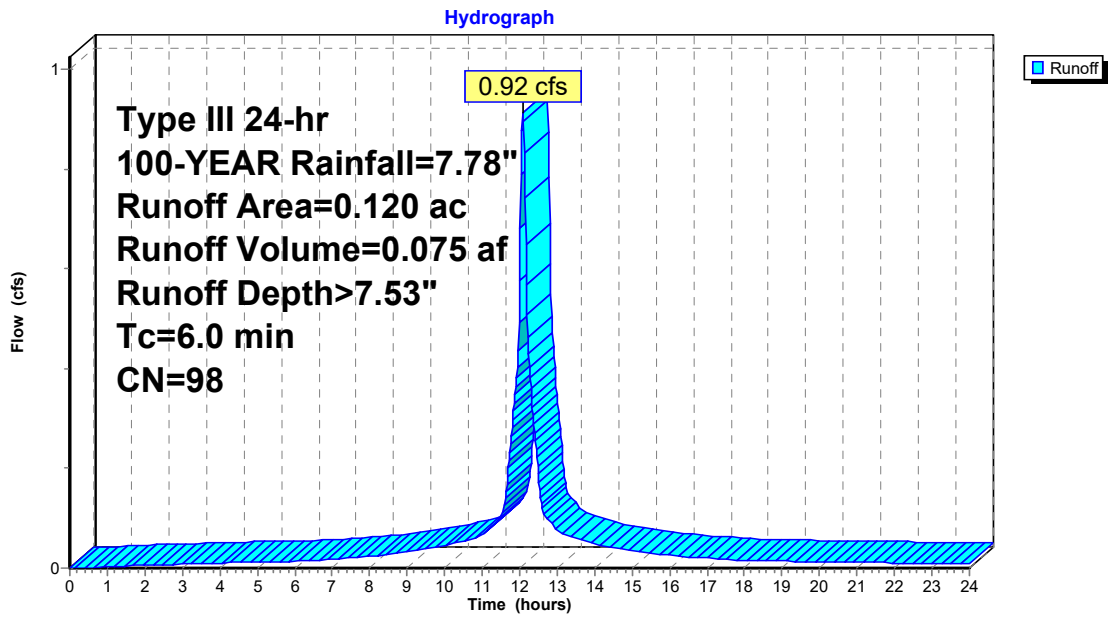
Runoff = 0.92 cfs @ 12.08 hrs, Volume= 0.075 af, Depth> 7.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-YEAR Rainfall=7.78"

Area (ac)	CN	Description
0.120	98	Unconnected roofs, HSG B
0.120		100.00% Impervious Area
0.120		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment R7: ROOF - BUILDING #7



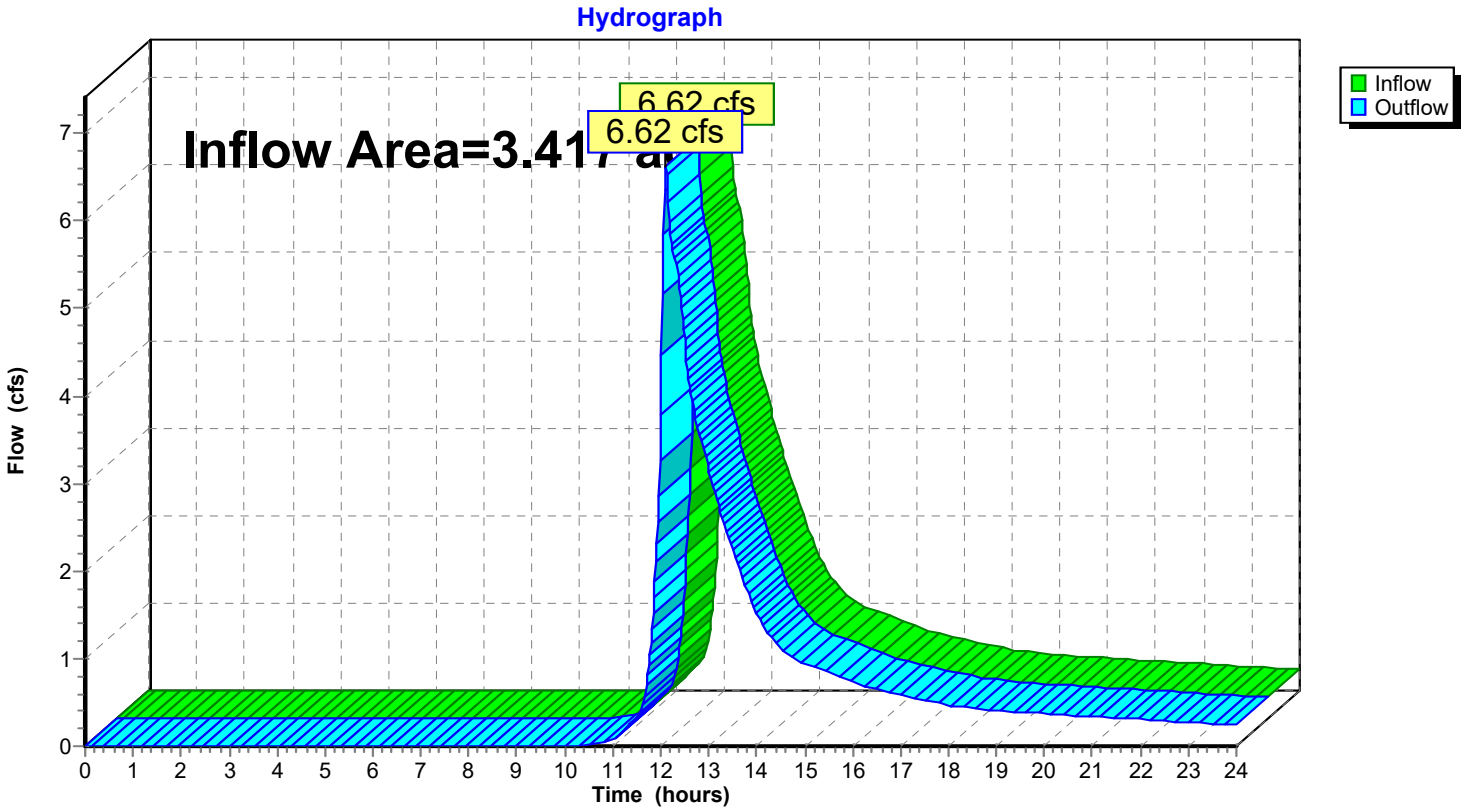
Summary for Reach 2R: TOTAL DISCHARGE TO THE EAST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.417 ac, 47.03% Impervious, Inflow Depth > 3.74" for 100-YEAR event
Inflow = 6.62 cfs @ 12.11 hrs, Volume= 1.064 af
Outflow = 6.62 cfs @ 12.11 hrs, Volume= 1.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 2R: TOTAL DISCHARGE TO THE EAST



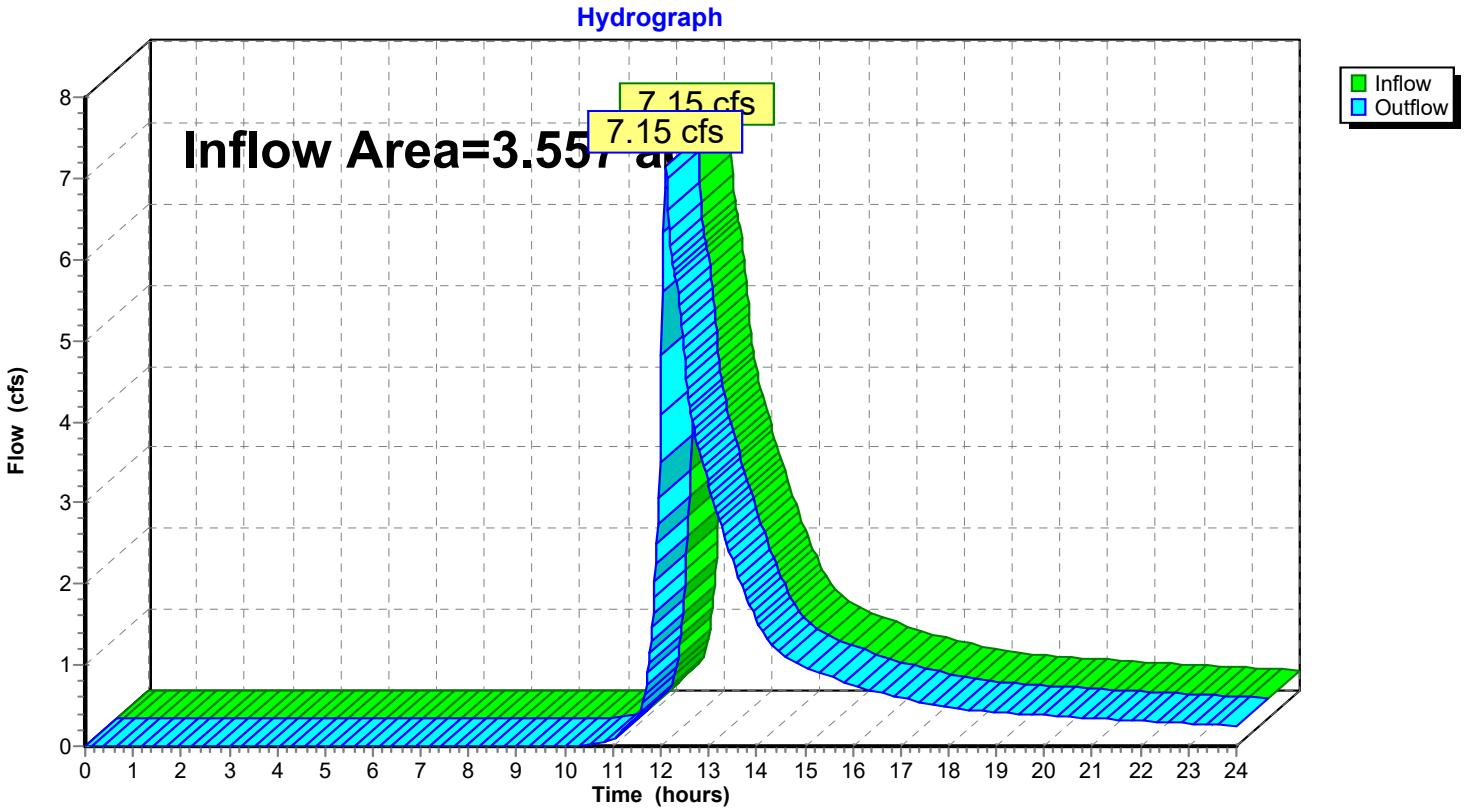
Summary for Reach 3R: PROPOSED SITE TOTAL DISCHARGE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.557 ac, 45.18% Impervious, Inflow Depth > 3.72" for 100-YEAR event
Inflow = 7.15 cfs @ 12.11 hrs, Volume= 1.102 af
Outflow = 7.15 cfs @ 12.11 hrs, Volume= 1.102 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Reach 3R: PROPOSED SITE TOTAL DISCHARGE



Summary for Pond 1P: DETENTION BASIN

[58] Hint: Peaked 0.89' above defined flood level

Inflow Area = 0.600 ac, 48.33% Impervious, Inflow Depth > 5.30" for 100-YEAR event
Inflow = 3.68 cfs @ 12.09 hrs, Volume= 0.265 af
Outflow = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af, Atten= 71%, Lag= 20.7 min
Primary = 1.07 cfs @ 12.43 hrs, Volume= 0.222 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 615.83' @ 12.43 hrs Surf.Area= 2,463 sf Storage= 4,750 cf
Flood Elev= 614.94' Surf.Area= 1,948 sf Storage= 2,797 cf

Plug-Flow detention time= 128.9 min calculated for 0.222 af (84% of inflow)
Center-of-Mass det. time= 62.8 min (868.5 - 805.7)

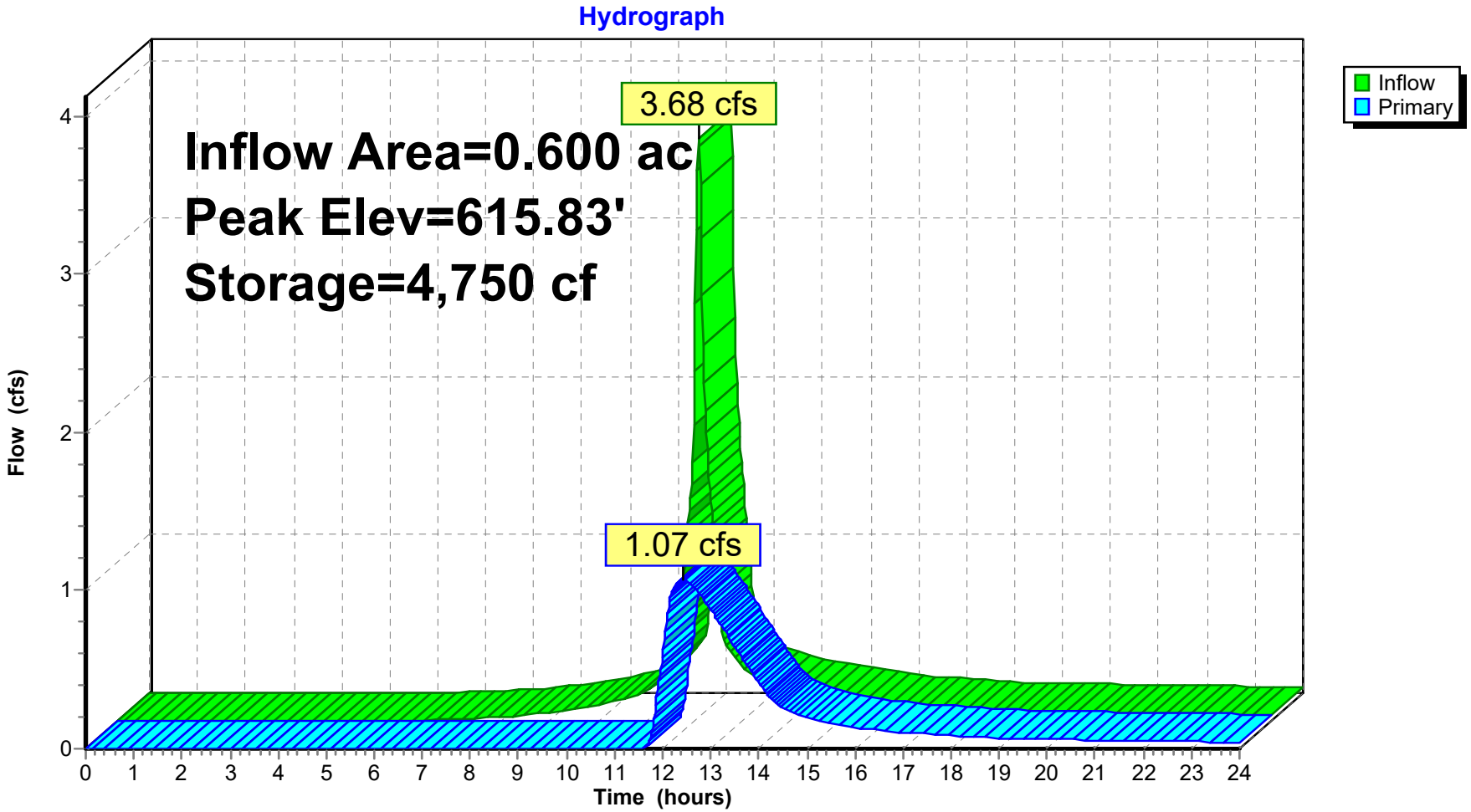
Volume	Invert	Avail.Storage	Storage Description
#1	613.00'	6,621 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
613.00	984	145.0	0	0	984
614.00	1,446	164.0	1,208	1,208	1,476
615.00	1,983	186.0	1,707	2,915	2,113
616.00	2,570	205.0	2,270	5,185	2,736
616.50	3,185	230.0	1,436	6,621	3,608

Device	Routing	Invert	Outlet Devices
#1	Primary	614.05'	**15.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 614.05' / 613.00' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.30'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	616.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

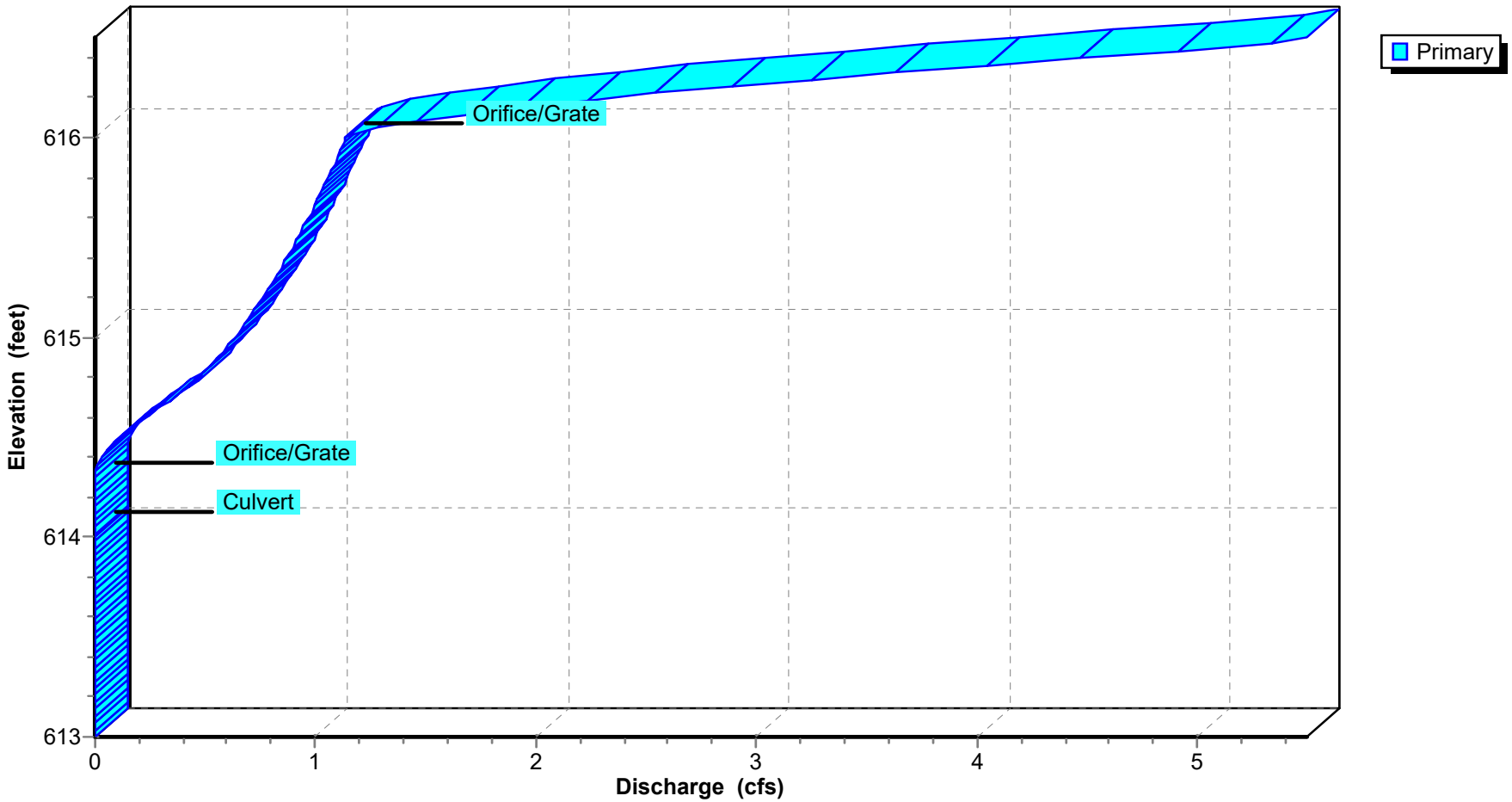
Primary OutFlow Max=1.07 cfs @ 12.43 hrs HW=615.83' (Free Discharge)
└─**1=Culvert** (Passes 1.07 cfs of 6.34 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.07 cfs @ 5.44 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: DETENTION BASIN

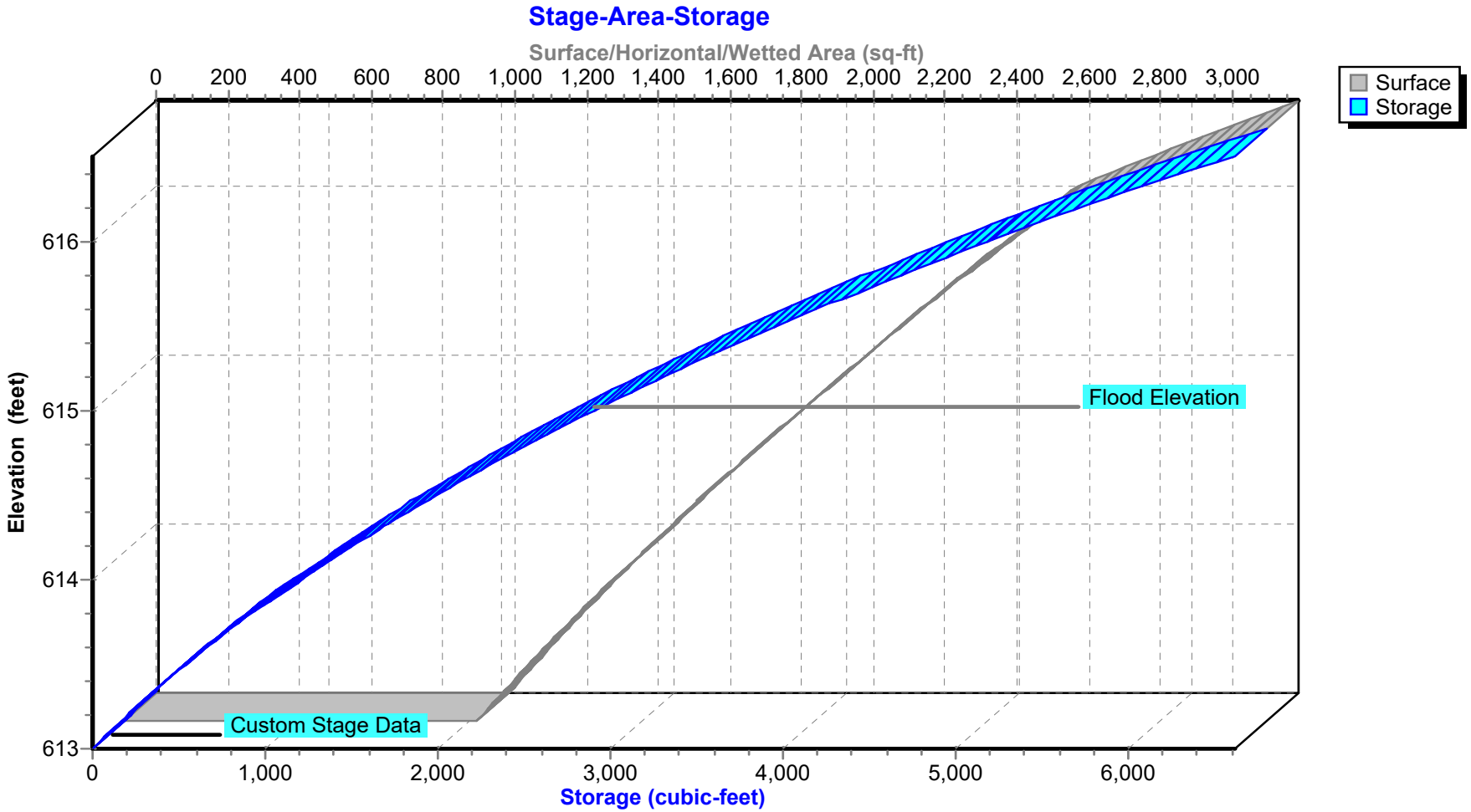


Pond 1P: DETENTION BASIN

Stage-Discharge



Pond 1P: DETENTION BASIN



Summary for Pond 2P: UNDERGROUND DETENTION

[81] Warning: Exceeded Pond 4P by 0.95' @ 12.30 hrs

Inflow Area = 1.468 ac, 80.93% Impervious, Inflow Depth > 5.34" for 100-YEAR event
Inflow = 8.15 cfs @ 12.08 hrs, Volume= 0.653 af
Outflow = 2.70 cfs @ 12.37 hrs, Volume= 0.547 af, Atten= 67%, Lag= 17.2 min
Primary = 2.70 cfs @ 12.37 hrs, Volume= 0.547 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.06' @ 12.37 hrs Surf.Area= 5,913 sf Storage= 12,093 cf

Plug-Flow detention time= 168.4 min calculated for 0.547 af (84% of inflow)
Center-of-Mass det. time= 97.4 min (894.9 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.75'	6,633 cf	**36.50'W x 162.00'L x 4.00'H Field A** 23,652 cf Overall - 7,069 cf Embedded = 16,583 cf x 40.0% Voids
#2A	614.25'	7,069 cf	**CMP Round 30** x 72 Inside #1 Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf Overall Size= 30.0"W x 30.0"H x 20.00'L 9 Rows of 8 Chambers
#3	614.25'	31 cf	**15.0" Round Pipe Storage** L= 25.0'
		13,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	613.75'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 613.25' / 613.75' S= -0.0278 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	614.86'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	615.33'	**8.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	617.00'	**10.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.70 cfs @ 12.37 hrs HW=617.06' (Free Discharge)
└─**1=Culvert** (Passes 2.70 cfs of 9.68 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.86 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.98 cfs @ 5.68 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.11 cfs @ 0.78 fps)

Pond 2P: UNDERGROUND DETENTION - Chamber Wizard Field A

Chamber Model = CMP Round 30 (Round Corrugated Metal Pipe)
Effective Size= 30.0"W x 30.0"H => 4.91 sf x 20.00'L = 98.2 cf
Overall Size= 30.0"W x 30.0"H x 20.00'L

30.0" Wide + 18.0" Spacing = 48.0" C-C Row Spacing

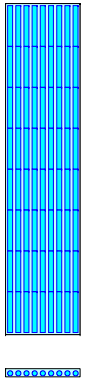
8 Chambers/Row x 20.00' Long = 160.00' Row Length +12.0" End Stone x 2 = 162.00' Base Length
9 Rows x 30.0" Wide + 18.0" Spacing x 8 + 12.0" Side Stone x 2 = 36.50' Base Width
6.0" Base + 30.0" Chamber Height + 12.0" Cover = 4.00' Field Height

72 Chambers x 98.2 cf = 7,068.6 cf Chamber Storage

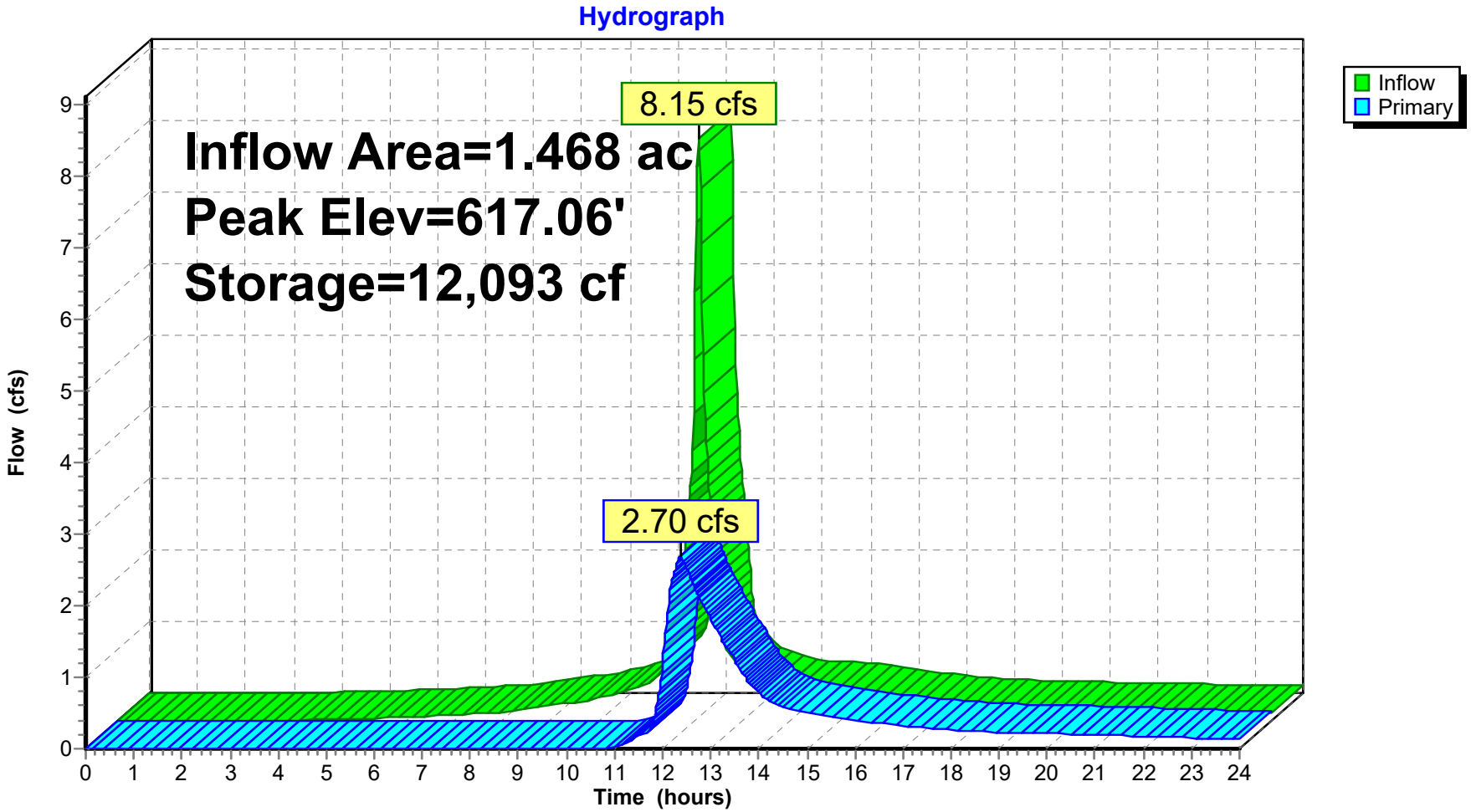
23,652.0 cf Field - 7,068.6 cf Chambers = 16,583.4 cf Stone x 40.0% Voids = 6,633.4 cf Stone Storage

Chamber Storage + Stone Storage = 13,702.0 cf = 0.315 af
Overall Storage Efficiency = 57.9%
Overall System Size = 162.00' x 36.50' x 4.00'

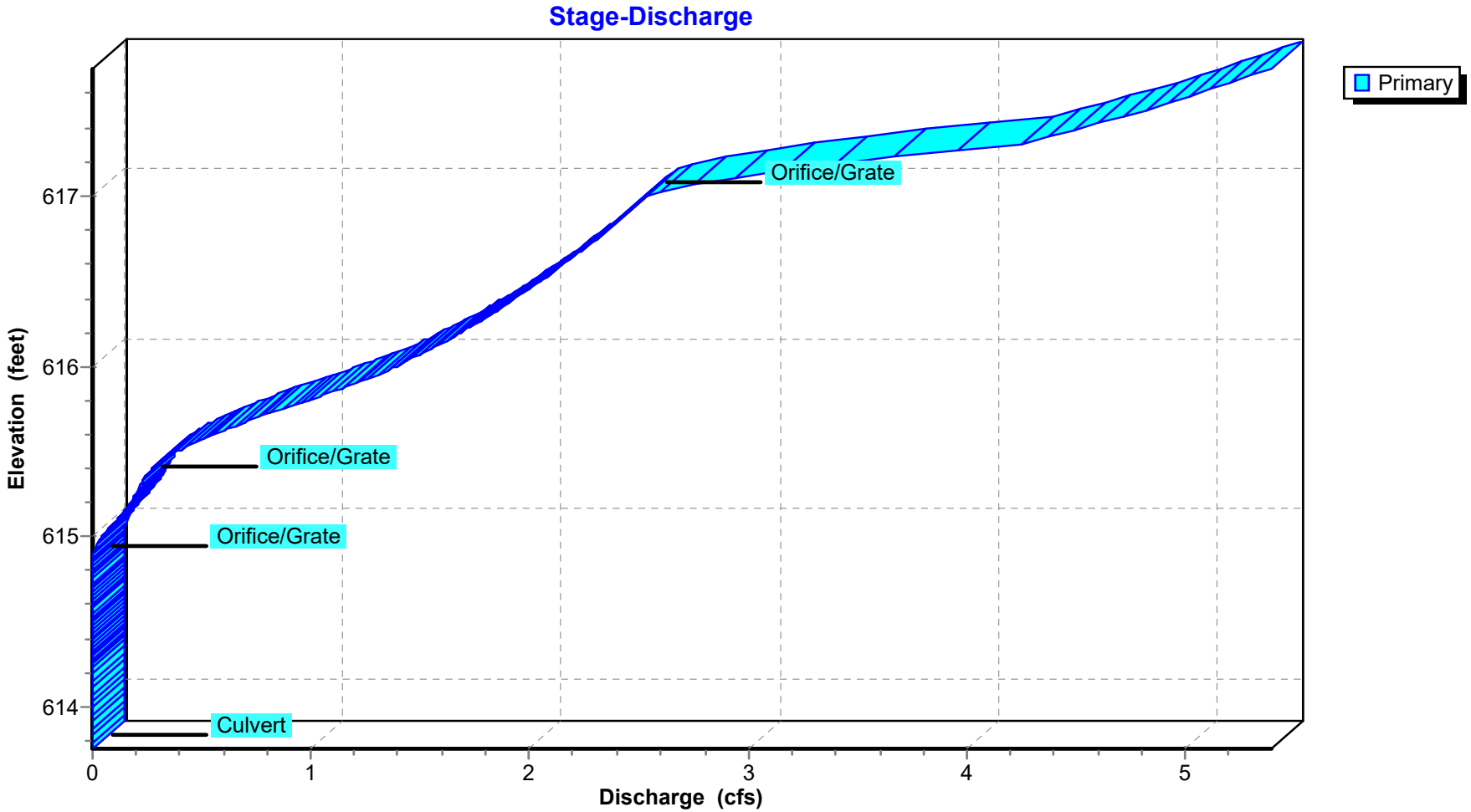
72 Chambers
876.0 cy Field
614.2 cy Stone



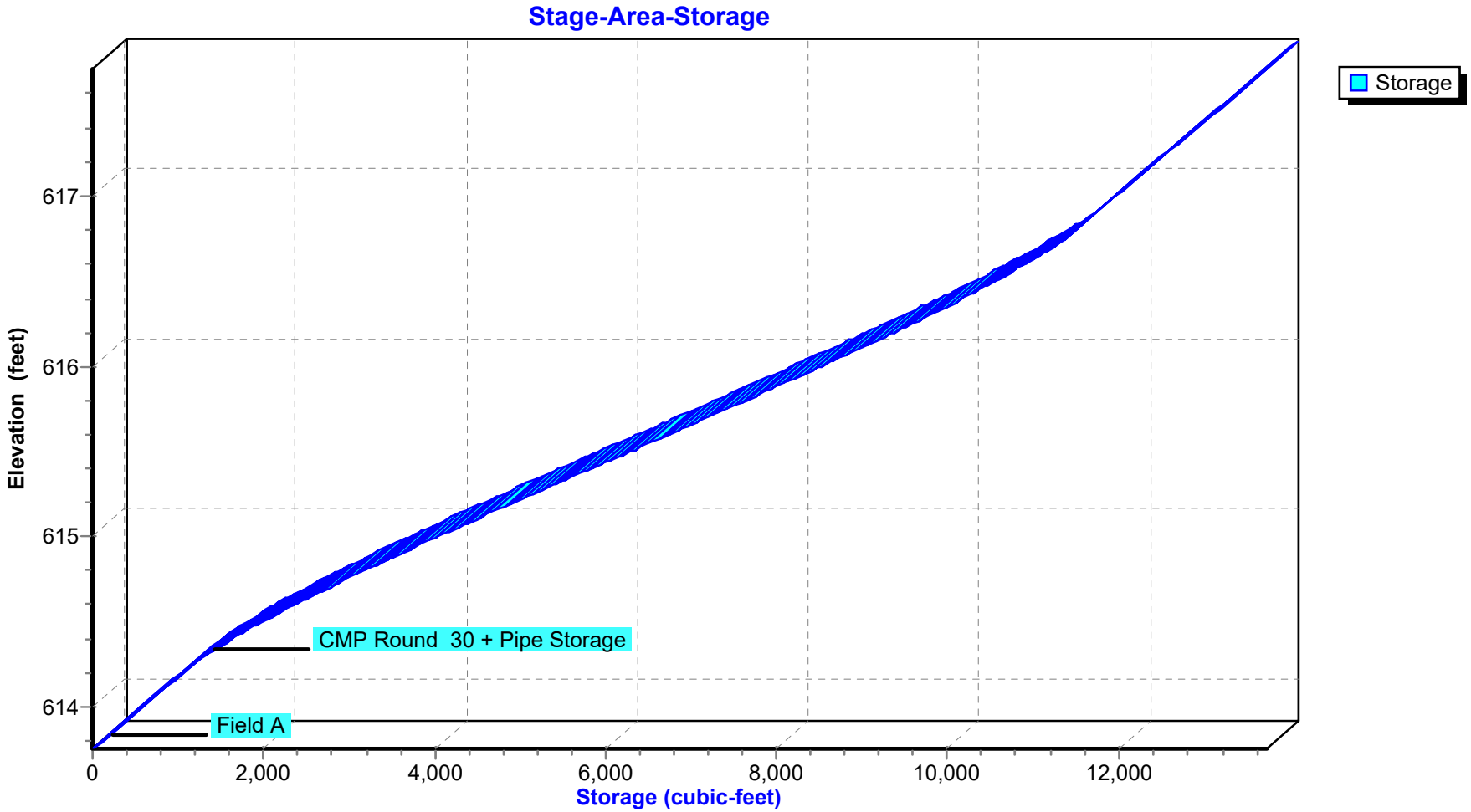
Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Pond 2P: UNDERGROUND DETENTION



Summary for Pond 3P: ROOF INFILTRATION

Inflow Area = 0.099 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 0.76 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af, Atten= 97%, Lag= 222.9 min
Primary = 0.02 cfs @ 15.80 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.59' @ 15.80 hrs Surf.Area= 607 sf Storage= 2,331 cf

Plug-Flow detention time= 721.0 min calculated for 0.009 af (14% of inflow)
Center-of-Mass det. time= 385.3 min (1,126.3 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	611.50'	1,192 cf	**19.42'W x 31.27'L x 7.25'H Field A** 4,401 cf Overall - 1,421 cf Embedded = 2,981 cf x 40.0% Voids
#2A	612.25'	1,421 cf	**ADS_StormTech MC-4500 +Cap** x 12 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 6 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
		2,613 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.50'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.50' / 616.00' S= 0.1000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.02 cfs @ 15.80 hrs HW=617.59' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.02 cfs @ 0.81 fps)

Pond 3P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

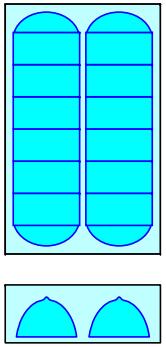
6 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 29.27' Row Length +12.0" End Stone x 2 = 31.27' Base Length
2 Rows x 100.0" Wide + 9.0" Spacing x 1 + 12.0" Side Stone x 2 = 19.42' Base Width
9.0" Base + 60.0" Chamber Height + 18.0" Cover = 7.25' Field Height

12 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 1,420.7 cf Chamber Storage

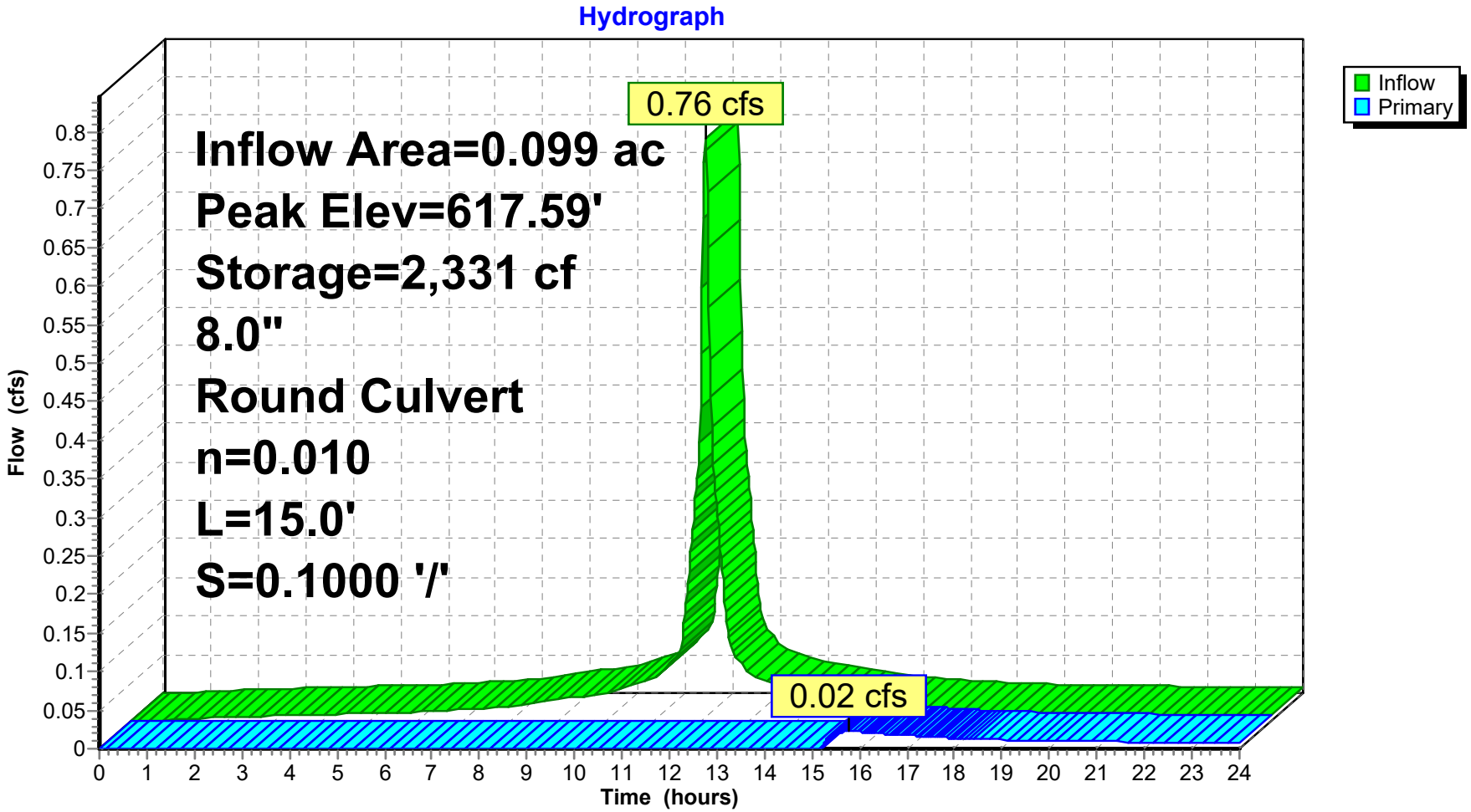
4,401.4 cf Field - 1,420.7 cf Chambers = 2,980.7 cf Stone x 40.0% Voids = 1,192.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,613.0 cf = 0.060 af
Overall Storage Efficiency = 59.4%
Overall System Size = 31.27' x 19.42' x 7.25'

12 Chambers
163.0 cy Field
110.4 cy Stone

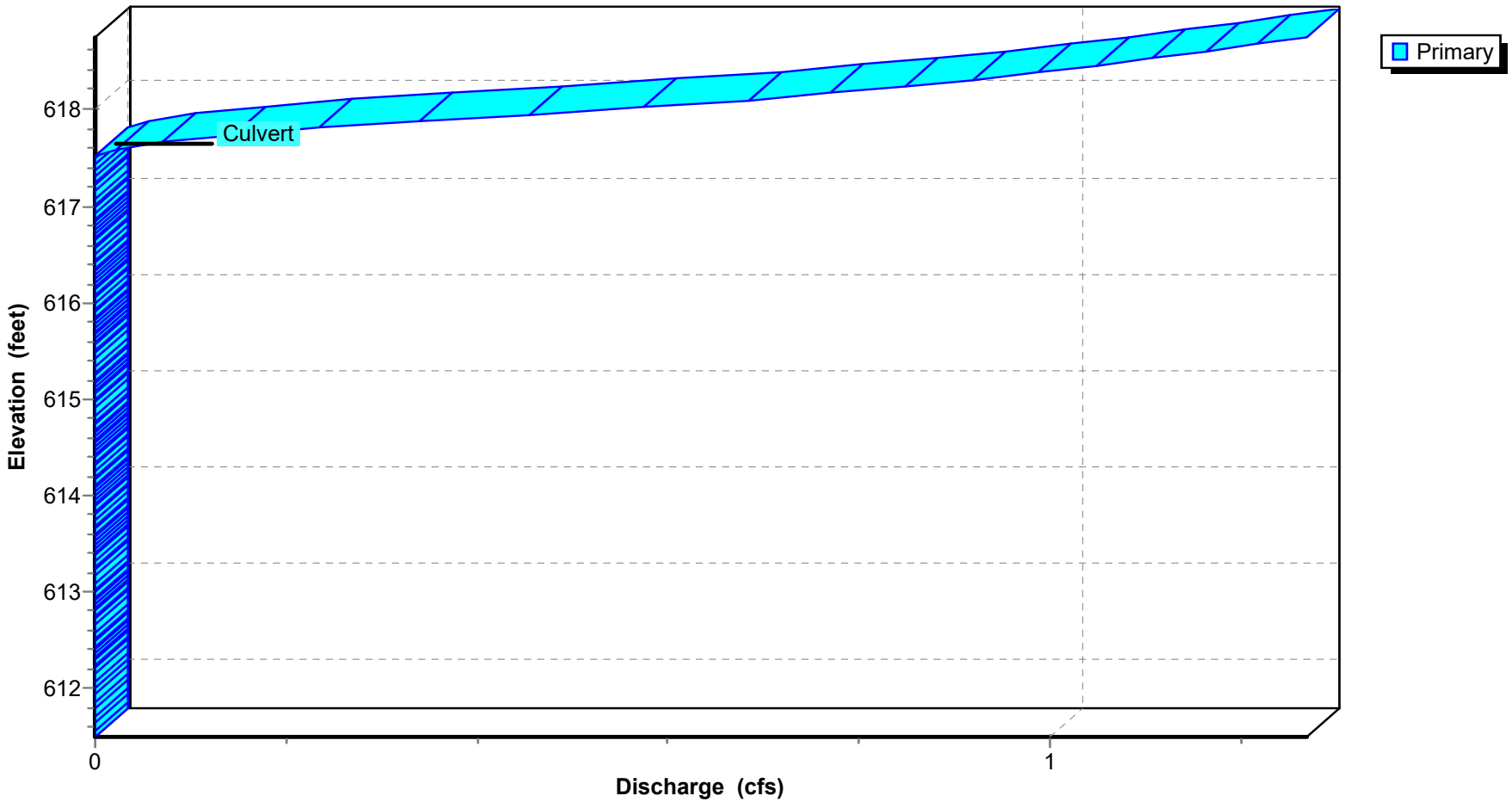


Pond 3P: ROOF INFILTRATION



Pond 3P: ROOF INFILTRATION

Stage-Discharge



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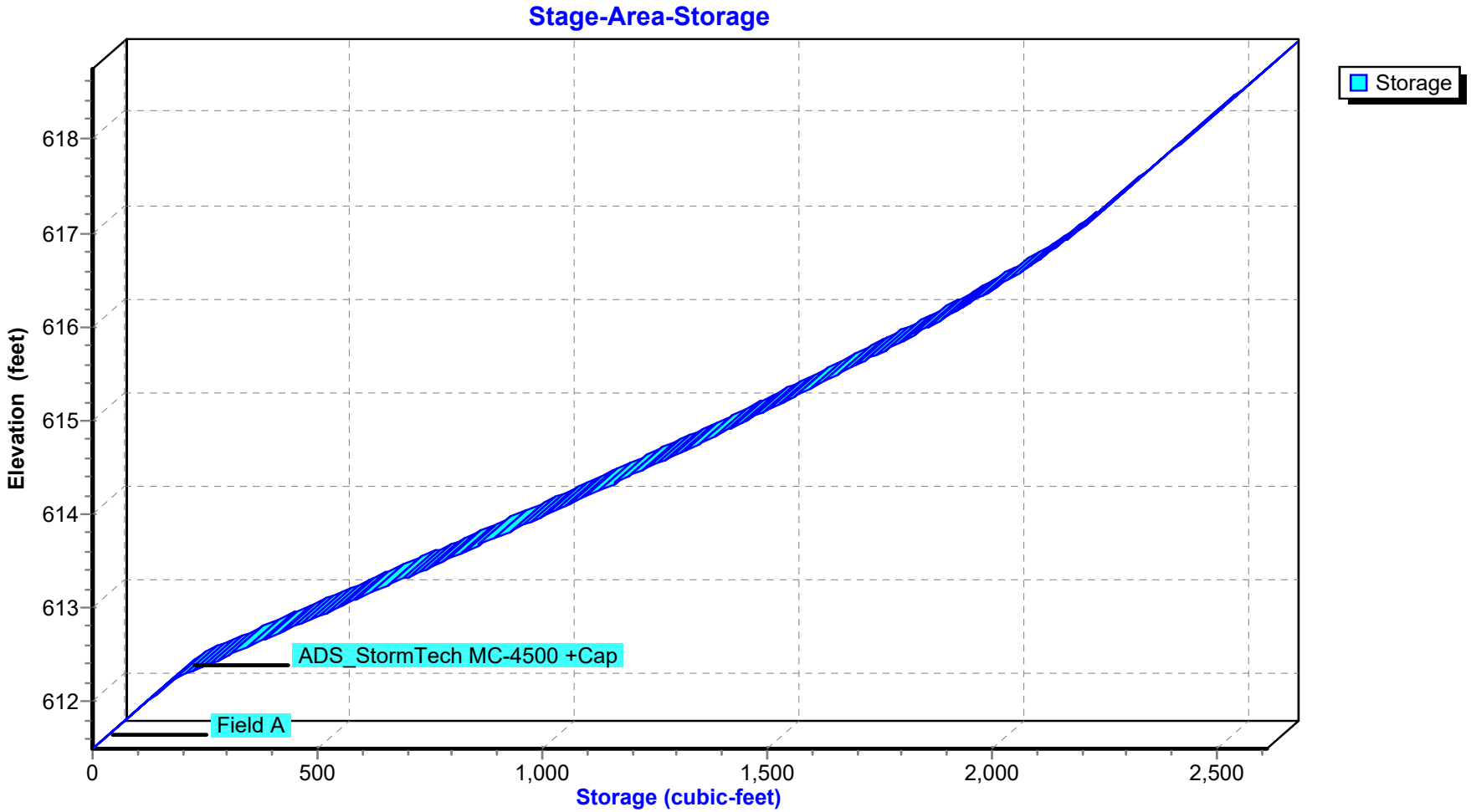


Summary for Pond 4P: ROOF INFILTRATION

Inflow Area = 0.328 ac,100.00% Impervious, Inflow Depth > 7.53" for 100-YEAR event
Inflow = 2.50 cfs @ 12.08 hrs, Volume= 0.206 af
Outflow = 0.09 cfs @ 15.24 hrs, Volume= 0.039 af, Atten= 96%, Lag= 189.1 min
Primary = 0.09 cfs @ 15.24 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2
Peak Elev= 617.26' @ 15.24 hrs Surf.Area= 0.059 ac Storage= 0.170 af

Plug-Flow detention time= 626.1 min calculated for 0.039 af (19% of inflow)
Center-of-Mass det. time= 339.7 min (1,080.8 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	613.00'	0.084 af	**22.75'W x 113.25'L x 5.50'H Field A** 0.325 af Overall - 0.116 af Embedded = 0.210 af x 40.0% Voids
#2A	613.75'	0.116 af	**ADS_StormTech MC-3500 d +Cap** x 45 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 3 Rows of 15 Chambers Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf
		0.200 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	617.00'	**8.0" Round Culvert** L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 617.00' / 617.00' S= 0.0000 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 15.24 hrs HW=617.26' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.09 cfs @ 1.07 fps)

Pond 4P: ROOF INFILTRATION - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 3 rows = 89.4 cf

77.0" Wide + 9.0" Spacing = 86.0" C-C Row Spacing

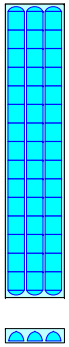
15 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 111.25' Row Length +12.0" End Stone x 2 = 113.25' Base Length
3 Rows x 77.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 22.75' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

45 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 3 Rows = 5,037.2 cf Chamber Storage

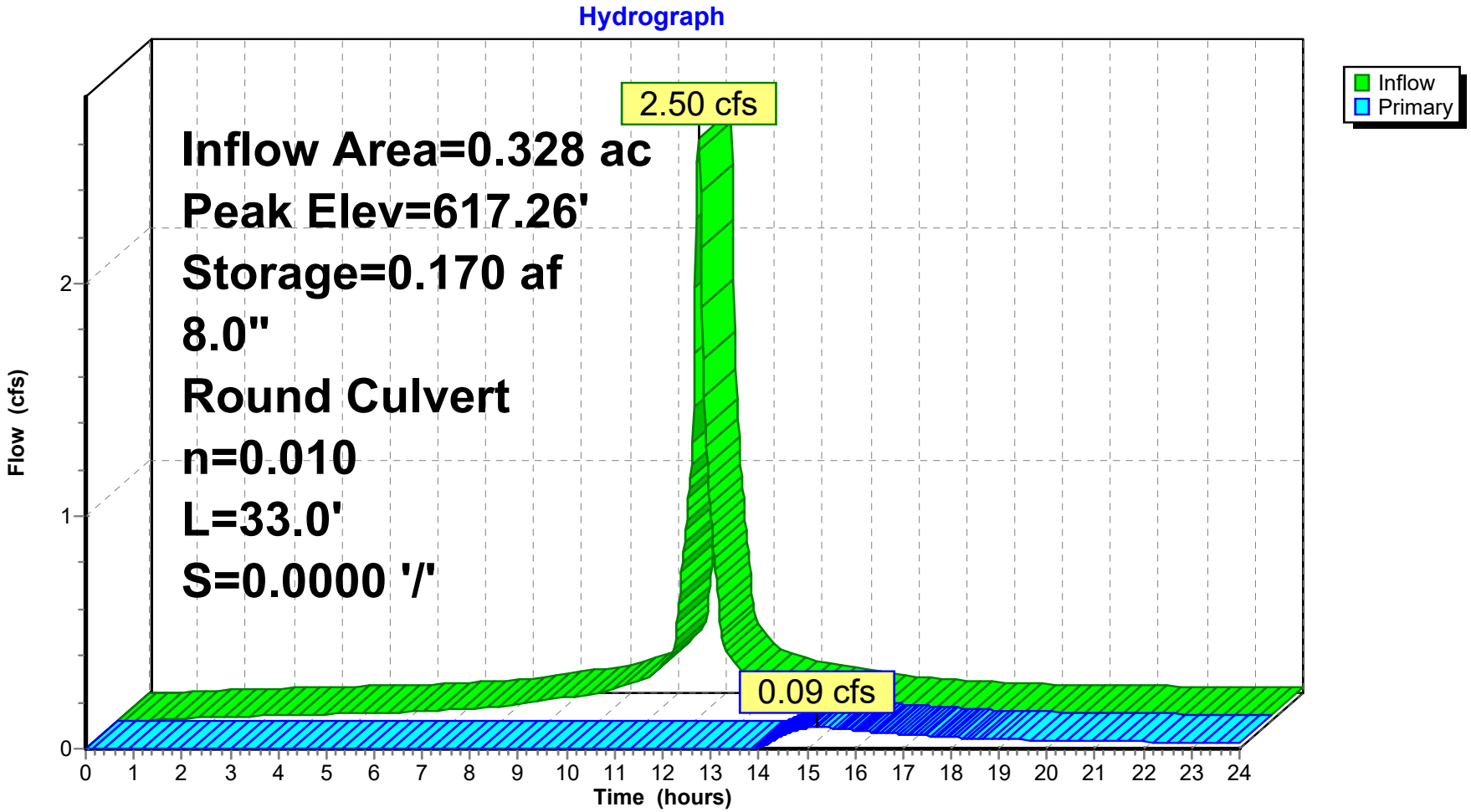
14,170.4 cf Field - 5,037.2 cf Chambers = 9,133.2 cf Stone x 40.0% Voids = 3,653.3 cf Stone Storage

Chamber Storage + Stone Storage = 8,690.5 cf = 0.200 af
Overall Storage Efficiency = 61.3%
Overall System Size = 113.25' x 22.75' x 5.50'

45 Chambers
524.8 cy Field
338.3 cy Stone

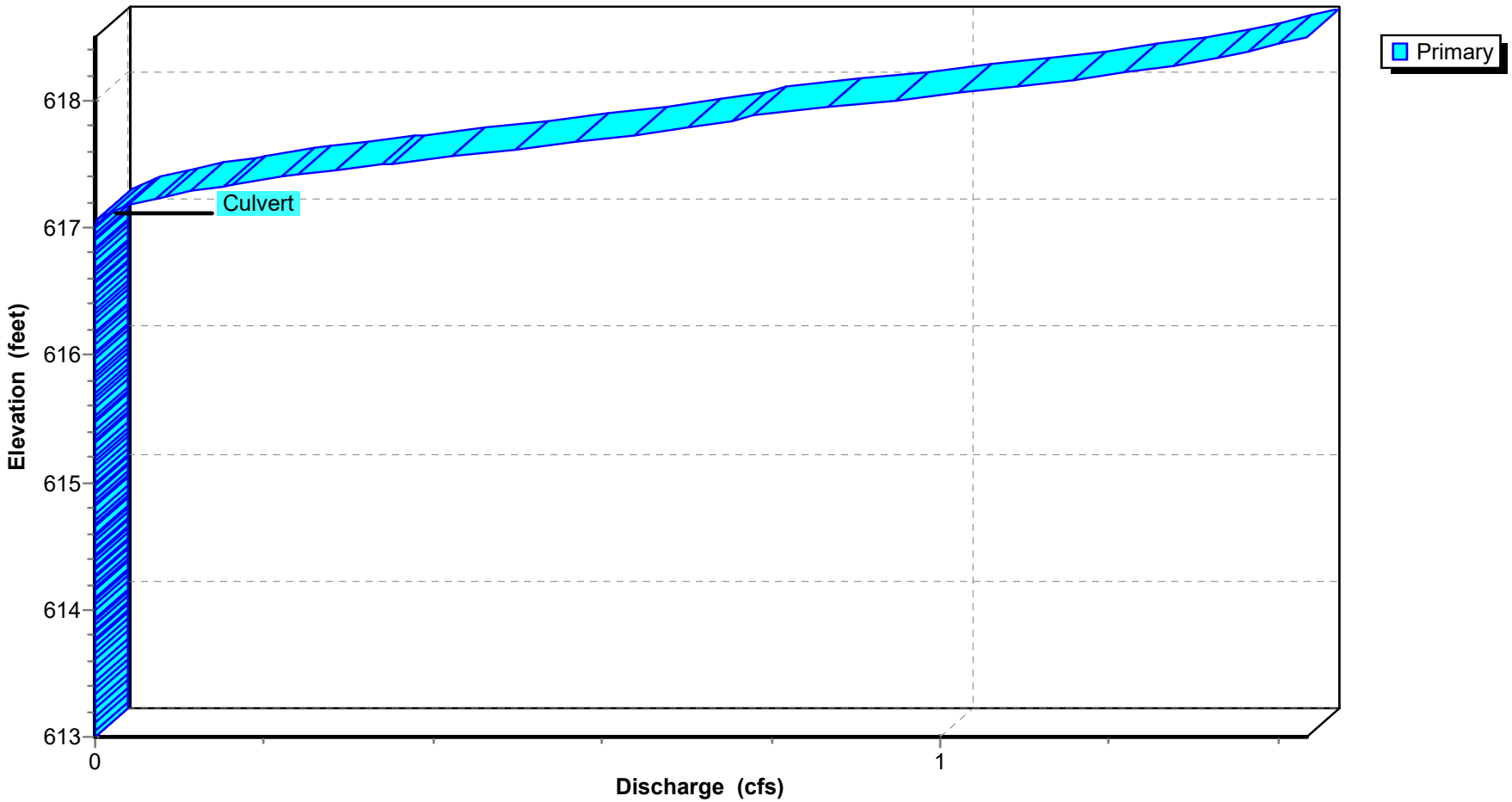


Pond 4P: ROOF INFILTRATION

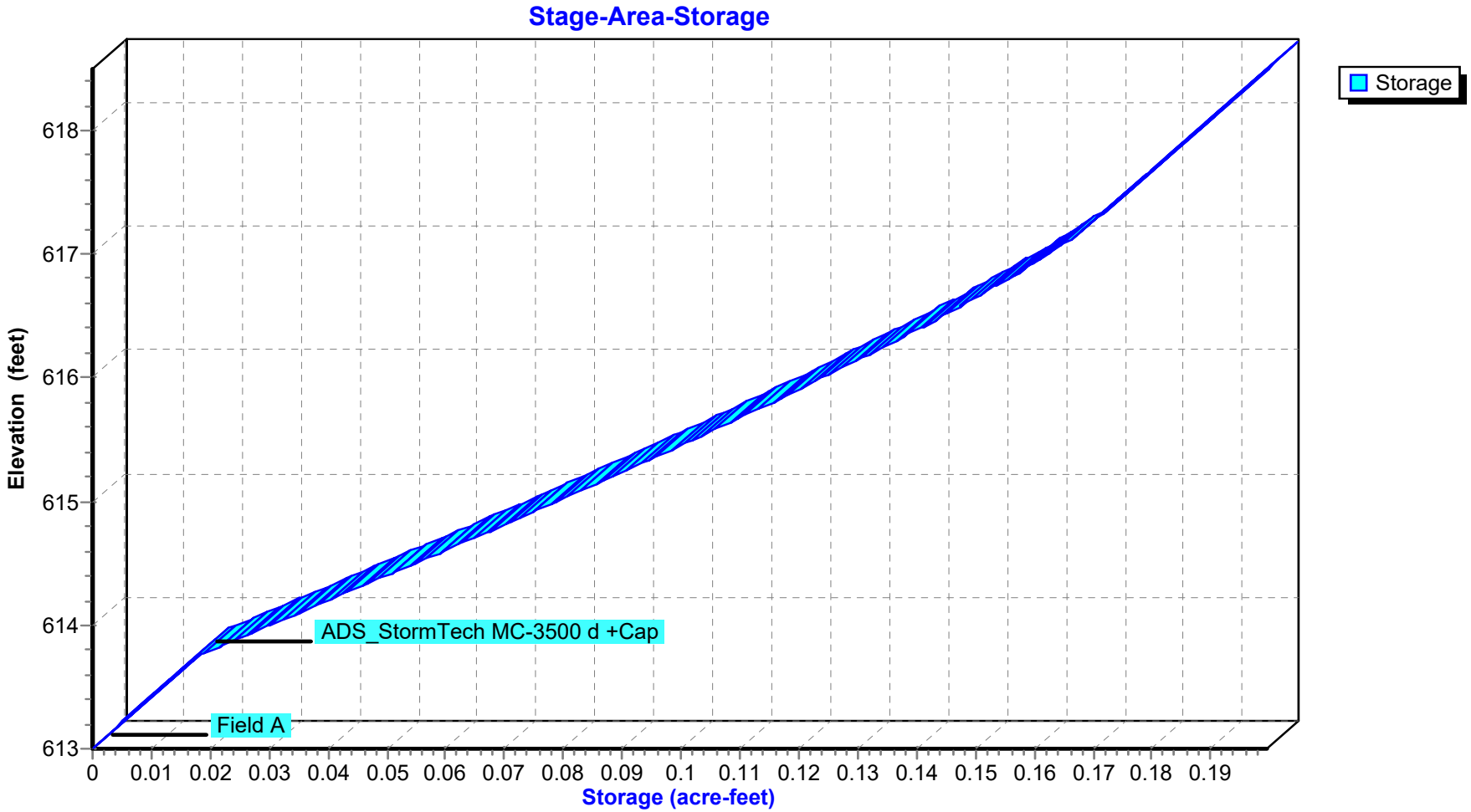


Pond 4P: ROOF INFILTRATION

Stage-Discharge



Pond 4P: ROOF INFILTRATION



Record and return to:
Shipman & Goodwin LLP
One Constitution Plaza
Hartford, CT 06103
Attn: Mary Jo Andrews, Esq.

DRAINAGE EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **CT LIBERTY GROUP LLC,** a Connecticut limited liability company with a place of business in the Town of Prospect, Connecticut (the "Grantor") for the consideration of One Dollar ($1.00) and other valuable consideration received to its full satisfaction of **THE MANSFIELD NONPROFIT HOUSING DEVELOPMENT CORPORATION**, a Connecticut corporation with a place of business in the Town of Mansfield, Connecticut (the "Grantee") does hereby give, grant, bargain, sell and confirm unto the Grantee, its successors and assigns forever, the perpetual right, privilege and easement to construct, build, install, maintain, alter, repair, replace, clean, reconstruct and inspect at all times drains, pipes, and other improvements or appurtenances customary or useful in connection with drainage rights, upon, over, under and across the easement area on land of the Grantor commonly known as 101 South Eagleville Road, Mansfield, Connecticut, which easement area is more particularly described on Schedule A attached hereto and made a part hereof (the "Easement Area").

Together with the right to drain and discharge storm and surface waters onto and from the Easement Area and to flow said waters over and across the surface of land adjacent to the Easement Area in order to maintain an unobstructed flow of said waters from the Easement Area.

Together with the right to regrade the Easement Area and keep the Easement Area free of trees, bushes and other obstructions and to perform all work necessary for such drainage purposes.

Together with the right to use the Easement Area for construction and maintenance of buildings and improvements along the southerly boundary of the adjacent parcel of land owned by Grantee and commonly known as 113-121 South Eagleville Road, Mansfield, Connecticut.

Grantee shall notify Grantor in writing at least three (3) days (but not more than seven (7) days) prior to commencing any work within the Easement Area and shall make every effort to perform such work in a fashion which will be least intrusive to Grantor as possible.

Grantee shall indemnify, defend, and hold Grantor harmless from and against any and all losses, costs, damages, liens, claims, liabilities, or expenses (including, but not limited to, reasonable attorneys' fees, court costs, and disbursements), including third party claims, incurred by Grantor arising from or by reason of Grantee's access to, or use of the Easement Area or Grantee's exercise of the easement rights herein granted.

The Grantor, for itself and its successors and assigns, covenants and agrees that no structures or other improvements shall be erected or installed within the limits of the Easment Area and that there shall be no filling, flooding, grading or excavating within the Easement Area.

The Grantor reserves to itself and its successors and assigns the right to use the Easement Area for any use and purpose which does not in any way interfere with the use of the Easement Area by the Grantee, its successors and assigns, in the exercise of the easement rights herein granted.

By the acceptance of this grant the Grantee covenants and agrees, for itself and its successors and assigns, to restore the Easement Area to substantially the same condition the Easement Area was in prior to the time of the exercise of any of the easement rights herein granted, exclusive of such changes as are permitted to be made by Grantee by the terms hereof.

The above-granted easement rights are contingent on the Mansfield Planning and Zoning Commission voting as a condition of site plan approval for a 42 dwelling unit development at 113-121 South Eagleville Road, Mansfield, that the use of the Easement Area for drainage purposes will not impair the future designation of the Easement Area as open space in any development application for 101 South Eagleville Road, Mansfield.

TO HAVE AND TO HOLD the above-granted easement unto the Grantee and its successors and assigns forever, to its and their own proper use and behoof.

[signature page follows]

IN WITNESS WHEREOF, the Grantor has caused this easement to be executed as of the 13 day of Nov, 2019.

Signed, sealed and delivered
in the presence of:

Sherry VanHaaften

CT LIBERTY GROUP LLC

By: _____
Yitz Rabinowitz
Its Manager

STATE OF CONNECTICUT)
) ss. Waterbury
COUNTY OF New Haven

The foregoing Instrument was acknowledged before me, this 13th day of November, 2019, by Yitz Rabinowitz, Manager of CT Liberty Group LLC, a Connecticut limited liability company, on behalf of said limited liability company.

Sherry G. VanHaaften

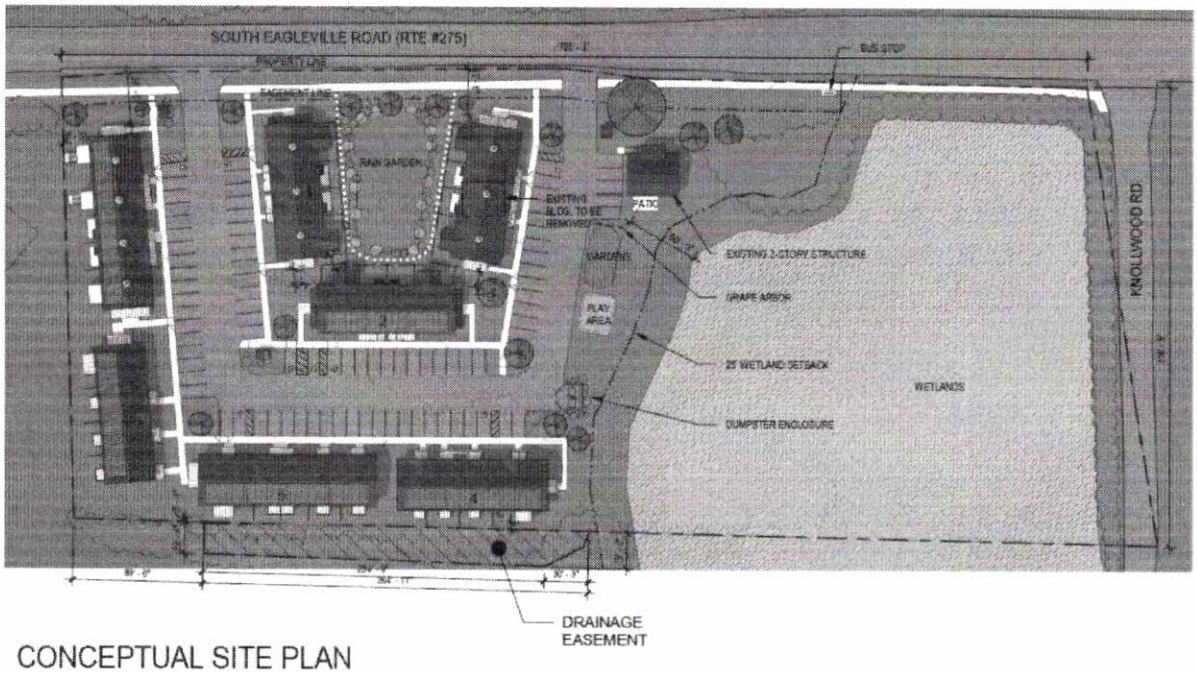
Commissioner of the Superior Court
Notary Public
My Commission Expires:

SHERRY G. VAN HAAFTEN
NOTARY PUBLIC
CONNECTICUT
MY COMMISSION
EXPIRES MAY 31, 2024

8047389v5

SCHEDULE A

[Attached drawing to be replaced by legal description based on survey of Easement Area.]



CONCEPTUAL SITE PLAN
SCALE: 1"=80'-0"

8047389v5

Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600
Office: 860.669.8636
Customer Service: 800.286.5700

April 3, 2019

Kathy Dorgan
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

Re: Water Feasibility
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

This letter is in response to your recent inquiry regarding the Connecticut Water Company's interest in providing water service to the subject property. Domestic and fire protection water is available to the property from the 8" water main in South Eagleville Road. To provide such service, a properly engineered main extension may be required in accordance with the Regulations of Connecticut State Agencies. To meet the overall needs of your project, additional infrastructure improvements may be required at your expense.

Should a Customer Agreement for service not be executed within one year of the date of this letter, Connecticut Water reserves the right to reevaluate its ability to service this project.

As an alternative, you may be considering an on-site, domestic well. Please be advised that the Public Health Code prohibits the local Director of Health from issuing a water supply well permit for any premise located, or that will be located, on property whose boundary is within 200 feet of an existing community water system, when such distance is measured along a street, alley or easement. While the Code does provide for certain exceptions to this restriction, any such exception must be granted by the State Department of Public Health.

If you have questions, please feel free to call me at (860) 664-6137.

Respectfully,

Kevin Schwabe
Developer Services Coordinator

BSC GROUP
Transportation ▪ Energy ▪ Land Development

300 Winding Brook Drive
Glastonbury, CT 06033

Tel: 860-652-8227
800-288-8123
Fax: 860-652-8229

www.bscgroup.com

November 25, 2019

Ms. Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Traffic Summary
Mansfield Nonprofit Housing Development Corporation
Traffic Summary - Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

BSC Group-Connecticut, Inc. (BSC) is pleased to submit this summary of traffic-related considerations associated with *Mansfield Nonprofit Housing Development Corporation's* proposed Eagleville Green housing project located at 113-121 South Eagleville Road (S.R. 275) in the Town of Mansfield (the "Town"), Connecticut.

1.0 INTRODUCTION

The Eagleville Green development is located on a 5.2-acre parcel and will consist of seven (7) new multi-story housing buildings, accommodating 42 dwelling units, renovation of an existing house, surface parking for 87 vehicles, and other "typical" site improvements to support the proposed building program. In addition to the constructed building complex, the site will include access via two driveways intersection S.R. 275, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site.

2.0 REGULATORY SUMMARY

2.1 Local Regulations

The project is located in the South Eagleville Road Housing Zone. Local regulations were used as the standard for the site design.

2.2 State Regulations

Office of the State Traffic Administration - Pursuant to Sections 14-311 and 14-311c of the Connecticut General Statutes, major traffic generators (MTG) are regulated as to their traffic impact on the state highway system in Connecticut by the Office of the State Traffic Administration (OSTA). A MTG is defined by Section 14-312-1 of the OSTA regulations as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces. The OSTA authority under these statutes applies to new MTGs as well as expansions or land use changes to those already in existence. However, entirely residential developments of 100 units or less are exempt from OSTA regulation under these statutes. The regulation of MTGs by the OSTA is accomplished via either an Administrative Decision (AD) or certification process (Certificate).

Engineers
Environmental Scientists
GIS Consultants
Landscape Architects
Planners
Surveyors

Although located on a State Highway (Route 275), the project does not require a MTG as it does not include 100,000 square feet or more of gross floor area, 200 or more parking spaces, and is an entirely residential development less than 100 units.

Encroachment Permit - The regulations associated with encroachments on the State highway system are defined in Section 13b-17 ("Encroachment Permit Regulations") of the Connecticut General Statutes. The proposed development includes two (2) driveways that will encroach on the state highway system (intersecting the S.R. 275 right-of-way) and therefore will require an Encroachment Permit from CTDOT District 2. Project plans depicting the proposed improvements will be submitted to CTDOT District 2 for their review following issuance of local land-use approvals. In accordance with the Encroachment Permit process, the contractor will secure the actual Encroachment Permit when the work has been scheduled.

Driveway Permit - Section 13a-143a (Driveway Permits) of the Connecticut General Statutes, requires a permit from the Commissioner of Transportation to construct a new driveway or relocate an existing driveway leading onto a state highway. In determining the advisability of issuing such permit, the commissioner shall include, in his consideration, the location of the driveway with respect to its effect on highway drainage, highway safety, the width and character of the highway affected, the density of traffic thereon and the character of such traffic.

3.0 DEVELOPMENT SUMMARY

Ingress/Egress - Ingress/egress for the project is accommodated with two (2) driveways intersection S.R. 275. S.R. 275 (South Eagleville Road) is classified by CTDOT as a two-lane bi-directional minor arterial. Each driveway is comprised of a 12-foot entrance lane and a 12-foot exit lane. The exit lanes are stop-controlled with a stop sign (MUTCD R1-1/CTDOT 31-0536) and a 12-inch wide white stop bar. The curb radius of each driveway is 25-feet. The intersection site distance at each driveway has been assessed at over 335-ft., which exceeds the minimum sight distance required for the posted limit of 30mph on S.R. 275 in the vicinity of both driveways.

Circulation and Parking - The parking area is configured as a single, continuous loop with a 24-foot drive isle that meets each driveway at S.R. 275. Parking fields are generally laid-out in three (3) primary areas, accommodating a total of 87 spaces (79 standard spaces and 8 handicapped parking spaces). Standard parking spaces are configured 90-degrees to the curb, and are 9 feet wide by 20-feet deep, delineated with 4-inch white lines. Handicapped parking spaces are configured 90-degrees to the curb, and consist of passenger car spaces (10-foot wide with a 5-foot access isle) and van spaces (8-foot wide with an 8-foot access isle). Handicapped parking signs are in accordance with the 2018 Connecticut State Building Code.

We appreciate the opportunity to be part of your team for this project. Please contact me at 860-652-8227 (extension 4558) if you have any questions or comments.

Sincerely,
BSC Group – Connecticut, Inc.

Dale L. Spencer, P.E. for

Kurt A. Prochorena, PE, LEED AP
Principal

WELTI GEOTECHNICAL, P.C.

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

October 4, 2019

Ms. Rebecca M. Fields
Executive Director
Mansfield Housing Authority
309 Maple Road
Storrs, CT 06268

Re: Geotechnical Study for Proposed Housing, 113-121 South Eagleville Road, Storrs, CT

Dear Ms. Fields:

1.0 Herewith are the boring data pertaining to the above. Twelve borings were drilled to maximum depth of 26.5 feet or to auger refusal if above 26.5 feet. The boring locations are shown on the attached plan. *The borings were drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.* Grain size gradation tests and water content tests were performed on six representative soil samples taken from the borings. The results of those tests are included in the Appendix.

2.0 The **Subject Project** will include the construction of a seven two story slab on grade housing structures with a total of 42 apartment units. The site development will include pavements for 72 regular spaces and 8 handicapped accessible spaces. The existing grades in the proposed developed area range from about Elev.622 to about Elev.612. There are two existing 2 ½ story residences on the site. At least one would be removed based on the proposed apartment building configuration. The site abuts a large wetland to the east of the developed area. A proposed grading plan was not available for this study.

3.0 The **Geologic Origin** of the natural inorganic soils consist generally of glacial lake deposits atop glacial moraine deposit. The lake deposits consist generally of medium compact to loose sand with trace to silt and gravel; or silt and fine sand.

3.1 The **Soils Cross Section** from the borings is generally as follows:

Topsoil to 6" to 12"

Locally Subsoil; fine to medium SAND, little to some Silt, trace Roots to 1.5 to 3 feet, loose

WELTI GEOTECHNICAL, P.C.

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

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3.1 The **Soils Cross Section** from the borings is generally as follows:

Topsoil to 6" to 12"

Locally Subsoil; fine to medium SAND, little to some Silt, trace Roots to 1.5 to 3 feet, loose

Glacial Lake Soils: Stratified fine to fine to coarse SAND, trace to little Silt and Gravel; or SILT and fine SAND to 4.5 to 26+ feet, medium compact to about 8 feet and loose to medium compact below 8 feet

Moraine Soils: fine to medium SAND, some Silt, little Gravel and Cobbles to auger refusal on probable bedrock at 9.5 feet to 26+ feet, dense to very dense

3.2 The **ground water** in the boreholes was at 2 to 10 feet below the existing grades at the completion of the borings (Elev. 610 to Elev.612). It is possible with heavy spring rains the water table could rise locally for short periods to 2 to 3 feet above the wetlands water level of Elev. 610. This mounding of the water table would normally be some distance from the wetland and could possibly be atop low permeability soil. Building slabs on grade should be kept above Elev. 616 and foundations should if possible be kept above Elev. 614.

4.0 The **Criteria for Foundation Type and Loading** are as follows:

1. The maximum total settlement should not exceed 3/4" and the maximum differential settlement shall not exceed ½ the maximum settlement.

2. The Foundations and Structures must address the seismic section of the building code

3. The Slab at Grade floors must not settle differentially more than ½" in excess of the main structure subsidence.

4.1 Regarding item 2 (above), the seismic site soil profile classification can be **"D"**. The mapped MCE spectral response acceleration values for Mansfield, CT are $\mathbf{S_1 = 0.062}$ for one second period and $\mathbf{S_S = 0.173}$ for short period. For transfer of ground shear into the soil the ultimate friction factor can be **0.60.**

5.0 Regarding the **Foundation Type,** the building can be supported on spread footings. The footing sub grades can be on the natural inorganic soils, or on a controlled fill placed after the removal of any existing fills, topsoil and locally frost disturbed subsoils (assume frost disturbed soil to at least 2.5 feet below the existing grades). There should be minimum 4" layer of processed base or 3/8" crushed stone on a geotextile beneath the footings on the natural soils. Controlled fills should conform to section 6.0 below and should extend horizontally beyond the footings for a distance equal to at least the depth of fill beneath the footings.

5.1 The **Allowable Bearing Pressure** for spread footings on the crushed stone layer atop the natural soils or on the controlled fill can be 4,000 psf. The allowable loading can be increased by 1/3 for seismic or wind loading. At retaining walls the maximum pressure on the toe can be 50% higher than the average pressure, cited above.

5.2 The static **Lateral Soil Loading** on retaining walls that are part of the building (if any), should be based on at-rest pressure using the coefficient $\mathbf{K_O = 0.45}$ as cited in the table below. Lateral soil loading on retaining walls apart from the building can be designed with active pressure using the coefficient $\mathbf{K_A = 0.28}$ for level backfill. The ultimate sliding coefficient for concrete cast on crushed stone or on controlled fill is **0.60.**

5.3 The **Frost Protection Depth** is 3.5 feet below the finish grades in areas, which are exposed to weather.

5.4 Summary of Foundation Design Parameters:

Parameter	Value
Allowable Bearing Pressure	4,000 psf
Soil Unit Weight (Backfill) *	125 pcf
Internal Friction Angle (Backfill) *	34°
At-Rest Pressure Coefficient, K_O	0.45
Active Pressure Coefficient, K_A (level backfill)	0.28
Ultimate Sliding Coefficient, concrete on crushed stone over soil	0.60
Seismic Site Soil Profile Classification	D
Mapped MCE Spectral Response Acceleration for one second period, S_1	0.062
Mapped MCE Spectral Response Acceleration for short period, S_S	0.173
Frost Protection Depth	3.5 feet

* Backfill material conforming to section 6.0 below

6.0 Regarding **Controlled Fill, Backfill for Retaining Walls and Excavations at Columns and Walls, plus Slab at Grade Underlayment** (to 4" below the slab bottom) the material should conform to the following or be 3/8" crushed stone:

Percent Passing	Sieve Size
100	3.5"

50 - 100	3/4"
25 - 75	No.4

The fraction, passing the No.4 sieve should have less than 15%, passing the No. 200 sieve.

All backfill and fill must be compacted to at least 95% of modified optimum density.

6.1 All existing fill, topsoil and subsoils should be removed beneath the building floor and replaced with controlled fill conforming to section 6.0 above. There should be at least 18" of controlled fill beneath the floor slabs. The final 4" layer beneath the floor slab should be 3/8" crushed stone or 3/4"minus processed base. A vapor retarder is required beneath the slab at grade floors.

7.0 Regarding **Earthwork,** excavations in the natural soils will fall in OSHA Class C. This will require sloping of excavations, which are unshored and exceed 5 feet in height, to be cut back to slopes less than 34° from the horizontal (1.5H:1V).

8.0 Regarding **New Pavements,** there should be at least 10" of CTDOT gravel subbase or material conforming to section 6.0 above placed beneath the pavement sections. If the sub grades are on wet subsoils, the subsoils would probably have to be removed to provide a stable sub grade for placement of fills and the pavement sections. The recommended pavement sections above the subbase are as follows:

For main access road; 4" of bituminous concrete (1.5" Class 2 over 2.5" Class 1) on 6" of processed stone base

For car parking areas; 3" of bituminous concrete on 6" of processed stone base

For concrete pavements; (1) truck access; 7" concrete over 8" of processed stone base, (2) for passenger vehicles; 5" of concrete on 8" processed stone base.

For pavers: below sand bedding over 8" of processed stone base

8.1 ***For concrete aprons contiguous to the building there should be free draining material, either gravel subbase or controlled fill conforming to section 6.0 above, to 18" below grade. This is to avoid movement of the slab at flush doorways.*** The modulus of sub grade reaction atop the subbase would be at least 200 pci.

9.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Welti Geotechnical, P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions, please call our office.

Very truly yours,

Max Welti, P.E.
President, Welti Geotechnical, P.C.

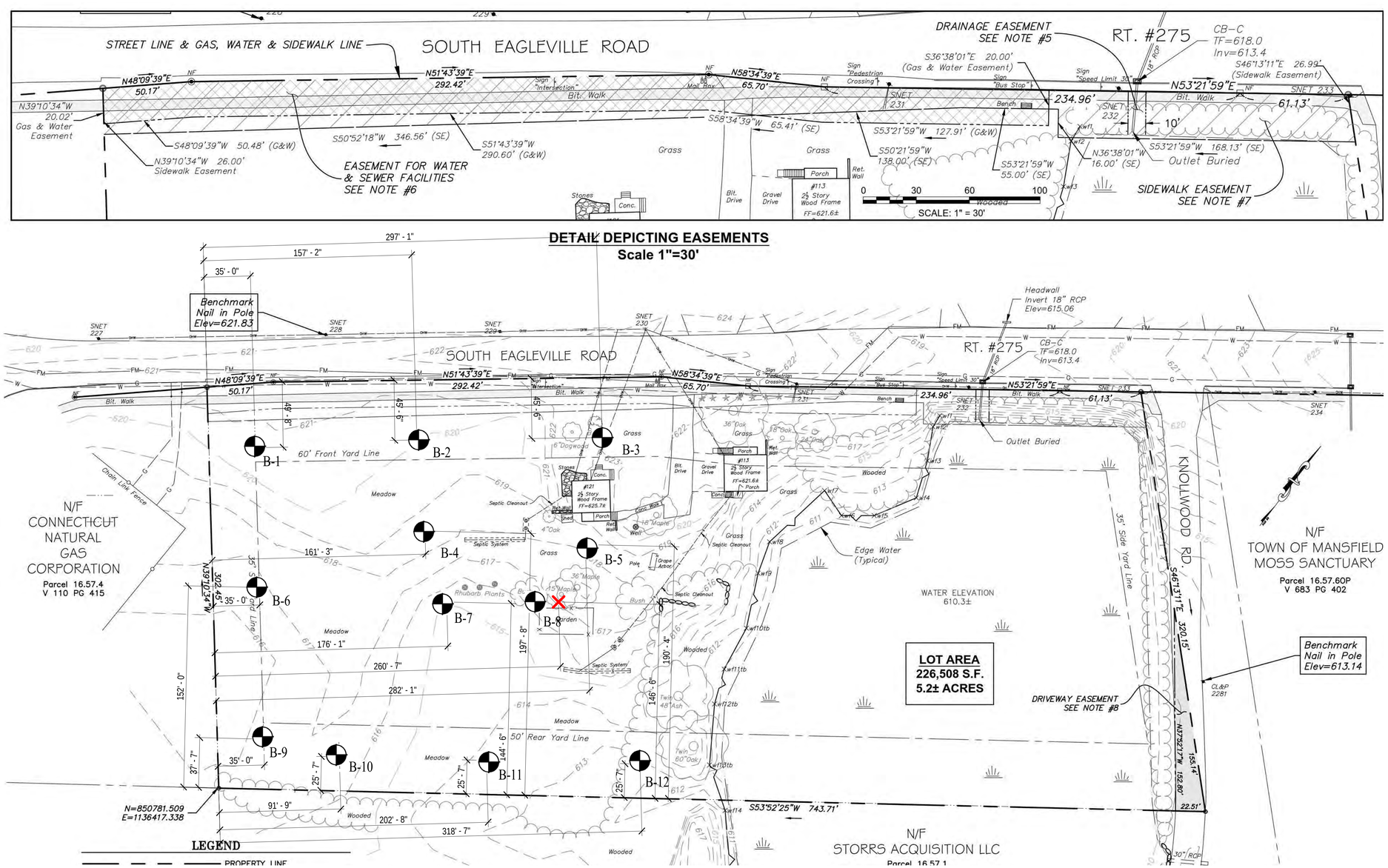
Clarence Welti Ph.D., P. E.

APPENDIX

Boring Location Plan

Boring Data

Laboratory Test Results



TEST BORING LOCATIONS
CLARENCE WELTI ASSOCIATES, INC.
9/26/19

1 A1.1 CONCEPTUAL SITE PLAN
SCALE: 1" = 30'-0"

PARKING

(73) REGULAR SPACES
(8) ACCESSIBLE SPACES

(81) TOTAL SPACES

81 SPACES/ 42 DWELLING UNITS = 1.92 SPACES/ UNIT

BUILDING HEIGHT

MAXIMUM BUILDING HEIGHT
(WITHOUT CUPOLA) = 33'-0"
(WITH CUPOLA) = 38'-6"

UNITS PER ACRE

PROPERTY AREA = 226,508 SF = +/-5.2 ACRES

UNITS/ ACRE, TOTAL SITE = 8.08

PROPERTY AREA - WETLANDS AREA = 150,720 SF = +/-3.46 ACRES

UNITS/ ACRE, TOTAL SITE - WETLANDS = 12.14

2 A1.1 DWELLING UNIT BREAKDOWN
SCALE: 1" = 60'-0"

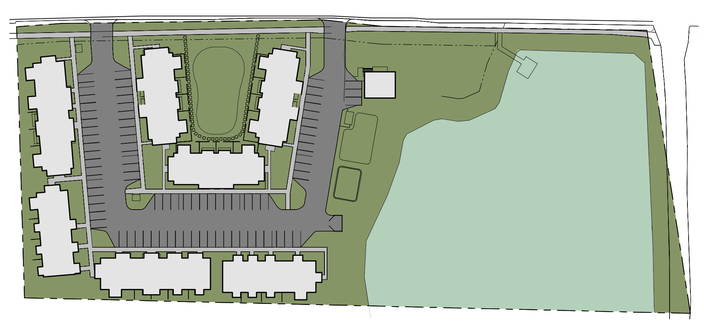
LEGEND

- 1 BED
- 2 BED
- 3 BED

(A) = ACCESSIBLE GROUND FLOOR UNIT

ACCESSIBLE & 1 BED UNITS ARE 1 STORY/ STACKED.
ALL OTHER UNITS ARE 2 STORIES

PROJECT NORTH



TOTAL PROPERTY AREA = 226,508 SF
BLDG. COVERAGE AREA = 32,620 SF
COVERAGE % = 14.40%

3 A1.1 SITE COVERAGE PLAN
SCALE: 1" = 80'-0"

UNIT BREAKDOWN

SOUTH EAGLEVILLE RD. HOUSING
MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

UNIT TYPE	UNIT QTY.	BEDS		BATHS		1/2 BATHS		NET AREA	
		PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL	PER UNIT	TOTAL
1 BEDROOM - TYPE #1	6	1	6	1	6	0	0	706	4,236
1 BEDROOM - TYPE #2	8	1	8	1	8	0	0	780	6,240
1 BEDROOM - TYPE #3	1	1	1	1	1	0	0	780	780
1 BEDROOM - TYPE #4	1	1	1	1	1	0	0	750	750
1 BEDROOM - ACCESSIBLE	2	1	2	1	2	0	0	706	1,412
2 BEDROOM - TYPE #1	12	2	24	1	12	1	12	1,045	12,540
2 BEDROOM - TYPE #2 (ACCESSIBLE)	2	2	4	1	2	0	0	980	1,960
2 BEDROOM - TYPE #3	2	2	4	1	2	0	0	1,060	2,120
2 BEDROOM - EXISTING BUILDING	1	2	2	1	1	1	1	1,200	1,200
3 BEDROOM - TYPE #1	6	3	18	2	12	0	0	1,260	7,560
3 BEDROOM - TYPE #2 (ACCESSIBLE)	1	3	3	2	2	0	0	1,400	1,400
TOTAL	42		73		49		13		40,198

S. EAGLEVILLE RD. HOUSING

MANSFIELD NON-PROFIT HOUSING DEVELOPMENT CORP.

da &p dorgan architecture & planning

REVISIONS:

SHEET TITLE: SITE PLAN

PROJECT NAME: S. EAGLEVILLE RD. HOUSING

PROJECT #:

DRAWN BY:

DATE: 5/17/19

SHEET NUMBER

A1.1

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 620.5 | HOLE NO. **B-1**

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-1-10	0.0'-2.0'		TOPSOIL	0.50	620
					BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL		
	2	9-15-20-15	2.0'-4.0'		LIGHT BR. FINE-CRS.SAND, LITTLE SILT & GRAVEL	2.0	
	3	9-11-11-13	4.0'-6.0'				
5							615
10	4	3-3-4	10.0'-11.5'		BR.FINE SAND, LITTLE SILT	10.0	610
15	5	2-3-4	15.0'-16.5'		GREY/BR.SILT, TRACE FINE SAND	15.0	605
20	6	3-3-3	20.0'-21.5'				600
					GREY FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	24.0	
25	7	60	25.0'-25.3'		BOTTOM OF BORING @ 25.4'	25.4	595
30							590
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-1**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 620.0 | HOLE NO. **B-2**

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-0-1-0	0.0'-2.0'		TOPSOIL 0.50	620
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	
	2	1-2-2-4	2.0'-4.0'		3.0	
					LIGHT BR.FINE SAND, LITTLE SILT	
	3	4-7-8-8	4.0'-6.0'			
5						615
					8.0	
					GREY FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES	
10	4	60	10.0'-10.3'			610
15	5	4-24-32	15.0'-16.5'			605
					19.5	
20					BOTTOM OF BORING @ 19.5' (AUGER REFUSAL)	600
25						595
30						590
35						585

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-2**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 622.6
HOLE NO. **B-3**

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-4-3	0.0'-2.0'		TOPSOIL	0.50	
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL		
	2	2-3-2-12	2.0'-4.0'			2.5	620
					LIGHT BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL		
	3	10-28-60	4.0'-5.1'			4.5	
5					GREY/BR. FINE-CRS.SAND, LITTLE TO SOME SILT & GRAVEL		
							615
						9.5	
10					BOTTOM OF BORING @ 9.5' (AUGER REFUSAL)		
							610
15							
							605
20							
							600
25							
							595
30							
							590
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-3**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 618.5 | HOLE NO. **B-4**

GROUND WATER OBSERVATIONS
AT 8.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-0-1-3	0.0'-2.0'		TOPSOIL	0.57	
					BR.FINE-MED.SAND, SOME SILT, TRACE ROOTS		
	2	3-7-7-7	2.0'-4.0'				
					LIGHT BR.FINE-CRS.SAND, TRACE SILT & FINE GRAVEL	3.0	615
	3	5-6-7-8	4.0'-6.0'				
5							
							610
10	4	2-3-3	10.0'-11.5'		GREY/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	10.0	
							605
15	5	1-3-15	15.0'-16.5'				
					GREY FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	16.0	
							600
					BOTTOM OF BORING @ 19.0' (AUGER REFUSAL)	19.0	
20							
							595
25							
							590
30							
							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-4**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 618.3 | HOLE NO. **B-5**

GROUND WATER OBSERVATIONS
AT 8.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL		
					BR.FINE-CRS.SAND, LITTLE SILT, TRACE GRAVEL & ROOTS	1.0	
	2	6-10-10-8	2.0'-4.0'		BR.FINE-CRS.SAND, LITTLE GRAVEL, TRACE SILT	2.5	615
	3	6-6-9-9	4.0'-6.0'				
5					LIGHT BR.FINE-MED.SAND, TRACE SILT	5.0	
					GREY/BR. FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL	8.0	610
10	4	60	10.0'-10.5'				
					BOTTOM OF BORING @ 11.0' (AUGER REFUSAL)	11.0	
							605
15							
							600
20							
							595
25							
							590
30							
							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-5**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.8 | HOLE NO. **B-6**

GROUND WATER OBSERVATIONS
AT 6.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/24/19
FINISH DATE 9/24/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-1-2	0.0'-2.0'		TOPSOIL	0.66	
					BR.FINE-CRS.SAND, SOME SILT, TRACE GRAVEL		615
	2	2-3-3-4	2.0'-4.0'		LIGHT BR. FINE-MED.SAND, TRACE TO LITTLE SILT	2.5	
	3	4-5-6-6	4.0'-6.0'				
5					GREY/BR.FINE SAND, TRACE TO LITTLE SILT	5.0	
							610
10	4	3-2-2	10.0'-11.5'				
							605
15	5	1-2-2	15.0'-16.5'				
							600
20	6	2-1-2	20.0'-21.5'				
							595
25	7	2-3-4	25.0'-27.0'				
					BOTTOM OF BORING @ 26.5'	26.5	590
30							
							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-6**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 615.0 | HOLE NO. **B-7**

GROUND WATER OBSERVATIONS
AT 6.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL	0.56	615
					BR.FINE-MED.SAND, LITTLE TO SOME SILT		
	2	1-0-2-4	2.0'-4.0'			3.0	
					BR.FINE-CRS.SAND, LITTLE SILT		
	3	2-4-4-5	4.0'-6.0'			4.5	
5					BR. FINE-CRS.SAND, LITTLE SILT, TRACE GRAVEL		610
						8.0	
					GREY/BR.FINE-CRS.SAND, TRACE SILT & FINE GRAVEL		
10	4	1-2-2	10.0'-11.5'				605
15	5	2-3-3	15.0'-16.5'				600
20						20.0	595
	6	15-26-24	20.0'-21.5'		GREY/BR.FINE-MED.SAND, SOME SILT, LITTLE GRAVEL		
						23.0	
					BOTTOM OF BORING @ 23.0' (AUGER REFUSAL)		
25							590
30							585
35							580

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-7**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.0 | HOLE NO. **B-8**

GROUND WATER OBSERVATIONS
AT 5.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-0-1-2	0.0'-2.0'		TOPSOIL	0.56	
					BR.FINE-CRS.SAND, SOME SILT, TRACE GRAVEL		615
	2	1-2-3-2	2.0'-4.0'			3.0	
					BR.FINE-MED.SAND, TRACE SILT		
	3	2-4-4-5	4.0'-6.0'			4.5	
5					GREY/BR.SILT, SOME FINE SAND		
							610
10	4	17-20-17	10.0'-11.5'			10.0	
					GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL		605
						13.5	
					BOTTOM OF BORING @ 13.5' (AUGER REFUSAL)		
15							600
20							595
25							590
30							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-8**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.4 | HOLE NO. **B-9**

GROUND WATER OBSERVATIONS
AT 4.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-1-1-1	0.0'-2.0'		TOPSOIL 0.50	
					BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	615
	2	4-6-6-6	2.0'-4.0'		3.0	
					BR.FINE-MED. SAND, TRACE SILT & GRAVEL	
	3	4-5-5-6	4.0'-6.0'			
5					6.0	
					GREY/BR.FINE-MED.SAND, LITTLE SILT	610
10	4	2-2-2	10.0'-11.5'			
						605
15	5	3-3-4	15.0'-16.5'			
						600
20	6	2-3-3	20.0'-21.5'			
						595
25	7	4-6-7	25.0'-26.5'			
					26.5	590
					BOTTOM OF BORING @ 26.5'	
30						585
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-9**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 616.5 | HOLE NO. **B-10**

GROUND WATER OBSERVATIONS
AT 5.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/25/19
FINISH DATE 9/25/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-1-0-2	0.0'-2.0'		TOPSOIL	0.56	
					BR.FINE-MED.SAND, LITTLE TO SOME SILT, TRACE GRAVEL		615
	2	1-3-5-5	2.0'-4.0'			3.0	
					BR.FINE-CRS.SAND, TRACE SILT & GRAVEL		
	3	3-5-6-6	4.0'-6.0'				
5							610
10	4	2-2-2	10.0'-11.5'		GREY/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	10.0	
							605
15	5	2-1-2	15.0'-16.5'				
							600
20	6	2-2-2	20.0'-21.5'				
							595
25	7	5-8-8	25.0'-26.5'				
					BOTTOM OF BORING @ 26.5'	26.5	590
30							585
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-10**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 613.7 | HOLE NO. **B-11**

GROUND WATER OBSERVATIONS
AT 3.5 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS		ELEV.
0	1	1-2-4-5	0.0'-2.0'		TOPSOIL	0.56	
					LIGHT BR.FINE-CRS.SAND, TRACE TO LITTLE SILT		
	2	5-5-6-4	2.0'-4.0'				
					BR.FINE-CRS.SAND, TRACE SILT	3.5	610
	3	3-4-5-4	4.0'-6.0'				
5							
						9.0	605
					GREY/BR. FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL, EW COBBLES		
10	4	24-32-60	10.0'-11.3'				
						14.0	600
					BOTTOM OF BORING @ 14.0' (AUGER REFUSAL)		
15							
							595
20							
							590
25							
							585
30							
							580
35							

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. **B-11**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT MANSFIELD HOUSING AUTHORITY	PROJECT NAME PROPOSED HOUSING LOCATION 113-121 SOUTH EAGLEVILLE ROAD, MANSFIELD, CT

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	
SIZE I.D.	3.75"		1.375"	
HAMMER WT.			140lbs	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV. 612.8
HOLE NO. B-12

GROUND WATER OBSERVATIONS
AT 2.0 FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 9/26/19
FINISH DATE 9/26/19

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	1-3-6-5	0.0'-2.0'		TOPSOIL 0.50	
					GREY/BR.FINE-MED.SAND, TRACE TO LITTLE SILT	
	2	4-6-5-5	2.0'-4.0'			610
	3	3-3-5-5	4.0'-6.0'			
5						
						605
10	4	8-9-15	10.0'-11.5'		GREY FINE-MED.SAND, SOME SILT & GRAVEL 10.0	
						600
15	5	7-12-13	15.0'-16.5'			
						595
20					BOTTOM OF BORING @ 20.0' (AUGER REFUSAL) 20.0	
						590
25						
						585
30						
						580
35						

LEGEND: COL. A:

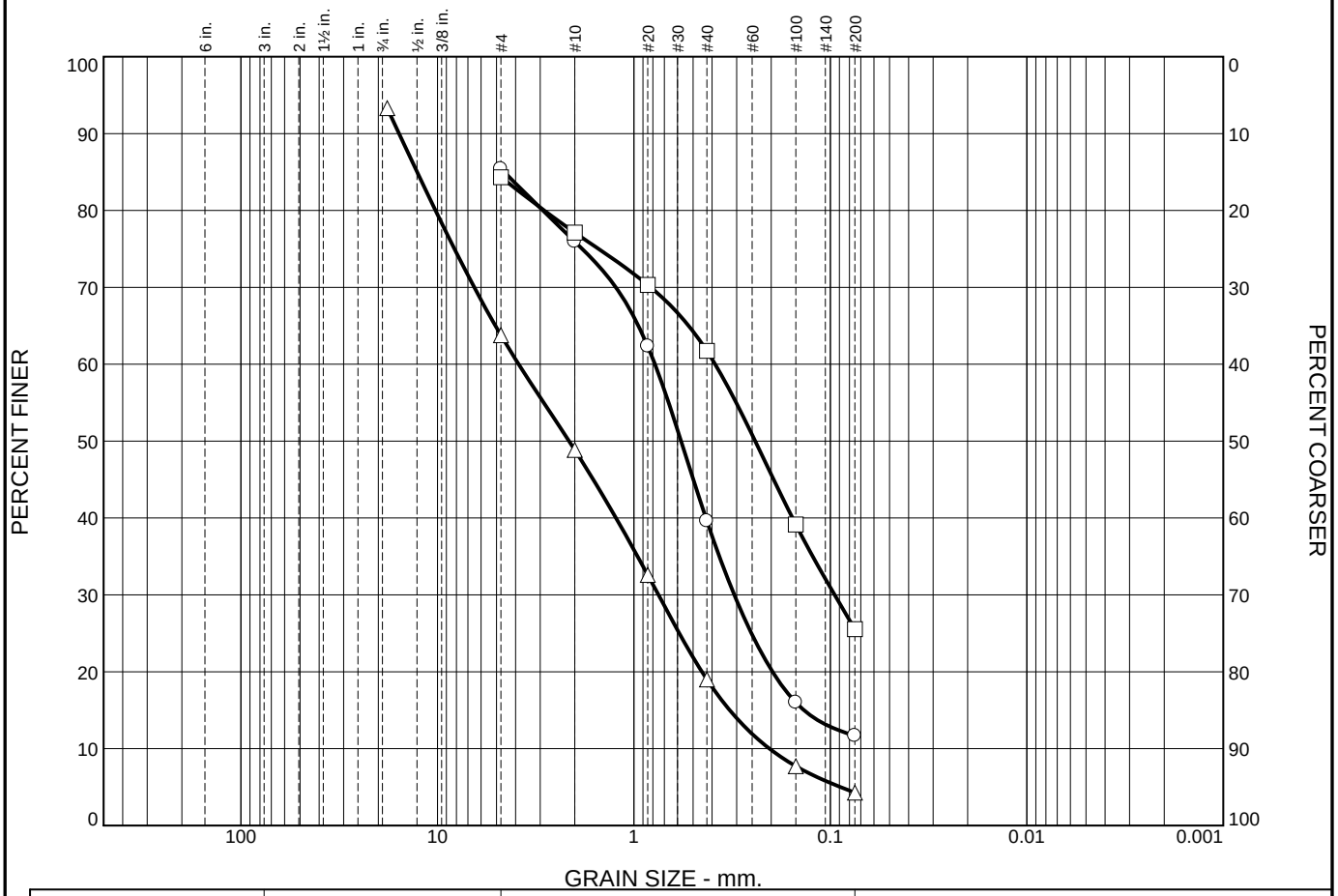
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: K. CHRISTIANA
INSPECTOR:

SHEET 1 OF 1 HOLE NO. **B-12**

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				9.4	36.4	27.9	11.7	
□				7.2	15.4	36.2	25.5	
△				14.9	29.9	14.7	4.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.5758	0.7815	0.5748	0.3083	0.1364			
□				0.3857	0.2412	0.0952				
△			12.6836	3.8573	2.1377	0.7497	0.3251	0.2043	0.71	18.88

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. **Client:** MANSFIELD HOUSING AUTHORITY

Project: PROPOSED HOUSING

○ **Source of Sample:** B-1 **Depth:** 0.50

□ **Source of Sample:** B-3 **Depth:** 2.0 **Sample Number:** 2

△ **Source of Sample:** B-5 **Depth:** 2.0 **Sample Number:** 2

Remarks:

○water content = 7.5%

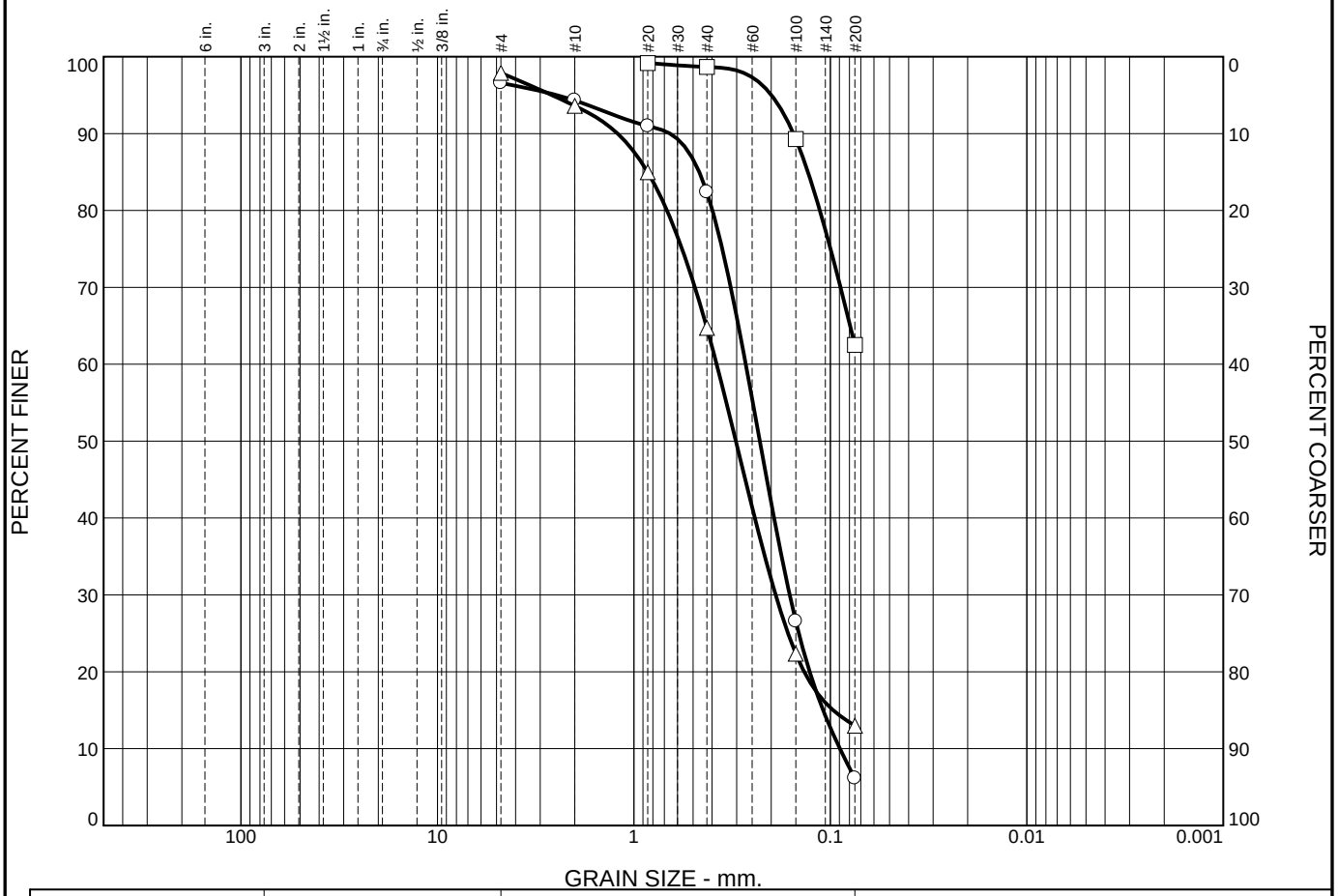
□water content = 11.3%

△water content = 3.0%

CLARENCE WELTI ASSOCIATES, INC.

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				2.3	11.9	76.3	6.1	
□						36.2	62.5	
△				4.3	28.9	51.7	13.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4646	0.2695	0.2286	0.1612	0.1090	0.0895	1.08	3.01
□			0.1301							
△			0.8513	0.3790	0.3026	0.1900	0.0968			

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. **Client:** MANSFIELD HOUSING AUTHORITY

Project: PROPOSED HOUSING

○ **Source of Sample:** B-6 **Depth:** 2.0 **Sample Number:** 2

□ **Source of Sample:** B-8 **Depth:** 4.5

△ **Source of Sample:** B-10 **Depth:** 0.56

Remarks:

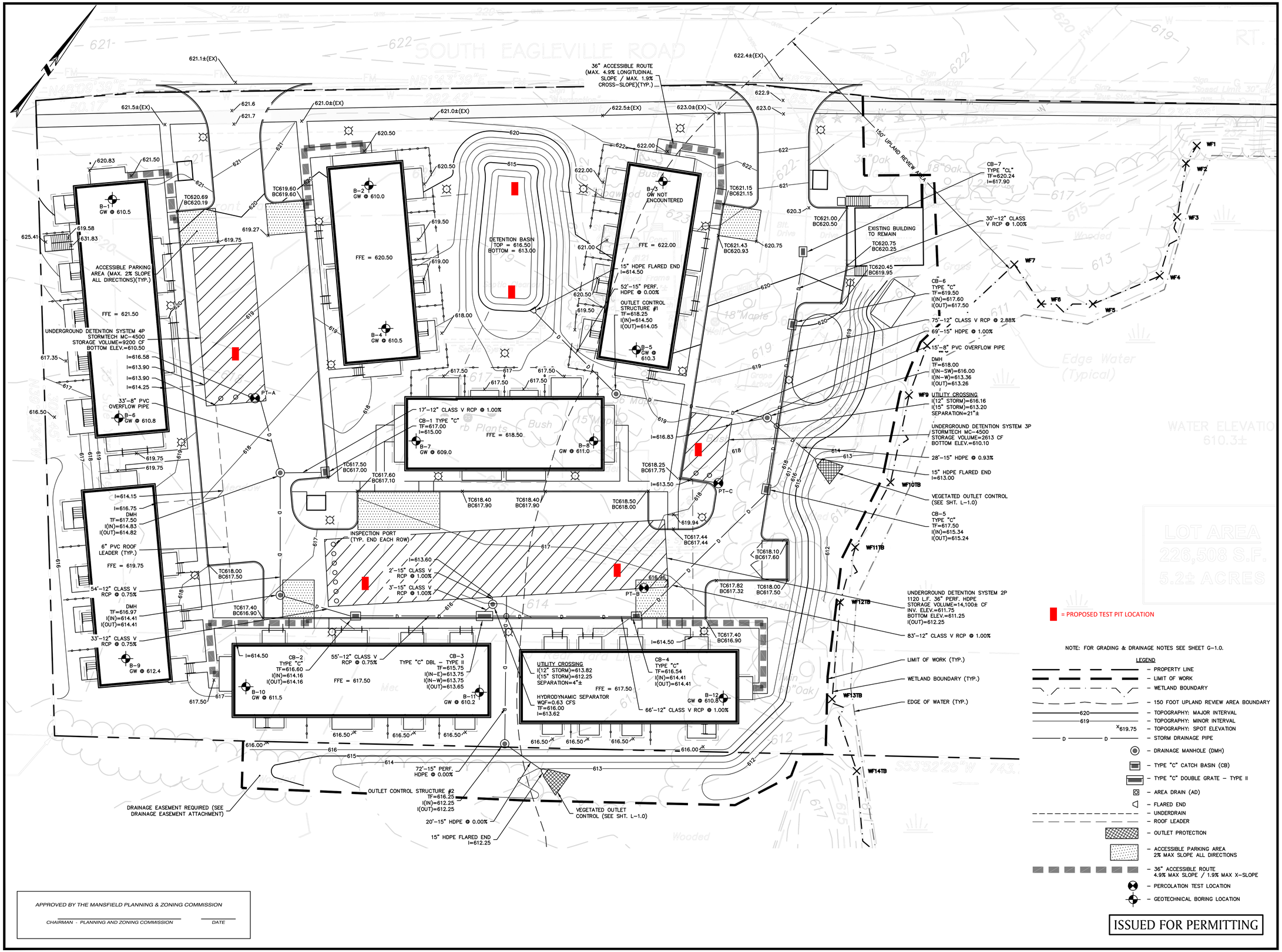
○water content = 8.5%

□water content = 25.6%

△water content = 11.9%

CLARENCE WELTI ASSOCIATES, INC.

Figure



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

FRANCIS J. VACCA, PE No. 29098

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

© 2019 BSC GROUP, INC.

SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0

SITE PLAN APPLICATION

Mansfield Planning and Zoning Commission
(see Article V, Section A of the Zoning Regulations)

File #_____
Date 11/25/19

1. **Name of development** (where applicable) Eagleville Green

2. The **proposed use** of the property is Multifamily Residential
in accordance with Sec.(s)_____ of Article VII (Permitted Use provisions) of the Zoning Regulations

3. **Address/location** of subject property 113-121 South Eagleville Road, Storrs, CT 06268
Assessor's Map_____ Block 764 Lot(s)_____ Vol._____ Page 555

4. **Zone** of subject property South Eagleville Road Housing Zone Acreage of subject property 5.2

5. **Acreage** of adjacent land in same ownership (if any) N/A

6. **Applicant** Mansfield Nonprofit Housing Development Corporation
(please **PRINT**) Signature
Street Address 309 Maple Road Telephone 860-487-0693

Town Mansfield Zip code 06268

Interest in property: Owner x Optionee_____ Lessee_____ Other_____

(If "Other," please explain)_____

7. **Owner** of Record: Name Mansfield Nonprofit Housing Development Corporation Telephone 860-487-0693
(please **PRINT**)
Street Address 309 Maple Road Town Mansfield

Signature_____ Zip Code 06268

(OR attached Purchase Contract ____ OR attached letter consenting to application ____)

8. **Agent**(s) if any) representing the applicant who may be directly contacted regarding this application:
Name (PRINT) Kathy Dorgan St. Addr. 10 Eastwood Road
Town Storrs Zip Code 06268 Phone 860-487-6740
Involvement (legal, engineering, surveying, etc.) Architect

BSC Group, Inc.
Name (PRINT) c/o Robert Newton St. Addr. 300 Winding Brook Drive
Town Glastonbury Zip Code 06033 Phone 617-896-4564
Involvement (legal, engineering, surveying, etc,) Engineering

(over)

Posted 1/2007

9. The following items have been submitted as part of this application:

x Application fee in the amount of $ 3,210
x Statement of Use further describing the nature and extent of the proposed use, and proposed site improvements. To assist the Commission with its reviews, applicants are encouraged to be as detailed as possible and to address the approval criteria contained in Art. V, Sec. A.5.
x Site plan (6 copies) as per Art. V, Sec. A.3.C of the Zoning Regulations
x Site Plan Checklist, including any waiver requests (Art. V, Sec. A.4)
N/A Sanitation report as per Art. V, Sec. A.3.D of the Zoning Regulations
x Other information (see Art. V, Sec. A.3.F). Please list items submitted (if any)

Geotechnical Report	Plans and Elevations
Wetland Characterization Report	
Affordability Plan	Drainage Easement
Windham Water Works Notification	
CT State IWW Activity Reporting Form	Connecticut Water Letter
	Traffic Summary

10. Neighborhood notification: All site plan applicants must notify abutting property owners pursuant to Art. V, Section 3.C (utilize Neighborhood Notification Form.)

11. All applications, including maps and other submissions, must comply with all applicable sections of the Zoning Regulations, including, but not limited to, the following:

Art. X, Sec. E	Flood Hazard Areas, Areas Subject to Flooding
Art. V, Sec. A	Site Plan Requirements (includes procedure, application requirements, approval criteria, conditions of approval and revisions)
Art. VI, Sec. A	Prohibited Uses
Art. VI, Sec. C	Bonding
Art. VI, Sec. B	Performance Standards
Art. VII	Permitted Uses
Art. VIII	Dimensional Requirements/Floor Area Requirements
Art. X, Sec. A	Special Regulations for Designed Development Districts
Art. X, Sec. C	Signs
Art. X, Sec. D	Parking and Loading
Art. X, Sec. H	Regulations Regarding Filling and Removal of Materials

* * * * * * * *

PZC File Number: _____

SITE PLAN CHECKLIST

Department of Planning and Development ▪ 4 South Eagleville Road ▪ Storrs-Mansfield, CT 06268
planzonedept@mansfieldct.org ▪ 860.429.3330

Project Name (different from Project Address): Eagleville Green

Project Address: 113-121 South Eagleville Road

Applicant's Name: Mansfield Nonprofit Housing Development Corp.

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			1.	**GENERAL PLAN STANDARDS-ALL SHEETS**
			A.	**Plan Quality**
⊙	○	○	1.A.1	Plans shall be of sufficient detail and professional quality to enable comprehensive review.
			B.	**Print/Digital Submission Requirements**
○	⊙	○	1.B.1	Print Size of 8 ½" by 11" or 11" by 17" **(15 copies)**
⊙	○	○	1.B.2	Print Size of 24" by 36" **(3 copies)**
⊙	○	○	1.B.3	Digital files provided in pdf format and sized to no larger than 11" by 17". Please submit the pdf of the Site Plan as one single file (do not break out the individual pages)
			C.	**Plan Information**
⊙	○	○	1.C.1	Date the plan was prepared **and** last revised
⊙	○	○	1.C.2	Name, address, signature, and registration number of professional(s) preparing the plan on each sheet-all plans to be sealed by the appropriate professional
○	○	○	1.C.3	Approval Signature Block in Same Place on Each Sheet (Lower Left Corner)
⊙	○	○	1.C.4	Map Scale: All plans required by this checklist shall be prepared at the same scale as the Existing Conditions Map
⊙	○	○	1.C.5	Map Scale: Scale no less than 1": 40' with scale identified in the same place on each sheet; 1": 20' or 1": 30' preferred
⊙	○	○	1.C.6	Dimension Labels: Dimensions (including but not limited to buildings, structures, setbacks, driveways, parking spaces, and landscape areas)
⊙	○	○	1.C.7	Symbols: North point consistently shown in same direction on all plan sheets. North arrow pointing down is not acceptable.
⊙	○	○	1.C.8	Symbols: Legend of Symbols, patterns and abbreviations used

PZC File Number: _____

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			2	**COVER SHEET**
			A.	**General Information**
⊙	○	○	2.A.1	Name and address of the developer and owner(s) of record
⊙	○	○	2.A.2	Location Map with the site shown in relation to the nearest intersection of two or more streets (Scale of 1" = 1,000 feet)
⊙	○	○	2.A.3	Sheet Index
○	⊙	○	2.A.4	Key to plan sheets if more than one sheet is needed to show the entire site
			3	**PROJECT INFORMATION** *Where a Development Impact Statement (DIS) is provided, this information may be provided as part of the DIS instead.*
			A.	**Area Tabulations (shown in square feet and acres)**
⊙	○	○	3.A.1	Total area of Parcel (acres)
⊙	○	○	3.A.2	Steep Slopes-15% or greater (acres)
⊙	○	○	3.A.3	Wetlands, watercourses and waterbodies (acres)
○	⊙	○	3.A.4	Special Flood Hazard Areas-100 Year Floodplain (acres)
○	⊙	○	3.A.5	Area subject to restrictions that prohibit development-i.e. conservation easements (acres)
⊙	○	○	3.A.6	Total Buildable Area (as defined in Regulations)
⊙	○	○	3.A.7	Volume of earth materials to be brought to the site (cubic yards)
⊙	○	○	3.A.8	Volume of earth materials to be removed from the site (cubic yards)
⊙	○	○	3.A.9	Volume of earth materials to be moved from one location to another on the site (cubic yards)
⊙	○	○	3.A.10	Existing and proposed impervious surface area (square feet or acres; percentage of total site)
⊙	○	○	3.A.11	Existing and proposed effective (connected) impervious cover (square feet or acres; percentage of total site)
⊙	○	○	3.A.12	Total area that will be disturbed during construction (square feet or acres; percentage of total site)
			B.	**Existing Permits/Approvals and Concurrent Applications**
○	⊙	○	3.B.1	List of all existing Special Permits, Site Plans, Variances and other local or state approvals that exist for the site
○	⊙	○	3.B.2	List of all Special Permits, Site Plans, Variances and other local or state approvals being requested
○	⊙	○	3.B.3	List of modifications requested to existing permit approvals

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			C.	**Zoning Data** *For each element, identify existing conditions, what is required by the Regulations, and what is proposed*
⦿	○	○	3.C.1	Zoning District(s) applicable to the property
⦿	○	○	3.C.2	Land Use(s)
⦿	○	○	3.C.3	Lot Area
⦿	○	○	3.C.4	Number of dwelling units (including bedrooms/unit)
⦿	○	○	3.C.5	Residential Density (dwelling units per buildable acre as defined by regulations)
⦿	○	○	3.C.6	Number and Type of Affordable and Workforce Housing Units
⦿	○	○	3.C.7	Gross Square Feet of Building Area (Total)
⦿	○	○	3.C.8	Gross Square Feet of Building Area-By Use
⦿	○	○	3.C.9	Open Space (Total and by Type)
⦿	○	○	3.C.10	Building Height
⦿	○	○	3.C.11	Building Setbacks
⦿	○	○	3.C.12	Lot Frontage
⦿	○	○	3.C.13	Parking Spaces (Total and by type-standard, accessible, motorcycle/scooter)
⦿	○	○	3.C.14	Parking Space Calculations for projects with multiple uses and proposed parking credits
⦿	○	○	3.C.15	Loading Spaces
			4.	**CONTEXT PLAN**
⦿	○	○	4.A	Clearly label project site
⦿	○	○	4.B	Display properties within 500 foot radius of project site
⦿	○	○	4.C	Identify names and addresses of all property owners within 500 feet of subject property
⦿	○	○	4.D	Identify any adjacent properties in the same ownership or under control of the applicant.
⦿	○	○	4.E	At minimum, display and label the following features: property lines, buildings, zoning districts, streets, transit stops and routes, open space and recreation areas, watercourses and Level A Aquifer Protection Areas.
			5.	**EXISTING CONDITIONS MAP**
			A.	**General Requirements**
⦿	○	○	5.A.1	Existing Conditions Map prepared in conformance with A-2 standards by Surveyor licensed in the State of CT
⦿	○	○	5.A.2	Existing easements, including but not limited to: conservation, drainage, access
			B.	**Access and Circulation**
⦿	○	○	5.B.1	Sidewalks and streets (show full width, curb lines and centerlines)

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
⦿	○	○	5.B.2	Rights-of-Way-identify full right-of-way width of adjoining streets and required highway clearance setbacks pursuant to Zoning Regulations
⦿	○	○	5.B.3	Roadway and lane widths/designations (right turn, left turn, etc.)
⦿	○	○	5.B.4	Traffic and pedestrian controls including signs, marking and signals
○	⦿	○	5.B.5	Existing transit/bus stops adjacent to the property (including transit provider)
○	⦿	○	5.B.6	On-street parking locations and individual spaces when designated
⦿	○	○	5.B.7	Driveways, entrances, exits, fire lanes and emergency vehicle access, parking areas (show spaces by type-standard, accessible, motorcycle/scooter) and indicate number in each bay and total count. Dimensions shall exclude any obstructions such as columns or light poles.
			C.	**Property Information**
⦿	○	○	5.C.1	Property lines, including adjoining property lines
⦿	○	○	5.C.2	Course and distance of property lines
			D.	**Buildings and Structures**
⦿	○	○	5.D.1	Existing buildings and structures, including fences and walls
⦿	○	○	5.D.2	Building setbacks
			E.	**Cultural Features**
○	⦿	○	5.E.1	National, State or Local Historic Designations (site and adjacent parcels)
○	⦿	○	5.E.2	Historic features, including but not limited to old foundations, dams, sluiceways, mill races, rip-rapping, wells and other utility features, walks, paths, hitching posts and former gardens, arbors or enclosed areas.
○	⦿	○	5.E.3	Archaeological features, including whether the site is located within an area of sensitivity or pre-historic site area pursuant to Map 4.1 of the Mansfield Tomorrow POCD
			F.	**Utilities and Infrastructure**
⦿	○	○	5.F.1	Transformers, ground level mechanical units, switch boxes, cable boxes poles, telephone pedestals, valves, overhead lines and other surface features of utility systems
○	⦿	○	5.F.2	Wells-on-site and within 500 feet of the site
○	⦿	○	5.F.3	Septic system (including primary and reserve leaching fields)
⦿	○	○	5.F.4	Water mains, sanitary sewer systems, gas mains/lines, and stormwater systems indicating line sizes; direction of flow for storm and sanitary lines; and owner of each system
⦿	○	○	5.F.5	Other buried utilities (electric, cable, etc) including owner of each system

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
⦿	○	○	5.F.6	Underground and above-ground storage tanks
⦿	○	○	5.F.7	Fire hydrants and Fire Department connections
			G.	**Natural Systems**
⦿	○	○	5.G.1	Topography shown with no less than 5 foot contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain; highlight areas of slopes greater than 15% and label percent slope.
⦿	○	○	5.G.2	Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
⦿	○	○	5.G.3	Significant Site Features (exposed ledge, areas shallow to bedrock, rock outcroppings, viewpoints, etc.) Depending on the nature of a proposal, an on-site soil survey by a registered soil scientist may be required.
○	⦿	○	5.G.4	Groundwater features including stratified drift aquifers
○	⦿	○	5.G.5	Level A Aquifer Protection Areas
⦿	○	○	5.G.6	Surface water features, including but not limited to: watercourses, bodies of water, wetlands (field delineated by soil scientist) and required upland review area; and limits of special flood hazard areas (100 year floodplain)
⦿	○	○	5.G.7	Major Trees (9“ or more in caliper) and shrubs (3 ft) or more in height, located and identified by species, including street trees on public rights-of-way along property frontage.
⦿	○	○	5. G.8	Soil types
			H.	**Open Space and Recreation**
⦿	○	○	5.H.1	Recreation areas, trails, and public access easements on site and adjoining properties
			I.	**Environmental Concerns**
⦿	○	○	5.I.1	Area of known or suspected contamination or narrative of site history if none expected
○	⦿	○	5.I.2	Areas located within 1,000 feet of a former landfill, dump or disposal area
○	⦿	○	5.I.3	Areas with potential of generating combustible gases
			6.	**PROPOSED SITE PLAN**
			A.	**General Requirements**
⦿	○	○	6.A.1	Include existing features to be retained and show location, dimension, size, height and elevation of proposed changes
⦿	○	○	6.A.2	Proposed easements, including but not limited to: conservation, drainage, access
⦿	○	○	6.A.3	Construction details and specifications

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			B.	**Natural Systems, Proposed Grading and Drainage**
⦿	○	○	6.B.1	Limits of Disturbance
⦿	○	○	6.B.2	Surface water features, including but not limited to: watercourses, bodies of water, wetlands (field delineated by soil scientist) and required upland review area; and limits of special flood hazard areas (100 year floodplain)
⦿	○	○	6.B.3	Proposed grading shown with 2' contours on the subject property and on adjoining parcels for sufficient distance to indicate the relationship of the site to off-site terrain
⦿	○	○	6.B.4	Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
⦿	○	○	6.B.5	Erosion and Sedimentation Control Measures (See Regulations for requirements)
○	⦿	○	6.B.6	Areas to be protected by conservation easements
			C.	**Proposed Buildings and Structures**
⦿	○	○	6.C.1	Required Building Setback lines
⦿	○	○	6.C.2	Proposed changes to buildings and structures, including decks and other projections such as canopies, bay projections, and roof overhangs (using outside dimensions)
⦿	○	○	6.C.3	Distances between buildings and adjoining property lines
⦿	○	○	6.C.4	Locations of building entrances and exits
○	⦿	○	6.C.5	Existing and proposed fences and walls, including details
			D.	**Proposed Access and Circulation**
⦿	○	○	6.D.1	Changes to roadway and lane widths/designations (right turn, left turn, bicycle, etc.)
⦿	○	○	6.D.2	Traffic and pedestrian controls including signs, marking and signals
○	⦿	○	6.D.3	Bus stops adjacent to the property (including transit provider) and bus stop amenities
○	⦿	○	6.D.4	On-street parking locations and individual spaces when designated
⦿	○	○	6.D.5	Driveways, entrances, and exits including slope (entrances/exits only), fire and emergency vehicle access and vehicle turning movements. Vehicle turning movements for loading areas shall be based on the largest vehicle that will access the site.
⦿	○	○	6.D.6	Sight distance per AASHTO at all driveways and street intersections
⦿	○	○	6.D.7	Curb radii at intersections, driveway entrances, and within parking lots; note AASHTO turning radii.

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
				Town can provide ladder truck specifications for projects where ladder truck access will be needed
⦿	○	○	6.D.8	Direction of traffic for all driveways and intersections
⦿	○	○	6.D.9	Traffic volumes at all site entrances, exits and intersections
⦿	○	○	6.D.10	Parking areas (show spaces by type-standard, accessible, motorcycle/scooter, bicycle) and indicate number in each bay and total count. Dimensions shall exclude any obstructions such as columns or light poles.
○	⦿	○	6.D.11	Details and specifications for bicycle parking
			E.	**Proposed Changes to Open Space and Recreation Areas**
⦿	○	○	6.E.1	Open space, recreation areas, recreation facilities/improvements, trails, and public access easements on site and adjoining properties
			F.	**Proposed Changes to Utilities and Infrastructure**
⦿	○	○	6.F.1	Transformers, ground level mechanical units, switch boxes, cable boxes poles, telephone pedestals, valves, overhead lines and other surface and subsurface features of utility systems
○	⦿	○	6.F.2	Well(s)
○	⦿	○	6.F.3	Septic system (including primary and reserve leaching fields), including locations and findings of all test pits, borings and percolation tests
⦿	○	○	6.F.4	Public water systems, sanitary sewer systems, natural gas, and stormwater systems indicating: owner of each system, mains and service lines; line sizes; direction of flow for storm and sanitary lines. Details and specifications for each system shall be provided in plan view.
⦿	○	○	6.F.5	Location, specifications and details for Low Impact Development (LID) stormwater management practices, including but not limited to: bioretention areas, bioswales, raingardens, roof leader drains, cisterns, permeable pavement, and green roofs.
⦿	○	○	6.F.6	Above-ground and underground utilities (electric, cable, etc) including owner of each system
○	⦿	○	6.F.7	Underground and above-ground storage tanks
⦿	○	○	6.F.8	Fire hydrants, water mains, service lines and Fire Department connections, with size of line and owner indicated
⦿	○	○	6.F.9	Waste recycling and disposal storage/pick-up areas including details regarding container size, pad, screening, drainage, and truck turning movements

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
			G.	**Lighting Plans**
⊙	○	○	6.G.1	Location of all existing and proposed lights, including street lights and building lights, relative to buildings, structures, property lines and landscape areas
⊙	○	○	6.G.2	Fixture Types and Details, including height
⊙	○	○	6.G.3	Calculations of Allowable and Proposed Total Light Output
⊙	○	○	6.G.4	Photometric plan identifying light distribution at property lines
			7	**LANDSCAPE PLAN**
			A.	**General Requirements**
⊙	○	○	7.A.1	All landscape documents, drawing submissions, specifications and as-built documents shall be prepared, signed, sealed and dated by a Landscape Architect licensed in the State of Connecticut pursuant to Article 5, Sec. A.3.d.3.
			B.	**Calculations**
⊙	○	○	7.B.1	Shade Coverage (including a graphic representation of trees included in the calculations)
⊙	○	○	7.B.2	Permeable Surface/Structural Soils
			C.	**Existing Conditions (Site and Adjoining Rights-of-Way)**
⊙	○	○	7.C.1	Limits of proposed disturbance
⊙	○	○	7.C.2	Existing vegetation including quantity, species, caliper size and height
⊙	○	○	7.C.3	Existing vegetation on adjacent sites that will be affected by proposed work/site disturbance
⊙	○	○	7.C.4	Existing vegetation to be removed including locations, size and species of all trees 9” or greater in caliper
⊙	○	○	7.C.5	Street trees and natural vegetation to be retained, including locations, approximate driplines, size and species of all trees greater than 9” in caliper
⊙	○	○	7.C.6	Location of existing and proposed fences and walls, including historic stone walls
⊙	○	○	7.C.7	Significant Site Features (rock outcroppings, viewpoints, etc.)
⊙	○	○	7.C.8	Trails (on-site and adjoining sites)
			D.	**Proposed Changes to Landscape**
⊙	○	○	7.D.1	Location and dimensions of areas to be landscaped (including within public rights-of-way), specifying the location, quantity, names, caliper and size of proposed individual trees, shrubs, and ground cover plants. (Indicate initial and final height for trees and shrubs, initial width for shrubs, and initial spread for groundcover plants)

COMPLETED	NOT APPLICABLE	WAIVER REQUESTED	REQUIREMENT	
⦿	○	○	7.D.2	Plant legend/index or schedule that indicates the species, whether the species is native to the Northeast US, character, height/spread, size and total quantity of all plantings at time of installation
⦿	○	○	7.D.3	Grass areas and limits, including identification of sod and/or seed areas
⦿	○	○	7.D.4	Slope areas in excess of four to one (4:1) or 25%
⦿	○	○	7.D.5	Drainage ways, yard inlets, area drains, overflow areas and LID stormwater practices
⦿	○	○	7.D.6	Existing and proposed location of above and below grade site utilities and service connections including Fire Department connections, easements and access requirements
⦿	○	○	7.D.7	Location and direction of service openings on above grade utilities such as transformers, telephone, air conditioning/heating units and cable boxes. Specifically indicate perimeter clearance/safety zone.
⦿	○	○	7.D.8	Location of landscape accessories and furnishings (i.e. tree grates, temporary/movable planters, benches, trash/recycling containers, street and site lighting, etc.)
⦿	○	○	7.D.9	Location of landscape irrigation system elements (above and below ground).
⦿	○	○	7.D.10	Sight-distance restrictions
⦿	○	○	7.D.11	Proposed streetscape, including street tree species, locations, separation distances between trees, and furnishings
⦿	○	○	7.D.12	Location of existing and proposed fences and walls
			E.	**Details**
⦿	○	○	7.E.1	Measures to protect existing vegetation to be preserved or relocated
⦿	○	○	7.E.2	Planting details including dimensioned design sections and specifications for all proposed work, including location, details and specifications for all ground-level work, tree wells, landscape strips, and plantings above structure (roof gardens).
⦿	○	○	7.E.3	Specifications and details for landscape accessories and furnishings
○	⦿	○	7.E.4	Specifications and details for landscape irrigation system
○	⦿	○	7.E.5	Fences and wall details

PZC File Number: _____

Waiver Requests

Pursuant to Article 5, Sections A.4 and B.4 of the Mansfield Zoning Regulations, the Planning and Zoning Commission may waive certain site plan requirements where they determine such information is not needed to determine compliance with the Regulations. Please complete the following information for any waiver requested. Attach additional pages as necessary.

Note: Waivers of requirement 4.A (survey prepared to A-2 standards) shall not be granted for applications involving new principal buildings or major additions or for applications where A-2 survey data is required to verify compliance with the Regulations.

Requirement Number	Justification for Waiver

Signature of professional certifying that the submission meets all requirements

I, Robert Newton, P.E. (print name), hereby certify that the drawings and other materials that accompany this checklist have met the requirements of this checklist, and the accompanying electronic copy is an exact duplicate of the hard copy submission.

Signature _____ Date 2/4/2020

SEWER AUTHORITY

TOWN OF MANSFIELD

APPLICATION TO CONNECT WITH SEWER

Application No: _____ Sewer Connection Fee : _____

To the Sewer Authority of the Town of Mansfield:

The undersigned applies for permission, subject to the rules and regulations of the Sewer Authority of the Town of Mansfield and to the terms and manner prescribed, or to be prescribed, by the Director of Public Works and to the provisions of the agreement hereinafter contained to

connect the premises owned by Mansfield Non-Profit Housing of Storrs, CT

_____ on the South side of South Eagleville Road

_____, Number 113-121 with the public sewer in South Eagleville Road by a

drain pipe, acceptable to the Director of Public Works, said drain to be 8 inches (size) .

PVC (type). Said drain is to start at a 750 feet East of the

manhole at Mansfield Housing property on 309 Maple Rd.

The above work is to be done by TBD, a Licensed Drain Layer. I hereby agree to conform to the rules and regulations of the Sewer Authority, and the above work shall be done in conformity with the terms and manner prescribed by the Director of Public Works.

I, further agree to waive all claims for damages in case of revocation and that such permit may be revoked by the Sewer Authority for any reason that it may deem sufficient. I especially agree to be responsible to and answer to said Town for all damage that may occur, or which said Town may be called upon to pay, by reason of any failure on the part of myself, my servants or agents, or on the part of said drainlayer to comply with the restrictions and conditions imposed in the permit, or resulting in any way from any violation of the agreement set forth herein.

Dated in Mansfield this 4th day of February, 2020

_____
Signature of Owner/Applicant Kathleen Ward, President

Permit No. _____ issued on _____ by the Sewer Authority for this work.

BSC GROUP
Transportation ▪ Energy ▪ Land Development

300 Winding Brook Drive
Glastonbury, CT 06033

Tel: 860-652-8227
800-288-8123
Fax: 860-652-8229

www.bscgroup.com

November 25, 2019
Revised February 12, 2020

Ms. Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Traffic Summary
Mansfield Nonprofit Housing Development Corporation
Traffic Summary - Eagleville Green
113-121 South Eagleville Road
Mansfield, Connecticut

Dear Ms. Dorgan:

BSC Group-Connecticut, Inc. (BSC) is pleased to submit this summary of traffic-related considerations associated with *Mansfield Nonprofit Housing Development Corporation's* proposed Eagleville Green housing project located at 113-121 South Eagleville Road (S.R. 275) in the Town of Mansfield (the "Town"), Connecticut.

1.0 INTRODUCTION

The Eagleville Green development is located on a 5.2-acre parcel and will consist of seven (7) new multi-story housing buildings, accommodating 42 dwelling units, renovation of an existing house, surface parking for 87 vehicles, and other "typical" site improvements to support the proposed building program. In addition to the constructed building complex, the site will include access via two driveways intersection S.R. 275, an exterior play area for increase in activity and an improved sense of community, and a stone dust walking path through the middle of the site.

2.0 REGULATORY SUMMARY

2.1 Local Regulations

The project is located in the South Eagleville Road Housing Zone. Local regulations were used as the standard for the site design.

2.2 State Regulations

Office of the State Traffic Administration - Pursuant to Sections 14-311 and 14-311c of the Connecticut General Statutes, major traffic generators (MTG) are regulated as to their traffic impact on the state highway system in Connecticut by the Office of the State Traffic Administration (OSTA). A MTG is defined by Section 14-312-1 of the OSTA regulations as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces. The OSTA authority under these statutes applies to new MTGs as well as expansions or land use changes to those already in existence. However, entirely residential developments

Engineers
Environmental Scientists
GIS Consultants
Landscape Architects
Planners
Surveyors

of 100 units or less are exempt from OSTA regulation under these statutes. The regulation of MTGs by the OSTA is accomplished via either an Administrative Decision (AD) or certification process (Certificate).

Although located on a State Highway (Route 275), the project does not require a MTG as it does not include 100,000 square feet or more of gross floor area, 200 or more parking spaces, and is an entirely residential development less than 100 units.

Encroachment Permit - The regulations associated with encroachments on the State highway system are defined in Section 13b-17 ("Encroachment Permit Regulations") of the Connecticut General Statutes. The proposed development includes two (2) driveways that will encroach on the state highway system (intersecting the S.R. 275 right-of-way) and therefore will require an Encroachment Permit from CTDOT District 2. Project plans depicting the proposed improvements will be submitted to CTDOT District 2 for their review following issuance of local land-use approvals. In accordance with the Encroachment Permit process, the contractor will secure the actual Encroachment Permit when the work has been scheduled.

Driveway Permit - Section 13a-143a (Driveway Permits) of the Connecticut General Statutes, requires a permit from the Commissioner of Transportation to construct a new driveway or relocate an existing driveway leading onto a state highway. In determining the advisability of issuing such permit, the commissioner shall include, in his consideration, the location of the driveway with respect to its effect on highway drainage, highway safety, the width and character of the highway affected, the density of traffic thereon and the character of such traffic.

3.0 DEVELOPMENT SUMMARY

Ingress/Egress - Ingress/egress for the project is accommodated with two (2) driveways intersection S.R. 275. S.R. 275 (South Eagleville Road) is classified by CTDOT as a two-lane bi-directional minor arterial. There is one-way circulation on the property. The western driveway serves as the entrance with the drivers from the property exiting through the eastern driveway. The exit lane is stop-controlled with a stop sign (MUTCD R1-1/CTDOT 31-0536) and a 12-inch wide white stop bar. The curb radius of each driveway is 25-feet. The intersection site distance at each driveway has been assessed at over 335-ft., which exceeds the minimum sight distance required for the posted limit of 30mph on S.R. 275 in the vicinity of both driveways.

Circulation and Parking - The parking area is configured as a single, continuous loop with a 24-foot drive isle that meets each driveway at S.R. 275. Parking fields are generally laid-out in three (3) primary areas, accommodating a total of 87 spaces (79 standard spaces and 8 handicapped parking spaces). Standard parking spaces are configured 90-degrees to the curb, and are 9 feet wide by 20-feet deep, delineated with 4-inch white lines. Handicapped parking spaces are configured 90-degrees to the curb, and consist of passenger car spaces (10-foot wide with a 5-foot access isle) and van spaces (8-foot wide with an 8-foot access isle). Handicapped parking signs are in accordance with the 2018 Connecticut State Building Code.

We appreciate the opportunity to be part of your team for this project. Please contact me at 860-652-8227 (extension 4558) if you have any questions or comments.

Sincerely,
BSC Group – Connecticut, Inc.

Kurt A. Prochorena, PE, LEED AP
Principal

MEMO

To: Planning and Zoning Commission

From: Linda Painter, AICP, Director

Date: March 15, 2020

Subject: **P1364-2 Eagleville Green Site Plan Application Supplemental Memo**

This memo is issued as a supplement to my previous report dated March 2, 2020. Staff has worked with the applicant to address minor corrections needed to the site plan set since the public hearing was continued on March 2, 2020. These corrections pertained primarily to the following items:

- Updates to the Erosion and Sedimentation Control Plan
- Updates to the stormwater management plan
- Clarification regarding how large snow accumulations would be addressed if designated stockpiles were not large enough to accommodate the accumulation.
- Requirement that public sidewalk remain open during construction, including to those with mobility aids.

PLAN REVISIONS

Wetlands Protection

Jennifer Kaufman, Inland Wetlands Agent, has submitted a memo dated 3/11/2020 identifying several corrections to the plans, many of which are reflected in the plan set dated 3/12/2020. The following plan revisions related to the Erosion and Sedimentation Control plan are still needed.

- Revise to ensure that all notes and specifications refer to “straw bales” not “hay bales.”
- Revise plans to indicate that all Erosion and Sediment must be inspected within 24 hours of a rain event of greater than ½ inch (other portions of her original note have been addressed)

Additionally, any conditions established by the Inland Wetlands Agency as part of a license approval should be incorporated into the final plan set. This could also be included as a condition of approval.

Stormwater Management Plan and System Design

At the time of this report, CHA (fka CME) had not yet had the opportunity to verify that all of their comments as identified in their 2/28/2020 have been sufficiently addressed. CHA confirmation that all remaining comments have been addressed should be included as a condition of any

approval motion to ensure that the stormwater management system functions as designed and does not have any negative impact on the wetland system.

As of this memo, staff is seeking clarification from CHA with regard to the period in which stormwater systems must be inspected to ensure they are draining. CHA's 2/28/2020 report and Ms. Kaufman's 3/11/2020 memo both reference a 24-hour inspection period; however, Ms. Kaufman advised the applicant to use a 72-hour time reference after speaking with CHA. Staff will be requesting clarification from Chuck Eaton and will report to the Commission which timeframe is correct during the public hearing on March 16, 2020. If a correction is needed, it can be included in an approval motion.

Snow Storage

The 3/2/2020 plan set significantly revised the proposed snow storage areas to move them further away from the wetlands; however, this change also resulted in a reduction to stockpile area. Staff recommended that the applicant identify how excess storage would be addressed and the applicant included a note on Sheet C-3.0, Layout & Materials Plan, indicating that excess snow accumulation would be stored in the parking lot. Staff recommends that the Commission require this contingency plan be revised to clarify that the parking lot may be used for excess snow storage provided such storage does not impact sight visibility, is located at least 75 feet from wetlands, and does not reduce the number of available spaces below that which is needed to support tenant parking. If snow accumulations exceed what can be stored on-site under these conditions, excess snow shall be removed from the site.

These conditions would ensure that the public safety concerns related to excess accumulation of snow storage in the parking lot is addressed:

- Pedestrian safety
- Retention of adequate sight visibility for drivers
- Retention of emergency vehicle access
- Eliminating potential for tenants to park on South Eagleville Road (which is a state arterial road) due to the lack of available parking in the lot

SUMMARY

All of the comments identified in this memo could be addressed as conditions in an approval motion.

MEMO

To: Linda Painter, AICP, Director of Planning and Development

From: Jennifer Kaufman, AICP, Senior Planner/Inland Wetlands Agent

Date: March 10, 2020

Subject: P-1364-2 Eagleville Green, 113-121 South Eagleville Road

Below are my comments regarding the above referenced application. I will be recommending that the IWA condition their approval on the applicant revising the plans to reflect these comments.

Snow Stockpiles

The 3/2/2020 revisions remove the stockpile areas that were closest to the wetland, which appear to have reduced overall storage. The applicant should add a note identifying how snow storage will be addressed for situations when the stockpile locations are too small to accommodate the snow accumulations. The locations must be consistent with conditions identified in the wetlands license.

Erosion and Sedimentation Control

1) *Revise Notes as Follows:*
   - Replace all references to "hay bales" with "straw bales"

2) Site plan sheet G-1.0 revised to include the following:

   Erosion and Sedimentation Notes

   - Note 2. Last sentence shall read, "as directed by the owner, engineer, or **TOWN".**
   - Note 4. All erosion and sedimentation measures implemented beyond that shown shall conform to applicable sections of the Connecticut 2002 Guidelines for Soil Erosion and Sediment Control**, AS AMENDED.**

   Suggested Construction Sequence

   - Remove "Suggested"
   - Note 1: Modify to include Conduct a Pre-construction meeting with the owner, engineer and **TOWN** prior to any construction activity.
   - Revise NOTE to "The contractor may modify the suggested construction sequence indicated above, provided a revised sequence is submitted for review and approved by the owner, engineer, and **TOWN"**.

   Temporary E&S Measures Maintenance Schedule

- Revise plans to indicate that all Erosion and Sediment must be inspected prior to an anticipated rain event of greater than ½ inch, within 24 hours of a rain event of greater than ½ inch or a storm generating a discharge.
- Revise plan to state, “Contractor shall document results of scheduled Erosion and Sedimentation inspections and resulting corrective measures. These documents shall be available for Town inspection upon request.

Stormwater Management

1) CHA will need to (formerly CME) confirm that the 3-2-2020 plan set addresses the remaining comments in their 2-28-2020 review.

   This includes the following:

   - A signed sealed stormwater management report incorporating all changes including the HydroCAD detention calculations, entitled “837490-HYDRO2”, prepared by BSC Group, dated February 27, 2020.
   - The Operation and Maintenance Plan “After Construction section” revised to include inspections of the detention basin to ensure it is draining in less than 24-hours after a storm event.
   - Site plan sheet C 3.0 revised to include a sediment barrier added at the bottom of basin (elevation 613) to provide mechanical cleanout in protecting any infiltration capacity compromised by eroded fines settling in the bottom of the basin.

Site Plan Review

Engineers
Designers
Consultants
Planners
Scientists

February 28, 2020

Mansfield Planning & Zoning Commission
C/O Linda Painter, Director of Planning & Development and Jennifer Kaufman, Senior Planner & Inland Wetlands Agent
Audrey P. Beck Municipal Building
4 South Eagleville Road
Storrs Mansfield, CT 06268
Via email: painterlm@mansfieldct.org and kaufmanjs@mansfieldct.org

RE: **Eagleville Green, 113-121 South Eagleville Road**

Commission Members,

CME Associates, Inc. (CME) reviewed application materials submitted for the proposed house development on South Eagleville Road and provided comments letters on December 23, 2019 and February 19, 2020. On February 26, 2020, the applicant submitted the following materials in response to those letters:

Item 1 Sheet C-4.0 Grading & Drainage Plan prepared by BSC Group, dated November 25, 2019, revised February 26, 2020

Item 2 Letter, "RE: Eagleville Green, 113-121 South Eagleville Road, Response to CME Review Comments" with attachments, prepared by BSC Group, addressed to Kathleen Dorgan, Dorgan Architecture & Planning, dated February 25, 2020

Item 3 HydroCAD detention calculations, entitled "837490-HYDRO2", prepared by BSC Group, dated February 27, 2020

Those comments still outstanding are below. Original December 23 comments are in normal text. February 19 comments and responses are in *italic text*. All new comments are in **bold text**.

860.885.1055
www.cmeengineering.com
33 Wilbur Cross Way, Suite 105, P.O. Box 535, Mansfield, CT 06268

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.
   The stormwater management design has been modified and peak flows will not be increased to the wetland system.

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.
   Test pits were conducted at the proposed stormwater system locations and are recorded on the revised site plans. The stormwater management system has been modified according to the test pit results. The high groundwater elevation is within 2-feet of the bottom of stone for each of the three underground detention systems.
   With the outlet of the three detention systems set above the bottom of stone elevation, the designer is relying on infiltration to ensure the detention systems drain completely between each storm. If the systems do not drain completely, then the storage volume necessary to attenuate peak flows will not be available for a subsequent storm. A mounding analysis to demonstrate that the provided separation is adequate could replace the need to satisfy the SQM requirement of 3-feet of separation. Alternatively, the system could be raised to meet the groundwater separation and widened to maintain the required volume. Enlarging the footprint of the systems will also help decrease the drawdown time (See Comment 3.)
   Mounding calculations have been provided and demonstrate that the groundwater will remain at or below the bottom of the proposed stormwater systems through a 100-year storm. Two of the detention systems were modified to increase the separation from groundwater as a result of the mounding analysis.

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were

not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

Drawdown calculations are provided in the revised Stormwater Management Report. The detention basin is expected to drain in 15.3 hours. Systems 2P, 3P and 4P are calculated to drain in 65.3, 70.6, and 56.8 hours, respectively. The SQM indicates underground detention facilities are typically designed to provide less than 24 hours of detention time in order to have the storage available for a subsequent storm. The Design Engineer must modify the design to ensure that these three detention systems will completely drain between storms (See Comment 2.)

Numerous sources including the 2008 Connecticut Department of Transportation Drainage Manual, the 2008 Massachusetts Stormwater Handbook, and the 2015 Rhode Island Stormwater Design and Installation Standards Manual indicate or require that systems drain within 72 hours. These manuals are more recent than the 2004 SQM. Multiple large storm events with significant rainfall rarely occur within a 72 hour time period. If multiple events were to occur within 72 hours and the detention systems became full of water, the overflow would discharge through the vegetated swales to the wetland. This overflow water would still be treated by the hydrodynamic separators prior to discharge to the vegetated swales. The wetland that receives the runoff from the site has the ability to absorb small increases in peak flow that might possibly occur due to back to back storms in a 72 hour period. The wetland would serve as a buffer between the site and downstream channelized flow, absorbing the small increase in stormflow volume and slowing the flow prior to it entering a channelized stream. The Design Engineer provided calculations indicating that the detention systems will drain within 72 hours and the 2 year peak storm flow is reduced to a 1 year peak storm flow. Based on this information we do not anticipate any impacts to the wetlands or downstream channels.

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Drawdown calculations are provided in the revised Stormwater Management Report and demonstrate that the basin will drain within 24 hours. In addition, adequate separation from groundwater has been demonstrated by test pits to ensure the basin

will not remain full of water. The basin should function for detention as designed. The Operation and Maintenance Plan After Construction must be revised to include inspections of the detention basin to ensure it is draining in less than 24-hours after a storm event.

CME recommends that inspection of the detention basin be added to the O&M Plan as noted above.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.
   The applicant's response clarified that the HydroCAD calculations for this outlet are based on Outlet Control Structure No. 1, the modeling appears to be accurate for this.

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.
   The revised site plans corrected the Outlet Control Structure table.

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.
   The revised application materials indicate the outlet velocities are less than 4 feet-per-second and the outlets will remain stable with the proposed temporary matting and landscaping.

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.
   Inspection ports have been included for the detention systems on the revised site plans. The designer connected Detention Systems 3P and 4P to the proposed outlets rather than providing high level overflow grates. The Operation and Maintenance Plan After Construction must be revised to include inspection of the detention systems to ensure they are draining in less than 24-hours after a storm event.

   CME recommends that inspection of the detention systems be added to the O&M Plan as noted above.

9. The design engineer must provide a detail of Detention System 2P (36-inch corrugated metal pipe) to verify the drainage calculations and ensure the system is properly constructed. Additionally, CME recommends that plastic pipe be utilized

in the detention system to avoid salt corrosion damage. The plastic pipe will have a considerably longer service life than metal pipe.
A detail for system 2P has been included on the revised site plans and the proposed pipe material is perforated HDPE.

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.
The revised site plans clarify the elevations of Detention System 2P, the elevations now match the provided calculations.

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.
The designer clarified that the rows are not strictly additive due to different times of concentrations.

12. The Design Engineer must review and revise the invert elevations for the drainage manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.
The invert elevations for Outlet Control Structure #1 have been modified in the revised site plans and the outlet pipe is now correctly sloped.

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.
The applicant indicates no signage is proposed for the site.

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.
Sediment barrier has been added mid-way up the basin slopes in the revised site plans, sheet C-1.0. CME recommends locating the barrier at the bottom of basin (elevation 613). Providing the barrier is superior to mechanical cleanout in protecting any infiltration capacity compromised by eroded fines settling in the bottom of the basin.

CME recommends that sediment barrier be added for the detention basin as noted above.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.
    The applicant indicates that there are no conflicts between the gas easement and the proposed drainage easement.

16. The proposed landscaping plan may limit location options for stockpiling snow. Snow stockpile location(s) should be shown on the site plans.
    The proposed snow stockpile locations included on the revised site plans do not appear to account for proposed landscaping in those areas.
    This comment must still be addressed.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73 bedrooms. The design engineer must review and revise this calculation must be updated.
    The calculation for pump chamber sizing has been revised and the pump chamber size updated on the revised site plans.

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.
    The revised application materials demonstrate the design has satisfied this requirement.

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station.
    The proposed pump station has been relocated adjacent to Building #2 in the revised site plans. The majority of the separation distances for stormwater are now met; however, CB-1 must be constructed in a watertight manner with rubber joint seals and

watertight pipe connection seals. The Design Engineer must provide a call-out on the plan for this requirement.

The appropriate callouts have been provided for CB-1 on the revised sheet C-4.0.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.

    The stormwater operation and management plan has been included on the revised site plans (Sheet G-1.0.)

21. The Plan revisions satisfied the comments made by CME (December 23, 2019) and Linda Painter as to the details of the Affordability Plan, but we remind the Commission that, when ultimately acting upon the application, it should include provisions in the terms of approval noting:
    a. The specific entity at the Town to whom the annual report is to be submitted.
    b. The Mansfield Housing Authority should be in possession of the "housing software program" as cited by the Plan.

22. **The applicant must submit a complete set of signed and sealed site plans and stormwater management report incorporating all the revisions submitted.**

Please contact us if you have any questions on the above comments.

Sincerely,

Chuck Eaton, PE, LEED-AP
Civil Engineering Manager

John Guszkowski, AICP
Lead Planner

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February 25, 2020

Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Eagleville Green, 113-121 South Eagleville Road
Response to CME Review Comments

Dear Kathy:

Below are our responses to the comments prepared by CME on the site plan application documents.

Site Plan Review Comments to Planning & Zoning Commission
Dated February 19, 2020; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.
   The stormwater management design has been modified and peak flows will not be increased to the wetland system.

   Response: None

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.
   Test pits were conducted at the proposed stormwater system locations and are recorded on the revised site plans. The stormwater management system has been modified according to the test pit results. The high groundwater elevation is within

Engineers
Environmental Scientists
Custom Software Developers
Landscape Architects
Planners
Surveyors

2-feet of the bottom of stone for each of the three underground detention systems.

With the outlet of the three detention systems set above the bottom of stone elevation, the designer is relying on infiltration to ensure the detention systems drain completely between each storm. If the systems do not drain completely, then the storage volume necessary to attenuate peak flows will not be available for a subsequent storm. A mounding analysis to demonstrate that the provided separation is adequate could replace the need to satisfy the SQM requirement of 3-feet of separation. Alternatively, the system could be raised to meet the groundwater separation and widened to maintain the required volume. Enlarging the footprint of the systems will also help decrease the drawdown time (See Comment 3.)

Response: A mounding analysis was performed using the Hantush equations with the procedure outlined in the USGS Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins." The analysis was performed using the accompanying spreadsheet published by the USGS. The calculations and results of the analysis have been provided as attachments to these response to comments.

The analysis demonstrated that detention basins P1 and P3 will not be inundated by groundwater at the end of their respective drawdown periods. Basins P2 and P4 have been revised accordingly to demonstrate the same. The attached calculations and results show the revised basin conditions. The Grading and Drainage Plan will be revised to show the new basin elevations and sizes correctly.

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.
Drawdown calculations are provided in the revised Stormwater Management Report. The detention basin is expected to drain in 15.3 hours. Systems 2P, 3P and 4P are calculated to drain in 65.3, 70.6, and 56.8 hours, respectively. The SQM indicates underground detention facilities are typically designed to provide less than 24 hours of detention time in order to have the storage available for a subsequent storm. The Design Engineer must modify the design to ensure that these three detention systems will completely drain between storms (See Comment 2.)

Response: While the Water Quality Manual states that basins are typically designed to drain within 24 hours, the ConnDOT Drainage Manual explicitly requires detention basins to drain within a 72-hour period. We feel we have adequately demonstrated compliance with this requirement.

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.
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   Response: A note will be added to the O&M Notes on the Plans.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.
   The applicant's response clarified that the HydroCAD calculations for this outlet are based on Outlet Control Structure No. 1, the modeling appears to be accurate for this.

   Response: None

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.
   The revised site plans corrected the Outlet Control Structure table.

   Response: None

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.
   The revised application materials indicate the outlet velocities are less than 4 feet-per-second and the outlets will remain stable with the proposed temporary matting and landscaping.

Response: None

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.
Inspection ports have been included for the detention systems on the revised site plans. The designer connected Detention Systems 3P and 4P to the proposed outlets rather than providing high level overflow grates. The Operation and Maintenance Plan After Construction must be revised to include inspection of the detention systems to ensure they are draining in less than 24-hours after a storm event.

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A detail for system 2P has been included on the revised site plans and the proposed pipe material is perforated HDPE.

Response: None

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.
The revised site plans clarify the elevations of Detention System 2P, the elevations now match the provided calculations.

Response: None

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.
The designer clarified that the rows are not strictly additive due to different times of concentrations.

Response: None

12. The Design Engineer must review and revise the invert elevations for the drainage

manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.
The invert elevations for Outlet Control Structure #1 have been modified in the revised site plans and the outlet pipe is now correctly sloped.

Response: None

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.
The applicant indicates no signage is proposed for the site.

Response: None

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.
Sediment barrier has been added mid-way up the basin slopes in the revised site plans, sheet C-1.0. CME recommends locating the barrier at the bottom of basin (elevation 613). Providing the barrier is superior to mechanical cleanout in protecting any infiltration capacity compromised by eroded fines settling in the bottom of the basin.

Response: The E&S Plan will be modified accordingly.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.
The applicant indicates that there are no conflicts between the gas easement and the proposed drainage easement.

Response: None

16. The proposed landscaping plan may limit location options for stockpiling snow. Snow stockpile location(s) should be shown on the site plans.
The proposed snow stockpile locations included on the revised site plans do not appear to account for proposed landscaping in those areas.

Response: Snow stockpile areas will be revised to eliminate conflicts with landscaping.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73

bedrooms. The design engineer must review and revise this calculation must be updated.
The calculation for pump chamber sizing has been revised and the pump chamber size updated on the revised site plans.

Response: None

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.
The revised application materials demonstrate the design has satisfied this requirement.

Response: None

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station.
The proposed pump station has been relocated adjacent to Building #2 in the revised site plans. The majority of the separation distances for stormwater are now met; however, CB-1 must be constructed in a watertight manner with rubber joint seals and watertight pipe connection seals. The Design Engineer must provide a call-out on the plan for this requirement.

Response: A note will be added to the Plans.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.
The stormwater operation and management plan has been included on the revised site plans (Sheet G-1.0.)

Response: None

21. The Plan revisions satisfied the comments made by CME (December 23, 2019) and Linda Painter as to the details of the Affordability Plan, but we

remind the Commission that, when ultimately acting upon the application, it should include provisions in the terms of approval noting:

a. The specific entity at the Town to whom the annual report is to be submitted.

b. The Mansfield Housing Authority should be in possession of the "housing software program" as cited by the Plan.

Response: Not applicable to Applicant

Site Plan Review Comments to Inland Wetlands Commission
Dated February 19, 2020; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.
   The stormwater management design has been modified and peak flows will not be increased to the wetland system.

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   Test pits were conducted at the proposed stormwater system locations and are recorded on the revised site plans. The stormwater management system has been modified according to the test pit results. The high groundwater elevation is within 2-feet of the bottom of stone for each of the three underground detention systems.

   With the outlet of the three detention systems set above the bottom of stone elevation, the designer is relying on infiltration to ensure the detention systems drain completely between each storm. If the systems do not drain completely, then the storage volume necessary to attenuate peak flows will not be available for a subsequent storm. A mounding analysis to demonstrate that the provided separation

is adequate could replace the need to satisfy the SQM requirement of 3-feet of separation. Alternatively, the system could be raised to meet the groundwater separation and widened to maintain the required volume. Enlarging the footprint of the systems will also help decrease the drawdown time (See Comment 3.)

Response: A mounding analysis was performed using the Hantush equations with the procedure outlined in the USGS Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins." The analysis was performed using the accompanying spreadsheet published by the USGS. The calculations and results of the analysis have been provided as attachments to these response to comments.

The analysis demonstrated that detention basins P1 and P3 will not be inundated by groundwater at the end of their respective drawdown periods. Basins P2 and P4 have been revised accordingly to demonstrate the same. The attached calculations and results show the revised basin conditions. The Grading and Drainage Plan will be revised to show the new basin elevations and sizes correctly.

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   Response: While the Water Quality Manual states that basins are typically designed to drain within 24 hours, the ConnDOT Drainage Manual explicitly requires detention basins to drain within a 72-hour period. We feel we have adequately demonstrated compliance with this requirement.

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overestimated.
Drawdown calculations are provided in the revised Stormwater Management Report and demonstrate that the basin will drain within 24 hours. In addition, adequate separation from groundwater has been demonstrated by test pits to ensure the basin will not remain full of water. The basin should function for detention as designed. The Operation and Maintenance Plan After Construction must be revised to include inspections of the detention basin to ensure it is draining in less than 24-hours after a storm event.

Response: A note will be added to the O&M Notes on the Plans.

5. A detail for the two vegetated outlets must be provided and velocity calculations must be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.
The revised application materials indicate the outlet velocities are less than 4 feet-per-second and the outlets will remain stable with the proposed temporary matting and landscaping.

Response: None

6. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If ine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.
Sediment barrier has been added mid-way up the basin slopes in the revised site plans, sheet C-1.0. CME recommends locating the barrier at the bottom of basin (elevation 613). Providing the barrier is superior to mechanical cleanout in protecting any infiltration capacity compromised by eroded fines settling in the bottom of the basin.

Response: The E&S Plan will be revised accordingly.

7. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse(s) to determine if the 2-year storm reduction is required.
The revised application materials demonstrate the design has satisfied this requirement.

Response: None

8. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater maintenance needs. ***The stormwater operation and management plan has been included on the revised site plans (Sheet G-1.0.)***

Response: None

9. Upon review at the field site visitation, the majority of the inland wetland delineation appears correct; however, upon close inspection of an area to the south-central portion of the property, along the rear property line, an area had a large amount of standing water at the surface with obligate wetland species identifiable. The wetland delineation was performed by Ian Cole in June of 2016. The existing flags in the field were re-staked by a land surveyor based on previous surveyed locations. This area may be an inland wetland based on subsurface soil characteristics of a wetland and the standing water at the surface. Note that the ground was not frozen, though there was an ice layer on the standing water. The soil scientist should review this area to determine if it is in fact a wetland and delineate the its limits accordingly.
The applicant's Soil Scientist reviewed the area with standing water and concluded that the area is not a wetland and that the original wetland delineation of the site from 2016 is still valid. We have reviewed the provided report and concur with the conclusion that this area is not an inland wetland and that the grades were previously altered.

Response: None

10. The report by Ms. Kaplan indicates that the wetlands on the site are established by surface runoff; however, there is a major groundwater component that exists. While there is some surface discharge into this wetland, it appears that groundwater is the primary source of water in this wetland given its size and height of some of the tussock sedges. The report does not address or classify the inland wetland soil and upland soil types on the site. Furthermore, the report does not evaluate the functions and values of the existing wetlands. This could have been done using the rationales of a standardized evaluation method (e.g. the US Army Corps of Engineers' escriptive Approach 1995) and using her best professional judgment. These functions include: ground water recharge, flood flow alteration, sediment/shoreline stabilization, sediment/pathogen retention, nutrient removal, production export, aquatic habitat, endangered species habitat, visual quality/aesthetics, educational/scientific value, recreation- passive or active and uniqueness/historical.
The applicant's Soil Scientist reviewed the site as documented in response to Comment #9.

Response: None

11. The stormwater basin is designed as a dry basin with many proposed plantings in the basin bottom. Due to the already existing high groundwater at the surface towards the rear property line, it may be appropriate to design the basins as wet basins and adjust the plantings accordingly.
    The recently completed test pits indicate that the bottom of the stormwater basin is well above high ground water; therefore, the proposed plantings will be appropriate.

    Response: None

12. We generally agree with Ms. Kaplan's evaluation of the potential effects on the wetlands from the proposed development. In addition to the evaluation, below are additional suggestions to enhance and protect the wetland system:
    a. Use native plantings for the trees, shrubs and groundcover in the landscape design.
       The applicant indicated that only native or adaptively native plants are included in the landscaping plan.
    b. No use of fertilizers, pesticides and/or herbicides in close proximity of the wetlands.
       The applicant agreed with this statement.
    c. That placards on fence posts be placed along the existing wetland that acknowledges the wetland resource and that no dumping of any type is allowed, including brush and leaves and other types of debris.
       The applicant indicated that placards will be considered if funding is available.

    Response: None

13. In conclusion, based on the proposed activities and the physical characteristics of the site we do not expect that there will be a significant adverse effect to the inland wetlands and watercourses on or off the site from the development.

    Response: None

Very truly yours,
BSC Group-Connecticut, Inc.

Robert S, Newton, PE, LEED AP

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values

2.0400	***R***	**Recharge (infiltration) rate (feet/day)**
0.210	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
20.40	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
8.800	**x**	**1/2 length of basin (x direction, in feet)**
29.000	**y**	**1/2 width of basin (y direction, in feet)**
0.640	**t**	**duration of infiltration period (days)**
25.000	**hi(0)**	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

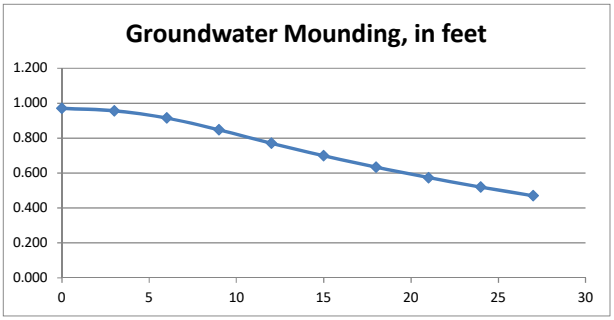
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

25.970	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.970	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
0.970	**0**
0.956	**3**
0.915	**6**
0.847	**9**
0.770	**12**
0.699	**15**
0.634	**18**
0.574	**21**
0.520	**24**
0.470	**27**

Re-Calculate Now



Disclaimer

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STORMWATER BASIN P1

Type:	Above Ground	
Overall Width, 2X:	17.5	ft; dimension parallel to assumed gw movement
Overall Length, 2Y:	58.0	ft; dimension perpendicular to assumed gw movement
Bottom Elevation:	613.00	ft
GW Elevation:	611.83	ft
Rawl's Rate:	1.02	in/hr; value based on observed soil type
Time to Empty:	15.3	hr; drawdown time

Hantush Equation Input Variables

Recharge Rate, R:	2.04	ft/day; converted from Rawl's Rate
Specific Yield, S_y:	0.21	; dimensionless, assumed for Fine Sand
Horizontal Hydraulic Conductivity, K_h:	20.40	ft/day
1/2 Width of Basin, X:	8.8	ft
1/2 Length of Basin, Y:	29.0	ft
Duration of Infiltration, t:	0.64	days
Initial thickness of saturated zone, $h_i(0)$:	25	ft; value assumed from Surficial Aquifer Potential Map of CT and reconciled with average depths of site borings

Specific yields, in percent, of various materials

[Rounded to nearest whole percent]

Material	Number of determinations	Specific yield		
		Maximum	Minimum	Average
Clay	15	5	0	2
Silt	16	19	3	8
Sandy clay	12	12	3	7
Fine sand	17	28	10	21
Medium sand	17	32	15	26
Coarse sand	17	35	20	27
Gravelly sand	15	35	20	25
Fine gravel	17	35	21	25
Medium gravel	14	26	13	23
Coarse gravel	14	26	12	22

Hantush Equation Results and Analysis

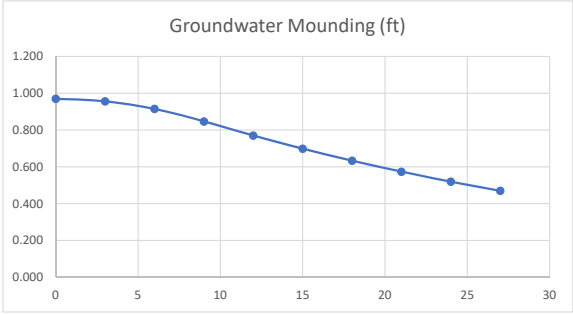
Datum Depth:	26.17	ft; measured from bottom elevation of basin
Datum Elevation:	586.83	ft
Maximum thickness of saturated zone:	25.97	ft; input from Hantush Spreadsheet Calculator
Maximum GW mounding:	0.97	ft; input from Hantush Spreadsheet Calculator

Therefore;

GW Mounding Elevation:	612.80	ft
Basin Bottom:	613.00	ft
Available Freeboard:	**0.20**	ft

Graphical Groundwater Mounding

y	x
0.970	0
0.956	3
0.915	6
0.847	9
0.770	12
0.699	15
0.634	18
0.574	21
0.520	24
0.470	27



This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values

0.5400	***R***	**Recharge (infiltration) rate (feet/day)**
0.210	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
5.40	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
18.300	**x**	**1/2 length of basin (x direction, in feet)**
81.000	**y**	**1/2 width of basin (y direction, in feet)**
1.520	**t**	**duration of infiltration period (days)**
25.000	**hi(0)**	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

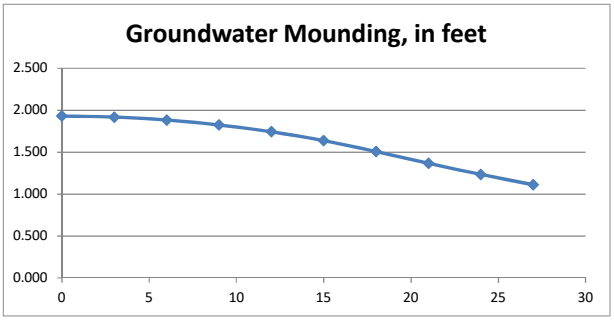
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

26.929	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
1.929	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
1.929	**0**
1.917	**3**
1.883	**6**
1.824	**9**
1.742	**12**
1.636	**15**
1.506	**18**
1.366	**21**
1.234	**24**
1.111	**27**

Re-Calculate Now



Disclaimer

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STORMWATER BASIN P2

Type:	Underground	
Overall Width, 2X:	36.5	ft; dimension parallel to assumed gw movement
Overall Length, 2Y:	162.0	ft; dimension perpendicular to assumed gw movement
Bottom Elevation:	614.25	ft
GW Elevation:	611.75	ft
Rawl's Rate:	0.27	in/hr; value based on observed soil type
Time to Empty:	36.4	hr; drawdown time

Hantush Equation Input Variables

Recharge Rate, R:	0.54	ft/day; converted from Rawl's Rate
Specific Yield, S_y:	0.21	; dimensionless, assumed for Fine Sand
Horizontal Hydraulic Conductivity, K_h:	5.40	ft/day
1/2 Width of Basin, X:	18.3	ft
1/2 Length of Basin, Y:	81.0	ft
Duration of Infiltration, t:	1.52	days
Initial thickness of saturated zone, $h_i(0)$:	25	ft; value assumed from Surficial Aquifer Potential Map of CT and reconciled with average depths of site borings

Hantush Equation Results and Analysis

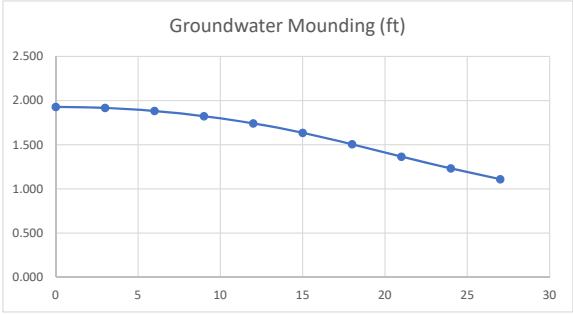
Datum Depth:	27.50	ft; measured from bottom elevation of basin
Datum Elevation:	586.75	ft
Maximum thickness of saturated zone:	26.93	ft; input from Hantush Spreadsheet Calculator
Maximum GW mounding:	1.93	ft; input from Hantush Spreadsheet Calculator

Therefore;

GW Mounding Elevation:	613.68	ft
Basin Bottom:	614.25	ft
Available Freeboard:	**0.57**	ft

Graphical Groundwater Mounding

y	x
1.929	0
1.917	3
1.883	6
1.824	9
1.742	12
1.636	15
1.506	18
1.366	21
1.234	24
1.111	27



Specific yields, in percent, of various materials

[Rounded to nearest whole percent]

Material	Number of determinations	Specific yield: Maximum	Specific yield: Minimum	Specific yield: Average
Clay	15	5	0	2
Silt	16	19	3	8
Sandy clay	12	12	3	7
Fine sand	17	28	10	21
Medium sand	17	32	15	26
Coarse sand	17	35	20	27
Gravelly sand	15	35	20	25
Fine gravel	17	35	21	25
Medium gravel	14	26	13	23
Coarse gravel	14	26	12	22

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values

2.0400	*R*	**Recharge (infiltration) rate (feet/day)**
0.210	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
20.40	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
9.800	x	**1/2 length of basin (x direction, in feet)**
15.700	y	**1/2 width of basin (y direction, in feet)**
2.940	t	**duration of infiltration period (days)**
25.000	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

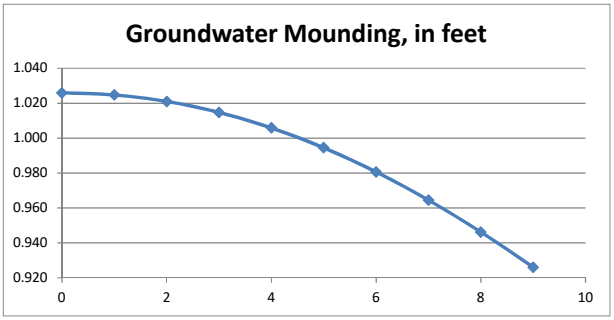
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

26.026	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
1.026	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
1.026	0
1.025	1
1.021	2
1.015	3
1.006	4
0.995	5
0.981	6
0.964	7
0.946	8
0.926	9

Re-Calculate Now



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STORMWATER BASIN P3

Type:	Underground	
Overall Width, 2X:	19.5	ft; dimension parallel to assumed gw movement
Overall Length, 2Y:	31.3	ft; dimension perpendicular to assumed gw movement
Bottom Elevation:	611.50	ft
GW Elevation:	609.50	ft
Rawl's Rate:	1.02	in/hr; value based on observed soil type
Time to Empty:	70.6	hr; drawdown time

Hantush Equation Input Variables

Recharge Rate, R:	2.04	ft/day; converted from Rawl's Rate
Specific Yield, S_y:	0.21	; dimensionless, assumed for Fine Sand
Horizontal Hydraulic Conductivity, K_h:	20.40	ft/day
1/2 Width of Basin, X:	9.8	ft
1/2 Length of Basin, Y:	15.7	ft
Duration of Infiltration, t:	2.94	days
Initial thickness of saturated zone, $h_i(0)$:	25	ft; value assumed from Surficial Aquifer Potential Map of CT and reconciled with average depths of site borings

Hantush Equation Results and Analysis

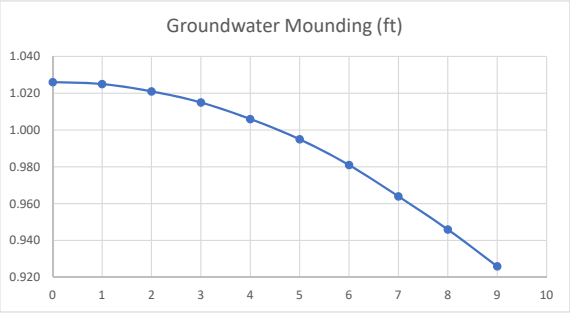
Datum Depth:	27.00	ft; measured from bottom elevation of basin
Datum Elevation:	584.50	ft
Maximum thickness of saturated zone:	26.03	ft; input from Hantush Spreadsheet Calculator
Maximum GW mounding:	1.03	ft; input from Hantush Spreadsheet Calculator

Therefore;

GW Mounding Elevation:	610.53	ft
Basin Bottom:	611.50	ft
Available Freeboard:	**0.97**	ft

Graphical Groundwater Mounding

y	x
1.026	0
1.025	1
1.021	2
1.015	3
1.006	4
0.995	5
0.981	6
0.964	7
0.946	8
0.926	9



Specific yields, in percent, of various materials

[Rounded to nearest whole percent]

Material	Number of determinations	Specific yield: Maximum	Minimum	Average
Clay	15	5	0	2
Silt	16	19	3	8
Sandy clay	12	12	3	7
Fine sand	17	28	10	21
Medium sand	17	32	15	26
Coarse sand	17	35	20	27
Gravelly sand	15	35	20	25
Fine gravel	17	35	21	25
Medium gravel	14	26	13	23
Coarse gravel	14	26	12	22

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The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values

2.0400	*R*	**Recharge (infiltration) rate (feet/day)**
0.210	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
20.40	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
11.400	x	**1/2 length of basin (x direction, in feet)**
56.600	y	**1/2 width of basin (y direction, in feet)**
1.960	t	**duration of infiltration period (days)**
25.000	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

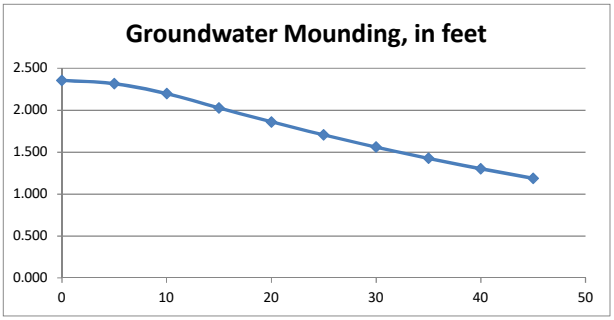
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

27.356	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
2.356	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
2.356	0
2.316	5
2.198	10
2.028	15
1.860	20
1.704	25
1.559	30
1.425	35
1.301	40
1.187	45

Re-Calculate Now



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STORMWATER BASIN P4

Type:	Underground	
Overall Width, 2X:	113.25	ft; dimension parallel to assumed gw movement
Overall Length, 2Y:	22.75	ft; dimension perpendicular to assumed gw movement
Bottom Elevation:	613.00	ft
GW Elevation:	610.67	ft
Rawl's Rate:	1.02	in/hr; value based on observed soil type
Time to Empty:	47.1	hr; drawdown time

Hantush Equation Input Variables

Recharge Rate, R:	2.04	ft/day; converted from Rawl's Rate
Specific Yield, S_y:	0.21	; dimensionless, assumed for Fine Sand
Horizontal Hydraulic Conductivity, K_h:	20.40	ft/day
1/2 Width of Basin, X:	56.6	ft
1/2 Length of Basin, Y:	11.4	ft
Duration of Infiltration, t:	1.96	days
Initial thickness of saturated zone, $h_i(0)$:	25	ft; value assumed from Surficial Aquifer Potential Map of CT and reconciled with average depths of site borings

Hantush Equation Results and Analysis

Datum Depth:	27.33	ft; measured from bottom elevation of basin
Datum Elevation:	585.67	ft
Maximum thickness of saturated zone:	27.36	ft; input from Hantush Spreadsheet Calculator
Maximum GW mounding:	2.36	ft; input from Hantush Spreadsheet Calculator

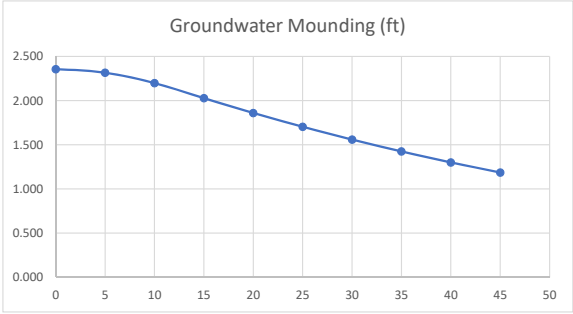
Therefore;

GW Mounding Elevation:	613.03	ft
Basin Bottom:	613.00	ft
Available Freeboard:	**-0.03**	ft

Effectively 0

Graphical Groundwater Mounding

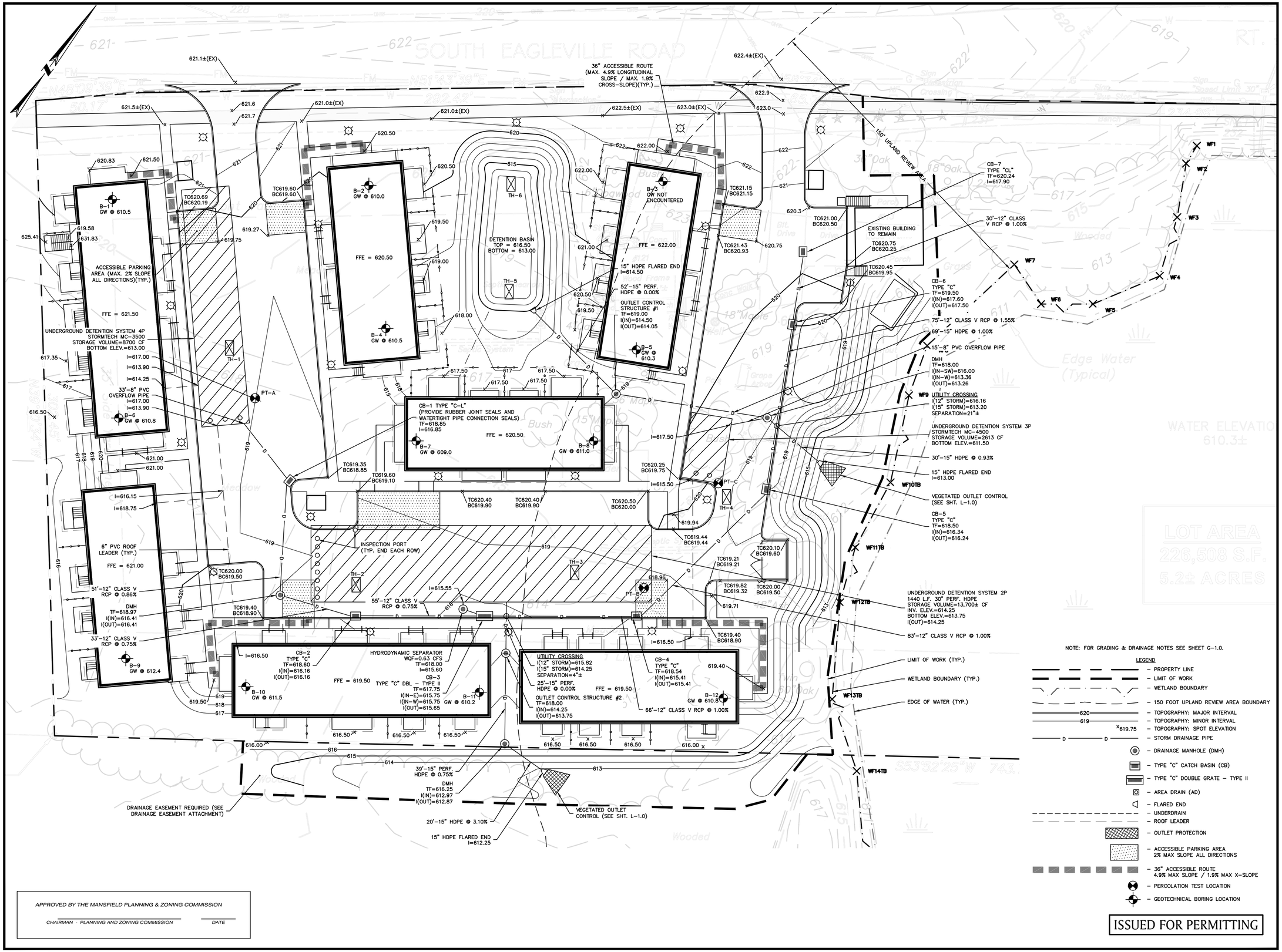
y	x
2.356	0
2.316	5
2.198	10
2.028	15
1.860	20
1.704	25
1.559	30
1.425	35
1.301	40
1.187	45



Specific yields, in percent, of various materials

[Rounded to nearest whole percent]

Material	Number of determinations	Specific yield: Maximum	Minimum	Average
Clay	15	5	0	2
Silt	16	19	3	8
Sandy clay	12	12	3	7
Fine sand	17	28	10	21
Medium sand	17	32	15	26
Coarse sand	17	35	20	27
Gravelly sand	15	35	20	25
Fine gravel	17	35	21	25
Medium gravel	14	26	13	23
Coarse gravel	14	26	12	22



APPROVED BY THE MANSFIELD PLANNING & ZONING COMMISSION

CHAIRMAN - PLANNING AND ZONING COMMISSION DATE

EAGLEVILLE GREEN - NOVEMBER 25, 2019

STATE OF CONNECTICUT ROBERT S. NEWTON No. 20662 LICENSED PROFESSIONAL ENGINEER

ROBERT NEWTON, PE No. 20662

EAGLEVILLE GREEN

113-121 SOUTH EAGLEVILLE ROAD
IN
MANSFIELD
CONNECTICUT

GRADING & DRAINAGE PLAN

NOVEMBER 25, 2019

REVISIONS:

1	01/20/2020	PER TOWN COMMENTS
2	01/31/2020	PER TOWN COMMENTS
3	02/12/2020	PER TEST PIT RESULTS
4	02/26/2020	PER REVIEW COMMENTS

PREPARED FOR:
MANSFIELD HOUSING DEV. CORP.
309 MAPLE ROAD
STORRS, CT 06268

BSC GROUP
300 Winding Brook Drive
Glastonbury, Connecticut 06033
860 652 8227

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SCALE: 1" = 20'
0 10 20 40 FEET

FILE: 8374900-GRDR.DWG
DWG. NO:
JOB. NO: 83749.00

C-4.0

MEMO

To: Planning and Zoning Commission

From: Linda Painter, AICP, Director

Date: March 2, 2020

Subject: **Eagleville Green ▪ 113-121 South Eagleville Road**
PZC File 1364-1 ▪ Petition to Amend the Zoning Map
PZC File 1364-2 ▪ Site Plan Application
Mansfield Nonprofit Housing Development Corporation, Owner/Applicant

OVERVIEW

The applicant is proposing to amend the Mansfield Zoning Map to change the designation of 113-121 South Eagleville Road (Parcel ID 16.57.5) from RAR-90 (Rural Agricultural Residence) to SER-HO (South Eagleville Road Housing Opportunity Zone). As required by Article 10, Section A.2.c, any application to create an SER-HO zone must be accompanying by a concurrent site plan application for the property. Accordingly, the applicant has submitted a Site Plan application for a 42-unit multi-family residential development. Furthermore, no zone change to create an SER-HO zone may be approved unless the site plan application is also approved by the Commission. As these two applications are linked together by virtue of the above-referenced regulation, both applications have been addressed in this memo.

Owner/Applicant: Mansfield Nonprofit Housing Development Corporation

Subject Property: 113-121 South Eagleville Road

Location: South side of South Eagleville Road, between Maple Road and Westwood Road

Size: 5.2 acres

Existing Zoning: RAR-90 (Rural Agricultural Residence)

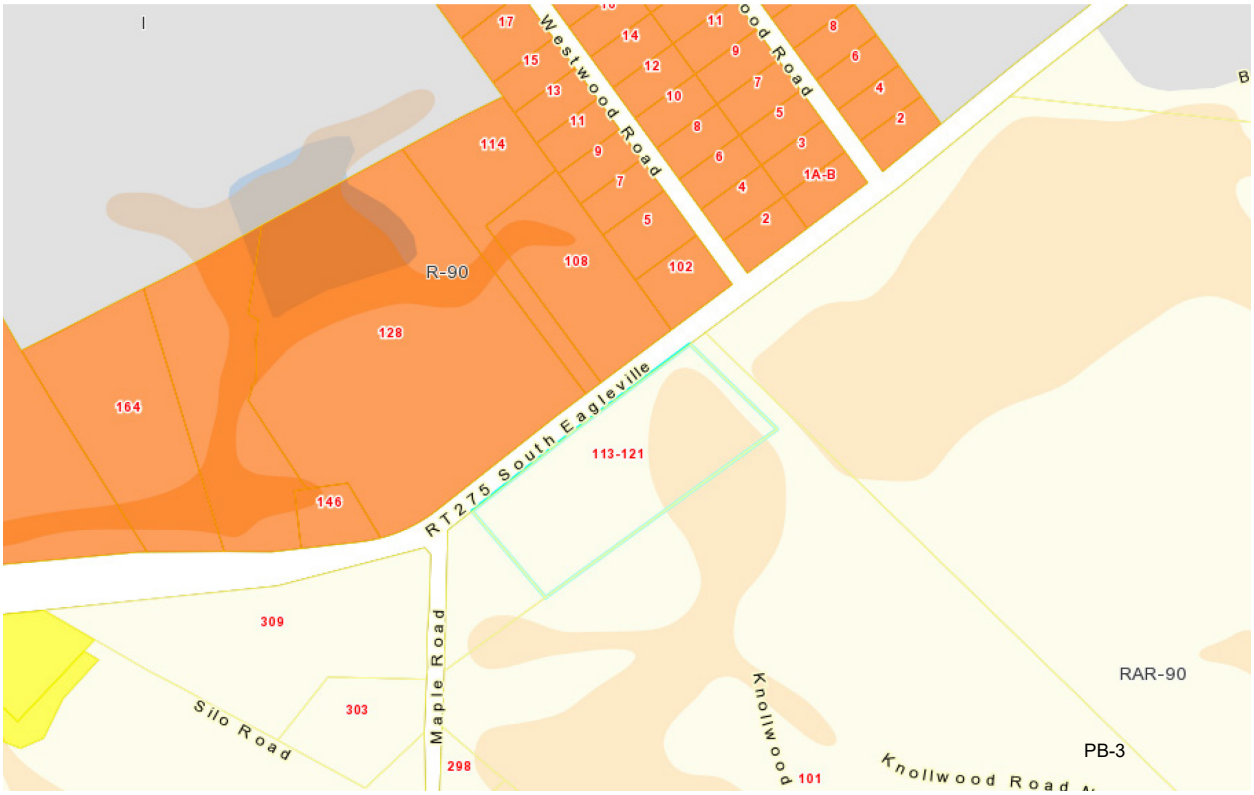
Proposed Zoning: SER-HO (South Eagleville Road-Housing Opportunity)

Proposed Use: 42-unit multi-family residential, including 13 affordable (income restricted) units

Roadway Classification: Arterial

	Adjacent Zoning	Adjacent Land Use
North	R-90	Single-Family Residential, Multi-Family Residential
South	RAR-90	Multi-Family Residential (Knollwood Apartments)
East	RAR-90	Knollwood Apartments entrance; Moss Sanctuary
West	RAR-90	Natural Gas Facility

Location Map



FRAMEWORK FOR REVIEW AND CONSIDERATION

Section 8-30g, C.G.S.

Both applications have been submitted pursuant to Section 8-30g, C.G.S., which provides an alternative appeals process for affordable housing developments. If the Commission were to deny either or both applications, or approve the site plan application with restrictions that have a "substantial adverse impact on the viability of the affordable housing development," the applicant may appeal such decisions to the Connecticut Superior Court pursuant to the provisions of 8-30g. These provisions place the burden on the Commission to prove that:

> The decision is necessary to protect substantial public interests in health, safety or other matters which the commission may legally consider; such public interests clearly outweigh the need for affordable housing; and such public interests cannot be protected by reasonable changes to the affordable housing development.

Accordingly, the Commission must consider the above standard when making a decision on the applications.

Zoning Map Amendment

With any proposed amendment to the Zoning Map, the PZC must weigh anticipated public and private benefits versus anticipated public and private costs. The Commission has the legislative discretion to determine what is best for the community as a whole, and the Zoning Map can and

should be modified to meet changing circumstances, Plan of Conservation and Development goals, objectives and recommendations or to address a recognized public need.

In addition to the requirements of Section 8-30g, C.G.S., Chapter 124 of the Connecticut General Statutes, the Commission is required to:

- Take the POCD into consideration and state its findings on the record with regard to the consistency of the proposed map change with the POCD (Sec. 8-2, 8-3(b) and 8-3a)
- State for the record why the change is being made (Sec. 8-3(c))

Site Plan Application

Section 8-3(g), C.G.S. outlines the requirements for site plan applications, including the following:

- The Commission cannot make a decision on a site plan application until the Inland Wetlands Agency (IWA) has submitted a report with its final decision. In making its decision, the PZC must consider the report of the IWA, and if the PZC establishes terms and conditions for approval that are not consistent with the final decision of the IWA, the reason for such terms and conditions must be stated on the record.
- The Commission may only deny or modify a site plan if it fails to comply with requirements already set forth in the zoning or inland wetlands regulations and any decision to modify or deny the application must state the reasons for the denial or modification.

ZONING MAP AMENDMENT

Approval Criteria for Zoning Map Amendments

Article 13, Section D of the Zoning Regulations establishes the following criteria for changes proposed to the Zoning Map by property-owners or residents. The applicant has submitted written responses regarding consistency of the proposed change with the approval criteria as part of the Statement of Justification submitted with the application.

- The proposed changes will promote the public's health, safety, property values and general welfare;
- The proposal is complete and contains all required application information;
- The proposal is consistent with the goals, policies and recommendations contained within the Mansfield Plan of Conservation and Development;
- The proposal is consistent with the expression of regulatory intent and purpose contained in the provisions of Article 1 of these regulations and Section 8-2 of the Connecticut General Statutes, as amended.
- Any proposal to amend the Zoning Map has comprehensively considered: the size and physical characteristics of the subject area; the character and supply of land currently zoned in the subject classification; and the effect of the proposal on existing land uses in the surrounding area.

Analysis

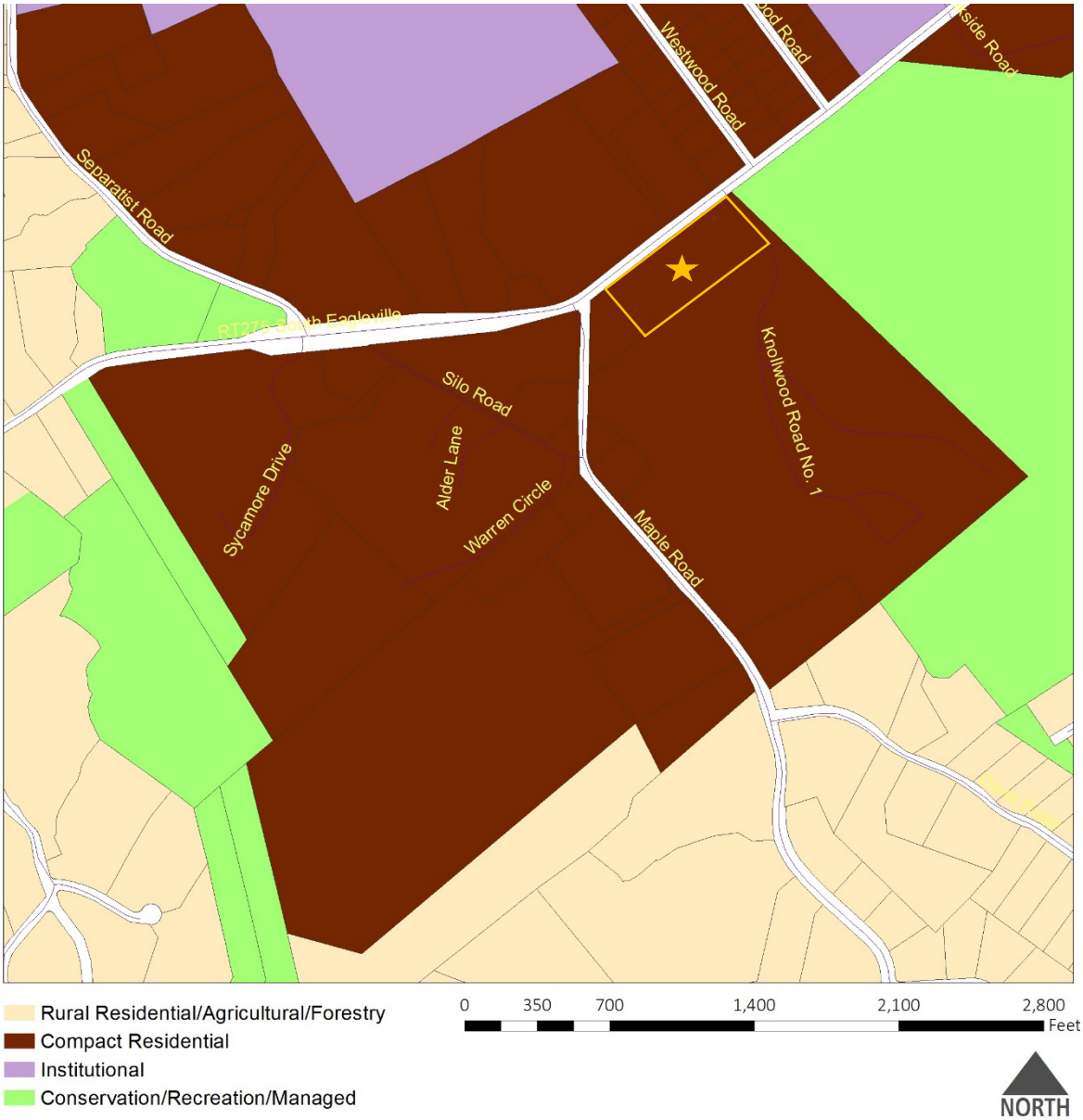
Completeness of Application

The applicant has submitted a Statement of Justification, legal description of the proposed SER-HO area, and a map depicting the proposed zone change area and properties within 500 feet. The applicant also provided a copies of a Phase 1 environmental assessment conducted in 2018 as well as a debris pile investigation conducted in 2019. Additionally, a traffic statement was provided with the site plan application.

Consistency with Plan of Conservation and Development (POCD)

As shown on the following map, the property is identified on the Future Land Use Map as **Compact Residential**.

Mansfield Tomorrow POCD Future Land Use Map



Key characteristics are summarized below in *italicized text* with staff's analysis following in regular text. Please refer to pages 8.27 through 8.28 of the POCD for full text related to the Compact Residential future land use designation. The following analysis is provided in addition to excerpts of the POCD provided in the application for the zoning map amendment.

- ***Purpose and Characteristics.*** *To accommodate residential growth in compact, walkable developments accessible to employment, the University and shopping areas. Compact Residential designations were applied based on existing or potential access to public water and sewer infrastructure and proximity to areas of activity such as the UConn campus and commercial centers. These areas are intended to promote higher density living where walkability and access to transit are more available than in the rural parts of town. The priority in these areas is on compact residential development patterns that allow more residents within walking and biking distance of destinations such as UConn, Storrs Center and the East Brook Mall area.*

  The area to be rezoned is located within approximately one half mile of Downtown Storrs and the UConn campus. The property is connected to both via sidewalks on South Eagleville Road and Eastwood Road and is also served by the Windham Regional Transit District. The property also has access to public water and sanitary sewer systems.

- ***Rezoning/Development Approvals.*** *Any request for rezoning or development approvals to allow a higher density of development in areas designated Compact Residential needs to adequately address the following issues in accordance with the Sustainability Principles outlined in Chapter 1 of the POCD:*

  - *Minimizing and mitigating impacts to natural systems and resources;*
  - *Minimizing and mitigating impacts to the surrounding neighborhoods, including scale, height, and massing of buildings, buffers, and impacts to community quality of life such as litter, noise, trespass and nuisance behavior;*
  - *Demonstrating the ability of the roadway network to accommodate additional traffic that would be generated by the development and providing alternative means of transportation to reduce traffic impacts on surrounding neighborhoods;*
  - *Identifying improvements to the surrounding transportation network to address capacity issues if the current system is not capable of supporting additional traffic in a manner that is appropriate to the context of the neighborhood;*
  - *Identifying techniques that will be used to promote resource conservation and reuse (energy, water, stormwater, waste, etc.) and minimize impacts from climate change (preservation of tree cover, natural infiltration of stormwater, etc.);*
  - *Identifying practices that will be used to enhance connectivity, both for natural and developed areas;*
  - *Clustering of development to preserve open space; and*
  - *Identifying other sustainable design and green building practices as may be appropriate to the site and development. The Storrs Center Sustainability Design Guidelines provide a resource that could be used to identify additional practices.*

  These criteria were considered when the Commission approved the regulations establishing the SER-HO zoning district. (File PZC 1361). The district requirements ensure that potential impacts are focused on South Eagleville Road, which as an

arterial road has much higher traffic volumes. Furthermore, this area has existing water and sewer service, transit service from WRTD, and a walkway connection from Maple Road to Downtown Storrs that provides access to goods and services as well as recreational opportunities. Impacts on natural resources are addressed through compliance with Zoning and Inland Wetlands Regulations.

- ***Design Characteristics.*** *Infill and redevelopment is encouraged in the form of compact neighborhoods that include a mix of multi-family, two and three-family houses and clustered single-family houses that preserve the natural setting. A variety of residential types should be considered such as cottage clusters, garden apartments, mansion apartments (apartments in buildings that look like large houses), townhouses, and clustered farmhouse style settlements. Design objectives include creation of walkable and human-scaled environments and minimizing impacts on nearby lower-density neighborhoods through appropriate transitions.*
  The proposed property is a small infill/redevelopment site. The property abuts a larger multi-family development (Knollwood Apartments) and is currently developed with two residential structures. The regulations established for the district address scale of building as well as impacts to lower density neighborhoods through the establishment of larger setbacks when properties abut single-family homes or vacant property zoned for single-family uses. Due to the small size of the site and the location of wetlands on the property, it would be difficult to incorporate a variety of housing types while still achieving the higher density that the Compact Residential designation was intended to provide.

- ***Affordable and Workforce Housing.*** *The following goals also apply to the proposed rezoning:*
  - *Goal 7.1: Mansfield's housing options include housing affordable to low and moderate income individuals and families.*
  - *Goal 7.4: Mansfield's land use regulations support development of a wide range of housing options to meet the needs of residents at all ages of the life cycle, including singles, families, seniors and students.*

  Residential uses in the SER-HO zone must qualify as either a set-aside development or assisted housing pursuant to Section 8-30g, C.G.S. Accordingly, a minimum of 30% of residential units developed in this zone must be affordable to households at 80% of median income. Additionally, the proposed development includes many features that will provide housing that appeals to residents of all ages and household compositions, including:

  - A mixture of 1, 2 and 3 bedroom units, of which 24 are two bedrooms are larger, providing additional housing opportunities for families.
  - Units include both flats as well as two-story townhouses.
  - Units include space for both dining and living areas as well as what appear to be kitchens appropriately sized for the unit.
  - Many units include some type of private outdoor space such as patios and small fenced yard areas.
  - Many units include some interior storage space; the district regulations also provide for small accessory storage structures to be added in the future if desired.

- Bedrooms are separated from living areas either by location on a separate floor or through access from a hallway.
- Access to full bathrooms is provided without having to go through a kitchen or living area.

Section 8-2, C.G.S.

Section 8-2, C.G.S. establishes provisions for Zoning Regulations. This section specifically requires the following (emphasis added):

> "Such regulations shall also encourage the **development of housing opportunities, including opportunities for multifamily dwellings**, consistent with soil types, terrain and infrastructure capacity, for all residents of the municipality and the planning region in which the municipality is located, as designated by the Secretary of the Office of Policy and Management under section 16a-4a. Such regulations shall also **promote housing choice and economic diversity in housing, including housing for both low and moderate income households**, and shall encourage the development of housing which will meet the housing needs identified in the state's consolidated plan for housing and community development prepared pursuant to section 8-37t and in the housing component and the other components of the state plan of conservation and development prepared pursuant to section 16a-26."

The proposed map amendment will promote the development of housing opportunities and housing choice as further described previously in this report.

Purpose and Intent of Zoning Regulations

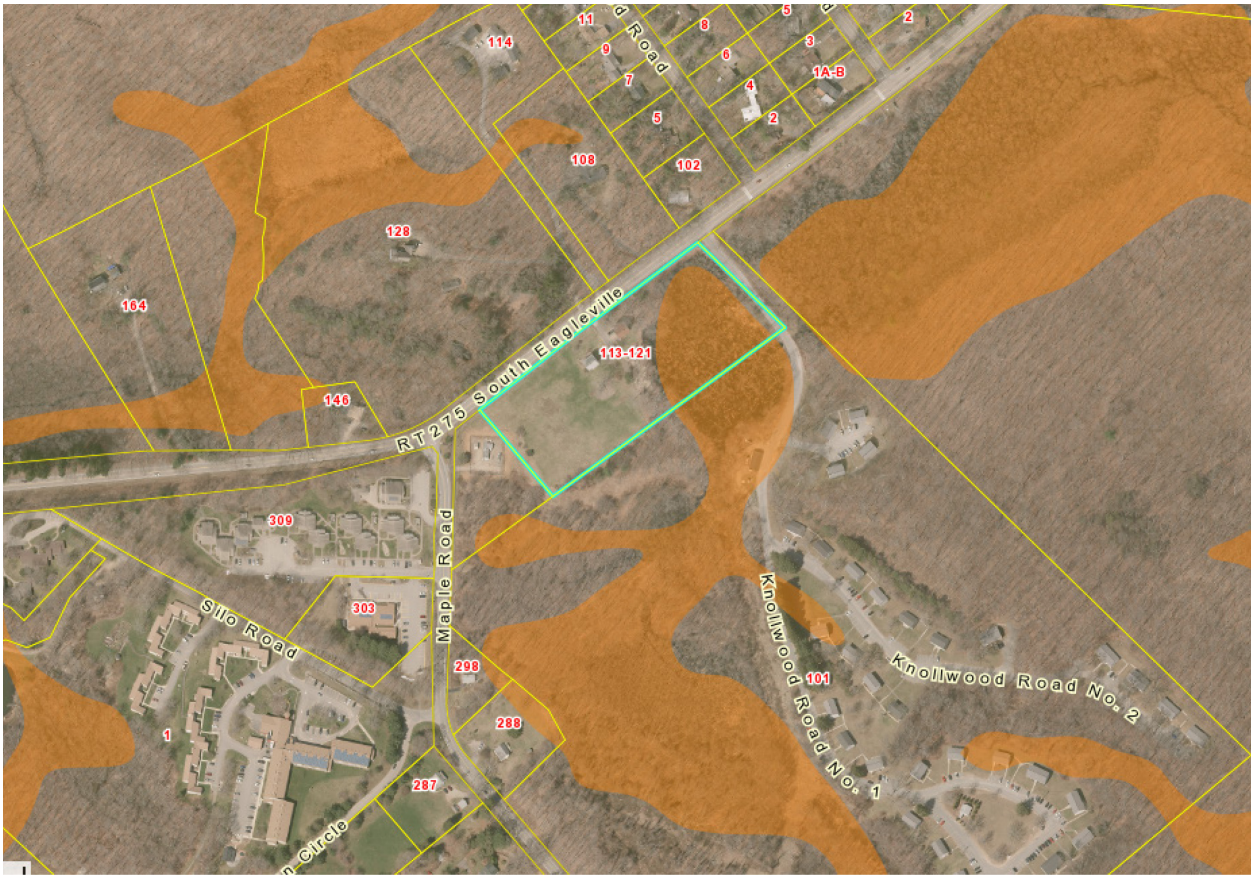
The proposed zoning map is consistent with the purpose and intent of the Zoning Regulations, particularly with regard to the establishment of zoning districts (emphasis added):

> "To divide the Town into various zones, restricting and regulating therein the location of construction, reconstruction, alteration and use of land, buildings, structures and associated improvements for residence, business and industrial and other uses, **with a view toward conserving the value of properties, encouraging a variety of housing and economic development opportunities, and encouraging compatible and appropriate uses of land** within the various zones and throughout the town;"

Characteristics of the Surrounding Area

- **North**. Properties to the north are primarily single-family homes located on the north side of South Eagleville Road, with the exception of Oakwood, a small multi-family residential development that is setback from the road. The driveway for the Oakwood development is located just to the east of the existing driveway to the property.
- **South:** The property to the south is developed with Knollwood Apartments.
- **East.** Immediately to the east of the subject property is the driveway to the Knollwood Apartment Development. Moss Sanctuary is located immediately east of that driveway.

- **West.** Immediately to the west of the subject property a natural gas facility. Additionally, Wright's Village and the Senior Center are located immediately across Maple Road from the natural gas facility. There are also two single-family homes on Maple Road that abut the Knollwood property.
- **Wetlands:** As shown on the aerial photograph below, the area of wetlands existing on the eastern portion of the property extends to the south into the Knollwood property.



SITE PLAN APPLICATION

Approval Criteria for Site Plan Applications

Article 5, Section A.5 establishes the following criteria for approval of site plan applications. Criteria are shown in *italics*, with staff analysis in regular text immediately following.

In reviewing and approving any proposed site plan application, the Planning and Zoning Commission shall determine that the public's health, welfare and safety have been protected and that the following criteria have been met:

a. *All required or necessary information has been provided by the applicant so that compliance with applicable regulations can be determined;*
The applicant has provided the information needed to evaluate the application, including but not limited to a site plan, stormwater management plan and associated drainage calculations, building elevations, floorplans and the affordable housing plan required by Section 8-30g, C.G.S. Original submission materials are available in the December 2, 2019 PZC meeting packet; revised plans will be provided in the packet for the public hearings on

March 2, 2020. Plans have been revised based on comments from staff and the consultant retained by the PZC; copies of those comments will also be included in the meeting packet.

b. *The proposal complies with all other applicable sections of the Zoning Regulations including but not limited to: parking and loading; landscaping and buffering; aquifer areas; prohibited uses, performance standards; architectural and design standards; height and area requirements; signs, bonding, filling, grading, excavation, removal, processing of soil, stone, sand and gravel, peat moss, and other similar materials regulations and any special provisions applying to the subject use;*

Staff has reviewed the plans for compliance with the Zoning Regulations and as further described in this memo, found them to be generally compliant. There are a few notes with regard to minor corrections that should be made to the plans. Additionally, as of the writing of this memo, a final review of the stormwater system had not been provided by CME.

Additionally, CME has noted in its review of the plans that proposed snow stockpile areas appear to conflict with proposed landscaping. This should be reviewed by the landscape architect and revised as appropriate.

c. *The application has considered all other applicable local, state and federal requirements, including subdivision approval and necessary permits from the Mansfield Inland Wetlands Agency, the Mansfield Water Pollution Control Authority, the Mansfield Fire Marshal, the Mansfield Historic District Commission and the state Departments of Health, Environmental Protection and Transportation. For applications involving concurrent Inland Wetland Agency (IWA) license applications, no decision shall be made until the IWA has submitted a report with its final decision;*

- **Inland Wetlands License.** A concurrent application was submitted to the Inland Wetlands Agency. No decision on the site plan application shall be made until the IWA has submitted a report with its final decision.

- **Mansfield Water Pollution Control Authority (WPCA).** Approval of a sewer permit from the WPCA will be needed before a zoning permit can be issued for the development. As of December 23, 2019, the WPCA has adequate capacity within the Sewer Service Agreement by and between the Town of Mansfield and the University of Connecticut for the proposed 42-unit multi-family development. There is no guarantee of capacity until the sewer permit is issued. The applicant has started the sewer permit application process.

- **CT Department of Transportation.** Encroachment and driveway permits will be needed from CTDOT prior to issuance of a zoning permit.

d. *The proposal has made safe and suitable provisions for water supply, waste disposal, flood control, fire and police protection, the protection of the natural environment, including air quality and surface and groundwater quality and the protection of existing aquifers and existing and potential public water supplies, cemeteries, historic structures and other features of historic value.*

For all properties within one of the ten (10) historic village areas identified in Article X, Section J, the special historic village area review criteria contained in Article X, Section J.2 also shall be complied with;

- **Potable Water.** The applicant has provided an April 3, 2019 letter from Connecticut Water Company indicating that domestic water and fire protection water service is available from the 8” main in South Eagleville Road. The letter notes that an engineered main extension (on-property) may be required. Furthermore, the letter indicates that should a Customer Agreement for service not be executed within one year of the letter, CWC reserves the right to reevaluate its ability to service the project. Approval of a Customer Service Agreement will be needed before a zoning permit can be issued.

  As the property will be served by CWC, it is subject to the provisions of Article 6, Section 4.b.u, which requires that no connection be authorized for new or expanded uses unless the type and intensity of use is consistent with the Planned Development designation established in the 2006 Plan of Conservation and Development or other criteria are met. The 2006 POCD identified the property as Medium to High-Density Residential, which is consistent with the proposed multi-family use.

  Furthermore, pursuant to the January 21, 2014 Water Supply Definitive Agreement and the subsequent a Memorandum of Agreement between the Town and Connecticut Water Company, main extensions and any connection to the CWC system that requires a change in zoning or approval by a local land use commission must be referred to the Water System Advisory Committee for review and comment. The Committee reviewed this application on January 8, 2020 and recommended approval of the requested connection.

- **Wastewater.** See comments related to the WPCA, above.

- **Solid Waste/Recycling.** The applicant has provided an enclosure sized to accommodate both solid waste and recycling containers based on the recommendations of the Town’s Recycling Coordinator.

- **Fire and Police Protection.** The Fire Marshal has not provided formal written comments as of the issuance of this report, both the Fire Marshal and Fire Chief have participated in staff reviews of plans and made recommendations regarding driveway width/circulation and hydrant location. It appears those recommendations have been met; however, that will need to be confirmed by the Fire Marshal.

- **Natural Resource Protection.** As the primary resource on the property is the wetland located in the eastern portion of the site, the report and decision of the IWA will determine whether there are any significant impacts to that resource.

- **Historic Structures and Features.** There are two small remnants of stone walls on the property in the area of disturbance that will be removed.

e. *Vehicular and pedestrian access to the property and egress from the property and internal vehicular and pedestrian traffic patterns are safe and suitable and have been designed to maximize safety and avoid hazards and congestion. Adequate provisions have been made to address accessibility problems of handicapped individuals. All curb cuts shall have adequate sightlines and adjacent streets shall have adequate capacity to safely accommodate the traffic flows associated with the proposed use(s). As deemed necessary, offsite road and drainage improvements may be required by the Commission;*

Sidewalks, bikeways, trails and/or other improvements designed to encourage and enhance safe pedestrian and bicycle use shall be required, unless specifically waived by a three-quarter (3/4) vote of the entire Commission (7 votes), for all sites within or proximate to Plan of Conservation and Development designated "Planned Development Areas"; proximate to schools, playgrounds, parks and other public facilities; or proximate to existing or planned walkway, bicycle or trail routes. In evaluating any waiver request, the Commission shall consider the size and the location of the proposed development, its relationship to existing or planned development, school sites, playground areas and other public areas and the location and nature of existing or planned sidewalk, bikeway or trail improvements.

- **Safe Vehicular and Pedestrian Access.** The proposed site layout plan proposes a second curb cut along South Eagleville Road. While the original plan proposed a full-access driveway, the plan has since been revised based on the recommendations of staff and the Mansfield Traffic Authority to have a one-way circulation driveway, with the entrance at the western access point and the exit at the eastern access point. This recommendation was based on traffic speed data, sight-distance and proximity of the Maple Road intersection.

  Representatives of the applicant have received concerns from the community as expressed in a 2/27/2020 email regarding potential conflicts of the eastern driveway with existing driveways on the north side of the street as well as speed of traffic on both Maple Road and South Eagleville Road. These concerns have been provided to the Traffic Authority for their review. As South Eagleville Road is a state road, the ultimate decision with regard to whether to authorize a second curb cut lies with CTDOT.

  If the CTDOT does not approve a second access (either as a one-way or full access), revisions to the site plan would require additional PZC review as the current design does not provide for closing one of the driveways without impacting accessibility for large vehicles including fire trucks, other emergency vehicles and garbage trucks. As designed, with one curb-cut removed, there is not sufficient area for large vehicles to turn around within the development to exit. Backing up into South Eagleville Road would create significant safety problems due to the volume and speed of traffic in the area as well as potential impacts on accessibility for emergency vehicles.

- **Accessibility for Persons with Disabilities.** Layout and materials notes 10, 11, and 12 indicate that walkways will comply with CT Building Code requirements, including maximum slope and ramps.

- **Roadway Capacity and Anticipated Impacts.** The applicant provided a traffic statement dated 11/25/2020 which was reviewed by staff. The applicant is providing an updated traffic statement in response to those comments which will be addressed in an addendum to this report.

- **Sidewalks, Bikeways and Trails.** There is currently a sidewalk extending along the frontage of the subject property, which is used by residents of Wright's Village (housing for seniors and individuals with disabilities) and Juniper Hill, another senior housing development, to access services in Downtown Storrs. The applicant will need to take appropriate steps during construction to ensure that the walkway remains accessible and available to all users during construction, including those using mobility aids. Furthermore, the existing walkway will need to be repaired/replaced to its current condition if impacted by site work and/or associated utility construction.

f. Off-street parking and loading, storm drainage improvements and grading plans are adequate, having been designed to promote vehicular and pedestrian safety and to prevent flooding, storm drainage and sediment and erosion problems. All required easements have been obtained by the applicant;

- **Off-Street Parking and Loading.** A total of 87 spaces are proposed within the development, which meets the requirements established for the SER-HO district. While the cross-hatch for the accessible spaces is not located on the right side of the space pursuant to Article 10, Section D.11, the accessible spaces do comply with the Building Code in number and design. Given the legal standards that apply to 8-30g, this local regulation is not one that rises to the level of a public health or safety issue and therefore will not be applied to this project.

- **Grading.**
    - Approximately 6,868 cubic yards of fill will be brought to the site, and 591 cubic yards of cutting will occur, for a net change of 6,277 cubic yards. While the provisions of Article 10, Section H apply, the site's location on an arterial road minimize impacts of trucks delivering fill on residential neighborhoods. The overall grading and drainage of the site has been extensively reviewed by CME. As many of the submission requirements of Article 10, Section H.3 are intended to address ongoing excavation operations, staff recommends that the Commission waive these submission requirements and find that the information submitted with the site plan application is sufficient.
    - The applicant has provided an Erosion and Sedimentation Control Plan for the project. There are a few minor updates are needed to the notes, including requiring that any modifications to construction sequencing also be approved by the Town, adding a note that the person responsible for the plan will be identified prior to issuance of a Zoning Permit, and replacing all references to "hay bales" with "straw bales".

- **Drainage/Stormwater Management**
    - **Drainage Easement.** The applicant has provided an executed copy of a drainage easement from the abutting property owner (Knollwood Apartments) authorizing them to construct drainage improvements and a right to drain within a

designated area depicted on the site plan (to be further described in a legal description). The applicant is also authorized to use this area for construction and maintenance of buildings and improvements along the southerly boundary of the subject property. These rights are contingent upon the Planning and Zoning Commission confirming as part of its site plan approval that designated easement area can still be counted as open space as part of any development application for the abutting property.

Based on the nature and design of the proposed drainage improvements, staff believes that the area will retain its open space character and should be counted toward open space requirements in any future application from the abutting property. Furthermore, the proposed drainage location is preferable from a resource conservation approach as it is located further from the wetland than the alternative.

- **Stormwater Management Plan.** CME was retained by the Town to assist in review of the stormwater management plan for the development as the system must comply with both Article 6, Section B.4.t as well as the Town's MS-4 permit. As the MS-4 permit is required and issued by the State of Connecticut, compliance with the provisions of that permit cannot be waived based on the 8-30g status of the development. As of the issuance of this memo, CME was still in the process of reviewing the latest revisions to the stormwater plan. It is expected that CME will provide additional commentary prior to and during the public hearing.

g. *The proposal has adequately considered all potential nuisances such as noise and outdoor lighting. Except where specifically authorized by these Regulations, all lighting shall be the minimum necessary to address safety and security needs taking into account manufacturer's installation charts and spacing recommendations for the proposed lighting. All lighting fixtures shall be designed to prevent undesirable illumination or glare above the site or beyond the site's property lines. All lighting fixtures shall be shielded and aimed downward unless it can be demonstrated that alternative designs will not result in spill light (undesirable light that falls outside the area of intended illumination).*

- **Noise.** As a residential development, significant noise impacts are not anticipated. The property is subject to the Town's Noise ordinance, Chapter 134 of the Code of Ordinances.
- **Lighting.** The applicant has proposed use of shielded lighting to reduce light spill. Staff has recommended that warmer toned lighting be used to reduce impacts of blue light.

h. *Passive solar and energy conservation techniques have been considered in the design of structures, structure orientation, street and lot layout, placement of vegetation, use of natural and manmade topographical features and protection of solar access within a development;*

The plans identify potential locations for rooftop solar installations dependent on funding.

i. *The proposal has adequately considered construction traffic and potential onsite and offsite vehicular and pedestrian safety problems, potential neighborhood impact problems and potential road and property damage that could occur due to the nature and timing of proposed construction activity;*

Given the site's location on an arterial road, neighborhood impacts of construction traffic should be minimal. As noted previously, damage to the Town's existing walkway will need to be repaired and pedestrian access along that walkway will need to be maintained during construction.

j. *Unless specifically waived by the Commission due to site and environmental constraints or adverse impacts to stonewalls or other historic features, existing significant trees or other natural or manmade features, all new wired utility lines (telephone, electric, cable, etc.) shall be installed underground within suitable conduits. For significant land use projects, the Commission also may require existing overhead utility lines to be replaced with underground lines.*

The site plan identifies an overhead connection from an existing utility pole on the opposite side of South Eagleville Road to a new utility pole on the subject site. Individual service connections for new buildings will be installed underground; the existing building to remain will continue to be served by an overhead connection.

While a transition to underground utilities on the north side of South Eagleville Road along with an underground connection to the site would be preferred, such a connection could pose significant expense. Given the impact that cost would have on the affordability of the project, and the fact that an overhead connection does not pose a significant impact on public health or safety, staff recommends that the proposed solution be accepted based on the 8-30g status of the project.

k. *The basic design of the proposed uses, buildings or development; the relationship between the buildings and the land; the relationships between uses and between buildings or structures; and the overall physical appearance of the proposed use, building or development; comply with all applicable architectural and design standards of Article X, Section R, are in general harmony with the character of the surrounding neighborhood and will not serve to blight or detract from the value of abutting residences or other property.*

Staff provided several suggestions for the applicant's consideration in terms of the architectural and design standards of Article 10, Section R (See December 2019 staff comments for more information). The applicant has indicated that they will take these suggestions into consideration as design progresses. Given that such design considerations do not rise to the level of a significant public health or safety concern, staff believes this is a satisfactory response based on the 8-30g status of the project.

Affordability Plan

Pursuant to 8-30g, any application for a proposed development must include an Affordability Plan. The applicant has prepared a revised affordability plan based on comments provided by staff and CME, including an Affirmative Fair Housing Marketing Plan. According to the applicant, this portion of the Affordability Plan is the same used by the Mansfield Housing Authority and has been reviewed and approved by HUD.

CME has reviewed the revised affordability plan and concluded that the revisions sufficiently addressed both staff and CME comments. CME also recommends that the approval should note the specific entity to whom the annual report should be submitted and that the applicant should be in possession of the "housing software program" cited in the plan.

SUMMARY

As previously noted, the approval criteria established in the Zoning Regulations must be considered using the standard set forth in Section 8-30g with regard to whether the public health and safety impacts (if any) of the proposed development outweigh the community's need for affordable housing.

Due to a technical notice issue identified below as well as the minor revisions identified in this memo and by CME, staff recommends that the Commission hold the public hearing as planned on March 2, 2020 **and** keep the hearing open until March 16, 2020. This will address the notice issue identified below as well as provide the applicant an opportunity to make any plan revisions needed prior to the close of the public hearing.

NOTES

- **Zoning Map Amendment.** The analysis contained in this report is based on the application dated November 25, 2019 and received by the PZC on December 2, 2019, including:
    - Transmittal Letter from Shipman and Goodwin LLP
    - Application Form
    - Statement of Justification
    - Zone Change Map dated September 25, 2019 prepared by Lenard Engineering
    - A-2 Property/Boundary Survey dated June 27, 2016 prepared by Lenard Engineering
    - Metes and Bounds description of land to be rezoned
    - Phase I Environmental Site Assessment dated September 18, 2018 prepared by Lenard Engineering
    - Debris Pile Investigation dated July 5, 2019 prepared by Lenard Engineering
    - Windham Water Works Notification
    - DPH Watershed Notification
- **Site Plan.** The analysis contained in this report is based on the application dated November 25, 2019 and received by the PZC on December 2, 2019, including:
    - Site Plan Application Form
    - Site Plan Checklist-Original and Revised to 2/4/2020
    - Site Plan Set Prepared by BSC Dated 11/25/2019 and revised to 2/12/2020; Grading and Drainage sheet revised to 2/26/2020
    - Unit Floor Plans and Building Elevations Prepared by Dorgan Architecture and Planning dated 11/25/2019
    - Affordability Plan-Original and Revised to January 21, 2020
    - Stormwater Management Report-Original and Revised to February 2020
    - Hydrocad Report revised to February 27, 2020
    - Test Pit Locations
    - Geotechnical Report dated October 4, 2019
    - Traffic Report dated 11/25/2019

  - Drainage Easement
  - CWC Water Feasibility Letter dated April 3, 2019
  - DPH Watershed Notification
  - Notification to Windham Water Works
  - Sewer Permit Application

- The proposed zoning map amendment was referred to the Town Clerk and Public Notice Registry on February 28, 2020. As 10 day notice is required for Town Clerk referrals and 7-day notice is required for the public notice registry, the public hearings for both applications will need to remain open until March 16, 2020.

- The following correspondence regarding the proposed amendments has been received:
  - February 27, 2020 email from Edith Allison, MNHDC
  - February 25, 2020 Applicant response to CME Comments (prepared by BSC)
  - February 19, 2020 Comments from CME
  - January 22, 2020 Traffic Authority Minutes
  - January 13, 2020 Email from Kathy Dorgan (extension to statutory deadlines)
  - January 8, 2020 Design Review Panel Minutes
  - Undated comments from Rudy Favretti, Design Review Panel member
  - February 12, 2020 Applicant response to CME Comments (prepared by BSC)
  - January 15, 2020 Applicant response to CME Comments (prepared by BSC)
  - January 8, 2020 CWC Water System Advisory Committee approval
  - Undated Memo from Kathy Dorgan in response to staff comments on affordability plan
  - Undated Applicant Response to Preliminary Staff Comments
  - December 24, 2019 Preliminary Staff Comments
  - December 23, 2019 Comments from CME

- Legal notice of the public hearing was published in The Chronicle on January 11 and January 16, 2020.

- Neighborhood Notification Forms
  - Zoning Map Amendment. Neighborhood notifications were sent to property owners within 500 feet of the subject property in accordance with Article 13, Section C of the Mansfield Zoning Regulations. Copies of the notice (mailed January 8, 2020) and certified mail receipts have been provided to the Planning Office.
  - Site Plan Application. Neighborhood notifications were sent to abutting property owners in accordance with Article 5, Section A.3.c on November 25. Copies of the notice and certified mail receipts have been provided to the Planning Office.

- The Public Hearings on these applications were opened on Tuesday, January 21, 2020 and continued to March 2, 2019. A written extension through April 10, 2020 has been granted by the applicant.
- A decision on the applications must be made by April 10, 2020 unless it is determined that longer statutory time frames apply.

Site Plan Review

CME

Engineers
Designers
Consultants
Planners
Scientists

February 19, 2020

Mansfield Planning & Zoning Commission
C/O Linda Painter, Director of Planning & Development and Jennifer Kaufman, Senior Planner & Inland Wetlands Agent
Audrey P. Beck Municipal Building
4 South Eagleville Road
Storrs Mansfield, CT 06268
Via email: painterlm@mansfieldct.org and kaufmanjs@mansfieldct.org

RE: **Eagleville Green, 113-121 South Eagleville Road**

Commission Members,

As requested, CME Associates, Inc. (CME) have reviewed the following materials for the proposed house development on South Eagleville Road:

Item 1 Twenty-five (25) sheet site plans "Eagleville Green, 113-121 South Eagleville Road, Mansfield, Connecticut" prepared by BSC Group, dated November 25, 2019, revised February 12, 2020

Item 2 Stormwater Management Report, Eagleville Green, prepared by BSC Group, dated October 2019, Revised February 2020

Item 3 Affordability Plan entitled The Mansfield Nonprofit Housing Development Corporation, Eagleville Green, 113-121 South Eagleville Road, Mansfield, Connecticut prepared by Shipman & Goodwin LLP, updated January 2020

Item 4 Letter, "RE: Eagleville Green, 113-121 South Eagleville Road, Response to CME Review Comments", prepared by BSC Group, addressed to Kathleen Dorgan, Dorgan Architecture & Planning, dated February 12, 2020

CME's December 23, 2019 comments below are in normal text. Updates to these comments, based on the revised application materials submitted, are in *italic text*. All new comments are in **bold text**.

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.
   The stormwater management design has been modified and peak flows will not be increased to the wetland system.

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.
   Test pits were conducted at the proposed stormwater system locations and are recorded on the revised site plans. The stormwater management system has been modified according to the test pit results. The high groundwater elevation is within 2-feet of the bottom of stone for each of the three underground detention systems.

   With the outlet of the three detention systems set above the bottom of stone elevation, the designer is relying on infiltration to ensure the detention systems drain completely between each storm. If the systems do not drain completely, then the storage volume necessary to attenuate peak flows will not be available for a subsequent storm. A mounding analysis to demonstrate that the provided separation is adequate could replace the need to satisfy the SQM requirement of 3-feet of separation. Alternatively, the system could be raised to meet the groundwater separation and widened to maintain the required volume. Enlarging the footprint of the systems will also help decrease the drawdown time (See Comment 3.)

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type

through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

Drawdown calculations are provided in the revised Stormwater Management Report. The detention basin is expected to drain in 15.3 hours. Systems 2P, 3P and 4P are calculated to drain in 65.3, 70.6, and 56.8 hours, respectively. The SQM indicates underground detention facilities are typically designed to provide less than 24 hours of detention time in order to have the storage available for a subsequent storm. The Design Engineer must modify the design to ensure that these three detention systems will completely drain between storms (See Comment 2.)

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Drawdown calculations are provided in the revised Stormwater Management Report and demonstrate that the basin will drain within 24 hours. In addition, adequate separation from groundwater has been demonstrated by test pits to ensure the basin will not remain full of water. The basin should function for detention as designed. The Operation and Maintenance Plan After Construction must be revised to include inspections of the detention basin to ensure it is draining in less than 24-hours after a storm event.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.

   The applicant's response clarified that the HydroCAD calculations for this outlet are based on Outlet Control Structure No. 1, the modeling appears to be accurate for this.

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.

   The revised site plans corrected the Outlet Control Structure table.

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.
The revised application materials indicate the outlet velocities are less than 4 feet-per-second and the outlets will remain stable with the proposed temporary matting and landscaping.

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.
Inspection ports have been included for the detention systems on the revised site plans. The designer connected Detention Systems 3P and 4P to the proposed outlets rather than providing high level overflow grates. The Operation and Maintenance Plan After Construction must be revised to include inspection of the detention systems to ensure they are draining in less than 24-hours after a storm event.

9. The design engineer must provide a detail of Detention System 2P (36-inch corrugated metal pipe) to verify the drainage calculations and ensure the system is properly constructed. Additionally, CME recommends that plastic pipe be utilized in the detention system to avoid salt corrosion damage. The plastic pipe will have a considerably longer service life than metal pipe.
A detail for system 2P has been included on the revised site plans and the proposed pipe material is perforated HDPE.

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.
The revised site plans clarify the elevations of Detention System 2P, the elevations now match the provided calculations.

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.
The designer clarified that the rows are not strictly additive due to different times of concentrations.

12. The Design Engineer must review and revise the invert elevations for the drainage manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.
The invert elevations for Outlet Control Structure #1 have been modified in the revised site plans and the outlet pipe is now correctly sloped.

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.
The applicant indicates no signage is proposed for the site.

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.
Sediment barrier has been added mid-way up the basin slopes in the revised site plans, sheet C-1.0. CME recommends locating the barrier at the bottom of basin (elevation 613). Providing the barrier is superior to mechanical cleanout in protecting any infiltration capacity compromised by eroded fines settling in the bottom of the basin.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.
The applicant indicates that there are no conflicts between the gas easement and the proposed drainage easement.

16. The proposed landscaping plan may limit location options for stockpiling snow. Snow stockpile location(s) should be shown on the site plans.
The proposed snow stockpile locations included on the revised site plans do not appear to account for proposed landscaping in those areas.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73 bedrooms. The design engineer must review and revise this calculation must be updated.
The calculation for pump chamber sizing has been revised and the pump chamber size updated on the revised site plans.

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.
The revised application materials demonstrate the design has satisfied this requirement.

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station.
The proposed pump station has been relocated adjacent to Building #2 in the revised site plans. The majority of the separation distances for stormwater are now met; however, CB-1 must be constructed in a watertight manner with rubber joint seals and watertight pipe connection seals. The Design Engineer must provide a call-out on the plan for this requirement.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.
The stormwater operation and management plan has been included on the revised site plans (Sheet G-1.0.)

21. **The Plan revisions satisfied the comments made by CME (December 23, 2019) and Linda Painter as to the details of the Affordability Plan, but we remind the Commission that, when ultimately acting upon the application, it should include provisions in the terms of approval noting:**
    a. **The specific entity at the Town to whom the annual report is to be submitted.**
    b. **The Mansfield Housing Authority should be in possession of the "housing software program" as cited by the Plan.**

Please contact us if you have any questions on the above comments.

Sincerely,

Chuck Eaton, PE, LEED-AP
Civil Engineering Manager

John Guszkowski, AICP
Lead Planner

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February 12, 2020

Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Eagleville Green, 113-121 South Eagleville Road
Response to CME Review Comments

Dear Kathy:

Below are our responses to the comments prepared by CME on the site plan application documents.

Site Plan Review Comments to Planning & Zoning Commission
Dated December 23, 2019; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.

   Response: The two drainage areas connect and both discharge to the wetlands located on the eastern half of the site. BSC feels it is appropriate to combine the drainage areas using the wetlands as a single design point.

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.

   Response: Test pits were performed on February 8, 2020 at the locations of each of the detention systems. Based on the observed soil conditions, the elevations of the detention basins were adjusted. The test pit information and the boring information are shown on the plans.. See information provided on Sheet C-4.0

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine

Engineers
Environmental Scientists
Custom Software Developers
Landscape Architects
Planners
Surveyors

infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

Response: Drawdown calculations are provided for each system. See revised Stormwater Management Report.

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Response: Drawdown calculations are provided. See revised Stormwater Management Report.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.

   Response: The outlet control structure for the basin has an invert of 614.05. The pipe from the basin to the outlet control structure #1 is considered storage.

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.

   Response: Table has been revised accordingly.

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.

   Response: Outlet velocities are low (approximately 4 fps) and should not have an issue with the outlet protection being stable. Erosion control matting is called for to stabilize the ground until the vegetation can be fully established.

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.

   Response: Maintenance manholes have been shown and will be constructed in accordance with the approved shop drawing from the manufacturer.

9. The design engineer must provide a detail of Detention System 2P (36-inch corrugated metal pipe) to verify the drainage calculations and ensure the system is properly constructed. Additionally, CME recommends that plastic pipe be utilized in the detention system to avoid salt corrosion damage. The plastic pipe will have a

considerably longer service life than metal pipe.

Response: Corrugated Metal Pipe has been switched to HDPE pipe. A detail of the pipe bedding has been included. See sheet C-6.1.

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.

    Response: Detention System 2P is the 36-inch HDPE pipe storage, which has a 6" stone bedding. See detail provided in previous response.

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.

    Response: The Total Site rows are not strictly additive between the two discharge areas due to their different time of concentrations. The two hydrographs were combined to create the total site flow.

12. The Design Engineer must review and revise the invert elevations for the drainage manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.

    Response: Outlet invert has been revised. Overflow from System 3P enters this manhole.

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.

    Response: Signage is not currently proposed for this site. If considered in the future, it will be located to ensure there are no sight line conflicts from the driveways.

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.

    Response: Silt fence has been added to the bottom of slopes leading into the basin. It is also required for the contractor to remove any collected sediment from the basin.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.

    Response: Survey of the abutting parcels is not required. Gas line easement is not located near the improvements with the drainage easement.

16. The proposed landscaping plan may limit location options for stockpiling snow.

Snow stockpile location(s) should be shown on the site plans.

Response: Snow stockpile areas will be identified.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73 bedrooms. The design engineer must review and revise this calculation must be updated.

    Response: Calculations have been updated for the additional bedrooms. See Sheet G-1.0.

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.

    Response: Stormwater management design has been modified to include a 50% reduction on the 2-year storm event over pre-construction conditions.

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station

    Response: The separation between the pump station tank and the proposed detention system and catch basins meet separation distance requirements of 25 feet and 10 feet respectively.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.

    Response: The Operation and management plan listed in the stormwater report has been placed on the plans as well. See Sheet G-1.0.

CME offers the following comments on the Affordability Plan:

21. The Affordability Plan appears to be largely in order. There several items of clarification that the Commission may wish to consider prior to final approval of this document:

    a. The annual status report of the Affordability Plan is submitted, per Section III, to "the Town" by January 31 to show the prior year's activity. The Commission should clarify the specific entity at the Town to whom this report should be directed.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

b. In the Tenant Selection Process section VII.C.(a).1., a reference is made to a waiting list lottery created using the Administrator's "housing software program". The Commission should verify that the proposed Administrator – in this case, the Mansfield Housing Authority – is in possession of such software.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

c. In the Tenant Selection Process section VII.C.(b).4.(iii).A, the background report for tenant applications must show that "No Applicant has a felony conviction within the last five (5) years for drug-related or violent criminal activity". In the case of drug-related convictions, particularly for non-violent crimes, the national standards appear to be changing, with recent state and federal level commutation of sentences reflecting a recalibration of the severity of non-violent drug-crime penalties. The Commission may wish to reconsider this automatic disqualification standard.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

Site Plan Review Comments to Inland Wetlands Commission
Dated December 23, 2019; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.

   Response: See response to Item 1 (Planning & Zoning Comments)

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.

   Response: See response to Item 2 (Planning & Zoning Comments)

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM,

percolation testing cannot be used in place of infiltration testing.

Response: See response to Item 3 (Planning & Zoning Comments)

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Response: See response to Item 4 (Planning & Zoning Comments)

5. A detail for the two vegetated outlets must be provided and velocity calculations must be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.

   Response: See response to Item 7 (Planning & Zoning Comments)

6. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If ine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.

   Response: See response to Item 14 (Planning & Zoning Comments)

7. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse(s) to determine if the 2-year storm reduction is required.

   Response: See response to Item 18 (Planning & Zoning Comments)

8. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater maintenance needs.

   Response: See response to Item 20 (Planning & Zoning Comments)

9. Upon review at the field site visitation, the majority of the inland wetland delineation appears correct; however, upon close inspection of an area to the south-central portion of the property, along the rear property line, an area had a large amount of standing water at the surface with obligate wetland species identifiable. The wetland delineation was performed by Ian Cole in June of 2016. The existing flags in the field were re-staked by a land surveyor based on previous surveyed locations. This area

may be an inland wetland based on subsurface soil characteristics of a wetland and the standing water at the surface. Note that the ground was not frozen, though there was an ice layer on the standing water. The soil scientist should review this area to determine if it is in fact a wetland and delineate the its limits accordingly.

Response: See attached correspondence from Ian Cole (Mansfield Housing Authority- Wetlands Delineation Review) dated January 3, 2020 and Ian Cole resume 12-9-19.pdf.

10. The report by Ms. Kaplan indicates that the wetlands on the site are established by surface runoff; however, there is a major groundwater component that exists. While there is some surface discharge into this wetland, it appears that groundwater is the primary source of water in this wetland given its size and height of some of the tussock sedges. The report does not address or classify the inland wetland soil and upland soil types on the site. Furthermore, the report does not evaluate the functions and values of the existing wetlands. This could have been done using the rationales of a standardized evaluation method (e.g. the US Army Corps of Engineers' escriptive Approach 1995) and using her best professional judgment. These functions include: ground water recharge, flood flow alteration, sediment/shoreline stabilization, sediment/pathogen retention, nutrient removal, production export, aquatic habitat, endangered species habitat, visual quality/aesthetics, educational/scientific value, recreation- passive or active and uniqueness/historical.

    Response: Ms. Kaplan was not responsible for the wetland delineation, soil characterization. Ms. Kaplan's report was to identify the health and quality of the wetland and the potential impact this proposed project would have on this natural resource. The Soil Scientist will provide the soil evaluation and characterization.

11. The stormwater basin is designed as a dry basin with many proposed plantings in the basin bottom. Due to the already existing high groundwater at the surface towards the rear property line, it may be appropriate to design the basins as wet basins and adjust the plantings accordingly.

    Response: The dry basin is approximately 2 feet above groundwater as identified in nearby borings. It is not expected to be a wet basin.

12. We generally agree with Ms. Kaplan's evaluation of the potential effects on the wetlands from the proposed development. In addition to the evaluation, below are additional suggestions to enhance and protect the wetland system:
    a. Use native plantings for the trees, shrubs and groundcover in the landscape design.
    b. No use of fertilizers, pesticides and/or herbicides in close proximity of the wetlands.
    c. That placards on fence posts be placed along the existing wetland that acknowledges the wetland resource and that no dumping of any type is allowed, including brush and leaves and other types of debris.

    Response: a. Only native and adaptively native plants have been called for on the plans. We are reviewing the recommendations provided for alternate plantings and will respond at a future time. b. Agreed c. Placards will be considered if funding is

available.

13. In conclusion, based on the proposed activities and the physical characteristics of the site we do not expect that there will be a significant adverse effect to the inland wetlands and watercourses on or off the site from the development.

    Response: Agreed

Very truly yours,

BSC Group-Connecticut, Inc.

Robert S, Newton, PE, LEED AP

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January 15, 2020

Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268

RE: Eagleville Green, 113-121 South Eagleville Road
Response to CME Review Comments

Dear Kathy:

Below are our responses to the comments prepared by CME on the site plan application documents.

Site Plan Review Comments to Planning & Zoning Commission
Dated December 23, 2019; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.

   Response: The two drainage areas connect and both discharge to the wetlands located on the eastern half of the site. BSC feels it is appropriate to combine the drainage areas using the wetlands as a single design point.

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.

   Response: Based on the geotechnical report, the highest groundwater elevation that was observed was 612.4 (B-9) which is the furthest from the detention systems. The majority of the other groundwater elevations were observed in the 610+ range. All detention systems will be reviewed to ensure they are sufficiently above the observed groundwater. See information provided on Sheet C-4.0

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through

Engineers
Environmental Scientists
Custom Software Developers
Landscape Architects
Planners
Surveyors

test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

Response: Drawdown calculations are provided for each system. See revised Stormwater Management Report.

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Response: Drawdown calculations are provided. See revised Stormwater Management Report.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.

   Response: The outlet control structure for the basin has an invert of 614.05. The pipe from the basin to the outlet control structure #1 is considered storage.

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.

   Response: Table has been revised accordingly.

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.

   Response: Outlet velocities are low (approximately 4 fps) and should not have an issue with the outlet protection being stable. Erosion control matting is called for to stabilize the ground until the vegetation can be fully established.

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.

   Response: Maintenance manholes have been shown and will be constructed in accordance with the approved shop drawing from the manufacturer.

9. The design engineer must provide a detail of Detention System 2P (36-inch corrugated metal pipe) to verify the drainage calculations and ensure the system is properly constructed. Additionally, CME recommends that plastic pipe be utilized in

the detention system to avoid salt corrosion damage. The plastic pipe will have a considerably longer service life than metal pipe.

Response: Corrugated Metal Pipe has been switched to HDPE pipe. A detail of the pipe bedding has been included. See sheet C-6.1.

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.

    Response: Detention System 2P is the 36-inch HDPE pipe storage, which has a 6" stone bedding. See detail provided in previous response.

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.

    Response: The Total Site rows are not strictly additive between the two discharge areas due to their different time of concentrations. The two hydrographs were combined to create the total site flow.

12. The Design Engineer must review and revise the invert elevations for the drainage manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.

    Response: Outlet invert has been revised. Overflow from System 3P enters this manhole.

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.

    Response: Signage is not currently proposed for this site. If considered in the future, it will be located to ensure there are no sight line conflicts from the driveways.

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.

    Response: Silt fence has been added to the bottom of slopes leading into the basin. It is also required for the contractor to remove any collected sediment from the basin.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.

    Response: Survey of the abutting parcels is not required. Gas line easement is not located near the improvements with the drainage easement.

16. The proposed landscaping plan may limit location options for stockpiling snow. Snow stockpile location(s) should be shown on the site plans.

    Response: Snow stockpile areas will be identified.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73 bedrooms. The design engineer must review and revise this calculation must be updated.

    Response: Calculations have been updated for the additional bedrooms. See Sheet G-1.0.

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.

    Response: Stormwater management design has been modified to include a 50% reduction on the 2-year storm event over pre-construction conditions.

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station

    Response: The separation between the pump station tank and the proposed detention system and catch basins meet separation distance requirements of 25 feet and 10 feet respectively.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.

    Response: The Operation and management plan listed in the stormwater report has been placed on the plans as well. See Sheet G-1.0.

CME offers the following comments on the Affordability Plan:

21. The Affordability Plan appears to be largely in order. There several items of clarification that the Commission may wish to consider prior to final approval of this document:

    a. The annual status report of the Affordability Plan is submitted, per Section III, to "the Town" by January 31 to show the prior year's activity. The Commission should clarify the specific entity at the Town to whom this report should be

directed.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

b. In the Tenant Selection Process section VII.C.(a).1., a reference is made to a waiting list lottery created using the Administrator's "housing software program". The Commission should verify that the proposed Administrator – in this case, the Mansfield Housing Authority – is in possession of such software.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

c. In the Tenant Selection Process section VII.C.(b).4.(iii).A, the background report for tenant applications must show that "No Applicant has a felony conviction within the last five (5) years for drug-related or violent criminal activity". In the case of drug-related convictions, particularly for non-violent crimes, the national standards appear to be changing, with recent state and federal level commutation of sentences reflecting a recalibration of the severity of non-violent drug-crime penalties. The Commission may wish to reconsider this automatic disqualification standard.

Response: See separate response for Affordability Plan by Kathleen Dorgan.

Site Plan Review Comments to Inland Wetlands Commission
Dated December 23, 2019; Prepared by CME

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.

   Response: See response to Item 1 (Planning & Zoning Comments)

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.

   Response: See response to Item 2 (Planning & Zoning Comments)

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed

at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

Response: See response to Item 3 (Planning & Zoning Comments)

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

   Response: See response to Item 4 (Planning & Zoning Comments)

5. A detail for the two vegetated outlets must be provided and velocity calculations must be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.

   Response: See response to Item 7 (Planning & Zoning Comments)

6. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If ine sediment eroded during construction enters the bottom of the basin, it will clog the soil pores and infiltration capacity will be significantly reduced.

   Response: See response to Item 14 (Planning & Zoning Comments)

7. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse(s) to determine if the 2-year storm reduction is required.

   Response: See response to Item 18 (Planning & Zoning Comments)

8. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater maintenance needs.

   Response: See response to Item 20 (Planning & Zoning Comments)

9. Upon review at the field site visitation, the majority of the inland wetland delineation appears correct; however, upon close inspection of an area to the south-central portion of the property, along the rear property line, an area had a large amount of standing water at the surface with obligate wetland species identifiable. The wetland delineation was performed by Ian Cole in June of 2016. The existing flags in the field

were re-staked by a land surveyor based on previous surveyed locations. This area may be an inland wetland based on subsurface soil characteristics of a wetland and the standing water at the surface. Note that the ground was not frozen, though there was an ice layer on the standing water. The soil scientist should review this area to determine if it is in fact a wetland and delineate the its limits accordingly.

Response: See attached correspondence from Ian Cole (Mansfield Housing Authority- Wetlands Delineation Review) dated January 3, 2020 and Ian Cole resume 12-9-19.pdf.

10. The report by Ms. Kaplan indicates that the wetlands on the site are established by surface runoff; however, there is a major groundwater component that exists. While there is some surface discharge into this wetland, it appears that groundwater is the primary source of water in this wetland given its size and height of some of the tussock sedges. The report does not address or classify the inland wetland soil and upland soil types on the site. Furthermore, the report does not evaluate the functions and values of the existing wetlands. This could have been done using the rationales of a standardized evaluation method (e.g. the US Army Corps of Engineers' escriptive Approach 1995) and using her best professional judgment. These functions include: ground water recharge, flood flow alteration, sediment/shoreline stabilization, sediment/pathogen retention, nutrient removal, production export, aquatic habitat, endangered species habitat, visual quality/aesthetics, educational/scientific value, recreation- passive or active and uniqueness/historical.

    Response: Ms. Kaplan was not responsible for the wetland delineation, soil characterization. Ms. Kaplan's report was to identify the health and quality of the wetland and the potential impact this proposed project would have on this natural resource. The Soil Scientist will provide the soil evaluation and characterization.

11. The stormwater basin is designed as a dry basin with many proposed plantings in the basin bottom. Due to the already existing high groundwater at the surface towards the rear property line, it may be appropriate to design the basins as wet basins and adjust the plantings accordingly.

    Response: The dry basin is approximately 2 feet above groundwater as identified in nearby borings. It is not expected to be a wet basin.

12. We generally agree with Ms. Kaplan's evaluation of the potential effects on the wetlands from the proposed development. In addition to the evaluation, below are additional suggestions to enhance and protect the wetland system:
    a. Use native plantings for the trees, shrubs and groundcover in the landscape design.
    b. No use of fertilizers, pesticides and/or herbicides in close proximity of the wetlands.
    c. That placards on fence posts be placed along the existing wetland that acknowledges the wetland resource and that no dumping of any type is allowed, including brush and leaves and other types of debris.

    Response: a. Only native and adaptively native plants have been called for on the plans. We are reviewing the recommendations provided for alternate plantings and

will respond at a future time. b. Agreed c. Placards will be considered if funding is available.

13. In conclusion, based on the proposed activities and the physical characteristics of the site we do not expect that there will be a significant adverse effect to the inland wetlands and watercourses on or off the site from the development.

    Response: Agreed

Very truly yours,

BSC Group-Connecticut, Inc.

Robert S, Newton, PE, LEED AP

Site Plan Review

CME

Engineers
Designers
Consultants
Planners
Scientists

December 23, 2019

Mansfield Planning & Zoning Commission
C/O Linda Painter, Director of Planning & Development and Jennifer Kaufman, Senior Planner & Inland Wetlands Agent
Audrey P. Beck Municipal Building
4 South Eagleville Road
Storrs Mansfield, CT 06268
Via email: painterlm@mansfieldct.org and kaufmanjs@mansfieldct.org

RE: **Eagleville Green, 113-121 South Eagleville Road**

Commission Members,

As requested, CME Associates, Inc. (CME) have reviewed the following materials for the proposed house development on South Eagleville Road:

Item 1 Thirty-eight (38) sheet site plans "Eagleville Green, 113-121 South Eagleville Road, Mansfield, Connecticut" prepared by BSC Group, dated November 25, 2019

Item 2 Stormwater Management Report, Eagleville Green, prepared by BSC Group, dated October 2019, Revised November 2019

Item 3 Affordability Plan entitled The Mansfield Nonprofit Housing Development Corporation, Eagleville Green, 113-121 South Eagleville Road, Mansfield, Connecticut prepared by Shipman & Goodwin LLP, dated November 2019 and noted as "Zoning Submission Draft".

Based on a review of these materials, we offer the following review comments based upon the Mansfield Zoning Regulations, the requirements of CT General Statute Chapter 126a, Section 8-30g, and other applicable standards. This type of development

(8-30g) provides relief from most local zoning regulations, therefore the majority of CME's review focused on items that may present health and safety risks and prevention of drainage and utility issues:

1. There are two drainage areas: one to the grassed area to the southwest and one to the eastern on-site wetlands. Due to the difference in times of concentration flow paths, peak flows for the two design points should be considered separately. In the provided calculations, peak flows for the two design points are combined to show an overall decrease; however, under the current design, peak flows will be increased to the eastern wetland system.

2. The submitted geotechnical report cites a possible high groundwater table at elevation 612 to 613 based on soil borings and wetland elevation observations. The Connecticut Stormwater Quality Manual (SQM) requires test pits to determine an accurate high groundwater elevation for use in stormwater management design. Test pits must be completed pursuant to the SQM for this site and the design must be revised accordingly including required separation from groundwater for each stormwater management system.

3. Drawdown calculations must be provided for each of the four detention systems (1 basin and 3 underground systems). CME recommends verifying the soil type through test pits and utilizing USDA soil types and the associated Rawl's Rate to determine infiltration rates. Percolation tests provided to verify drawdown were not performed at the bottom elevations of the proposed systems, additionally, pursuant to the SQM, percolation testing cannot be used in place of infiltration testing.

4. The Stormwater Management Report indicates that the detention basin is designed as a dry basin; however, the outlet is set 1.5-feet above the bottom of the basin. Without drawdown calculations to confirm that the basin will drain in less than 24 hours (pursuant to the SQM), the starting water surface elevation must be set at the outlet elevation in the drainage calculation for detention storage. If the basin does not drain, this storage will not be available for detention and the detention will be overestimated.

5. The outlet elevation of the detention basin is noted as 614.5 on the site plans, this must be properly modeled in the HydroCAD calculations.

6. The outlet control structure table on Sheet C-6.1 indicates a 15-inch diameter for Orifice B in Outlet Control Structure #1. It appears this information is for the overflow invert. The Design Engineer must review and revise the table as necessary.

7. A detail for the two vegetated outlets must be provided and velocity calculations should be provided to verify the outlets will remain stable. If the outlets are not stable erosion may occur and sediment may enter the wetland system.

8. Additional details including maintenance manholes must be shown on the plans for the three underground detention systems. High level overflow grates for Systems 2P and 3P must be provided on the plans and details. If these details are not shown, the system may not be constructed correctly and function as designed.

9. The design engineer must provide a detail of Detention System 2P (36-inch corrugated metal pipe) to verify the drainage calculations and ensure the system is properly constructed. Additionally, CME recommends that plastic pipe be utilized in the detention system to avoid salt corrosion damage. The plastic pipe will have a considerably longer service life than metal pipe.

10. The design engineer must review and revise the plans and calculations for the bottom elevation of Detention System 2P. The plans indicate a bottom elevation of 611.75 and the report includes a bottom stone elevation of 611.25. The system detail states a minimum 9-inches of stone below the system.

11. The Pre- and Post-Development Comparison table in the Stormwater Management Report contains addition errors in the Total Site rows, Proposed conditions column. The design engineer must review and revise as required.

12. The Design Engineer must review and revise the invert elevations for the drainage manhole downstream of Outlet Control Structure #1. It appears too many inverts are listed for this structure and the pipe to the vegetated outlet is sloped in reverse.

13. Any proposed free-standing signs must be included on the site plans to ensure there are no sight line conflicts from the driveways.

14. Provide a sediment barrier at the bottom elevation of the proposed stormwater quality basin immediately after grading to protect the basin from contamination with fine particles. The barrier must be maintained until the basin slopes are stabilized. If fine sediment eroded during construction enters the bottom of the

basin, it will clog the soil pores and infiltration capacity will be significantly reduced.

15. The gas line on the abutting parcel(s) should be included on the site plans to ensure that no conflicts with proposed infrastructure exist.

16. The proposed landscaping plan may limit location options for stockpiling snow. Snow stockpile location(s) should be shown on the site plans.

17. The Sewer Design Notes on Sheet G-1.0 reference 42 bedrooms in the calculations for pump chamber sizing; however, it appears the development will have 73 bedrooms. The design engineer must review and revise this calculation must be updated.

18. Pursuant to the Mansfield Zoning Regulations, the stormwater management design must reduce the peak runoff from the 2-year storm event to fifty percent of the pre-development conditions as well as provide zero increase in peak runoff for the 10-, 25-, and 100- year storm events. The SQM requires a reduction in the 2-year peak runoff to prevent downstream channel degradation. The design engineer must evaluate the downstream watercourse to determine if the 2-year storm reduction is required.

19. The proposed pump station must meet the Separation Distances for stormwater pipes & structures outlined by Table 1 of the CT Public Health Code. Watertight pipe can be utilized to reduce these separation distances however, the code does not allow groundwater to be collected in the stormwater system. The proposed perforated pipes are subject to larger separation distances from the pump station.

20. CME recommends that the stormwater operation and management plan be added to the plan set. This keeps the operation and management plan with the plan set and ensures that the Town and the contractor are aware of stormwater management needs.

CME offers the following comments on the Affordability Plan:

21. The Affordability Plan appears to be largely in order. There several items of clarification that the Commission may wish to consider prior to final approval of this document:

a. The annual status report of the Affordability Plan is submitted, per Section III, to "the Town" by January 31 to show the prior year's activity. The Commission should clarify the specific entity at the Town to whom this report should be directed.

b. In the Tenant Selection Process section VII.C.(a).1., a reference is made to a waiting list lottery created using the Administrator's "housing software program". The Commission should verify that the proposed Administrator – in this case, the Mansfield Housing Authority – is in possession of such software.

c. In the Tenant Selection Process section VII.C.(b).4.(iii).A, the background report for tenant applications must show that "No Applicant has a felony conviction within the last five (5) years for drug-related or violent criminal activity". In the case of drug-related convictions, particularly for non-violent crimes, the national standards appear to be changing, with recent state and federal level commutation of sentences reflecting a recalibration of the severity of non-violent drug-crime penalties. The Commission may wish to reconsider this automatic disqualification standard.

Please contact us if you have any questions on the above comments.

Sincerely,

Chuck Eaton, PE, LEED-AP
Civil Engineering Manager

John Guszkowski, AICP
Lead Planner

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dorgan architecture & planning

10 Eastwood Road, Storrs, CT 06268 01.518.469.6464 Registered Architect NCARB

To: Linda Painter

From: Kathleen A. Dorgan, Principal

Re: Eagleville Green Affirmative Fair Housing Marketing Plan

Attached please find a revised Affordability Plan and the Affirmative Fair Housing Marketing Plan. This plan along with zoning regulations approved and the submitted map amendment meets the requirements of Connecticut Chapter 126a Section 8-30g(b)(1)

> "Any person filing an affordable housing application with a commission shall submit, as part of the application, an affordability plan which shall include at least the following: (A) Designation of the person, entity or agency that will be responsible for the duration of any affordability restrictions, for the administration of the affordability plan and its compliance with the income limits and sale price or rental restrictions of this chapter; (B) an affirmative fair housing marketing plan governing the sale or rental of all dwelling units; (C) a sample calculation of the maximum sales prices or rents of the intended affordable dwelling units; (D) a description of the projected sequence in which, within a set-aside development, the affordable dwelling units will be built and offered for occupancy and the general location of such units within the proposed development; and (E) draft zoning regulations, conditions of approvals, deeds, restrictive covenants or lease provisions that will govern the affordable dwelling units."

Please find the following in response to the comments received: from CME and Linda Painter:

CME offered the following comments on the Affordability Plan:

1. The Affordability Plan appears to be largely in order. There several items of clarification that the Commission may wish to consider prior to final approval of this document:

    a. The annual status report of the Affordability Plan is submitted, per Section III, to "the Town" by January 31 to show the prior year's activity. The Commission should clarify the specific entity at the Town to whom this report should be directed.

    Response: *This comment is directed to the Commission not the applicant.*

    b. In the Tenant Selection Process section VII.C.(a).1., a reference is made to a waiting list lottery created using the Administrator's "housing software program". The Commission should verify that the proposed Administrator – in this case, the Mansfield Housing Authority – is in possession of such software.

Response: This comment is directed to the Commission not the applicant.

c. In the Tenant Selection Process section VII.C.(b).4.(iii).A, the background report for tenant applications must show that "No Applicant has a felony conviction within the last five (5) years for drug-related or violent criminal activity". In the case of drug-related convictions, particularly for non-violent crimes, the national standards appear to be changing, with recent state and federal level commutation of sentences reflecting a recalibration of the severity of non-violent drug-crime penalties. The Commission may wish to reconsider this automatic disqualification standard.

Response: *This provision is not included in the revised Affordability Plan.*

Linda Painter offered the following comments regarding the Affordable Housing Plan on behalf of Mansfield Planning and Zoning:

Draft Affordability Plan
The note at the beginning of the Affordability Plan states that the Plan is in draft form due to
changes in income data from year to year as well as the fact that the developer has not yet secured the principal financing that will qualify the project as "assisted housing" pursuant to Sec.
8-30g(a)(3), C.G.S. Accordingly, the provisions of Article 10, Section W.8 related to provision of
deed restrictions do not apply. Should this development change from assisted housing to a setaside development pursuant to Sec. 8-30g, a revised affordablility plan will need to be submitted and approved by the Commission.

Response: *This language is not included in the revised Affordability Plan.*

Comment: See CME's comments on the affordable housing plan
Response: *See above.*

Recommendations. Revise affordable housing plan per CME's comments.
Response: *See above*

Comment: The sample calculations for establishing maximum rent (Section IX) as well as calculation of maximum income (Sections V and VII, Schedule D) address the ways in which updated annual income data will be used to determine tenant eligibility and maximum rent. The definition of Community and Schedule C identify the number and type of income-restricted units based on the assumption that 30% of units will be affordable. If the financing product results in changes to the percentage, number and type of income-restricted units, these sections should be updated accordingly.

Response: *MNHDC will submit revisions if required by 8-30g due to a decrease in the number or percentage of affordable units serving each required category.*

P1364-2 Staff Review Comments-Original Submission
Page 10
Recommendations:
1. Introductory Note. Delete the second sentence of the Introductory Note and replace with the following:
"The Affordability Plan will be updated once financing is secured to revise the following information in accordance with the specific requirements of the lending program: tenant selection, application, income verification, annual recertification procedures, and number and type of affordable units (by income level). The revised Affordability Plan and a summary of changes shall be submitted for the Commission's records within 30 days of completion."

Response: *This provision is not included in the revised Affordability Plan.*

2. Plan Revisions. Add a section on Affordability Plan Revisions (suggested Article XII, renumbering existing Articles XII and XIII. This Section should identify when plan revisions are required (i.e. if the financing requirements change); and the types of changes to the Affordability Plan that would require PZC approval (i.e. any change that reduces the number of affordable units/income requirements below that which was approved by the Commission; change from assisted housing to set-aside development, etc.) Changes that are needed to comply with financing requirements should be submitted for records but may not need Commission approval.

Response: *MNHDC will submit revisions as required by law including any reduction in the number or percentage of affordable units in each of the required categories.*

Affirmative Fair Housing Marketing Plan
Pursuant to Sec. 8-30g(b)(1)(B), C.G.S., the affordability plan required as part of the affordable housing application must include "an affirmative fair housing marketing plan governing the sale or rental of all dwelling units." The minimum standards for compliance with this requirement are further established in Section 8-30g-7 of the Regulations of Connecticut State Agencies:
"(3) With respect to an affirmative fair housing marketing plan filed in accordance with an affordable housing development application, the provisions of sections 8-37ee-1 et seq. of the Regulations of Connecticut State Agencies, and particularly sections 8-37ee-301 and 302, shall serve as the basis for such plan, provided that such regulations, including the procedures therein, shall be guidelines, not requirements. Collection and dissemination of information about available price restricted and market rate dwelling units shall include, at a minimum:

(A) Analyzing census and other data to identify racial and ethnic groups least represented in the population;
(B) Announcements/advertisements in publications and other media that will reach minority populations;
(C) Announcements to social service agencies and other community contacts serving low-income minority families in the region (including churches, civil rights organizations, housing authorities, and legal services organizations);
(D) Assistance to minority applicants in processing applications;
(E) Marketing efforts in geographic area of high minority concentrations within the housing market area;
(F) Beginning marketing efforts prior to general marketing of units, and repeating again during initial marketing, at fifty percent (50%) completion, and thereafter at reasonable period intervals with respect to resales or re-rentals; and
(G) Collection of basic racial and ethnic information for all residents and persons on the wait list for the development.

Response: *The Mansfield Housing Authority Affirmative Fair Housing Marketing Plan is attached.*

Site Plan Review Comments

OVERVIEW

All Article, Section, and Page Numbers refer to the November 1, 2019 Zoning Regulations of the Town of Mansfield, which can be accessed at http://www.mansfieldct.gov/DocumentCenter/View/4570/Zoning-Regulations, with the exception of regulations to the SER-HO District. The SER-HO regulations are expected to be adopted on December 16, 2019 and become effective on January 1, 2020. Excerpts of applicable regulations are provided in the green rows in *italics.* Staff comments relevant to that regulation are in the white rows beneath with bullets.

ARTICLE NUMBER	SECTION NUMBER	PAGE NUMBER	REGULATION/COMMENT
5	A.3.a	5.2	**A completed application form, including fee payment:** Said application must be signed by the owner of the subject property or by an individual with a legally binding contract to purchase the subject property. *Response: Noted.*
			Need signed copy of site plan checklist; also need to check off whether approval block requirements were met on the checklist. *Response: Noted.*

5	A.3.c	5.2	**Notification of Abutting Property Owners:** The applicant shall be responsible for notifying all property owners abutting the site of a proposed use or activity requiring site plan approval, including property owners across the street from a subject site (as measured at right angles to straight street lines and radial to curved street lines). Said notification, which shall be sent by Certified Mail, within seven (7) days of the Commission's receipt of the application, shall include the applicant's Statement of Use and mapping that depicts areas of proposed activity. The notice also shall reference the fact that the complete application is available for review in the Mansfield Planning Office. Notification forms available in the Mansfield Planning Office shall be utilized for notifying abutting property owners. *Response: Noted.*
			Copies of notice, attachments and proof of mailing shall be submitted prior to the opening of the public hearing. *Response: Noted.*
5	A.3.d	5.2	**Site Plan Requirements**
			• *Label proposed drainage easement on plans* *Response: Proposed easement location will be shown on Sheet C-4.* • *Provide specifications for dumpster enclosure (see staff memo and attachments for additional information)* *Response: Dumpster Enclosure Detail is Shown on Sheet C-6.5* • *Change reference to "hay bale" on Sheet C-60.0 to "straw bale"* *Response: Reference to "hay bale" on Sheet C-6.0 has been changed to "straw bale"*

5	A.3.e	5.4	**Sanitation Report:** The application shall submit a written sanitation report, with information on site characteristics and the proposed sanitary systems, including water supply and waste disposal. As necessary said report shall be prepared by the applicant's registered professional engineer or registered sanitarian. The report shall demonstrate that the subject sanitary systems will comply with state and local Health Department requirements and all other applicable regulations including the Town's Sand and Gravel Regulations. Where a separate permit to fill a site is necessary, said permit shall be obtained and the fill shall be placed prior to the submission of a site plan application for the subject use or development project. Necessary onsite testing must be coordinated with the Town Health Officer. *Response: Noted*
			As the site will be served by public water and sewer, the requirements of the sanitation report can be met by updating the Statement of Use to describe the proposed water and sewer connections. *Response: Statement of Use will be updated accordingly.*
5	A.3.g	5.4	**Other information:** Dependent on the nature of the proposal, the Commission shall have the right to require additional detailed information if it finds the information is necessary to review the application and determine compliance with applicable regulations and performance standards. Such information may include but shall not be limited to: traffic impact analysis, including specific information on how construction traffic will be regulated, routed and monitored; aquifer, watershed and flooding data; drainage calculations and documentation of necessary drainage rights or easements; environmental and neighborhood impact analysis; erosion and sedimentation control plans, future plans for adjacent land under the control of the subject applicant or owner; information on homeowner or property-owner associations; maintenance provisions; estimates of site improvements costs, and bonding agreements. *Response:Noted*
			See comments in staff memo and from CME with regard to traffic statement. *Response: Traffic Statement will be updated with the additional traffic information provided by the DOT*

6	B.4.n	6.5	**Energy Considerations -** Where Planning and Zoning Commission approval is required for a land use activity, applicants shall demonstrate to the Commission that their pending proposal has considered, to the degree physically and economically possible, the utilization of the physical environment and natural energy sources, such as solar orientation, to help heat, cool or illuminate the proposed use and accordingly minimize a dependence on fossil fuels and mechanical equipment. Potential impacts on neighboring properties shall also be evaluated. Factors to be considered include: roadway, lot and building orientation, natural and manmade topographic features, soil and subsoil characteristics, existing and proposed vegetative cover, and shadow patterns on neighboring properties. Wherever feasible: • building orientation and design should maximize south facing walls; • an east-west orientation should be considered for streets and private access roads; • building height and bulk and landscaping improvements should minimize shadow patterns on adjacent properties; and • walls and accessory structures should be located in areas that will not diminish south wall exposure. *Response: Noted*
			Update Statement of Use to describe measures taken to address the energy consideration requirements *Response: See revised Statement of Use.*
6	B.4.o	6.5	**Parking and Loading Areas** - Adequately sized, constructed and located onsite parking areas shall be provided for all land use activities so that the use of adjacent roadways is not obstructed. Where required, on- site loading areas which do not conflict with parking areas or circulation ways shall be provided. See Article X, Section D for more specific requirements. In addition, state standards for fire access and handicapped parking shall be incorporated into all parking and loading designs. *Response: Noted. Parking has been designed in accordance with local and state requirement.*
			See comments in memo with regard to fire/emergency vehicle access and turning radius for ladder trucks. *Response: Site has been designed to accommodate emergency vehicle access. See Sheet C-3.1*

6	B.4.p	6.5	**Road and Drainage Standards** - All road and drainage improvements, including private roads, driveways and parking and loading areas, must be designed and constructed to promote vehicular and pedestrian safety and the proper discharge of storm water run off. Appropriate separation of pedestrian and vehicular traffic and adequate sightlines for all intersections, including those within a private parking or loading areas, must be incorporated into development plans. All road and drainage improvements, with the possible exception of roadway width, should conform with the standards and specifications of the Mansfield Public Works *Response: Noted*
			Department (available in the Mansfield Engineering Office). As appropriate, peak storm water discharges should be retained on site to minimize or prevent downstream impacts. *Response: Noted. Detention systems are design in accordance with local regulations.*
			See comments in staff memo and from CME with regard to proposed second curbcut and stormwater management.

6	B.4.q	6.5	**Landscaping and Buffering** **1. General** - All land use activities and particularly structures, parking areas and outdoor storage areas associated with commercial, industrial, or multi-family residence uses, shall include strategically placed landscape and buffer areas, which shall be designed to protect and preserve property values; to provide privacy from visual intrusion, light, dirt and noise; to prevent the erosion of soil and to provide water recharge areas; to promote pedestrian and vehicular safety; and to enhance the environmental quality and attractiveness of Mansfield. Except where alternative uses, such as parking areas, are provided for in other sections of these regulations, all required setback areas shall either be attractively landscaped with lawns trees and shrubs or, where appropriate, left in a sightly and well kept natural state. Landscape plans submitted in conjunction with a land use application shall identify, by type, size, height and placement, all proposed landscaping and all existing landscape features to be retained. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used. All submitted landscape plans must be adequate to meet the intended aesthetic, buffer and environmental purposes. Particular attention should be given to parking and loading areas, outside storage areas and shadow patterns with respect to south wall and rooftop solar access. See Article X, Section D.18 for supplemental interior parking lot landscaping requirements and Article X, Section R for architectural and design standards. *Response: Noted.* **2. Landscape Buffer -** The Commission shall have the authority to require up to a 75 foot wide landscaped buffer area where a site abuts a more restrictive zone or an existing residential use. In addition, the Commission shall have the authority to require a landscaped buffer area when a commercial, industrial, multi- family or other non-residential use abuts a historic structure or a cemetery. The width of the buffer for commercial, industrial, multi-family or other non-residential use that abuts a historic structure or cemetery shall be determined with reference to the existing physical characteristics of the property, such as topography, adjacent flood hazard, the location of existing structures, existing non-conforming lot characteristics, the nature of activity or the nature of the landscaping plan but in no event may the Commission require more than a 75 foot buffer. Buffers for a commercial, industrial, multi-family or other non-residential use that abuts an environmentally sensitive feature such as a river, brook, pond or wetland area shall be as determined by the Inland Wetlands Agency. The designated buffer area shall be attractively landscaped and shall be designed to achieve the desired buffering objectives, which may include the visual screening of the proposed use from abutting properties, the minimizing of auditory impacts and the protection and enhancement of historic structures, cemeteries or environmentally sensitive features. The buffer design shall consider vegetated earthen berms, multiple rows of staggered evergreens, selective plantings, walls, fencing, existing vegetation and other landscape measures. Due to special provisions contained or referenced in Article X, Section S, the landscape buffer requirements contained in this subparagraph shall not apply to land zoned SC-SDD. *Response: Noted.*

			• *Given that the property abuts another multi-family residential development and a natural gas facility, no buffering to protect adjacent uses is needed.* *Response: Noted.*
			• *Staff defers to the Inland Wetlands Agent and Agency with regard to the proposed setback buffer between the area of disturbance and the on-site wetland. The applicant should consider some type of visual screening along the property line abutting the natural gas facility to screen that facility from view of the residents.* *Response: Noted.* • *The architectural site plan identifies a "rain garden in the courtyard formed by three of the buildings; however, this is identified as a detention pond on the engineering plans. If this is intended to be a rain garden, landscape plantings should be revised to be consistent with rain garden design and a formal maintenance plan should be developed.* *Response: This area will function as a detention basin.* • *Suggest adding another dogwood next to the dumpster enclosure to screen view of the utility box.* *Response: Noted.* • *Consider shifting the tree located in the landscape island between buildings 5 and 6 closer to the parking lot to improve summer shade coverage* *Response: Noted.* • *Why is there a light fixture next to the detention pond/rain garden in the courtyard? Is the entire courtyard intended to be lit for safety?* *Response: The lighting was located in the courtyard area to provide accent lighting in the area. Not designed as security lighting.* • *Clarify whether there is a path around the detention pond/rain garden. Shows on photometrics plan but not on site layout plan or landscape plan.* *Response: There will not be a path around the basin.*

6	B.4.r	6.6	**Site Development Principles** **2.j:** Unless approved by the Commission, topsoil shall not be removed from developing areas except for sites of structures or manmade improvements. The topsoil from areas intended for such improvements shall be redistributed within the boundaries of the subject site to facilitate the provision of a suitable base for seeding and plantings. As necessary, additional topsoil shall be brought to the site. Soil and other materials shall not be temporarily or permanently stored in locations, which would cause suffocation of root systems of trees to be preserved. Applicable sand and gravel regulations shall be complied with.
			Add note that no topsoil is to be removed from the site. *Response: See Sheet G-1.0 for note indicating no topsoil to be removed from the site.*
6	B.4.S	6.9	**Erosion and Sedimentation Control**
			Update plan to address the following: • *4.b.1-No schedule is provided in narrative for grading and construction activities, including sequencing* *Response: Sequencing will be provided by the selected contractor.* • *4.g-No contingency plan provided* *Response: Site will be monitored weekly for erosion control issues.* • *4.h-No information provided on specific individual responsible for compliance* *Response: Person will be identified at the time of construction.* • *7.b-No zoning permit to be issued until erosion and sedimentation controls have been installed per the approved specifications and a certificate is provided to this effect.* *Response: Sedimentation controls will be installed at the on-set of construction.*

6	B.4.t	6.12	**Stormwater Management**
			See comments from CME *Response: Noted.*
10	A.12	New	**Special Provisions for SER-HO Zone**
			Revise plans to address following: • *d. Include bed per acre calculation on sheet T-1.0* *Response: Table on T-1.0 will be updated.* • *d. Revise table on A1.1a to match density on sheet T-1.0* *Response: Table will be updated to match* • *l. Please verify that the linear feet of planted parking lot perimeter shown on sheet L-1.1 is native or adaptive landscaping, not turf.* *Response: The landscaping is native or adaptive landscaping*
10	C	10.14	**Signs**
			No sign information has been provided for review. Recommend providing sign design for PZC review, specifically with regard to free-standing signs per comment from CME regarding sight lines. *Response: No signs are proposed at this time. If a sign is desired by the owner, a permit will be applied for at that time.*

10	D.11	10.29	**Accessible Parking Spaces** - All proposed commercial, industrial, governmental and multi-family residential land uses shall provide accessible parking spaces for handicapped individuals. Said spaces shall conform with Section 14-253a(h) of the State Statutes. At a minimum, accessible parking spaces shall be provided in the number required by the State Building Code. However, additional handicap spaces may, depending on the number of entrances and the nature of the population served, be required by the Commission. Wherever feasible, the parking spaces located closest to a primary entrance shall be designated as accessible parking spaces. Appropriate access ways to and from the adjacent primary entrance shall be developed in association with all accessible parking spaces. All accessible parking spaces shall be clearly designated with signs situated approximately 5 feet above grade and, wherever possible, with pavement markings. The required crosshatch area shall be located on the right-hand side of each accessible space. *Response: Noted. Accessible parking is provided in accordance with state regulations.*
			Revise site plan to meet requirements related to location of crosshatch area for accessible spaces *Response: The crosshatch meets state regulations as designed.*
10	D.17	10.30	**Lighting** - All parking and loading areas shall be adequately illuminated in order to prevent vehicular and pedestrian safety problems. All lighting fixtures shall be arranged (and, where appropriate, shielded) to prevent glare and to direct light away from any neighboring residential properties (also see Article VI, Section B.4.g.). *Response: Noted.*
			There are areas in the parking lot with less than 0.5 footcandles, which is considered the minimum for safety in low activity areas. Revise spacing of light poles to ensure that minimum lighting for pedestrian safety is maintained. *Response: Lighting will be modified to provide a minimum of 0.5 footcandles.*

10	D.18	10.30	**Snow Removal** - All parking and loading areas shall be designed, constructed and maintained to address snowplowing and snow removal needs for the site. All loading areas and the minimum number of parking spaces required by these regulations and any Commission approval requirements shall be available for year- round use. *Response: Noted.*
			No snow removal storage areas are identified on the plan. When locating, consult with Inland Wetlands Agent to reduce impact of salt and other deicing materials on wetland. *Response: Snow storage areas have been identified on the plans.*
10	H	10.45	**FILLING/GRADING/EXCAVATION/REMOVAL/PROCESSING OF SOIL, STONE, SAND AND GRAVEL, PEAT MOSS AND OTHER SIMILAR MATERIALS**
			No information on volume of material to be brought to the site, removed from the site or relocated on the site has been provided. Please provide so that staff can determine whether the provisions of this Section of the Regulations apply. *Response: Cut/Fill calculations will be provided.*

10	R	10.65	**Architectural and Design Standards**
			Due to the fact that this is an 8-30g application and these standards do not strictly relate to public health and safety, the following comments are advisory in nature and are not requirements. • *3.c. Given the small, compact nature of the site, it may be beneficial to reduce the number of different building elevations (proposed at 4). There seems to be a mix of traditional(buildings 1, 2, 3 and 7) and more modern elements (buildings 4, 5 and 6), which on a larger site may help reduce monotony but on a small site such as this may simply be introducing too much and become visually confusing.* *Response: Thank you this advice will be considered as the project advances.* • *3.f. No information is provided regarding mechanical systems. In addition to roof-mounted systems, consideration should also be given to potential location and screening of ground systems.* *Response: Thank you this advice will be considered as the project advances.* • *3.g. No information has been provided with regard to building materials.* *Response: Thank you this advice will be considered as the project advances.*

			• *3.j. No information has been provided with regard to signage, lighting, accessory structures etc. It is unclear where the fencing detail provided applies as the renderings appear to show low fencing associated with individual units and the spec identifies a 6 foot tall fence. In particular, building- mounted lighting and design of the waste/garden sheds should be provided given their impact on the overall design.* *Response: Thank you this advice will be considered as the project advances.* • *4.d. No information has been provided with regard to building lighting.* *Response: Thank you this advice will be considered as the project advances.* • *4.e. To reduce blue-light impacts on wetlands and wildlife habitat, lighting should be changed to 3,000 Kelvin or less for a warmer fixture.* *Response: Noted.* • *4f. As noted previously, please provide pavement markings to indicate pedestrian crossings of drive aisles.* *Response: pedestrian crosswalks are not typically required in residential parking areas.*

MEMO

To: Mansfield Nonprofit Housing Development Corporation
(c/o Agents Kathy Dorgan and Robert Newton)

CC: Jennifer Kaufman; Derek Dilaj; Adam Libros, Chuck Eaton (CME)

From: Linda Painter, AICP, Director

Date: December 13, 2019

Subject: P1364-2 Eagleville Green Site Plan Application
Preliminary Review Comments-Set #1
Plan Set Prepared by BSC Group dated November 25, 2019

OVERVIEW

The following comments are based on staff review of plans dated November 25, 2019 for Eagleville Green. They do not include peer review comments that are being prepared by CME on behalf of the Planning and Zoning Commission. These comments are organized and based on the Site Plan approval criteria identified in Article 5, Section A.5 of the Mansfield Zoning Regulations.

Please provide a revised plan set and response to comments by Friday, January 3, 2019 to allow staff and CME time to review the plan revisions prior to the public hearing currently scheduled for January 21, 2019.

Disclaimers

1. These comments are provided as a courtesy. It is the applicant's responsibility to ensure that the submitted plans comply with current regulations. In any revision process, it is possible that addressing one comment will have impacts on compliance with another regulation. The applicant is responsible for reviewing revised plans prior to submittal to ensure that any domino effects from one correction are caught and addressed prior to resubmittal.

2. While staff has attempted to identify every potential issue to be addressed, we may miss something or identify additional comments upon review of the revised plans.

3. These comments have been provided with the understanding that pursuant to Sec. 8-30g(g), C.G.S., the burden is on the Planning and Zoning Commission to prove that their ultimate decision is:

   - Necessary to protect substantial public interests in health, safety or other matters which the commission may legally consider
   - Such public interests clearly outweigh the need for affordable housing; and
   - Such public interests cannot be protected by reasonable changes to the affordable housing development.

COMPLETENESS OF APPLICATION

Relevant Approval Criterion ▪ Article 5, Section A.5.a

All required or necessary information has been provided by the applicant so that compliance with applicable regulations can be determined.

Recommendation: Where requested in these comments, please provide additional information.

COMPLIANCE WITH REGULATIONS

Relevant Approval Criterion ▪ Article 5, Section A.5.b

The proposal complies with all other applicable sections of the Zoning Regulations including but not limited to: parking and loading; landscaping and buffering; aquifer areas; prohibited uses, performance standards; architectural and design standards; height and area requirements; signs, bonding, filling, grading, excavation, removal, processing of soil, stone, sand and gravel, peat moss, and other similar materials regulations and any special provisions applying to the subject use.

The applicant has submitted Site and Architectural Plans along with the required Site Plan checklist.

Comment: See the attached table that identifies revisions that are needed to comply with specific requirements of the Zoning Regulations.

Recommendation: Revise plans and associated documentation as described in the attached table and resubmit by January 6, 2020.

OTHER STATE AND LOCAL REQUIREMENTS

Relevant Approval Criterion ▪ Article 5, Section A.5.c

The application has considered all other applicable local, state and federal requirements, including subdivision approval and necessary permits from the Mansfield Inland Wetlands Agency, the Mansfield Water Pollution Control Authority, the Mansfield Fire Marshal, the Mansfield Historic District Commission and the state Departments of Health, Environmental Protection and Transportation. For applications involving concurrent Inland Wetland Agency (IWA) license applications, no decision shall be made until the IWA has submitted a report with its final decision.

Comment: The following summary identifies the need for other state and local permits based on the information submitted.

Recommendation: Unless otherwise noted, no Zoning Permit shall be issued for the development until all of the required state and local permits have been obtained pursuant to Article 11, Section 3.c.

Subdivision Approval

No subdivision approval is needed for this application.

Inland Wetlands License

A concurrent application was submitted to the Inland Wetlands Agency. The public hearing is scheduled for January 21, 2020. No decision on the site plan application shall be made until the IWA has submitted a report with its final decision.

Mansfield Water Pollution Control Authority

Comment. The connection for the proposed development is shown to the Town of Mansfield's Wastewater Collection System. The Applicant shall complete a Sewer Permit with the Town of Mansfield for consideration by the Town of Mansfield Water Pollution Control Authority (WPCA). As of December 23, 2019, the WPCA has adequate capacity within the Sewer Service Agreement by and between Town of Mansfield and University of Connecticut for the proposed 42 unit multi-family residential project. The proposed plans will require further detail for consideration as part of the Sewer Permit. This detail will include pump sizing, operating levels, community sewer service agreement, and potential impact statement concerning the downstream pumping station.

Mansfield Fire Marshal

While the Fire Marshal has not yet provided formal comments, this memo addresses suggestions from the Fire Marshal and Fire Chief identified during a preliminary plan review meeting of Town staff.

Mansfield Historic District Commission

The subject property is not located within a local Historic District; therefore, no review or approval from the Mansfield Historic District Commission is needed.

Connecticut Department of Public Health (DPH)

Provided the development is served by public water (CWC) as proposed, no approval is needed from CTDPH.

Connecticut Department of Energy and Environmental Protection (CTDEEP)

Provided the development is served by public sanitary sewers as proposed, no approval from CTDEEP will be needed for the wastewater disposal system.

See comments from CME with regard to whether an Army Corps of Engineers permit is required.

Connecticut Department of Transportation (CTDOT)

As described in the Traffic Summary prepared by BSC dated November 25, 2019, encroachment and driveway permits will be needed from CTDOT prior to construction.

Comment: Refer to the section of this memo titled "Vehicular and Pedestrian Access" for additional comments and recommendations regarding proposed ingress/egress circulation.

INFRASTRUCTURE, PUBLIC SAFETY AND PROTECTION OF NATURAL AND CULTURAL RESOURCES

Relevant Approval Criterion ▪ Article 5, Section A.5.d

The proposal has made safe and suitable provisions for water supply, waste disposal, flood control, fire and police protection, the protection of the natural environment, including air quality and surface and groundwater quality and the protection of existing aquifers and existing and potential public water supplies, cemeteries, historic structures and other features of historic value.

For all properties within one of the ten (10) historic village areas identified in Article X, Section J, the special historic village area review criteria contained in Article X, Section J.2 also shall be complied with

Potable Water

The applicant has provided an April 3, 2019 letter from Connecticut Water Company indicating that domestic water and fire protection water service is available from the 8" main in South Eagleville Road. The letter notes that an engineered main extension may be required. Furthermore, the letter indicates that should a Customer Agreement for service not be executed within one year of the letter, CWC reserves the right to reevaluate its ability to service the project.

Comments:

(1) Pursuant to the January 21, 2014 Water Supply Definitive Agreement and the subsequent a Memorandum of Agreement between the Town and Connecticut Water Company, main extensions and any connection to the CWC system that requires a change in zoning or approval by a local land use commission must be referred to the Water System Advisory Committee for review and comment. **This application was referred to the WSAC on December 3, 2019. A special meeting of the committee is scheduled for January 8, 2020.**

(2) Please identify the proposed main extension on the plans.

Recommendations:

(1) The applicant is encouraged to attend the special meeting of the WSAC to explain the project and answer questions.

(2) Approval of the site plan should be contingent upon execution of a Customer Agreement for Service as well as the required permits for any main extension prior to issuance of a Zoning Permit for the development to ensure that potable water service will be available for the development.

Wastewater

See Mansfield Water Pollution Control Authority.

Solid Waste/Recycling

Comments: The Town's recycling coordinator has reviewed the proposal and provided the following recommendations with regard to dumpster and recycling enclosure sizing:

- The gate opening should be at least 18 feet to accommodate both trash and recycling dumpsters, both of which measure just under 7 feet across. This will allow for clearance around each dumpster for both users and the truck.
- The depth of the dumpster pad/enclosure will depend on size. She has provided two specification sheets with dumpster dimensions for use by the designer. Based on the proposed size of the development, she recommended an 8 cubic yard dumpster and a 4 cubic yard recycle dumpster.

Recommendations: Revise the site layout plan and specifications to provide a solid waste enclosure that meets the minimum dimensional requirements outlined in the above comments and per the attached specifications. Additionally, the fence specification for the enclosure should be revised to require a minimum height at least 1 foot taller than the dumpster containers.

Flood Control

The subject property is not located within a flood hazard area.

Fire and Police Protection

Comments. Based on a preliminary review of the site plan, the Fire Department has requested that the two hydrant locations be moved closer to South Eagleville Road next to each entrance driveway, approximately 25 feet from each property line. Additionally, confirmation is needed that the proposed layout meets the accessibility needs of a ladder truck (see attached specifications).

Depending on the type of building construction proposed, a separate water service line to each building may be required for fire protection.

Recommendations.

(1) Revise site layout and utility plan to relocate hydrants pursuant to the above comments.

(2) Provide vehicle turning movements demonstrating that the site is accessible via ladder truck.

Protection of Natural Resources

See comments and recommendations provided by CME and Jennifer Kaufman with regard to the associated wetlands application.

Historic Structures and Features

There are two small remnants of stone walls on the property in the area of disturbance.

Recommendations: Add a note requiring the stones from the walls to be retained and reused on site in another location as part of the overall site landscaping.

VEHICULAR AND PEDESTRIAN ACCESS

Relevant Approval Criterion ▪ Article 5, Section A.5.e

Vehicular and pedestrian access to the property and egress from the property and internal vehicular and pedestrian traffic patterns are safe and suitable and have been designed to maximize safety and avoid hazards and congestion. Adequate provisions have been made to address accessibility problems of handicapped individuals. All curb cuts shall have adequate sightlines and adjacent streets shall have adequate capacity to safely accommodate the traffic flows associated with the proposed use(s). As deemed necessary, offsite road and drainage improvements may be required by the Commission;

Sidewalks, bikeways, trails and/or other improvements designed to encourage and enhance safe pedestrian and bicycle use shall be required, unless specifically waived by a three-quarter (3/4) vote of the entire Commission (7 votes), for all sites within or proximate to Plan of Conservation and Development designated "Planned Development Areas"; proximate to schools, playgrounds, parks and other public facilities; or proximate to existing or planned walkway, bicycle or trail routes. In evaluating any waiver request, the Commission shall consider the size and the location of the proposed development, its relationship to existing or planned development, school sites, playground areas and other public areas and the location and nature of existing or planned sidewalk, bikeway or trail improvements.

Safe Vehicular and Pedestrian Access

The site layout plan proposes a second full-access curbcut to South Eagleville Road. As South Eagleville is a state road, the ultimate decision with regard to whether to authorize a second curb cut lies with the CTDOT.

Comment. In the vicinity of the proposed project, CTDOT has identified the need for a signal at the intersection of Separatist Road and South Eagleville Road. As such, recent data for the 85th percentile is available. The Applicant's traffic review investigated the Intersection Sight Distance based upon a Design Speed of 30 mph which is also the speed limit.

Recommendations.

(1) **Speed Study.** Conduct or obtain 85th percentile speed data to confirm adequacy of the Intersection and Stopping Sight Distances to demonstrate that a second access can be safely installed in the proposed location.

(2) **Plan Modification.** If the CTDOT does not approve a second access, revisions to the site plan shall require additional PZC review as the current design does not provide for closing one of the driveways without impacting accessibility for large vehicles including fire trucks and garbage trucks. As designed, with one curb-cut removed, there is not sufficient area for large vehicles to turn around within the development to exit. Backing up into South Eagleville Road would create significant safety problems due to the volume and speed of traffic in the area as well as potential impacts on accessibility for emergency vehicles.

Accessibility for Persons with Disabilities

Comment: All sidewalks require ADA ramps where meeting the parking lot or a driving aisle.

Recommendation: Revise plans and specifications to include ADA ramps for all sidewalks as well as striped crossings between ramps. See attached table for additional corrections with regard to ADA parking space/access aisle locations.

Roadway Capacity and Anticipated Impacts

The applicant has provided a traffic summary statement prepared by BSC Group and dated November 25, 2019. The summary provides a narrative overview of the development, including proposed ingress/egress, on-site circulation and parking. It also notes that the project does not qualify as a Major Traffic Generator based on its size.

Comment: The traffic summary does not include any information regarding current traffic volumes or levels of service for Route 275, nor does it include any information regarding projected trip generation for the project.

Recommendation: Update the traffic summary statement to address existing traffic volumes, levels of service and projected trip generation rates for the project as well as any potential impacts the project may have on traffic flow on Route 275.

It should be noted that the CTDOT Division of Traffic Engineering recently completed a review of the intersection of Route 275 and Maple Road, including traffic counts, roadway characteristics and crash history. Based on their findings, a traffic signal will be installed at that intersection with construction of the signal estimated to start in spring 2023.

Sidewalks, Bikeways and Trails

There is currently a sidewalk extending along the frontage of the subject property.

Comment: The existing walkway will need to be repaired/replaced to its current condition if impacted by site work and/or associated utility construction. The construction entrance is proposed over the existing walkway preventing wheelchairs or other assistive devices from traveling along it during construction.

Recommendation: The Applicant shall make the walkway available to all users during construction.

OFF-STREET PARKING AND LOADING, GRADING AND DRAINAGE

Relevant Approval Criterion ▪ Article 5, Section A.5.f

Off-street parking and loading, storm drainage improvements and grading plans are adequate, having been designed to promote vehicular and pedestrian safety and to prevent flooding, storm drainage and sediment and erosion problems. All required easements have been obtained by the applicant.

Off-Street Parking and Loading

The site layout plan indicates that there will be a total of 87 parking spaces provided for the development; however, the stormwater management plan indicates a total of 81 spaces.

Recommendations:

(1) Clarify the correct number of spaces

(2) See attached table for specific comments regarding design of ADA spaces

Grading

See comments in attached table regarding information needed on filling and grading.

Drainage/Stormwater Management

Drainage Easement

The applicant has provided an executed copy of a drainage easement authorizing them to construct drainage improvements and a right to drain within a designated area depicted on the site plan (to be further described in a legal description). The applicant is also authorized to use this area for construction and maintenance of buildings and improvements along the southerly boundary of the subject property. These rights are contingent upon the Planning and Zoning Commission confirming as part of its site plan approval that designated easement area can still be counted as open space as part of any development application for the abutting property.

Comment. This is an issue that will need to be resolved by the Planning and Zoning Commission as part of its review.

Recommendation. To assist the Commission in its review, the applicant is encouraged to provide photographs of similar installations or appropriately rendered landscape plans.

Stormwater Management Plan

See comments from CME with regard to the proposed stormwater management plan, compliance with Article 6, Section B.4.t as well as the Town's MS-4 permit.

Recommendation. Revise plans as needed to address CME comments and comply with MS-4 requirements.

MITIGATION OF POTENTIAL NUISANCES

Relevant Approval Criterion ▪ Article 5, Section A.5.g

The proposal has adequately considered all potential nuisances such as noise and outdoor lighting. Except where specifically authorized by these Regulations, all lighting shall be the minimum necessary to address safety and security needs taking into account manufacturer's installation charts and spacing recommendations for the proposed lighting. All lighting fixtures shall be designed to prevent undesirable illumination or glare above the site or beyond the site's

property lines. All lighting fixtures shall be shielded and aimed downward unless it can be demonstrated that alternative designs will not result in spill light (undesirable light that falls outside the area of intended illumination).

Noise

As a residential development, significant noise impacts are not anticipated. The property is subject to the Town's Noise ordinance, Chapter 134 of the Code of Ordinances.

Outdoor Lighting

The applicant has proposed use of shielded lighting to reduce light spill.

Comment. See the attached table for specific comments with regard to outdoor lighting.

Recommendation. Revise plan and specifications per attached comments.

ENERGY CONSERVATION

Relevant Approval Criterion ▪ Article 5, Section A.5.h

Passive solar and energy conservation techniques have been considered in the design of structures, structure orientation, street and lot layout, placement of vegetation, use of natural and manmade topographical features and protection of solar access within a development.

Comment. While not specifically referenced in the application, the architectural plans appear to include rooftop solar installations for 5 of the 7 buildings.

Recommendation. Please provide additional information with regard to techniques used to promote passive solar and energy conservation.

CONSTRUCTION TRAFFIC

Relevant Approval Criterion ▪ Article 5, Section A.5.i

The proposal has adequately considered construction traffic and potential onsite and offsite vehicular and pedestrian safety problems, potential neighborhood impact problems and potential road and property damage that could occur due to the nature and timing of proposed construction activity.

Comment. No specific information on construction traffic or timing has been submitted as part of the site plan.

See above comment concerning sidewalks, etc.

Recommendation. Please provide information with regard to construction traffic management.

UNDERGROUND UTILITIES

Relevant Approval Criterion ▪ Article 5, Section A.5.j

Unless specifically waived by the Commission due to site and environmental constraints or adverse impacts to stonewalls or other historic features, existing significant trees or other natural or manmade features, all new wired utility lines (telephone, electric, cable, etc.) shall be installed underground within suitable conduits. For significant land use projects, the Commission also may require existing overhead utility lines to be replaced with underground lines.

The site plan identifies an overhead connection from an existing utility pole on the opposite side of South Eagleville Road to a new utility pole on the subject site. Individual service connections

for new buildings will be installed underground; the existing building to remain will continue to be served by an overhead connection.

Comment. While it is strongly encouraged that the transition to underground utilities occur on the other side of South Eagleville Road and that the connection to the site be made underground, it is understood that such a connection could come at great expense and potentially impact the overall affordability of the development.

Recommendations. While the applicant is encouraged to pursue an underground connection and changing the service for the existing building to underground lines, staff recommends that the Commission not require such modifications due to the project's status as an 8-30g application and the fact that the use of overhead utilities does not rise to the level of a significant public health and safety concern.

ARCHITECTURAL DESIGN STANDARDS

Relevant Approval Criterion ▪ Article 5, Section A.5.k

The basic design of the proposed uses, buildings or development; the relationship between the buildings and the land; the relationships between uses and between buildings or structures; and the overall physical appearance of the proposed use, building or development; comply with all applicable architectural and design standards of Article X, Section R, are in general harmony with the character of the surrounding neighborhood and will not serve to blight or detract from the value of abutting residences or other property.

Comment. See specific comments and recommendations in attached table.

Recommendations. While the applicant is encouraged to consider the comments provided, staff will recommend to the Commission that such comments not be considered requirements due to the project's status as an 8-30g application and the fact that such design considerations do not rise to the level of a significant public health or safety concern.

AFFORDABLE HOUSING PLAN

Draft Affordability Plan

The note at the beginning of the Affordability Plan states that the Plan is in draft form due to changes in income data from year to year as well as the fact that the developer has not yet secured the principal financing that will qualify the project as "assisted housing" pursuant to Sec. 8-30g(a)(3), C.G.S. Accordingly, the provisions of Article 10, Section W.8 related to provision of deed restrictions do not apply. Should this development change from assisted housing to a set-aside development pursuant to Sec. 8-30g, a revised affordablility plan will need to be submitted and approved by the Commission.

Comment: See CME's comments on the affordable housing plan

Recommendations. Revise affordable housing plan per CME's comments.

Comment: The sample calculations for establishing maximum rent (Section IX) as well as calculation of maximum income (Sections V and VII, Schedule D) address the ways in which updated annual income data will be used to determine tenant eligibility and maximum rent. The definition of Community and Schedule C identify the number and type of income-restricted units based on the assumption that 30% of units will be affordable. If the financing product results in changes to the percentage, number and type of income-restricted units, these sections should be updated accordingly.

Recommendations:
1. Introductory Note. Delete the second sentence of the Introductory Note and replace with the following:
"The Affordability Plan will be updated once financing is secured to revise the following information in accordance with the specific requirements of the lending program: tenant selection, application, income verification, annual recertification procedures, and number and type of affordable units (by income level). The revised Affordability Plan and a summary of changes shall be submitted for the Commission's records within 30 days of completion."

2. Plan Revisions. Add a section on Affordability Plan Revisions (suggested Article XII, renumbering existing Articles XII and XIII. This Section should identify when plan revisions are required (i.e. if the financing requirements change); and the types of changes to the Affordability Plan that would require PZC approval (i.e. any change that reduces the number of affordable units/income requirements below that which was approved by the Commission; change from assisted housing to set-aside development, etc.) Changes that are needed to comply with financing requirements should be submitted for records but may not need Commission approval.

Affirmative Fair Housing Marketing Plan

Pursuant to Sec. 8-30g(b)(1)(B), C.G.S., the affordability plan required as part of the affordable housing application must include "an affirmative fair housing marketing plan governing the sale or rental of all dwelling units." The minimum standards for compliance with this requirement are further established in Section 8-30g-7 of the Regulations of Connecticut State Agencies:

> "(3) With respect to an affirmative fair housing marketing plan filed in accordance with an affordable housing development application, the provisions of sections 8-37ee-1 et seq. of the Regulations of Connecticut State Agencies, and particularly sections 8-37ee-301 and 302, shall serve as the basis for such plan, provided that such regulations, including the procedures therein, shall be guidelines, not requirements. Collection and dissemination of information about available price restricted and market rate dwelling units shall include, at a minimum:
>
> (A) Analyzing census and other data to identify racial and ethnic groups least represented in the population;
>
> (B) Announcements/advertisements in publications and other media that will reach minority populations;
>
> (C) Announcements to social service agencies and other community contacts serving low-income minority families in the region (including churches, civil rights organizations, housing authorities, and legal services organizations);
>
> (D) Assistance to minority applicants in processing applications;
>
> (E) Marketing efforts in geographic area of high minority concentrations within the housing market area;
>
> (F) Beginning marketing efforts prior to general marketing of units, and repeating again during initial marketing, at fifty percent (50%) completion, and thereafter at reasonable period intervals with respect to resales or re-rentals; and
>
> (G) Collection of basic racial and ethnic information for all residents and persons on the wait list for the development.

Comment: The Affirmative Fair Housing Marketing Plan provided in Section VI of the Affordability Plan does not address the minimum requirements established in the Regulations of State Agencies and therefore does not meet the requirement that an Affirmative Fair Housing Marketing Plan be submitted with the application in accordance with Sec. 8-30g(b)(1)(B) C.G.S.

Recommendation: Prepare and submit an Affirmative Housing Marketing Plan that complies with the provisions outlined in Section 8-30g-7 of the Regulations of Connecticut State Agencies.

OVERVIEW

All Article, Section, and Page Numbers refer to the November 1, 2019 Zoning Regulations of the Town of Mansfield, which can be accessed at http://www.mansfieldct.gov/DocumentCenter/View/4570/Zoning-Regulations, with the exception of regulations to the SER-HO District. The SER-HO regulations are expected to be adopted on December 16, 2019 and become effective on January 1, 2020. Excerpts of applicable regulations are provided in the green rows in *italics.* Staff comments relevant to that regulation are in the white rows beneath with bullets.

ARTICLE NUMBER	SECTION NUMBER	PAGE NUMBER	REGULATION/COMMENT
5	A.3.a	5.2	**A completed application form, including fee payment:** Said application must be signed by the owner of the subject property or by an individual with a legally binding contract to purchase the subject property.
			Need signed copy of site plan checklist; also need to check off whether approval block requirements were met on the checklist.
5	A.3.c	5.2	**Notification of Abutting Property Owners:** The applicant shall be responsible for notifying all property owners abutting the site of a proposed use or activity requiring site plan approval, including property owners across the street from a subject site (as measured at right angles to straight street lines and radial to curved street lines). Said notification, which shall be sent by Certified Mail, within seven (7) days of the Commission's receipt of the application, shall include the applicant's Statement of Use and mapping that depicts areas of proposed activity. The notice also shall reference the fact that the complete application is available for review in the Mansfield Planning Office. Notification forms available in the Mansfield Planning Office shall be utilized for notifying abutting property owners.
			Copies of notice, attachments and proof of mailing shall be submitted prior to the opening of the public hearing.
5	A.3.d	5.2	**Site Plan Requirements**
			• *Label proposed drainage easement on plans* • *Provide specifications for dumpster enclosure (see staff memo and attachments for additional information)* • *Change reference to "hay bale" on Sheet C-60.0 to "straw bale"*
5	A.3.e	5.4	**Sanitation Report:** The application shall submit a written sanitation report, with information on site characteristics and the proposed sanitary systems, including water supply and waste disposal. As necessary said report shall be prepared by the applicant's registered professional engineer or registered sanitarian. The report shall demonstrate that the subject sanitary systems will comply with state and local Health Department requirements and all other applicable regulations including the Town's Sand and Gravel Regulations. Where a separate permit to fill a site is necessary, said permit shall be obtained and the fill shall be placed prior to the submission of a site plan application for the subject use or development project. Necessary onsite testing must be coordinated with the Town Health Officer.

			As the site will be served by public water and sewer, the requirements of the sanitation report can be met by updating the Statement of Use to describe the proposed water and sewer connections.
5	A.3.g	5.4	**Other information:** Dependent on the nature of the proposal, the Commission shall have the right to require additional detailed information if it finds the information is necessary to review the application and determine compliance with applicable regulations and performance standards. Such information may include but shall not be limited to: traffic impact analysis, including specific information on how construction traffic will be regulated, routed and monitored; aquifer, watershed and flooding data; drainage calculations and documentation of necessary drainage rights or easements; environmental and neighborhood impact analysis; erosion and sedimentation control plans, future plans for adjacent land under the control of the subject applicant or owner; information on homeowner or property-owner associations; maintenance provisions; estimates of site improvements costs, and bonding agreements.
			See comments in staff memo and from CME with regard to traffic statement.
6	B.4.n	6.5	**Energy Considerations -** Where Planning and Zoning Commission approval is required for a land use activity, applicants shall demonstrate to the Commission that their pending proposal has considered, to the degree physically and economically possible, the utilization of the physical environment and natural energy sources, such as solar orientation, to help heat, cool or illuminate the proposed use and accordingly minimize a dependence on fossil fuels and mechanical equipment. Potential impacts on neighboring properties shall also be evaluated. Factors to be considered include: roadway, lot and building orientation, natural and manmade topographic features, soil and subsoil characteristics, existing and proposed vegetative cover, and shadow patterns on neighboring properties. Wherever feasible: • building orientation and design should maximize south facing walls; • an east-west orientation should be considered for streets and private access roads; • building height and bulk and landscaping improvements should minimize shadow patterns on adjacent properties; and • walls and accessory structures should be located in areas that will not diminish south wall exposure.
			Update Statement of Use to describe measures taken to address the energy consideration requirements
6	B.4.o	6.5	**Parking and Loading Areas** - Adequately sized, constructed and located onsite parking areas shall be provided for all land use activities so that the use of adjacent roadways is not obstructed. Where required, on-site loading areas which do not conflict with parking areas or circulation ways shall be provided. See Article X, Section D for more specific requirements. In addition, state standards for fire access and handicapped parking shall be incorporated into all parking and loading designs.
			See comments in memo with regard to fire/emergency vehicle access and turning radius for ladder trucks.
6	B.4.p	6.5	**Road and Drainage Standards** - All road and drainage improvements, including private roads, driveways and parking and loading areas, must be designed and constructed to promote vehicular and pedestrian safety and the proper discharge of storm water run off. Appropriate separation of pedestrian and vehicular traffic and adequate sightlines for all intersections, including those within a private parking or loading areas, must be incorporated into development plans. All road and drainage improvements, with the possible exception of roadway width, should conform with the standards and specifications of the Mansfield Public Works

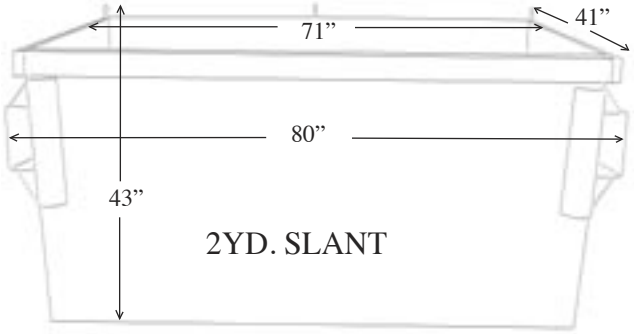
			Department (available in the Mansfield Engineering Office). As appropriate, peak storm water discharges should be retained on site to minimize or prevent downstream impacts.
			See comments in staff memo and from CME with regard to proposed second curbcut and stormwater management.
6	B.4.q	6.5	**Landscaping and Buffering** **1. General** - All land use activities and particularly structures, parking areas and outdoor storage areas associated with commercial, industrial, or multi-family residence uses, shall include strategically placed landscape and buffer areas, which shall be designed to protect and preserve property values; to provide privacy from visual intrusion, light, dirt and noise; to prevent the erosion of soil and to provide water recharge areas; to promote pedestrian and vehicular safety; and to enhance the environmental quality and attractiveness of Mansfield. Except where alternative uses, such as parking areas, are provided for in other sections of these regulations, all required setback areas shall either be attractively landscaped with lawns trees and shrubs or, where appropriate, left in a sightly and well kept natural state. Landscape plans submitted in conjunction with a land use application shall identify, by type, size, height and placement, all proposed landscaping and all existing landscape features to be retained. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used. All submitted landscape plans must be adequate to meet the intended aesthetic, buffer and environmental purposes. Particular attention should be given to parking and loading areas, outside storage areas and shadow patterns with respect to south wall and rooftop solar access. See Article X, Section D.18 for supplemental interior parking lot landscaping requirements and Article X, Section R for architectural and design standards. **2. Landscape Buffer -** The Commission shall have the authority to require up to a 75 foot wide landscaped buffer area where a site abuts a more restrictive zone or an existing residential use. In addition, the Commission shall have the authority to require a landscaped buffer area when a commercial, industrial, multi-family or other non-residential use abuts a historic structure or a cemetery. The width of the buffer for commercial, industrial, multi-family or other non-residential use that abuts a historic structure or cemetery shall be determined with reference to the existing physical characteristics of the property, such as topography, adjacent flood hazard, the location of existing structures, existing non-conforming lot characteristics, the nature of activity or the nature of the landscaping plan but in no event may the Commission require more than a 75 foot buffer. Buffers for a commercial, industrial, multi-family or other non-residential use that abuts an environmentally sensitive feature such as a river, brook, pond or wetland area shall be as determined by the Inland Wetlands Agency. The designated buffer area shall be attractively landscaped and shall be designed to achieve the desired buffering objectives, which may include the visual screening of the proposed use from abutting properties, the minimizing of auditory impacts and the protection and enhancement of historic structures, cemeteries or environmentally sensitive features. The buffer design shall consider vegetated earthen berms, multiple rows of staggered evergreens, selective plantings, walls, fencing, existing vegetation and other landscape measures. Due to special provisions contained or referenced in Article X, Section S, the landscape buffer requirements contained in this subparagraph shall not apply to land zoned SC-SDD.
			• *Given that the property abuts another multi-family residential development and a natural gas facility, no buffering to protect adjacent uses is needed.*

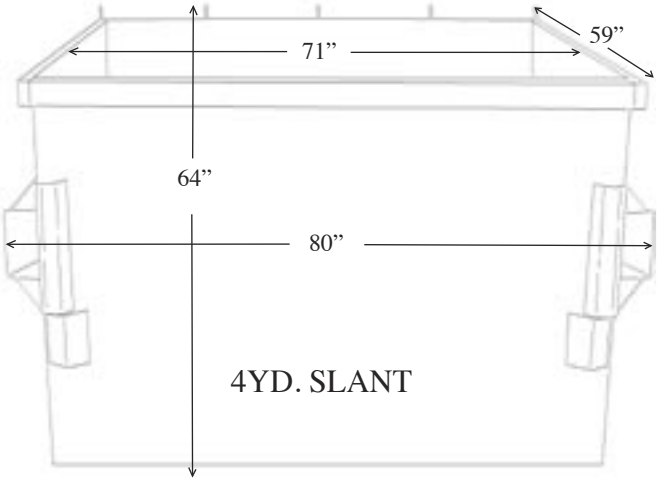
			• *Staff defers to the Inland Wetlands Agent and Agency with regard to the proposed setback buffer between the area of disturbance and the on-site wetland. The applicant should consider some type of visual screening along the property line abutting the natural gas facility to screen that facility from view of the residents.* • *The architectural site plan identifies a "rain garden in the courtyard formed by three of the buildings; however, this is identified as a detention pond on the engineering plans. If this is intended to be a rain garden, landscape plantings should be revised to be consistent with rain garden design and a formal maintenance plan should be developed.* • *Suggest adding another dogwood next to the dumpster enclosure to screen view of the utility box.* • *Consider shifting the tree located in the landscape island between buildings 5 and 6 closer to the parking lot to improve summer shade coverage* • *Why is there a light fixture next to the detention pond/rain garden in the courtyard? Is the entire courtyard intended to be lit for safety?* • *Clarify whether there is a path around the detention pond/rain garden. Shows on photometrics plan but not on site layout plan or landscape plan.*
6	B.4.r	6.6	**Site Development Principles** **2.j:** Unless approved by the Commission, topsoil shall not be removed from developing areas except for sites of structures or manmade improvements. The topsoil from areas intended for such improvements shall be redistributed within the boundaries of the subject site to facilitate the provision of a suitable base for seeding and plantings. As necessary, additional topsoil shall be brought to the site. Soil and other materials shall not be temporarily or permanently stored in locations, which would cause suffocation of root systems of trees to be preserved. Applicable sand and gravel regulations shall be complied with.
			Add note that no topsoil is to be removed from the site.
6	B.4.S	6.9	**Erosion and Sedimentation Control**
			Update plan to address the following: • *4.b.1-No schedule is provided in narrative for grading and construction activities, including sequencing* • *4.g-No contingency plan provided* • *4.h-No information provided on specific individual responsible for compliance* • *7.b-No zoning permit to be issued until erosion and sedimentation controls have been installed per the approved specifications and a certificate is provided to this effect.*
6	B.4.t	6.12	**Stormwater Management**
			See comments from CME
10	A.12	New	**Special Provisions for SER-HO Zone**
			Revise plans to address following: • *d. Include bed per acre calculation on sheet T-1.0* • *d. Revise table on A1.1a to match density on sheet T-1.0* • *l. Please verify that the linear feet of planted parking lot perimeter shown on sheet L-1.1 is native or adaptive landscaping, not turf.*
10	C	10.14	**Signs**

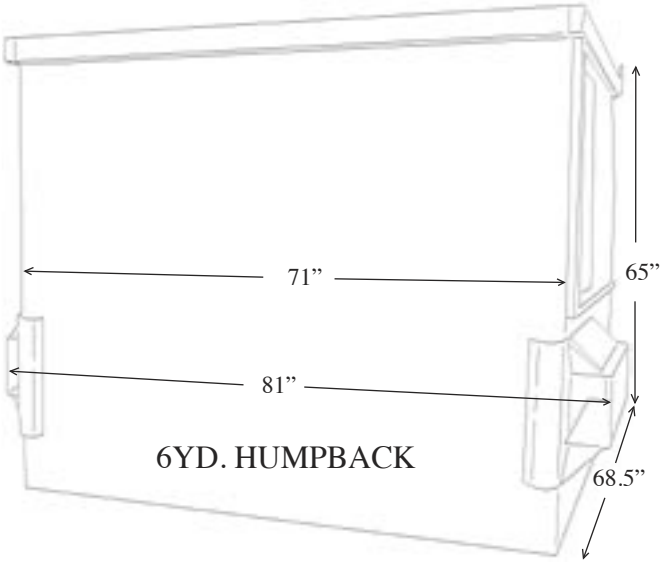
			No sign information has been provided for review. Recommend providing sign design for PZC review, specifically with regard to free-standing signs per comment from CME regarding sight lines.
10	D.11	10.29	**Accessible Parking Spaces** - All proposed commercial, industrial, governmental and multi-family residential land uses shall provide accessible parking spaces for handicapped individuals. Said spaces shall conform with Section 14-253a(h) of the State Statutes. At a minimum, accessible parking spaces shall be provided in the number required by the State Building Code. However, additional handicap spaces may, depending on the number of entrances and the nature of the population served, be required by the Commission. Wherever feasible, the parking spaces located closest to a primary entrance shall be designated as accessible parking spaces. Appropriate access ways to and from the adjacent primary entrance shall be developed in association with all accessible parking spaces. All accessible parking spaces shall be clearly designated with signs situated approximately 5 feet above grade and, wherever possible, with pavement markings. The required crosshatch area shall be located on the right-hand side of each accessible space.
			Revise site plan to meet requirements related to location of crosshatch area for accessible spaces
10	D.17	10.30	**Lighting** - All parking and loading areas shall be adequately illuminated in order to prevent vehicular and pedestrian safety problems. All lighting fixtures shall be arranged (and, where appropriate, shielded) to prevent glare and to direct light away from any neighboring residential properties (also see Article VI, Section B.4.g.).
			There are areas in the parking lot with less than 0.5 footcandles, which is considered the minimum for safety in low activity areas. Revise spacing of light poles to ensure that minimum lighting for pedestrian safety is maintained.
10	D.18	10.30	**Snow Removal** - All parking and loading areas shall be designed, constructed and maintained to address snowplowing and snow removal needs for the site. All loading areas and the minimum number of parking spaces required by these regulations and any Commission approval requirements shall be available for year-round use.
			No snow removal storage areas are identified on the plan. When locating, consult with Inland Wetlands Agent to reduce impact of salt and other deicing materials on wetland.
10	H	10.45	**FILLING/GRADING/EXCAVATION/REMOVAL/PROCESSING OF SOIL, STONE, SAND AND GRAVEL, PEAT MOSS AND OTHER SIMILAR MATERIALS**
			No information on volume of material to be brought to the site, removed from the site or relocated on the site has been provided. Please provide so that staff can determine whether the provisions of this Section of the Regulations apply.
10	R	10.65	**Architectural and Design Standards**
			Due to the fact that this is an 8-30g application and these standards do not strictly relate to public health and safety, the following comments are advisory in nature and are not requirements. • *3.c. Given the small, compact nature of the site, it may be beneficial to reduce the number of different building elevations (proposed at 4). There seems to be a mix of traditional(buildings 1, 2, 3 and 7) and more modern elements (buildings 4, 5 and 6), which on a larger site may help reduce monotony but on a small site such as this may simply be introducing too much and become visually confusing.* • *3.f. No information is provided regarding mechanical systems. In addition to roof-mounted systems, consideration should also be given to potential location and screening of ground systems.* • *3.g. No information has been provided with regard to building materials.*

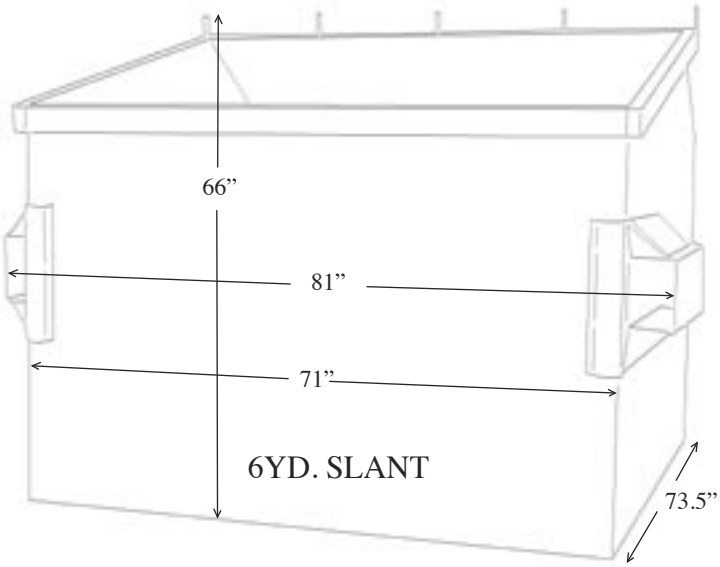
			• *3.j. No information has been provided with regard to signage, lighting, accessory structures etc. It is unclear where the fencing detail provided applies as the renderings appear to show low fencing associated with individual units and the spec identifies a 6 foot tall fence. In particular, building-mounted lighting and design of the waste/garden sheds should be provided given their impact on the overall design.* • *4.d. No information has been provided with regard to building lighting.* • *4.e. To reduce blue-light impacts on wetlands and wildlife habitat, lighting should be changed to 3,000 Kelvin or less for a warmer fixture.* • *4f. As noted previously, please provide pavement markings to indicate pedestrian crossings of drive aisles.*

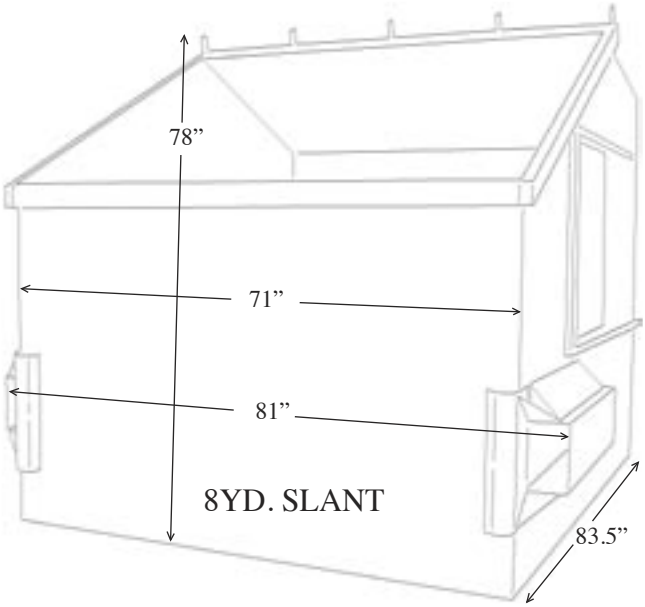
FRONT LOAD CONTAINERS
TOTAL DIMENSIONS

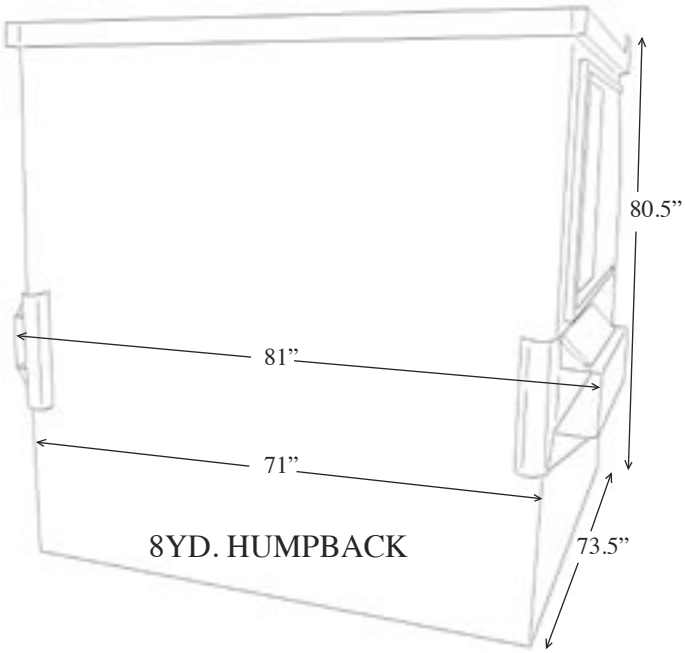


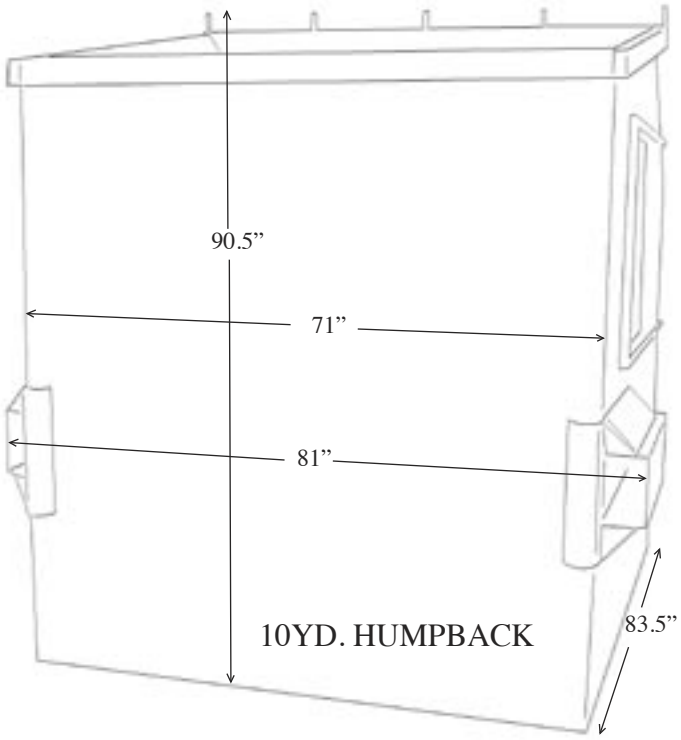


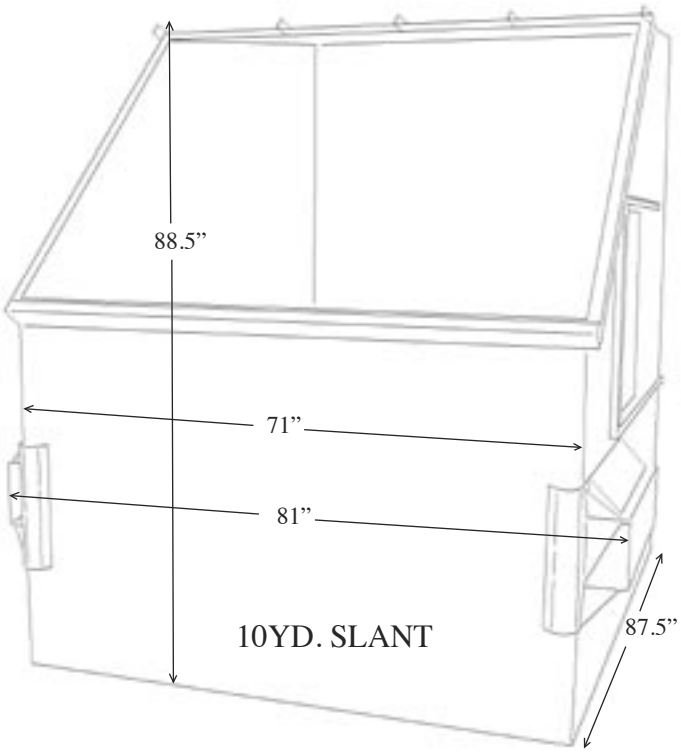












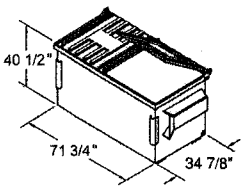
FRONT LOAD SPECIFICATIONS

- FLOOR: 12 GAUGE ON 2YD., 10 GAUGE ON 3YD. - 10YD.
- WALLS: 12 GAUGE
- BOTTOM SKIDS: 2.75” X 2.75” X 10GA. FORMED (2 ON 2YD. - 4YD., 3 ON 6YD. - 10YD.)
- TOP STIFFENERS: 3” X 3.5LB STRUCTURAL CHANNEL (ALL AROUND ON 2YD. - 4YD., FRONT & SIDE ON 6YD. - 10YD.)
- 6YD. - 10YD. REAR STIFFENER: 3 X 3 X 7GA. ANGLE (3 X 4 X 7GA. ANGLE ON 8YD. SLANT)
- LIFT ARM POCKETS: 5” DEEP X 8.25” HIGH X 30” LONG (24” LONG ON 2YD. & 3YD.) X 7 GAUGE (FULLY WELDED)
- POCKET COVERS: 12 GAUGE FULLY WELDED
- POCKET GUIDES: 7GA. FLARED
- BUMPER GUARDS: 16” HIGH, CIRCULAR BENT AROUND FRONT
- GUSSETS: 7 GAUGE
- HINGES: 7 GAUGE X 5/8” DIAMETER HOLE (3 HINGES 2YD. & 3YD.)(5 HINGES 4YD. - 10YD.)
- WINDOW FRAMES: 12 GAUGE FORMED W/ 27 X 27 OPENING
- SINGLE WALL PLASTIC SLIDING SIDE DOORS
- COVERS: (2) 36 X 41 PLASTIC SINGLE WALL ON 2YD. & 3YD.
  (2) 36 X 58 PLASTIC SINGLE WALL ON 4YD. - 10YD.
- 1/2” ZINC COATED THREADED HINGE ROD X 75”
- INSIDE BOTTOM AND CORNER SEEMS FULLY WELDED, WHERE SIDES MUST BE 2PCS. THEY ARE WELDED FULLY ON THE OUTSIDE & STITCHED ON THE INSIDE
- ALL CONTAINERS FITTED WITH RECEPTORS FOR MANUAL LOCK BARS & WINDOW LOCKS

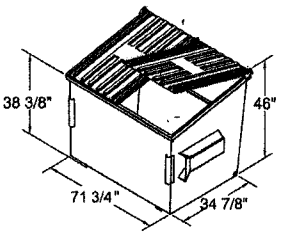
OPTIONS

- MANUAL LOCKING BARS
- WINDOW LOCKS
- AUTO LOCK SYSTEM
- DOCK LID PACKAGE (27 X 60 OPENING ON REAR OF TOP OF 8YD. SLANT & 10YD. SLANT & 10YD. HUMPBACK STYLE)
- CARDBOARD SLOTS (6 X 60 OPENING IN FRONT TOP OF CONTAINER)
- CASTERS FOR 2YD.

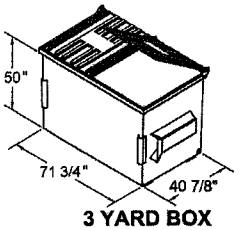
Front Load Containers: Overall Dimensions



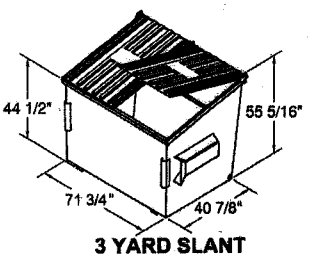
2 YARD BOX



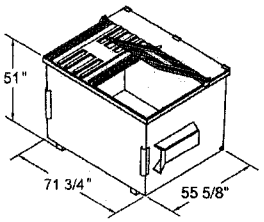
2 YARD SLANT



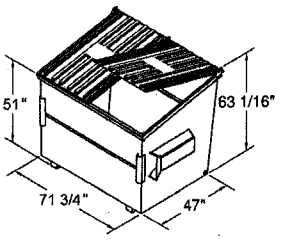
3 YARD BOX



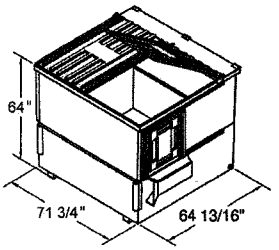
3 YARD SLANT



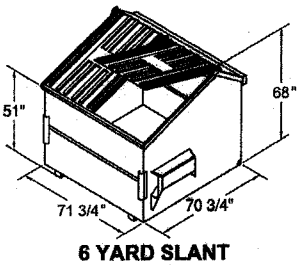
4 YARD BOX



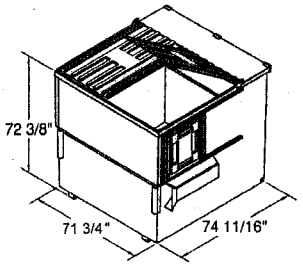
4 YARD SLANT



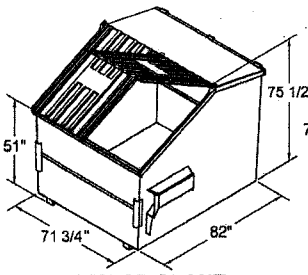
6 YARD BOX



6 YARD SLANT



8 YARD BOX



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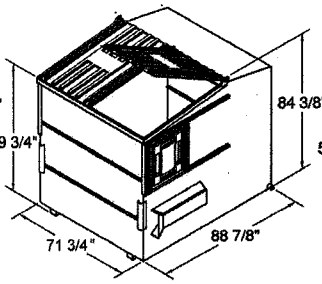
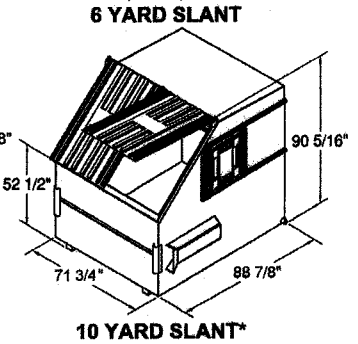


10 YARD BOX*



10 YARD SLANT*

NOTE: 71-3/4" ID width is top dimension – floor width varies by model. * Indicates non-nested containers. Product dimensions may vary.

Model Size	2 YD BOX	3 YD BOX	4 YD BOX	6 YD BOX	8 YD BOX	10 YD BOX*	2 YD SLANT	3 YD SLANT	4 YD SLANT	6 YD SLANT	8 YD SLANT	10 YD SLANT*
Truckload Quantities 48' tr./53' tr.	53/57	34/37	25/28	14/16	13/14	6/7	49/53	31/36	28/31	14/16	13/14	6/7
Plastic Lid Standard	37" x 41" Single Wall	37" x 46" Single Wall	37" x 46" Single Wall	37" x 58" Single Wall	37" x 58" Single Wall	37" x 58" Single Wall	37" x 46" Single Wall	37" x 48" Single Wall	37" x 58" Single Wall	37" x 58" Single Wall	37" x 58" Single Wall	37" x 58" Single Wall
Side Door	N/A	N/A	N/A	30 x 30 Single Wall	30 x 30 Single Wall	30 x 30 Single Wall	N/A	N/A	N/A	N/A	N/A	Optional 30 x 30 Single Wall
Sides	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.
Front	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.
Rear	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.	12 GA.
Bottom	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.
Pockets	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.	10 GA.
Bumpers	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded	7 GA. Rounded
Bottom Channel	(4) Formed Caster Pads	(4) Formed Caster Pads	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels	(4) Formed Caster Pads	(4) Formed Caster Pads	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels	(2) Formed 3 x 4 x 10 GA. Channels
Back Tube	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel
Front Tube	10 GA. Formed G-Channel	10 GA.Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel	10 GA. Formed G-Channel
Side Tubes	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel	12 GA. Formed G-Channel
Drain Plug	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic	1 1/2" Dia. Plastic
Theo. Weight	500#	625#	775#	1010#	1225#	1350#	531#	645#	765#	955#	1160#	1620#

NOTE: For XHD specifications, consult factory. Unless stated otherwise in writing, container sizes indicated on sales literature, invoices, price list, quotations, and delivery tickets are nominal sizes. Actual volume may vary from nominal sizes. *Shipping quantities based on typical 48' and 53' dropdeck trailers. Actual quantities may vary.

FIRE DEPARTMENT NAME	UCONN
Wheel Base:	255
Tire Size:	425
Bumper Extension:	14

OUTSIDE CURB TO CURB TURNING RADIUS

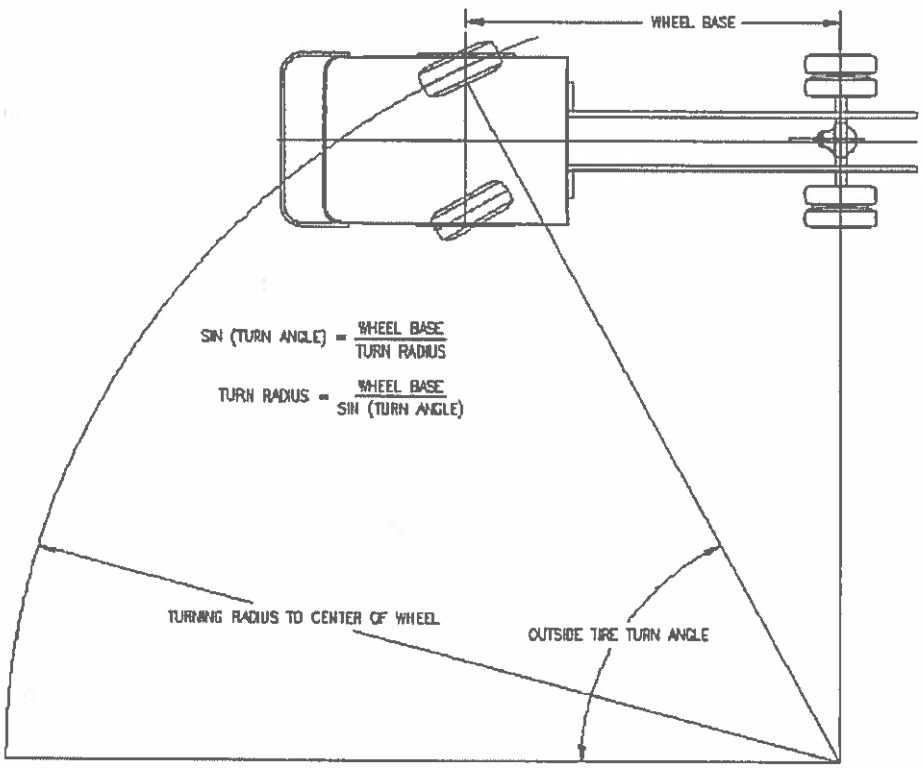
Input wheelbase?	255
Input front wheel INSIDE turn angle?	46
Input offset from kingpin to outside of wheel	16

Turn radius is 37.14 ft.

WALL TO WALL TURNING RADIUS

Input wheelbase?	255
Input length of extension?	14
Input width of extension?	101
Input front wheel INSIDE turn angle?	46
Input radius at front corner?	12

Turn radius is 40.98 ft.



MANSFIELD
CONNECTICUT
Fire & Emergency Services

Town of Mansfield
Mansfield Fire Department

To: Linda Painter, Director of Planning and Development

From: Adam B. Libros, Deputy Chief/Fire Marshal

Date: March 2, 2020

Re: Eagleville Green

I have reviewed the site plan application for the proposed Eagleville Green development. It appears that the fire hydrants and fire apparatus access on the proposed development plans meet our recommendations.

Please be advised that this does not include a review of the CT State Fire Safety Code.

UCONN
UNIVERSITY OF CONNECTICUT

Office of the Executive Vice President for
Administration and Chief Financial Officer
Scott A. Jordan
Executive Vice President
for Administration
and Chief Financial Officer

Via E-Mail Only

March 2, 2020

Paul Aho, Chair
Mansfield Inland Wetlands Agency
Mansfield Planning & Zoning Commission
Town of Mansfield
Aubrey P. Beck Municipal Building
4 South Eagleville Road
Mansfield, CT 06268

RE: **W1612** – Petition of the Mansfield Nonprofit Housing Development Corp for a Multifamily Development at 113-121 S. Eagleville Rd.; **P1364-1** – Petition of the Mansfield Nonprofit Housing Development Corp to Amend the Mansfield Zoning Map; **P1364-2** – Petition of the Mansfield Nonprofit Housing Development Corp for a Site Plan Approval

Dear Chair Aho and Agency/Commission Members:

The University of Connecticut ("UConn") has been on record with the Town of Mansfield ("Town") that it is opposed to development of undergraduate student housing in proximity to the University. However, UConn has a long history of supporting projects that provide real affordable housing opportunities in the Town and that do not focus on undergraduate student housing. Accordingly, I write on behalf of UConn to let you know that UConn does not oppose the above-referenced Petitions proposed by the Mansfield Nonprofit Housing Development Corporation ("Applicant").

These three Petitions present an application that materially differs from the other pending applications in Town that are being pursued as undergraduate student housing in the guise of multifamily housing. The Applicant here is a local non-profit development entity whose mission is to make more affordable housing available in Mansfield. The Applicant also has strong organizational links with the Mansfield Housing Authority ("MHA"), a municipal agency, and MHA is proposed to be the Administrator of the Applicant's Affordability Plan. We also understand that MHA received substantial predevelopment funding for this project from the Connecticut Department of Housing.

Eagleville Green is to be located in the narrowly-prescribed geographic area to which the South Eagleville Road – Housing Opportunity Zoning District applies, and is of modest size. It is proposed as a mixed-income rental housing development, with an assisted housing component, that we hope will be available to UConn graduate students, faculty and staff.

352 MANSFIELD ROAD, UNIT 1122
GULLEY HALL
STORRS, CT 06269-1122
PHONE 860.486.3455
www.evpacfo.uconn.edu

An Equal Opportunity Employer

We appreciate this opportunity to comment on the above-referenced Petitions.

Sincerely,

Scott A. Jordan
Executive Vice President for Administration and Chief Financial Officer

Encl.
CC: John Carrington, Interim Town Manager, Town of Mansfield (via E-Mail)
Robert Corbett, UConn
Robert Sitkowski, UConn

352 MANSFIELD ROAD, UNIT 1122
GULLEY HALL
STORRS, CT 06269-1122
PHONE 860.486.3455
www.evpacfo.uconn.edu

An Equal Opportunity Employer

Linda M. Painter

From: Kathy Dorgan <dorgan@kdorgan.net>
Sent: Monday, January 13, 2020 8:29 PM
To: Linda M. Painter
Cc: Jennifer S. Kaufman; Newton, Robert; Kathy Ward (wardgervino@gmail.com); Hannah Rudd; Edith Allison
Subject: Eagleville Green Revised Schedule

Linda -

This email is to confirm that the Mansfield Nonprofit Housing Development Corporation agrees and consents to extending the hearing and review process for our three applications for the Site Plan, Inlands Wetlands and Map Amendment for Eagleville Green to April 10, 2020.

Thank you for your consideration, Kathy

Kathleen A. Dorgan, FAIA, LEED-AP
Principal
Dorgan Architecture & Planning
10 Eastwood Road
Storrs, CT 06268
01.860.487.6740 (o)
01.518.469.6464 (c)

Linda M. Painter

From: Edith Allison <edith.e.allison@gmail.com>
Sent: Thursday, February 27, 2020 1:24 PM
To: Linda M. Painter
Cc: Town Mngr; Kathy Ward; Kathy Dorgan; Rebecca Fields; Hannah Rudd
Subject: Eagleville Green project - traffic concerns

Dear Ms Painter,

We are writing as board members of the MNHDC concerning our Eagleville Green project and are addressing you as a representative of the Town of Mansfield.

We want to let you know about feedback we received from neighbors of our project at our recent Open Houses. One of the greatest concerns voiced was about the additional traffic that may be generated on Route 275 (South Eagleville Road) and the impact it may have on the neighborhood.

There are two areas of specific concern. The first is the location of the Eagleville Green driveway exit. As currently proposed by the town, the driveway is one way but exits directly across from three private driveways. We are told that getting out on Route 275 is already difficult and neighbors anticipate it will become that much harder.

The second concern is the speed people travel on Route 275 and Maple Road. It is way too fast much of the time especially considering the lack of sight lines in some areas and the lack of traffic lights to slow things down.

We feel that it is important that we bring these concerns to your attention and would welcome the opportunity to discuss these issues if that would be helpful.

Best,

Kathy Ward, President, MNHDC
Edith Allison, Board Member, MNHDC

DRAFT SPECIAL MEETING MINUTES

Members Present:	J. Brown; R. Favretti, J. Lenard (4:02 p.m.), T. Wrubel
Members Absent:	P. Miniutti
Staff Present:	L. Painter, Director of Planning and Development; J. Kaufman, Senior Planner/Inland Wetlands Agent; D. Dilaj, Acting Director of Public Works/Town Engineer

CALL TO ORDER AND ROLL CALL

The meeting was called to order at 4:00 p.m. Members present were Brown, Favretti, Lenard and Wrubel.

APPROVAL OF MINUTES

Wrubel MOVED, Brown seconded approval of the October 2, 2018 meeting minutes as presented. Motion PASSED unanimously (4-0-0).

NEW BUSINESS

Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multi-family residential development at 113 to 121 So. Eagleville Road (Parcel I.D. 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2)

J. Lenard arrived at 4:02 p.m.

Painter provided an introduction to the project, noting that as an applicant filed under Sec. 8-30g, C.G.S., different legal standards apply to the review. Accordingly, staff has been distinguishing between recommendations that are needed to address a public health/safety issue versus those that the applicant is encouraged to consider.

Kathy Dorgan presented an overview of the proposed development on behalf of the applicant and responded to questions from committee members. While the committee expressed overall support for the proposed development, they provided the following suggestions to the applicant.

- Members liked the diversity of architectural design and suggested the applicant consider:
    - Use of wider trim boards, particularly on elevations visible from road, to reduce the scale of the buildings
    - Use of standing seam roofs
- Members generally supported the site layout from a landscape architecture standpoint, and suggested the applicant consider the following with regard to plant choices. R. Favretti noted that he would provide more detailed suggestions in a written memo.

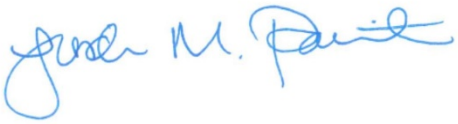
- Use of more native plants as opposed to “natively adapted”
- Use of plantings of varying heights adjacent to buildings to reduce scale of buildings
- Use of more evergreen/conifer plantings as opposed to deciduous

- Members had several questions related to the proposed stormwater design, particularly with regard to the depth and functionality of the proposed detention pond/rain garden. Different options were suggested, including exploring the potential to relocate the stormwater pond closer to the wetland and the use of permeable pavement to reduce the need for a detention pond.

ADJOURNMENT

The meeting adjourned at 5:11 p.m.

Respectfully Submitted:



Linda M. Painter, AICP
Director of Planning and Development

BSC GROUP PROPOSAL FOR EAGLEVILLE GREEN PROJECT – LANDSCAPE ARCHITECTURAL COMMENTS

General Comments

The entire project has been well laid out in concept, meaning that the buildings are placed in a as pleasing a manner as the site would allow. The landscape, in general, supports this concept. The following comments deal with the details of the project related to how well the landscape plan supports, or does not support, the conceptual layout plan.

Details

It is obvious that one objectives of the landscape plan was to use native plants, but many of the plants selected do not support this objective, and as expressed in the plan, do not show such things as the spread of the plant. For example, the white oak suggested shows a spread of 20 feet, while that tree spreads to double that width. Similar comments may be made for several other of the trees, the American Linden being a prominent example. Care should be taken in this regard because this sort of error can lead to law suits in the future.

Landscape plantings planted surrounding the buildings, as foundation plantings to "tie" the buildings, visually to the ground, are heavily designed with deciduous plants. What happens in winter when one can see through such plants? More evergreens, or thick growing deciduous plants, should be used.

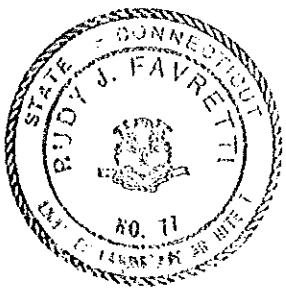
All of the planting plans are drawn to the scale of one inch = twenty feet. This is a scale that leads to many problems and law suits because of the confusion it causes. This can result in long-term delays.

Plan L-1.1 does not have most of the plants labeled.

Rain gardens are useful features, and are often attractive in a landscape; I highly approve of them where needed. However the one proposed at the main pedestrian entrance to this site seems excessively large and deep (I have not taken time to do any calculations). Also that space is quite small site-wise and formal in character. A smaller rain garden would be appropriate if designed as a sculptural feature. Furthermore, some of the plants used in the plantings for the rain garden are not appropriate. For example, *Cornus racemosa* requires a drier soil for the best results.

Rudy J. Favretti, FASLA
Connecticut License 77

P.O. Box 403
Storrs, CT 06268



Traffic Authority
January 22, 2020; 9:00am

Conference Room B
Audrey P. Beck Municipal Building

DRAFT MINUTES

Members Present: J. Carrington, L. Painter, B. LaVoie, D. Dilaj, F. Raiola

Members Absent: K. Timme

Guests Present: K. Dorgan

The meeting was called to order at 9:02am by John Carrington.

Approval of Minutes

December 18, 2019 Meeting Minutes – Motion made by D. Dilaj and seconded by F. Raiola to approve the minutes. Motion passed unanimously.

New Business

a. **Mansfield Neighborhood Non-Profit Housing Development Corporation – 42-unit Multi-Family Development on 113-121 South Eagleville Road (L. Painter) – L. Painter showed the plans for the proposed development. J. Carrington requested comments in regards to traffic for the Planning & Zoning Commission. F. Raiola would like the driveway to be one way with the entrance on the west end for emergency vehicles and garbage trucks. K. Dorgan said the original plan was a one-way driveway. Motion made D. Dilaj and seconded by B. Lavoie to recommend the development have a one-way driveway.**

Adjournment
Motion to adjourn at 9:24am made by D. Dilaj and seconded by B. LaVoie.

Respectfully submitted,
Sheri E. Baczanski
Public Works Specialist

Date: 1/8/2020

Water System Advisory Committee

Request for Water Service Review

Pursuant to the agreement between the Town of Mansfield and the Connecticut Water Company (CWC), requests for water service that involve a water main extension, new use, or modification to an existing use that requires a change in zoning or approval by a local land use commission shall be referred to the Water System Advisory Committee (WSAC) for review.

Project:

Name: Eagleville Green

Location: 113-121 South Eagleville Road, Mansfield

Description: 42 unit multi-family development pursuant to Sec. 8-30g

Referral to WSAC:

☒Project referred by Mansfield Department of Planning and Development

Basis for Referral:

☐Water main extension

☒Requires local land use commission approval for:

☐Rezoning ☐Site Plan ☒Special Permit ☐Subdivision ☐Other

Requested timeframe for WSAC review: 1/15/2020

WSAC has reviewed and has the following comments:

☒Town Planner confirmed consistency with Mansfield Plan of C&D as required by permit

☐Any Concerns or Recommendations for Source Protection Measures

☐Any Recommended Best Management Practices Related to Water Use for project

☐Any Recommended Water Conservation Measures for Project

☒Other Incorporation of water conservation, efficiency and sustainability measures as described by Kathy Dorgan, Architect

Date: 1/10/2020

Chair: X M.P. Reich vice chair

☒Recommend

☐More Information Needed

MANSFIELD
CONNECTICUT

Town of Mansfield
Economic Development Commission

MEMO

To: Planning and Zoning Commission

CC: John Carrington, Interim Town Manager; Cynthia van Zelm, Executive Director, Mansfield Downtown Partnership, Inc.; Linda Painter, Director of Planning and Development; Mansfield Town Council

From: Steven Ferrigno, Chair

Date: February 20, 2020

Subject: Eagleville Green

The Mansfield Economic Development Commission (EDC) has reviewed the Mansfield Nonprofit Housing Development Corporation's application for the Eagleville Green mixed-family residential project and wanted to submit a letter in favor of the project. After carefully reviewing the application and site plan we feel this project would be a valuable addition to our town and support the goals of the EDC for the following reasons:

- The location of the project is in conformity with the area. As a higher-density project, it has minimal impact on existing neighborhoods and actually abuts another apartment complex as well as Mansfield senior housing and the Mansfield Senior Center which also has a higher density than many of our more rural neighborhoods.
- It is located near Downtown Storrs and is connected to Downtown Storrs via sidewalks and a bus stop. This should facilitate access without the need for every resident to use a car for transportation. Focusing development near developed areas such as our Downtown maximizes the benefits of a downtown without necessitating additional vehicular traffic.
- Eagleville Green adds diversity to our housing stock. One consistent issue we have seen with regard to our housing stock is there isn't enough diversity and that much of it is older or dated, or in need of renovation. This project provides diversity, not only with its mix of affordable and market-rate rents but also with its mix of unit sizes (one, two & three-bedroom units).
- It continues to add and diversify our Grand List which the EDC sees as a major priority. While the majority of the Grand List is made up of taxes on single family residences, this project (while still residential) would help to spread the burden across a different property type.

Thank you for the opportunity to express our continued support for smart development that accommodates a variety of uses and income levels, and contributes to the tax base of Mansfield. We hope you are as excited about this project and its benefits for our town as we are.

MANSFIELD INLAND WETLAND AGENCY

ABUTTER NOTIFICATION FORM

(must be sent by certified mail, return receipt requested)

Pursuant to Mansfield's Inland Wetland Agency notification requirements, abutting property owners are hereby notified of a wetland application pending before the Inland Wetland Agency. The complete file for this application is available for review in the Planning Office. Questions regarding the application or application review process may be addressed by calling the Planning Office at (860) 429-3330 or emailing at www. PlanZoneDept@mansfieldct.org

I. Date Application was Submitted: November 4, 2019

II. Location of Proposal: 113-121 South Eagleville Road, Mansfield, CT

III. Applicant: Mansfield Housing Authority

IV. Owner: Mansfield Housing Authority

V. Description of Proposed Activity

The proposed project is located on approximately 5.2 acres of property. The property generally consists of the construction of multi-story 42 mixed-housing units in 7 buildings, surface parking, and other "typical" site improvements to support the proposed building program. The proposed Site access is via two driveways intersecting South Eagleville Road.

VI. Map: (Attached is a map depicting proposed activity)

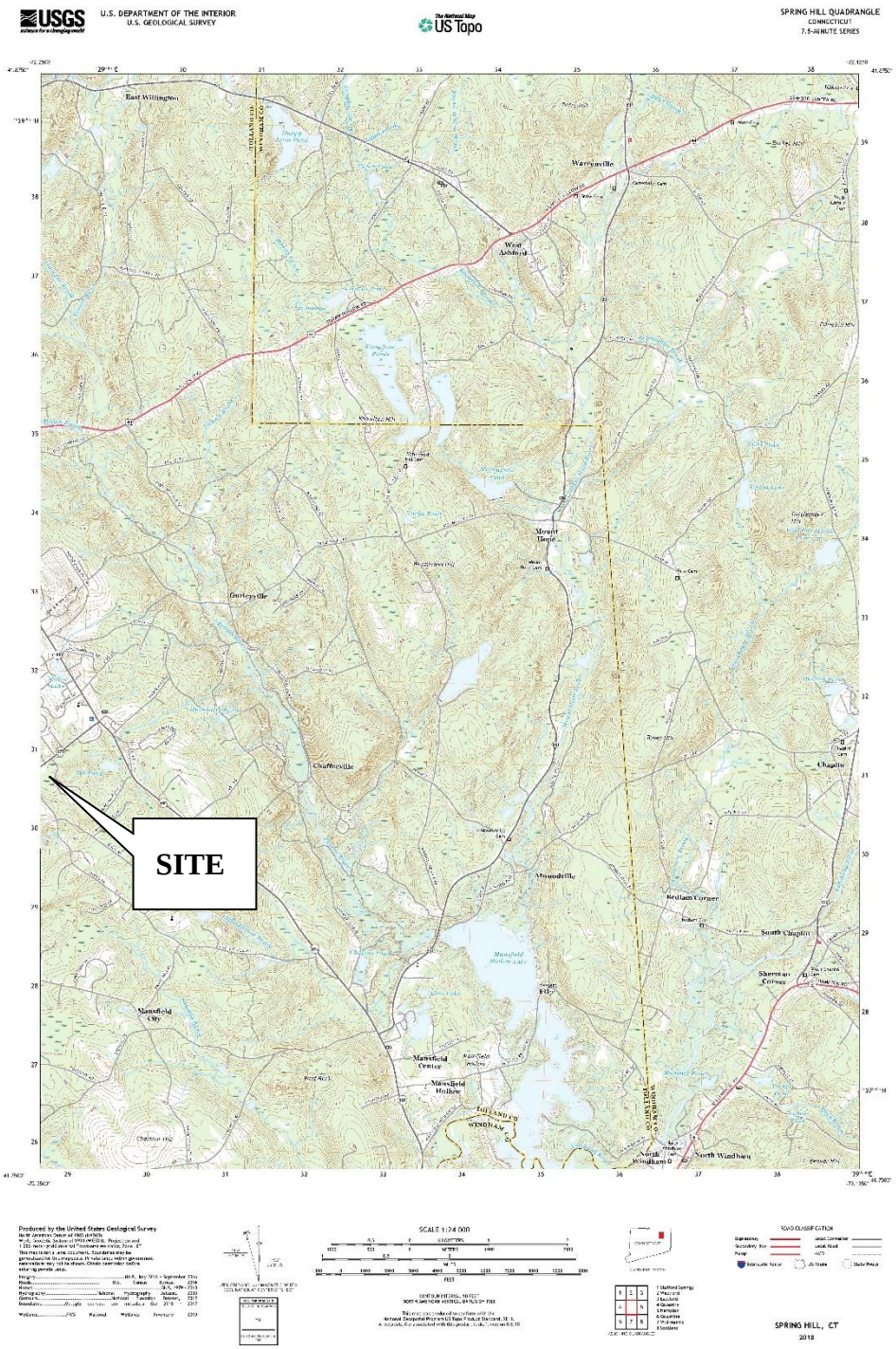
Figure 1 – Site Location Map

Eagleville Green

113-121 South Eagleville Road

Mansfield, Connecticut

Scale = 1:24,000



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- Adult Signature Required $ $0.00
- Adult Signature Restricted Delivery $

Postage $0.55

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0133 06

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NOV 25 2019

11/25/2019

Harold & Edith Posselt
108 South Eagleville Road
Mansfield, CT 06268

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SECTION ON DELIVERY

Posselt

Printed Name) C. Date of Delivery

Posselt

ess different from item 1? ☐ Yes
elivery address below: ☐ No

DEC 2 2019 OFFICE

T 06268

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☐ Addressee

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☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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PORTLAND, ME 04101

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- Return Receipt (electronic) $ $0.00
- Certified Mail Restricted Delivery $ $0.00
- Adult Signature Required $ $0.00
- Adult Signature Restricted Delivery $

Postage $0.55

Total Postage and Fees $6.85

0133 06

Postmark Here

NOV 25 2019

11/25/2019

Connecticut Natural Gas
One City Center 5th Floor
Portland, ME 04101

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SECTION ON DELIVERY

Printed Name) C. Date of Delivery

11/27/19

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WATERBURY, CT 06705

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- Certified Mail Restricted Delivery $ $0.00
- Adult Signature Required $ $0.00
- Adult Signature Restricted Delivery $

Postage $0.55

Total Postage and Fees $6.85

0133 06

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NOV 25 2019

11/25/2019

CT Liberty Group LLC
1 Interstate Lane 2nd Floor
Waterbury, CT 06705

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

HIS SECTION ON DELIVERY

y Van

(Printed Name) C. Date of Delivery

ldress different from item 1? ☐ Yes
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PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

7017 0190 0000 9101 7728

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STORRS MANSFIELD, CT 06268

OFFICIAL USE

Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $ $0.00
- Return Receipt (electronic) $ $0.00
- Certified Mail Restricted Delivery $ $0.00
- Adult Signature Required $ $0.00
- Adult Signature Restricted Delivery $

Postage $0.55

Total Postage and Fees $6.85

0133 06

Postmark Here

NOV 25 2019

11/25/2019

Jay Rueckl & Julie M Brown
128 South Eagleville Road
Mansfield, CT 06268

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

S SECTION ON DELIVERY

Printed Name) C. Date of Delivery

11-27-19

ress different from item 1? ☐ Yes
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PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

Watershed or Aquifer Area Project Notification Form

REQUIREMENT:

Within seven days of filing, all applicants before a municipal Zoning Commission, Planning and Zoning Commission, Zoning Board of Appeals or Inland Wetlands Commission for any project located within a public water supply aquifer or watershed area are reguired by Public Act No. 06-53 of the CT General Statutes to notify The Commissioner of Public Health and the project area Water Company of the proposed project by providing the following information.

To determine if your project falls within a public water supply aquifer or watershed area visit the appropriate town hall and look at their *Public Drinking Water Source Protection Areas* map. If your project falls completely within or contain any part of a public water supply aquifer or watershed you are required to complete the following information.

Note: You will need information obtained from the *Public Drinking Water Source Protection Areas* map located in the appropriate town hall to complete this form.

Step 1: Have you already notified the CT Department of Public Health (CTDPH) of this project?

☑ No, Go to Step 2

☐ Yes, I have notified DPH under a different project name - Complete steps 4-6

☐ Yes, same name different year - Notification Year ____ Complete steps 4-6

Step 2:

1. Name of public water supply aquifer your project lies within: N/A
2. Name of the public water supply watershed your project lies within: PWSID 1630011
3. Public Water Supply Identification number (PWSID) for the water utility: CT

Step 3: For 1-5 Check all that apply

1. My project is proposing:

☐ Industrial use; ☐ Commercial use; ☐ Agricultural use; ☑ Residential use;

☐ Recreational use; ☐ Transportation improvements; ☐ Institutional (school, hospital, nursing home, etc.);

☐ Quarry/Mining; ☑ Zone Change, Please Describe: ____

☐ Other, Please describe: ____

2. The total acreage of my project is:

☑ Less than or equal to 5 acres ☐ Greater than 5 acres

3. My project site contains, abuts or is within 50 feet of a:

☑ Wetland; ☐ Stream; ☐ River; ☐ Pond or Lake

4. Existing use of my project site is:

☐ Grassland/meadow; ☐ Forested; ☐ Agricultural; ☐ Transportation; ☐ Institutional (school, hospital, nursing home, etc.); ☑ Residential; ☐ Commercial; ☐ Industrial; ☐ Recreational; ☐ Quarry/Mining

☐ Other Please Describe:

5. My project will utilize:

☐ septic system; ☑ existing public sewer; ☐ new public sewer; ☐ agricultural waste facility;

☐ existing private well; ☐ new private well; ☐ existing public water supply;

☐ new public water supply, if new have you applied for a certificate of public convenience and necessity from DPH? ☐ Yes ☐ No

6. My project will contain this percentage of built up area (buildings, parking, road/driveway, pool): ☐ Less than or equal to 20% ☑ Greater than 20% to 50% ☐ Greater than 50%

Step: 4 Applicants Contact Information:

Name: Mansfield Nonprofit Housing Dev Corp

E-mail address: wardgervino@gmail.com

Telephone: (860) 933-3506

Fax number:

Step 5: Please provide the following if available:

Project name: South Eagleville Rd Housing Opportunity Zone

Project site address: 113-121 South Eagleville Road

Town: Mansfield

Project site nearest intersection:

Project site latitude and longitude:

E-mail completed form to dph.swpmail@ct.gov

Town File Number: WEB-42708917

NOTIFICATION TO WINDHAM WATER WORKS

For Mansfield Projects within the Willimantic Reservoir Watershed

Sections 8-3i and 22a-42f of the State Statutes require applicants to provide to all water companies written notice of an application, petition, request or plan if the proposed project is located within the watershed of their public drinking supply. **The applicant must mail such notice within seven (7) days of the date of the application, by certified mail, return receipt requested.** To meet this requirement, this form shall be used by applicants in Mansfield for projects within the Willimantic Reservoir Watershed. To determine if a project is within the reservoir watershed, please consult map(s) on file in the Planning Office. **Failure of an applicant to comply with this statutory requirement may be grounds for a claim of procedural error ad a successful legal challenge of the decision rendered on the application.**

Application Submitted to:
(Check one or more)

- [x] Inland Wetlands Agency
- [x] Planning and Zoning Commission
- [ ] Zoning Board of Appeals

Type of Application:

- [x] Zone Change
- [ ] Subdivision
- [ ] Variance
- [ ] Special Exception/Permit
- [x] Inland Wetland/Watercourses License
- [ ] Other (Describe)

Applicant Mansfield Non-Profit Housing Dev Corp
(please **PRINT**)

Signature

Street Address 309 Maple Road

Telephone (860) 487-0693

Town Storrs, CT

Zip code 06268

Project Street Location/Nearest Utility Pole 113-121 S. Eagleville Rd, Storrs, CT

Contact Person Rebecca Fields

Telephone (860) 487-0693 x5

Brief description of application (For example: 10 lot subdivision of single family homes with on-site septic systems and wells)

New housing development that includes 42 units within 7 new buildings and the renovation of one existing building. New access drives and off-street parking to support the units. Connections to public water and sewer facilities.

Public Hearing Date: _____
(If Applicable)

Commission/Agency Meeting Date(s) 12/3/2019

Enclose a copy of the application submitted to the Town and a full set of project plans. Mail this completed form by certified mail, return receipt requested, to:

Windham Water Works-Superintendent
174 Storrs Road
Mansfield Center, CT 06250

CHRONICLE MEDIA LLC
P. O. BOX 229
WILLIMANTIC CT 06226
(860)423-8466
Fax (860)423-7641

ORDER CONFIRMATION

Salesperson: Laurie Moulthrope Printed at 01/10/20 12:11 by lmoul-cm

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Acct #: 3141 Ad #: 173397 Status: New

MANSFIELD PZC/IWA
ATTN: EMMY GALBRAITH
4 SOUTH EAGLEVILLE RD.
STORRS CT 06268

Start: 01/11/2020 Stop: 01/16/2020
Times Ord: 2 Times Run: ***
LEG 2.00 X 4.61 Words: 157
Total LEG 9.22
Class: 0005 LEGAL NOTICES
Rate: LEG Cost: 483.12
Affidavits: 1

Contact: EMMY GALBRAITH
Phone: (860)429-3330
Fax#: (860)429-6863
Email: GalbraithEA@mansfieldct.org
Agency:

Ad Descrpt: LEGAL NOTICE THE MANSFIEL
Given by: *
P.O. #:
Created: lmoul 01/10/20 12:03
Last Changed: lmoul 01/10/20 12:05

COMMENTS:
COPIED from AD 172936

PUB	ZONE	EDT	TP	RUN DATES
CHR	A	97	S	01/11,16

AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

Name (print or type) Name (signature)

(CONTINUED ON NEXT PAGE)

CHRONICLE MEDIA LLC
P. O. BOX 229
WILLIMANTIC CT 06226
(860)423-8466
Fax (860)423-7641

ORDER CONFIRMATION (CONTINUED)

Salesperson: Laurie Moulthrope Printed at 01/10/20 12:11 by lmoul-cm

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Acct #: 3141 Ad #: 173397 Status: New

LEGAL NOTICE

The Mansfield Planning and Zoning Commission will hold the following Public Hearings on Tuesday, January 21, 2020, in the Council Chamber, A.P. Beck Bldg., 4. S. Eagleville Rd., Mansfield, CT to hear comments regarding the following applications;

6:35 PM Application of the Mansfield Non-Profit Housing Development Corporation (owner/applicant) to amend the Zoning Map to change the zoning of property located at 113-121 South Eagleville Road (Parcel ID 16.57.5) from Rural Agriculture Residence 90 (RAR-90) to South Eagleville Road Housing Opportunity Zone (SER-HO) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-1)
6:40 PM Site plan application of the Mansfield Nonprofit Housing Development Corporation (owner/applicant) for a 42 unit multifamily residential development at 113-121 So. Eagleville Road (Parcel ID 16.57.5) pursuant to Sec. 8-30g, C.G.S. (PZC File 1364-2)

No information from the public shall be received after the close of the Public Hearings. Additional information is available in the Planning Office.

P. Aho, Chair
V. Ward, Secretary

MEMO

To: Planning and Zoning Commission

From: Linda Painter, AICP, Director

Date: March 16, 2020

Subject: Stone Hill (fka Echo Grange)
Benjamin Lacey (owner/applicant)
483 Storrs Road-Site Improvements
Mansfield Center Historic Village

BACKGROUND

On August 5, 2019, the PZC reviewed site improvements at the former Echo Grange property (483 Storrs Road) for consistency with the Historic Village provisions of Article 10, Section J. of the Zoning Regulations. Those improvements included an extension of a paved driveway up the hill to an area historically used for parking. At that time, Ben Lacey, property owner, indicated that a gravel surface would be provided for the parking area on the south side of the building. With the completion of renovations and the recent opening of the new gathering space called Stone Hill, Mr. Lacey is requesting approval to pave the area that was originally proposed to be gravel.

A copy of the revised site plan was included with the application; however, Mr. Lacy has further revised his plans to reduce the total area of proposed paving as shown in the updated site plan provided. The area shown in red would remain gravel and the total proposed new paving area would be approximately 7,100 square feet.

COMPLIANCE WITH ZONING REQUIREMENTS

Nonconforming Use/Site Provisions

As a nonconforming site, maintenance, repairs, and reconstruction of site improvements are authorized by Article 9, Section C provided the degree of nonconformity is not increased and no new nonconformities are created. Section C.2.b specifically requires that the expanded or enlarged portion of the building, structure or site improvement not extend further into the required side or rear yards and is not closer to the front lot line. While the parking area was historically unimproved, the proposed paving is consistent with the plan originally shown as gravel when the Commission originally reviewed site improvements in August 2019.

Given the dimensions of the proposed area to be paved, staff requested clarification from Mr. Lacy as to whether any of the paved area would be used for parking. Pursuant to email communications on March 15, 2020, Mr. Lacey indicated the paved area would only be used for circulation, not parking.

Stormwater Requirements

The applicant has indicated that the total new paving on the property would be 7,100 square feet, which falls below the 10,000 square foot threshold at which the requirements of Article 6, Section B.4.t, Stormwater Management would apply. While most of the stormwater will be directed to the main parking area in front of the building and the stormwater system that was installed per CTDOT, the applicant is strongly encouraged to use one or more of the Low Impact Development Practices identified in Section B.4.t.5 to reduce the hydraulic connectivity of impervious surfaces, increase runoff travel time, and increase groundwater recharge.

HISTORIC VILLAGE REQUIREMENTS

In addition to the nonconformity requirements of Article 9, the property is located within the Mansfield Center Historic Village and is therefore subject to the requirements of Article 10, Section J. Section J.2 specifies that "*all exterior construction within the ten (10) historic villages, including but not limited to new primary or accessory structures, building additions, swimming pools, signs, and site work or site improvements . . . shall comply with the provisions of the Special Historic Village Area Review Criteria."*

Approval Criteria

According to Article 10, Section J.2, the following approval criteria apply to all exterior construction involving a property located within a Historic Village:

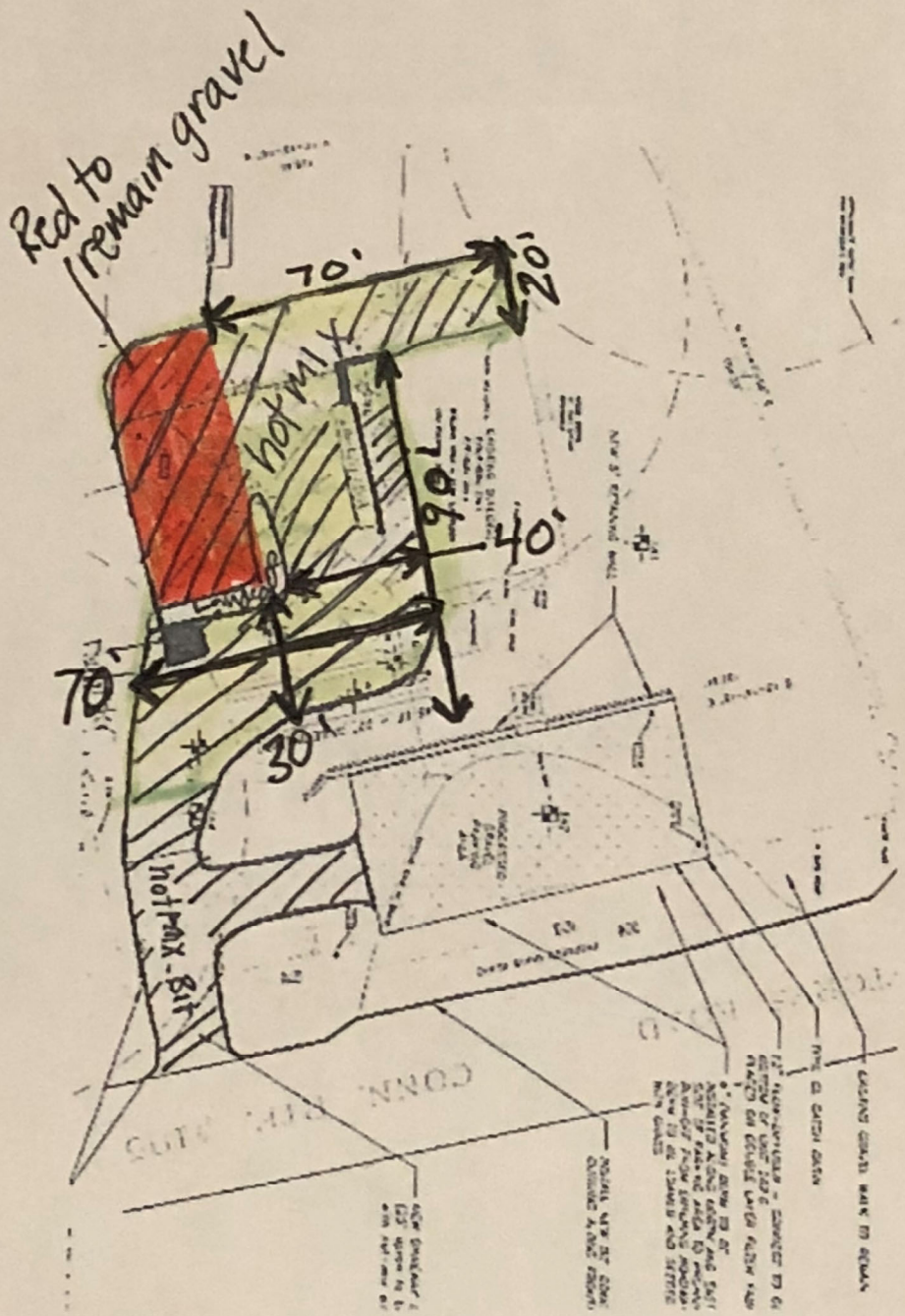
- New buildings and site improvements shall be designed to fit the individual characteristics of their particular site and village neighborhood. Careful consideration shall be given to promoting compatibility in building size, architectural form, massing, detail, and materials.
- All structural elements shall be in scale with and proportionate to adjacent buildings and other visual structures.
- Overall spacing between roadside structures within the village area shall be maintained.
- Setbacks from roadways and property lines shall be consistent with neighboring structures within the village areas.
- The height of new buildings shall be consistent with neighboring structures within the village area. One and one-half to two and one-half story structures are typical in Mansfield's historic village areas. Through the use of variations in building height, roof line, and grade definition, the perceived high of buildings can be influenced.
- Building and site improvements shall be designated to avoid impacts on significant trees, stone walls, scenic views and vistas and other features that contribute to a historic village area.
- Traditional building materials, such as wood siding and brick that reflect Mansfield's architectural tradition shall be used. Modern materials, such as fiber, cement siding that have the same visual characteristics as wood are considered acceptable.

SUMMARY

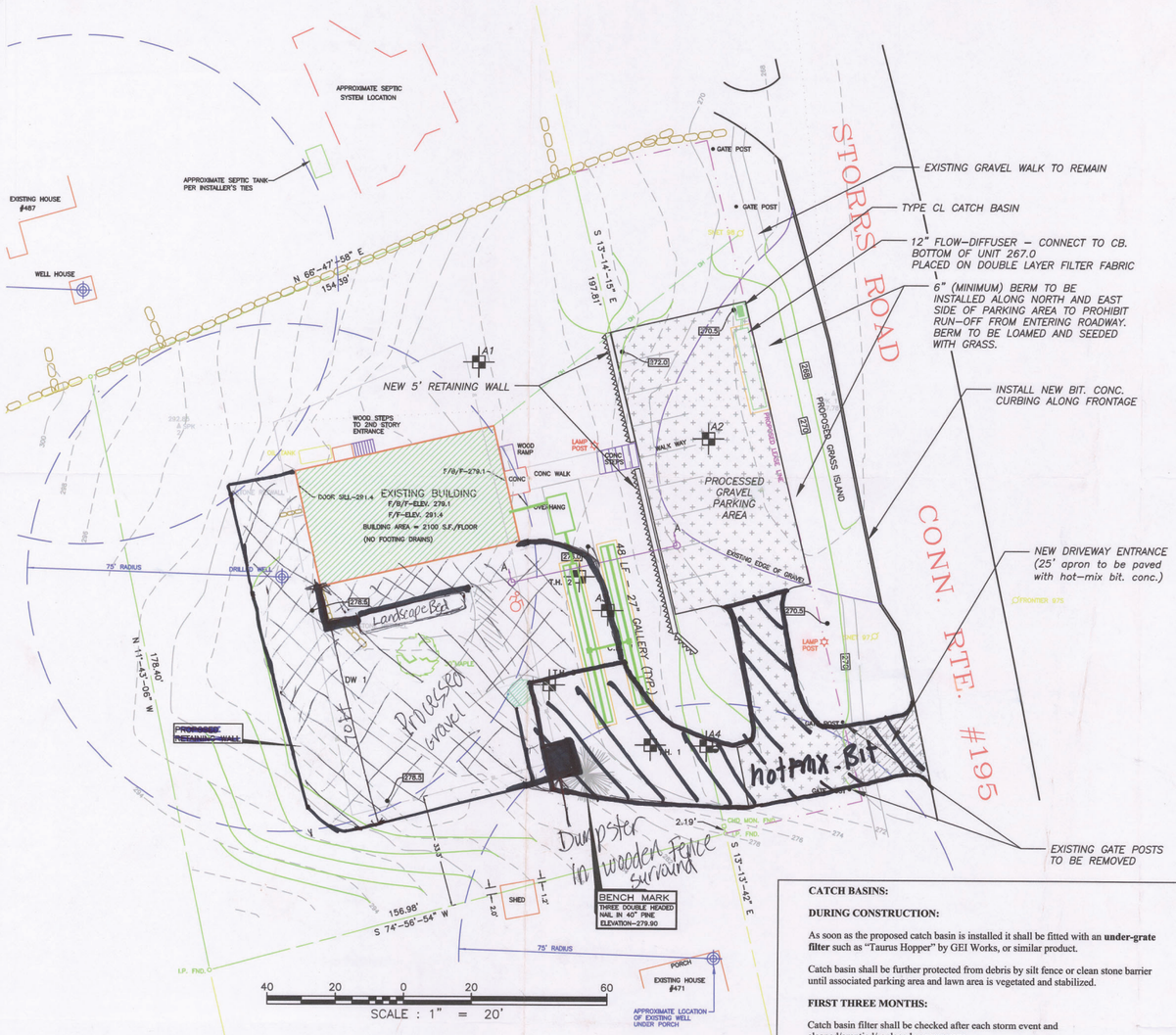
The applicant has indicated that the need for the additional paving is to create a safer experience for visitors, improve the longevity of the driveway/parking surface and reduce tracking of mud and debris into the building. If the Commission determines that the proposed paving area meets the Historic Village criteria established in Article 10, Section J, the following motion would be in order:

MOVE to find that the proposed site improvements at 483 Storrs Road comply with the Special Historic Village Area Review Criteria established in Article 10, Section J.2 based on the information provided by the applicant. The applicant is strongly encouraged to employ one or more of the Low Impact Development Practices identified in Article 6,Section B.4.t.5 of the Zoning Regulations to reduce the hydraulic connectivity of impervious surfaces, increase runoff travel time, and increase groundwater recharge.

483 Storrs Rd



Total SQFt 7,100



CATCH BASINS:

DURING CONSTRUCTION:

As soon as the proposed catch basin is installed it shall be fitted with an **under-grate filter** such as "Taurus Hopper" by GEI Works, or similar product.

Catch basin shall be further protected from debris by silt fence or clean stone barrier until associated parking area and lawn area is vegetated and stabilized.

FIRST THREE MONTHS:

Catch basin filter shall be checked after each storm event and cleaned/emptied/replaced as necessary.

REGULAR MAINTENANCE:

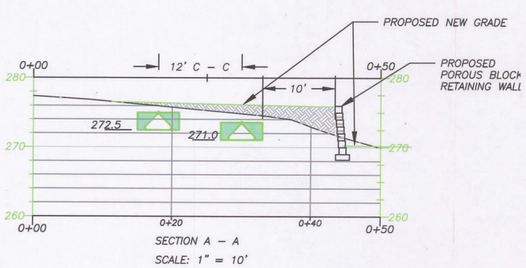
Once site has been fully stabilized catch basin filter shall be checked after every significant storm event and on a regular basis such as quarterly. Spare under-drain shall be maintained on site for immediate replacement as necessary.

INFILTRATION SYSTEMS:

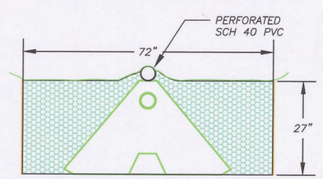
The infiltration system is equipped with manhole access allowing visual inspection and, if necessary, maintenance operations. System should be monitored on a monthly basis during construction operations, and yearly upon full stabilization of the site. The bottom of the infiltration system consists of two layers of geo-fabric. If sediment accumulates on the fabric to a depth of two inches or more, the systems should be cleaned with high pressure JetVac or similar means.

WINTER MAINTENANCE:

Pretreatment for expected ice conditions is recommended, and any sand use is strongly discouraged.



SECTION A - A
SCALE: 1" = 10'



27" GALLERY (H20 LOADING)
PIPE LAID ON TOP OF STONE

"SELECT" FILL SPECIFICATION:

"Select Fill" placed within and adjacent to proposed leaching areas shall be comprised of clean sand, or sand and gravel, free from organic matter and foreign substances. The fill material shall meet the following requirements unless otherwise approved by a professional engineer for use within the leaching area:

1. *The select fill shall contain no material larger than three (3) inches.*
2. *Up to 45% of the dry weight of the representative sample may be retained on the #4 sieve. (This is the gravel portion of the sample).*
3. *The material passing the #4 sieve is then reweighed and the sieve analysis started.*
4. *The fill less the gravel shall meet the following gradation:*

	PERCENT PASSING	
SIEVE SIZE	WET SIEVE	DRY SIEVE
#4	100	100
#10	70-100	70-100
#40	10-50*	10-75
#100	0-20	0-5
#200	0-5	0-2.5

** Percent Passing the #40 sieve can be increased to no greater than 75% if the percent passing the #100 sieve does not exceed 10% and the #200 sieve does not exceed 5%.*

STONE AGGREGATE means broken stone, crushed stone, or screened gravel meeting the DOT Form 816 Spec. M.01.01 for No. 4 stone (as shown below or latest specification). Stone aggregate (previously "one-inch broken stone") shall be free of silt, dirt or debris, and shall show a loss of abrasion of not more than 50% using AASHTO Method T-96.

SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
2-INCH	100
1.5-INCH	90-100
1-INCH	20-55
3/4-INCH	0-10
3/8-INCH	0-5
#40	0-3
#200	0-1.5

The resposibility for the preparation of a leaching area utilizing "select material" is that of the licensed installer. The installer shall take the necessary steps to protect the underlying naturally occurring soils from overcompaction and siltation once exposed. Select fill shall extend a minimum of five (5) feet laterally in all directions beyond the outer perimeter of the leaching system.

SEPTIC SYSTEM NOTES:

- *SEPTIC TANK SHALL BE A MINIMUM 1250 GAL. TWO-COMPARTMENT TANK, WATERTIGHT, AND PROPERLY BAFFLED AT THE INLET AND OUTLET. TANK OUTLET SHALL BE APPROVED HIGH-BYPASS EFFLUENT FILTER.*
- *THE PIPE BETWEEN THE BUILDING AND SEPTIC TANK SHALL BE 4" SCH 40 PVC WITH RUBBER COMPRESSION GASKET JOINTS (AWWA C-100) OR EQUAL; PIPE SHALL HAVE 1/4 IN./FT. SLOPE.*
- *SOLID DISTRIBUTION PIPE AFTER SEPTIC TANK SHALL BE 4" PVC MEETING ASTM D3034 OR EQUAL.*
- *BOTTOM OF SYSTEM SHALL BE LEVEL THROUGHOUT.*
- *IF EXISTING SEPTIC SYSTEM COMPONENTS ARE ENCOUNTERED, THOSE COMPONENTS SHALL BE REMOVED FROM THE AREA AND DISPOSED OF IN APPROPRIATE FASHION AND THOSE AREAS FROM WHICH THE SYSTEM IS REMOVED SHALL BE FILLED WITH "SELECT FILL".*
- *SANITARIAN SHALL INSPECT FILL PLACEMENT. ALL FILL MATERIAL MUST BE APPROVED PRIOR TO PLACEMENT IN SYSTEM AREA.*
- *FILL MATERIAL SHALL BE "SELECT FILL" COMPRISED OF CLEAN SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES AND COMPACTED IN SIX (6) INCH LAYERS. THE FILL MATERIAL SHALL MEET THE "TECHNICAL STANDARDS" REQUIREMENTS UNLESS OTHERWISE APPROVED BY THE DESIGN ENGINEER FOR USE WITHIN THE LEACHING AREA.*
- *RISERS ARE REQUIRED IF TANK COVER IS >12" DEEP;*
- *TANK SIZE SHALL BE INCREASED FOR USE OF A GARBAGE GRINDER OR TUB > 100 GALLON;*
- *ANY MODIFICATIONS TO APPROVED PLAN MUST BE AUTHORIZED BY DESIGN ENGINEER AND THE EASTERN HIGHLANDS HEALTH DEPT.*

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	ABUTTER LINE	
	EDGE OF ROAD	
BL	BUILDING SETBACK	
WATER	WATER LINE	WS
	10 FT CONTOUR	
	2 FT CONTOUR	
× 577.28	SPOT ELEVATION	636.7 632
UU	UNDERGROUND UTILITIES	
	OVERHEAD UTILITIES	OH
	SANITARY SEWER LINE	SEWER
S	SEWER MANHOLE	
D	STORM MANHOLE	
	FIRE HYDRANT	
W	WATER GATE	

ZONING TABLE (ZONE: RAR-90)

	REQUIRED	PROVIDED
LOT SIZE:	90,000 S.F.	29,169 S.F.
LOT FRONTAGE:	200'	200'
FRONT YARD SETBACK:	100'*	?
REAR YARD SETBACK:	50'	>50'
SIDE YARD SETBACK:	33.3'**	>48'

*100 FEET FRONT CENTER OF HIGHWAY RIGHT OF WAY
**1/6 OF SUBJECT PROPERLTY FRONTAGE

--- TEST HOLE DATA ---
TEST HOLES OBSERVED BY SHERRY McGANN
ON MARCH 12, 2018
PERCOLATION RATE: 8 MIN/IN
NOTE: TEST HOLES #2 & #3 ARE APPROXIMATE AS NO PHYSICAL EVIDENCE WAS FOUND

- TEST HOLE - 1
  0- 5" TOPSOIL
  5-17" OB FINE SANDY LOAM
  17-45" LOOSE FINE RED SAND W/GRAVEL
  45-82" VERY GRAVELLY MED-COARSE SAND W/COBBLES, STONES & BOULDERS
  NO MOTTLING
  NO LEDGE
  NO WATER
  ROOTS TO 17"
- TEST HOLE - 2
  EXISTING SEPTIC SYSTEM ENCOUNTERED
- TEST HOLE - 3
  0-24" FILL
  24-36" BURIED TOPSOIL
  36-82" OB FINE SANDY LOAM
  62-85" GRAVELLY MED SAND
  NO MOTTLING
  NO LEDGE
  NO WATER
  ROOTS TO 52"

---ADDITIONAL TEST HOLE DATA ---
ON 11/29/18
TEST HOLES OBSERVED BY SHERRY McGANN, R.S. & GERALD HARDISTY, P.E.

- TEST HOLE - A1
  0-34" M. SAND; WATER @ SURFACE
  LEDGE @ 34"
- TEST HOLE - A2
  0-36" GRAVEL (PARKING LOT)
  SEEPAGE @ 36"
- TEST HOLE - A3
  0-20" FILL
  20-29" TOPSOIL
  29-61" FINE SANDY LOAM
  61-96" COMP. FINE SAND
  * EXISTING SYSTEM ENCOUNTERED @ 30"
  NO MOTTLING
  NO LEDGE
  NO WATER
- TEST HOLE - A4
  0- 5" TOPSOIL
  5-27" FINE SANDY LOAM
  27-78" FINE SAND
  78-102" RED COARSE BRKN ROCK
  LEDGE @ 102"
  NO MOTTLING
  NO WATER

SEPTIC SYSTEM DESIGN PARAMETERS:

NON-RESIDENTIAL COMMERCIAL BUILDING W/OUT PROBLEMATIC SEWAGE:
RETAIL/SUPERMARKET BLDG: DESIGN FLOW = 0.1 GPD/SF GROSS AREA
BLDG AREA = 2100 SF/FLOOR x 2 FLOORS = 4200 SF
DESIGN FLOW = 0.1 GPD/SF x 4200 SF = 420 GAL/DAY
NON-RESIDENTIAL, NON-PROBLEMATIC
PERC RATE 1-10 MIN/IN.; APPLICATION RATE= 1.5 GPD/SFEA

REQUIRED AREA = 420 GPD/1.5 GPD/SFEA = 280 SFEA

PROVIDED SYSTEM: 1250 GAL TANK; H20 LOADING
PROVIDED SFEA = 96 LF x 7.9 SFEA/LF (27" GALLERY W/ PIPE ON TOP) = 758 SFEA

MLSS NOT APPLICABLE, NO FOOTING DRAINS

SEPTIC SYSTEM ELEVATIONS:

TRENCH 1 BOTTOM:	272.5
TRENCH 1 DIST. PIPE:	274.75
TRENCH 1 OVERFLOW:	274.92
TRENCH 2 BOTTOM:	271.00
TRENCH 2 DISTR. PIPE:	273.25
TANK OUTLET:	275.00
TANK INLET:	275.25
TANK TOP:	276.00
GRADE AT TOP TANK:	276.70
SOIL PIPE>	275.50

PERC RATE: (DEPTH 4.75')

TIME	DEPTH	RATE
1:13	0.65'	
1:15	0.90'	
1:17	1.05'	
1:20	1.20 '	1.67 MIN/IN
1:23	1.34'	1.78 MIN/IN.

PERC RATE: 1- 5 MIN/IN.

Type of Survey: IMPROVEMENT LOCATION
Boundary Determination Category: DEPENDENT RESURVEY
Class of Accuracy: A-2

This map and survey were prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc., on September 26, 1996.

GERALD E. HARDISTY, PEL #15974

General Notes

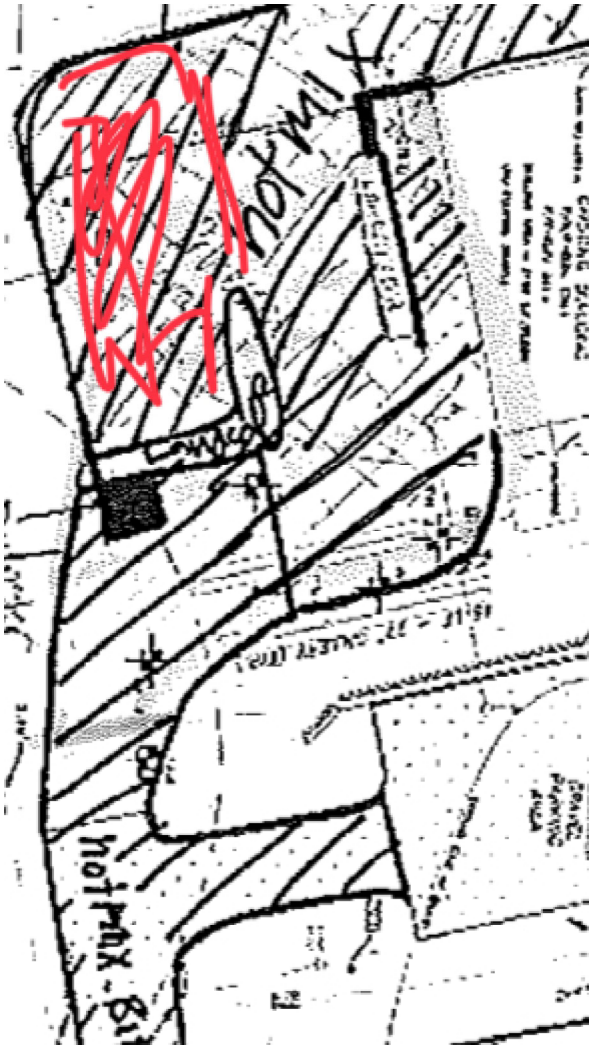
ASSESSOR'S ID: 29.96.16
VOL. 56, PG. 70

No.	Revision/Issue	Date
3.	ADDED PAVED APRON per CT DOT	4/26/19
2.	Revised per CTDOT comments	3/29/19
1.	Revised per EHHD comments	3/11/19

PROPOSED IMPROVEMENTS
483 STORRS ROAD
ROUTE 195
MANSFIELD CENTER CT

CIVIL ENGINEERING SERVICES, LLC.
203 BOSTON HILL ROAD
ANDOVER CT 06232
ph. (860) 742-0364

Project: 218031-LACY
Date: JAN 19, '19
Scale: 1"=20'
Sheet: 1 OF 1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PZC file _____

REQUEST FOR SITE/BUILDING MODIFICATIONS
(see Article XI, Section D of the Mansfield Zoning Regulations)

APPLICANT/OWNER SECTION

1. Owner(s) Ben Lacy (please PRINT) Telephone 860 428 5228
   Address 102 Crane Hill Rd Town Storrs Zip 06268
2. Applicant(s) Olivia Lacy (please PRINT) Telephone 860 428 5228
   Address 102 Crane Hill Rd Town Storrs Zip 06268
3. Site Location 483 Storrs Rd.
4. Reference any approved map(s) that would be superseded if this request is approved:

5. Reference any new map(s) submitted as part of this request:
   See attached
6. Itemize and describe the modification(s) being requested, using separate sheet where necessary. The description must be adequate to determine compliance with all applicable land use regulations: -
   paving and chip sealing upper parking lot area and drive area behind building up to ramp.
   9200 sq ft. (per applicant email)
7. _____ Applicant's signature date 1/31/2020.

(over)

ZONING AGENT'S SECTION

After reviewing this application with respect to provisions of the Mansfield Zoning Regulations, including Article XI, Section D and Article V, Sections A.8 and B.9, the following determination has been made:

1. The subject modification request does not contain adequate information and is therefore denied. Applicable comments are listed below.

2. The subject modification is denied for reasons listed below.

3. The subject modification request has been reviewed with the PZC Chairman and we have concurred that the requested modification is minor in nature. Subject to any special conditions or comments noted below, the subject modification request is approved.

4. The subject modification request has been reviewed with the PZC and, in accordance with PZC action on _____, the subject modification request is approved, subject to any special conditions or comments noted below.

5. The subject modification request has been reviewed with the PZC and, in accordance with PZC action on _____, the subject modification request is considered a significant alteration of the approved plans and/or site, and shall require the submittal and processing of a new site plan or special permit application.

6. Other (see comments below)

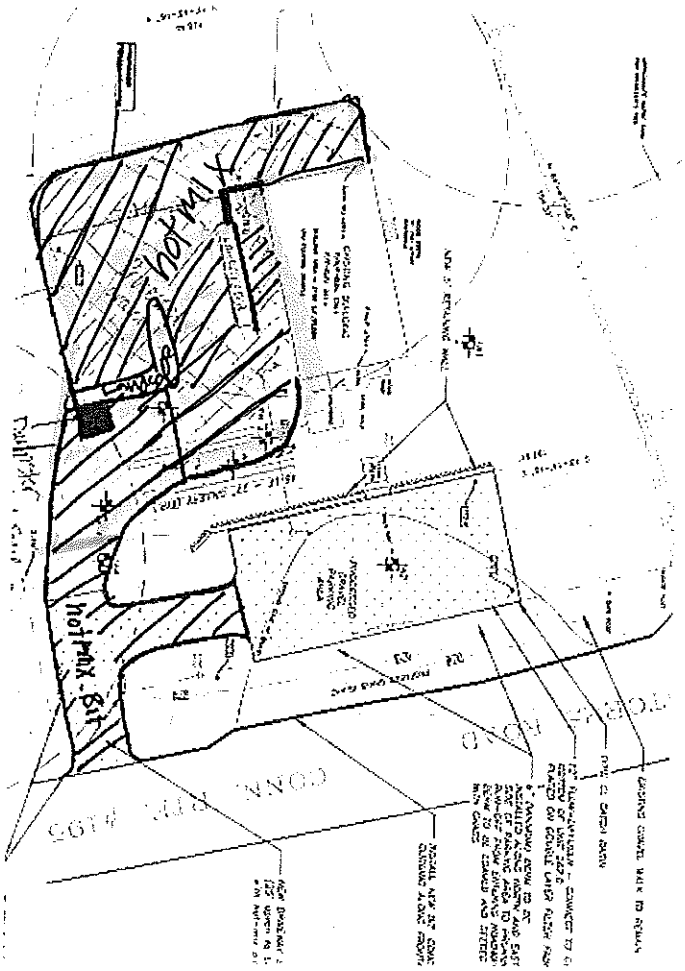
Special conditions/comments/reasons for denial:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

_____ date _____
Zoning Agent's signature

_____ date _____
PZC Chairman's signature (items 3 and 4 above)

Posted: 2006 11 15


Not Big - Not Big
Not Big

Jillene B. Woodmansee

From: Ben Lacy <Greenstarct@hotmail.com>
Sent: Monday, February 3, 2020 9:07 PM
To: Jillene B. Woodmansee
Subject: Re: Paving

Hi jillene
It's 9200sq ft
Thanks!
Ben

Sent from my iPhone

On Feb 3, 2020, at 3:16 PM, Jillene B. Woodmansee <WoodmanseeJB@mansfieldct.org> wrote:

> Hi Ben: We are going to need the total square footage of the amount of pavement. Please refer to the attached map. Please only include the pavement that will be on your property (not to include the DOT right-of-way). If the amount exceeds 10,000 square feet, we will need you provide a stormwater management plan.
>
> Also, I spoke to Olivia briefly about signage. I forgot to mention to her that the sign design will need PZC approval due to the Historic Village. I know that location of the sign will be in question due to the DOT property. If she wants to move ahead we can have the PZC look at designs for both the DOT location and an alternative location if DOT doesn't approve a sign in the right-of-way.
>
> **Jillene Woodmansee**
> *Planning Specialist*
>
> 860.429.3341
> jillene.woodmansee@mansfieldct.org
> mansfieldct.gov
>
> <image003.jpg>
>
> <Pavement Map.pdf>

PZC file _____

REQUEST FOR SITE/BUILDING MODIFICATIONS
(see Article XI, Section D of the Mansfield Zoning Regulations)

APPLICANT/OWNER SECTION

1. Owner(s) ~~Rhon~~ Nancy McKenney Hops 44 Telephone 860 463-2013
   (please **PRINT**)
   Address _____ Town _____ Zip _____

2. Applicant(s) _____ Telephone _____
   (please **PRINT**)
   Address 625 Middle Turnpike Town Mansfield Zip 06268

3. Site Location 625 Middle Turnpike

4. Reference any approved map(s) that would be superseded if this request is approved:

5. Reference any new map(s) submitted as part of this request:

6. Itemize and describe the modification(s) being requested, using separate sheet where necessary. The description must be adequate to determine compliance with all applicable land use regulations: -
   we are requesting to expand our patio area
   30 feet x 34 w/ either brick pavers or concrete
   this will ~~be~~ ~~the~~ tied into existing patio.
   Enclose the patio area w/ fencing / trellis as a barrier
   Cover part of the patio with removable structure. not attached
   to building such as a pergola
   Additional seats of approx 25-30
   Update occupancy of space to what Fire has
   us zoned for
   use of propane heaters / ~~[illegible]~~

7. Nancy McKenney date 3/4/2020
   Applicant's signature

(over)

ZONING AGENT'S SECTION

After reviewing this application with respect to provisions of the Mansfield Zoning Regulations, including Article XI, Section D and Article V, Sections A.8 and B.9, the following determination has been made:

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6. Other (see comments below)

Special conditions/comments/reasons for denial:

_____
_____
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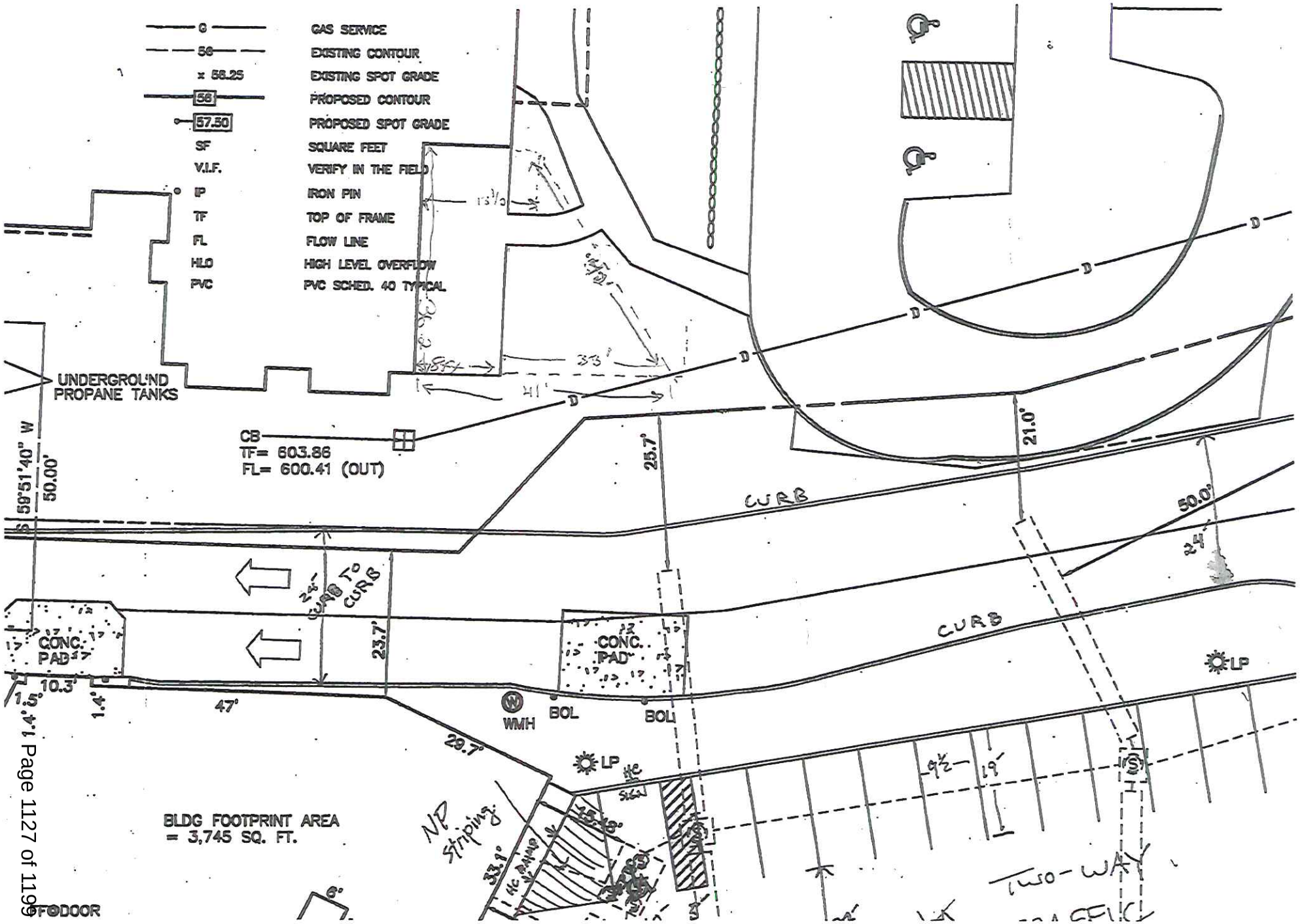
_____ date _____
Zoning Agent's signature

_____ date _____
PZC Chairman's signature (items 3 and 4 above)

Posted: 2006 11 15

Food
Craft Beer
Fun
Cocktails


GAS SERVICE
EXISTING CONTOUR
EXISTING SPOT GRADE
PROPOSED CONTOUR
PROPOSED SPOT GRADE
SQUARE FEET
VERIFY IN THE FIELD
IRON PIN
TOP OF FRAME
FLOW LINE
HIGH LEVEL OVERFLOW
PVC SCHED. 40 TYPICAL
UNDERGROUND PROPANE TANKS
CB
TF= 603.86
FL= 600.41 (OUT)
S 59°51'40" W
50.0'
25.7'
21.0'
CURB
CURB TO CURB
23.7'
CONC. PAD
10.3'
1.5'
1.4'
47'
WMH
BOL
29.7'
LP
BLDG FOOTPRINT AREA
= 3,745 SQ. FT.
NP Striping
TWO-WAY
TO DOOR

DRAFT MINUTES

Members Present: P. Aho, L. Cooley, K. Rawn

Staff Present: L. Painter, J. Kaufman (departed at 6:00 p.m.)

CALL TO ORDER AND ROLL CALL

Aho called the meeting to order at 5:03 p.m.

MINUTES

Rawn MOVED, Cooley seconded approval of the February 21, 2020 minutes as presented. Motion PASSED unanimously.

REVISIONS TO ZONING AND SUBDIVISION REGULATIONS

Members discussed drafts of the following potential short-term amendments to the Zoning Regulations.

Stormwater Management

Members reviewed the draft dated February 26, 2020 and expressed concern that the lien provisions of the proposed maintenance agreement could serve as an incentive for property owners to forgo maintenance and let the Town step in. Staff will explore ways to provide disincentives for such behavior, such as adding language regarding zoning violations/enforcement actions and penalties. Members also identified the need for there to be a cost associated with the staff review of annual reports; this is something that would need to be addressed by the Town Council.

Multi-Family Residential

Members reviewed the draft dated February 26, 2020 and discussed:

- The need for the applicability to renovation projects to be more clearly defined;
- Elimination of the requirement related to minimum number of 1-bedroom or studio units;
- Clarifying requirements related to the number of 2 and 3 bedroom units;
- Changing the term multi-generational housing to be clear that we are not expecting multiple generations to live in a single unit;
- Whether the “multi-generational” standards for all units with two or more bedrooms should only be applied to a percentage of those size units instead of all; and
- Limiting the number of bathrooms in 2 and 3 bedroom units to 2 ½ baths.

As the digital packet was updated to include the draft regulations shortly before the meeting, members agreed that they needed to take time to read and fully digest the initial draft. Cooley requested that staff seek input from the Town Attorney as to whether there is anything in the proposal that would be legally problematic.

Affordable Housing

Staff distributed a draft of proposed amendments to the Affordable Housing bonus section and reviewed it with members. Members concurred with the proposed changes; staff noted the need to change the title of subsection 7.a from “Fee-in-Lieu” to “Housing Trust Fund.”

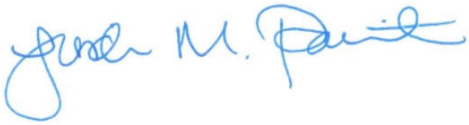
FUTURE MEETINGS

The next regular meeting is scheduled for 9:00 a.m. on Friday, March 6th.

ADJOURNMENT

The meeting adjourned at approximately 6:39 p.m.

Respectfully Submitted:



Linda M. Painter, AICP
Director of Planning and Development

H.B. 5293

To: Co-Chairs Senator Maroney, Representative D'Agostino; Ranking Members Senator Witkos, Representative Cheeseman and distinguished members of the General Law Committee
CC: Mansfield Town Council, Mansfield Planning and Zoning Commission
From: Steven Ferrigno, Chair, Mansfield Economic Development Commission
Date: March 3, 2020
Subject: **Testimony in Support of Raised Bill H.B. No 5293**
An Act Concerning Municipalities and the Sale of Alcoholic Liquor

---

This testimony is submitted in support of the above-referenced bill to amend provisions related to the process through which communities may opt to prohibit or limit the issuance of specific liquor permits.

Background

One of the responsibilities of an Economic Development Commission (EDC) is to recommend actions related to improving the economic condition and development of the community to appropriate officials and agencies of the municipality. The issue before you today in H.B. No. 5293 is one that the Mansfield Economic Development Commission, and the Town, has been struggling with since 2015. I am here in hopes that this Committee can assist our community, and others, in removing an antiquated provision of the statutes that poses a significant barrier to economic growth in communities whose opinions regarding alcohol have changed over the generations.

Section 30-10, C.G.S. establishes the procedures through which municipalities can opt to prohibit or limit sales of alcohol. To our knowledge, this provision is the **only** one whereby the only means of amending it requires a petition and referendum. Specifically, the only way to modify a community's choice regarding allowable liquor permits is for at least 10% of the electors to file a petition, which would then be put to referendum.

The proposed change would not remove the ability for individual communities to determine for themselves whether to allow, prohibit, or limit liquor permits; it would only subject that decision to the legislative procedures that each community uses to establish other local laws, which include public hearing procedures as specified by state statute and local ordinance. This change would be reflective of the times in which we now live, where the sale of alcohol does not have the same taboo as in 1949 when this provision was enacted, presumably in response to the end of prohibition.

Why We Support This Change

Mansfield is a "damp town," meaning that our voters previously decided to limit the types of liquor permits that are allowed in town. As it is impossible to think of every possible scenario that may arise in the future, the concept of brewpubs and agriculture-based brewing and distilleries were unsurprisingly not addressed in the list of allowable permits that the community previously approved.

In 2015, the developer of Storrs Center (a key project supporting the revitalization of Mansfield's downtown) approached the Town regarding the possible inclusion of a brewpub in the project's second phase. After reviewing the potential issues associated with brewpubs (water usage, wastewater, odors, etc.), the Mansfield EDC voted in October 2015 to send a request to the Town Council and Planning

and Zoning Commission that they begin the process of amending the ordinances and zoning regulations to allow brewpubs in Mansfield. It was through this process that we learned of the petition/referendum requirement to amend the Town's Code of Ordinances.

To its credit, the Mansfield Planning and Zoning Commission immediately initiated changes to the Zoning Regulations to allow for brewpubs. Furthermore, they took the opportunity to streamline the review process for liquor permits, recognizing that allowing the sales of alcohol by right in association with uses such as restaurants, hotels, and retail operations and the separation distances that had been in effect since the 1960s were no longer needed. When endorsing the proposed changes in May 2016, the EDC expressed concern that no progress had been made with regard to the corresponding changes needed to the Code of Ordinances and began to explore the possibility of spearheading a petition drive. Unfortunately, we were advised by the Town's legal counsel that such an action would be outside of our authority.

In response, one of our members volunteered to work on the effort in an individual capacity. By July 2016, his effort had ceased due to the prohibition on use of electronic signatures and the sheer volume of work that would be required to obtain signatures of 10% of the electorate. As a result, while changes to the Zoning Regulations to enable uses such as brewpubs, brewpub/restaurants, breweries, and farm-based wineries were adopted in 2016, no progress has been made with regard to updating the Code of Ordinances due to the barrier posed by the petition/referendum requirement. Through my work as a local realtor, I am personally aware of two brewpubs that were interested in locating in Mansfield but were unable to do so given the barrier posed by Section 30-10 in changing local laws related to alcohol sales.

Summary

As testified to by Mayor Moran and Vice Chair Rawn of the Planning and Zoning Commission, Mansfield has made extensive strides in promoting economic development over the last 10 years in an effort to reduce our reliance on state aid. We respectfully request that the Committee support this amendment to assist communities in retaining self-determination on the question of alcohol sales while allowing them to do so in the manner that they regulate other issues of local importance. While this change may seem small to many, it will remove a significant barrier to local economic development efforts, including those aimed at helping preserve our agricultural enterprises.

H.B. 5293

To: Co-Chairs Senator Maroney, Representative D'Agostino; Ranking Members Senator Witkos, Representative Cheeseman and distinguished members of the General Law Committee
CC: Mansfield Planning and Zoning Commission, Mansfield Economic Development Commission
From: Antonia Moran, Mayor, Town of Mansfield
Date: March 3, 2020
Subject: **Support for H.B. 52930**

I write today to express my support of the proposed bill H. B. 5293: *An Act Concerning Municipalities and the Sale of Alcoholic Liquor*.

CGS Sec., 30-10 *Sec. 30-10. Vote on liquor permit question*, is a Prohibition-era antique that hinders current economic development. Approval of H. B. 5293 to repeal CGS Sec. 30-10 would remove a significant hurdle for business development, although there may be other legislation that subsequently should be updated.

For the past ten years, the Town of Mansfield has worked to improve the business climate in town by updating its Plan of Conservation and Development (POCD), updating and modernizing its zoning regulations, and reestablishing its Economic Development Commission (EDC) to better address and understand the needs of existing and potential businesses.

Two major economic drivers for Mansfield are agriculture and tourism, both of which would benefit from the passage of H. B. 5293. Allowing for the sale of alcohol would expand options for value-added products for local farms. Microbreweries, farm wineries and distilleries, and craft brew pubs drive tourism as well as support ancillary businesses such as hotels, restaurants, and gas stations. Mansfield has updated its local regulations to support such activity. Should you approve H. B. 5293, we are ready to welcome new businesses and help current businesses expand their offerings.

We know there is interest in such potential businesses, as we have unfortunately had to turn away prospective business owners due to the current law. Collecting and verifying signatures from 10% of registered voters and sustaining interest through a public referendum requires a large investment of time and funds that many small businesses are unable to commit without guarantee of success. Mansfield faces additional challenges with this process due to the elevated voter rolls and transient voters that are a natural result of being home to the state's flagship university. (Ironically, its position as home to the largest state university also increases demand for amenities such as craft brew pubs for the thousands of visitors we host each year.)

We ask you to vote in favor of H. B. 5293. This small step by the state legislature would greatly benefit towns such as Mansfield which have worked to update their own regulations and ordinances to attract new business investment. The town has provided safeguards through its POCD and zoning regulations to ensure development is appropriate for the community, and the state maintains oversight of alcohol sales through its regulatory bodies. This simple change, though, would open up avenues for business growth in Mansfield and throughout the state.

H.B. 5293

To: Co-Chairs Senator Maroney, Representative D'Agostino; Ranking Members Senator Witkos, Representative Cheeseman and distinguished members of the General Law Committee
CC: Mansfield Town Council, Mansfield Economic Development Commission
From: Kenneth Rawn, Vice Chair, Mansfield Planning and Zoning Commission
Date: March 2, 2020
Subject: **Testimony in Support of Raised Bill H.B. No 5293**
An Act Concerning Municipalities and the Sale of Alcoholic Liquor

---

This testimony in support of the above-referenced bill was approved by the Planning and Zoning Commission at its March 2, 2020 meeting. Through this testimony, we acknowledge that there may be other sections of the statutes that need to be revised due to linkage with the affected sections.

Background

In 2015, the Planning and Zoning Commission (PZC) adopted the Mansfield Tomorrow Plan of Conservation and Development. In addition to serving as our statutorily required POCD, this Plan also serves as a strategic plan for the Town. It was developed after an extensive public participation process and was endorsed by the Town Council prior to adoption by the PZC. This Plan devotes an entire chapter to diversifying Mansfield's economy, recognizing that growing our tax base is critical in an era of ever-shrinking state aid. As home to UConn's main campus, the value of state-owned property continues to exceed the value of taxable property.

The economic development chapter of the Plan identifies several goals and strategies to grow existing businesses and attract new business, including farm-based and other agricultural enterprises. We are focusing on our strengths, including our connection to UConn, rural character, and abundant natural resources and cultural opportunities that offer a diverse tourism experience. When it comes to how Zoning Regulations and economic development initiatives interact, we adopted the following goal: "Mansfield's land use regulations are farm-friendly and support business retention and expansion efforts while protecting community character."

Impact of Sec. 30-10 on Local Efforts

As we were in the midst of adopting the Mansfield Tomorrow Plan, the Town's Economic Development Commission requested that we amend our regulations to allow for brewpubs in certain zoning districts. In reviewing this request, the Commission put the goals, strategies, and recommendations related to the much-needed update of our regulations into action. We took the opportunity to fully review and update all of our regulations relating to the sale of alcohol, many of which were antiquated and, as one member so eloquently put it, related to the era of "demon rum."

In addition to adding brewpubs, brewpub/restaurants, breweries, and farm wineries to the list of uses permitted in certain districts, we streamlined the review process by eliminating the special permit requirement for the sale of alcohol associated with other uses such as restaurants, hotels, and retail establishments and permitting it by-right as an accessory use. We also authorized administrative approval of temporary special outing permits, eliminating the need for Commission approval for such

events. We knew at the time we took these actions that the additional alcohol-related uses would not be possible until the ordinance was changed to allow the associated liquor permits, but we wanted to be proactive in our support of such changes.

At the time these regulations went into effect, the Commission had no idea that over three years would pass without any progress toward amending the associated Town ordinances. However, upon review of Sec. 30-10 and the procedures established with regard to municipal options on the prohibition or limits on sales of alcohol, it is unsurprising that nothing has happened. The requirement that a town's decision with regard to what types of liquor permits are permitted can only be changed by a petition signed by at least 10% of the electorate and subsequently approved at referendum appears to be unique. To our knowledge, this provision is the only one whereby the **only** means of amending an ordinance requires a petition and referendum.

We understand, perhaps better than most, the way in which regulations can become outdated as times change. Our own zoning rewrite process continues to evolve since we started in 2016 as we realize that simply reorganizing regulations may improve usability but will not tackle fundamental issues of regulations that no longer reflect the community's values and goals. We hope that the Committee will consider the way in which the state and its communities have evolved since the provisions of Section 30-10 were adopted in 1949, particularly as this particular section of the statutes appears to have been crafted in response to the end of prohibition.

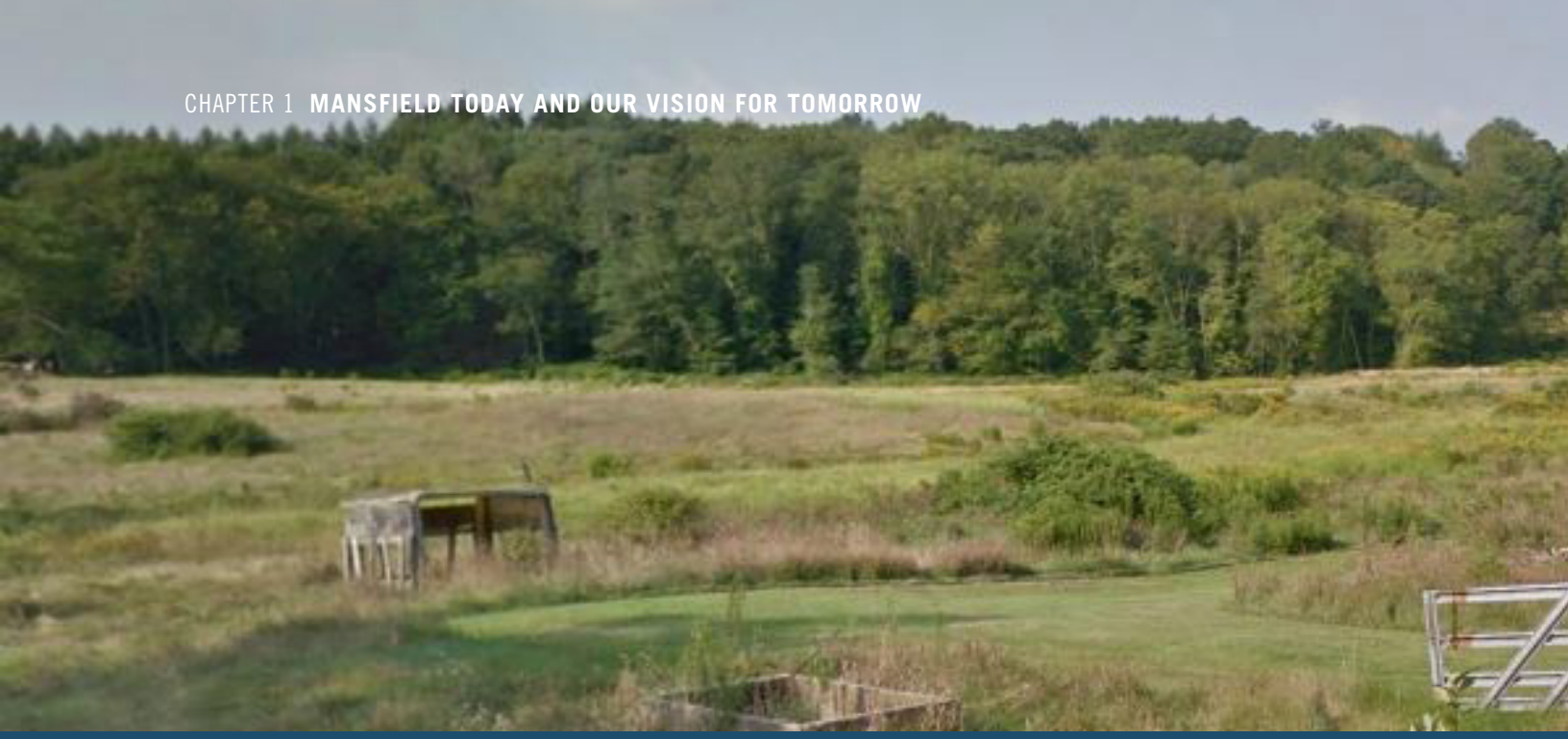
Furthermore, we understand the importance of allowing members of the community to have a say in the regulations that govern their activities. All changes to both Zoning Regulations and the Town's Code of Ordinances involve public hearings, giving residents and other stakeholders the opportunity to share their thoughts on the potential impacts of a change. The PZC is proud to say that the regulations we adopt are often modified based on the testimony provided through the hearing process. If the proposed amendments to Section 30-10 are approved by the Committee and ultimately the General Assembly, changes to the types of liquor permits currently allowed in a municipality would be subject to the same process in which other local laws are adopted. The would ensure that communities retain the local option for determining whether to limit or prohibit alcohol sales while ensuring the public has the ability to weigh in on that decision.

Conclusion

As testified to by Mayor Moran and Chair Ferrigno of the Economic Development Commission, Mansfield has been working diligently to diversify our economy in ways that support the community's vision and character. We respectfully request that the Committee support H.B. No. 5293 as it will allow municipalities to continue to decide what is right for their community while removing a barrier to economic growth and diversification.

Attachments

Excerpts from Mansfield Tomorrow POCD (Vision Statement; Economic Development Chapter)



Mansfield's Vision for Tomorrow

In 2035, the Town of Mansfield will be a community of historic rural villages, flourishing farms, and protected open spaces, and the home of the University of Connecticut's flagship campus. Through a smart growth approach, Mansfield will accommodate growth in designated areas of compact development, avoiding sprawl and preserving rural character. The compact development areas include a vibrant town center and neighborhoods with diverse housing adjacent to campus, attractive mixed-use centers at Four Corners and in southern Mansfield, as well as room for new businesses at Perkins Corner and the Depot Campus area. These areas will provide compact and walkable locations for growth. Outside of these designated areas, Mansfield will promote rural character, agriculture, and natural open space, through preservation and stewardship.

We are committed to supporting diversity, sustainability, arts and culture, economic viability, an excellent public school system, and a high quality of life and sense of community for all residents. These commitments are reflected in our community institutions such as our library, public education system, recreational programs, and town events. We value our natural resources and our cultural and historic heritage. Our goal is to pass them on to future generations. As the University's host community, our town has a mutually beneficial and respectful relationship with the University as an institution, a campus and an academic community rooted in Mansfield. As we look to the future, we are guided by community values and aspirations:

- Principles of **sustainability,** including green building, energy- and resource-efficiency, and smart growth guide development and Town policies, making Mansfield a leader in Connecticut.
- We are **a resilient community,** safeguarding our values while adapting to the future challenges of climate change.
- We are good stewards of our **natural and cultural heritage,** working to preserve a clean, green and healthy community with open space lands that support wildlife, recreation, clean air and water resources in connected networks. We value the homes and other buildings built by previous generations and adapted to contemporary uses in order to preserve our historic heritage.
- Our **economic viability** is based on technology- and research-based businesses, local retail and services, a growing agricultural and recreational business sector, and university-affiliated activities. We

Mt. Hope Road

welcome businesses that are aligned with Mansfield's smart growth development patterns and rural character, while helping to support Town services.

- We celebrate art and our diversity, taking pride in our **cultural offerings and amenities.**
- Our public education system, recreational opportunities, and community events offer unparalleled **quality of life** to residents.
- We promote **transportation alternatives** to connect people to destinations within Mansfield, surrounding communities and regional employment centers through increased access to public transportation, networks of walking and bicycle routes and innovative car sharing opportunities.
- We support **diversity** through a variety of attractive and affordable housing choices for people throughout the life cycle, from single young adults and couples to families, empty-nesters and retirees.
- Town residents who need **supportive services** to meet social, economic, and emotional needs find that Mansfield is a resource.
- Our **sense of community** on the neighborhood and town level is enriched by a variety of village, school, and joint town-university activities.
- We pursue **high standards of quality in design** and development.
- We work with our **neighboring communities and regional partners** to foster communication and collaboration.
- We value and promote **communication, transparency, and community participation** in town decision-making.
- We invest and take pride in our **municipal services and facilities,** providing our residents and taxpayers with excellent service and a strong return on their investment.
- We are **financially responsible,** ensuring that decisions made today do not burden future generations.

Combining enjoyment of rural character and the benefits of a university community, Mansfield in 2035 will be a place of environmental stewardship, active farming, advanced learning, cultural enrichment, innovative businesses, walkable villages, rural settlements, natural beauty, and the best schools in the region.

6 DIVERSIFYING THE ECONOMY

overview

Mountain Dairy

TOPICS IN THIS CHAPTER INCLUDE

- Economic Conditions and Trends
- Key Existing Economic Sectors
- Potential Growth Opportunities

This chapter focuses on Mansfield's economy and the role it plays in supporting the quality of life that is highly valued by residents, including the importance of sustaining and growing Mansfield's agricultural sector. A strong, diverse economy provides multiple benefits for residents, including jobs, access to goods and services, and financial support for community services such as education, public safety and recreation through a robust commercial tax base. Economic growth must also be balanced by sensitivity to preserving the unique character that is Mansfield, particularly in the more rural residential areas of the community.

This planning effort included the development of stand-alone strategy reports on economic development and agriculture. Much of the information and analysis in this chapter has been summarized from those documents; readers should refer directly to those reports for more detail.

what the community said

DIVERSIFYING THE ECONOMY

Throughout the planning process, community members focused on the need for balanced, managed economic growth that supports community goals and objectives without compromising the rural character enjoyed by the majority of town. While residents expressed concern with local tax burdens and recognized that growth in the commercial tax base could help compensate for declining state revenues and alleviate tax burdens on homeowners, there was clear concern expressed with the potential impacts of new growth on the community. Themes in the comments on growing the Mansfield economy included:

- Desire for a greater variety of retail establishments and more retail establishments targeting a non-student clientele
- Desire to retain existing agricultural businesses and encourage formation of new ones
- Need to retain and support existing and locally owned businesses
- Need to expand markets for locally produced agricultural goods
- Desire to increase the availability of locally grown food
- Need to improve Town policies and regulations to be more farm-friendly
- Preference for focusing retention and recruitment efforts on businesses with a strong commitment to the town
- Need to understand and address traffic impacts that might be associated with new development
- Desire for clustering new development and providing sidewalks linking residential areas to commercial clusters
- Concern with expanding the built footprint of the town (including the new UConn Technology Park) and associated impacts of new development on the town's character, including impacts of new water and sewer infrastructure to support growth
- Preference for redevelopment of existing sites instead of developing vacant properties
- Concerns with how much retail the town can support
- Questions as to whether redevelopment efforts would succeed without a redevelopment agency to help guide new development

"I would like to see the rural character of Mansfield maintained. At the same time to develop the infrastructure such that the economics of living in town are well balanced by growth of the tax income (i.e., by making it attractive for new businesses and tax paying enterprises to come to town."

"[I'd like to see] smart growth… that expands tax base in an environmentally smart way, partners with the University, and encourages professionals and families to live here."

"I envision a Mansfield where you don't have to go out-of-town for amenities that modern 20-and-30-somethings take for granted."

FROM MANSFIELD RESIDENTS

MANSFIELD'S ECONOMY TODAY

Photo credit: Don Couture

Storrs Center

From its roots as an agrarian economy in the 18th century to a town of mill villages centered around small-scale industries in the 19th century to the expansion of UConn as the state's flagship public university campus in the mid-twentieth century, Mansfield has continually adapted to changing economic conditions. The growth of UConn brought many benefits to the community, such as enhanced water, wastewater and transportation infrastructure and access to arts, culture, education and recreation amenities unparalleled in similarly-sized communities. The presence of UConn also had a significant influence on the Town's revenue stream. Inclusion of UConn students in the town's overall population resulted in higher educational cost sharing payments to the Town than would have otherwise been received. Combined with significant State PILOT (Payment in Lieu of Taxes) revenues, the Town was able to support a wide variety of community services and activities without actively engaging in economic development.

Conditions have changed in the 21st century, and Mansfield should take a fresh look at its economic underpinnings. State revenues have significantly declined over the last ten years, forcing the Town to find new sources of revenue to maintain its high level of services. UConn has become a linchpin in statewide economic development efforts with a focus on Science, Technology, Engineering and Math (STEM) activities designed to catapult UConn into the top tier of public research institutions and attract new talent

and businesses to the state. As the town's population ages, the need to attract and retain younger professionals and families will be essential to Mansfield's continued economic diversity and viability.

The Town must take a more active role in economic development activities to maintain the high level of services expected by residents, of equal importance is the need to ensure that new business growth and development is balanced with other goals related to preservation of natural resources and rural character. In addition, growth of the agricultural sector has been identified as a key objective by the community, both to increase food security and community resiliency, and also because of the scenic and rural character of the community. Farm and forest lands also contribute to the Town's economy by providing "ecosystem services," such as clean water, and by requiring lower levels of Town services than residences.

Together, these aspirations and circumstances provide a foundation for shaping town economic development efforts in the years ahead.

GUIDING ECONOMIC DEVELOPMENT IN MANSFIELD

- Preserve Mansfield's rural and small-town character while providing a healthy economy that supports essential public services like schools.
- Emphasize "sustainable development" that meets the needs of the present without compromising the needs of future generations, and that balances the pursuit of economic prosperity with environmental quality and social equity.
- Support businesses that are already established within the community.
- Focus new business development and expansion efforts on low-impact, high-value businesses such as research and development, professional and business services, and small-scale production of high-value products—businesses that generally have a small footprint and limited environmental impacts.
- Site new businesses and developments preferably on land that is already developed or zoned for commercial and industrial development.
- Support sustainable, productive agriculture and forestry, farmland preservation and farmland restoration. Tax revenues from these land uses exceed the cost of community services for the Town.
- Provide active leadership in the region's agricultural identity and successes.
- Establish flexibility in land use and business regulation that supports entrepreneurship and new business development consistent with the town's existing character.
- Sustain the community's cultural and natural assets through appropriately focused and scaled tourism activities.
- Expand retail and consumer services focused on meeting the needs of local residents and workers, or on drawing visitors with unique offerings that reinforce the town's identity.
- Develop, attract and retain a talented workforce to support innovation, job creation, and new business ventures that are key to the long-term success of the local economy.
- Collaborate regionally where working with adjacent communities through regional entities has the potential to achieve economic synergies and shared benefits.
- Protect the water resources that economic growth depends on.

The pages that follow provide more information on existing economic conditions, trends and opportunities for Mansfield as well as the variety of tools and resources available to help the town achieve its goals.

WHAT IS "ECONOMIC DEVELOPMENT?"

Most fundamentally, economic development is about maintaining and expanding businesses that export their products to consumers outside the community, thereby importing income and increasing local employment and wealth. These types of businesses are referred to as the "traded sector." The income from the traded sector circulates within the community, creating demand for goods and services from businesses that primarily service local residents such as retail and consumer services; these types of economic activities are referred to as the "sheltered sector." Sheltered sector businesses such as supermarkets and pharmacies, local attorneys, physicians and accountants, and automotive repair shops and hair salons, provide goods and services primarily to people who live and work in the community

While attracting income from outside the community is the foundation of economic development efforts, communities often have two other economic development goals:

- **Expansion of the sheltered sector.** While the sheltered sector typically relies on income from the traded sector for its development, local impediments to the growth of the sheltered sector such as a lack of suitable land and buildings or the absence of critical infrastructure must be addressed to ensure that the sheltered sector grows to its full potential. Addressing these impediments can increase employment and provide residents convenient access to a wider array of goods and services. Mansfield residents have expressed a desire for more retail and services.
- **Expansion of the tax base.** Commercial, industrial, agricultural and forest properties are typically net generators of tax revenue. Retention and expansion of these land uses provide revenue to reduce the residential property tax burden while maintaining quality public services which, in addition to enhancing quality of life, can be an important factor in attracting additional business activity.

TOOLS IN THE ECONOMIC DEVELOPMENT TOOL BOX

Communities can use a range of tools to achieve economic development goals. These tools are not applied in isolation, but are typically complementary and synergistic in supporting the overall economic development program, including agriculture.

- **Entrepreneurship and small business development.** Tools to help small businesses start up and grow include entrepreneurial training programs, one-on-one technical assistance, networking and collaboration venues, and various forms of public or quasi- public business financing.
- **Business Retention and Expansion (BRE).** Established businesses face a range of challenges as they seek to retain profitability and pursue expansion opportunities. Business retention and expansion programs typically involve one-to-one outreach, identification of key issues that threaten retention or impede growth, and follow-up to directly resolve these issues or broker needed assistance. Econom-

ic gardening, a variant of business retention and expansion programs, involves intensive market and competitive analysis to assist rapidly expanding firms to develop new products and markets.

- **Business recruitment.** This approach uses marketing and incentives to induce established businesses that may be expanding or building new facilities to locate in a community. Recruitment is typically a state or regional function, particularly in areas with small communities with limited economic development capacity and incentive funding, and is typically targeted to larger businesses.
- **Workforce development.** Businesses need appropriately trained and skilled workers to provide quality products and services at profitable levels. Education and training institutions need to understand the workforce needs of local employers and work with employers to ensure that their programs are responsive. Workforce development efforts typically take place at the regional level, particularly in rural areas, but local communities can collaborate with employers on career development at the K-12 level.
- **Talent attraction and retention.** As the ability to attract skilled professional and technical workers is critical to success of high-value, high-wage, growth businesses, the community environment is an important factor in decisions by these businesses about where to locate. Communities are consequently paying more attention to developing the amenities necessary to attract highly skilled workers who have choices of where to live and work.
- **Regulatory and tax policies.** Businesses newly locating in a community or moving into new space typically need to obtain certain regulatory approvals, particularly when there is a change in use or need to make a physical alteration to the property. The more these regulations and regulatory processes can be made user friendly without compromising community safety and environmental quality, the less they are an impediment to attracting and retaining desirable businesses. Communities can also offer various forms of tax incentives to promote desirable forms of business development
- **Real estate and infrastructure development.** As businesses start, expand or relocate in a community, they need appropriate land, space and infrastructure to meet their facility needs. If a community targets certain kinds of business activity as part of its economic development strategy, it must ensure that its land use regulations and infrastructure investments are aligned with those targets.
- **The local role in economic development.** How a community uses these economic development tools is a function of its own resources and capacities, as well as the mission, resources and capacities of other local or regional organizations that can be mobilized as partners. In general, the community wants to adopt the least costly and resource-intensive role necessary to achieve the desired outcome. Potential roles for the Town of Mansfield in implementing an economic development plan include:
  - > Information provider
  - > Broker (matching businesses with service providers)
  - > Catalyst (convening partners to develop a program or resource)
  - > Partner
  - > Investor
  - > Program developer and manager

1. Economic Conditions and Trends

For detailed information on current economic conditions, please refer to the July 2013 *Mansfield Tomorrow Economic Development and Agriculture Strategy Reports.*

A) MANSFIELD HAS THE ECONOMIC PROFILE OF A "COMPANY TOWN" AND ITS ECONOMY IS PERFORMING RELATIVELY WELL.

Leading Economic Sectors. As home to the state's flagship university campus, the Mansfield economy relies heavily on state government. In 2011, state government accounted for 56.2% of total jobs in town, an 8.7% increase over 2001. In contrast, private industry accounted for 36.4% of total employment in 2011, an increase of 9% since 2001. Other major economic sectors include health care and social assistance, and accommodation and food services; these sectors also experienced significant growth between 2001 and 2011, with increases of 29.1% and 27.5%, respectively. These three sectors also experienced the greatest growth between 2001 and 2011.

The following industries experienced declines from 2001 to 2011: construction, manufacturing, finance and insurance, real estate and rental/leasing, and administrative/support and waste management/remediation services.

Unemployment. As shown in Table 6.1, Mansfield is performing relatively well in terms of employment growth and unemployment compared to regional and state averages. However, average annual wages, while exceeding the regional average, still lag the state average.

Table 6.1: Comparative Economic Indicators: Mansfield, the Region, and Connecticut

	MANSFIELD	REMAINDER OF WINDHAM/ TOLLAND COUNTIES	STATEWIDE
% Employment Growth 2001-2011	8.0%	2.4%	-3.2%
Unemployment Rate 2011	7.5%	8.5%	8.8%
Average Wage 2011	$49,637	$40,180	$61,110

Source: Quarterly Census of Employment and Wages and Local Area Unemployment Statistics, U.S. Department of Labor

How Mansfield Compares to the Region. According to data comparing employment growth in Mansfield to the remainder of the Tolland-Windham region, there are three sectors which have seen strong growth in the region but not in Mansfield, presenting potential opportunities for new business growth:

- *Professional and technical services* (including legal, accounting, architecture, design, engineering, computer-related, and research and development services among others)

- *Administrative and waste management services* (including office administrative services, employment placement agencies, business services, security services, and building services among others)
- *Other services* (including automotive, consumer product repair, laundry and personal care services among others)[1]

Data on employment relative to population for major industries oriented heavily to local consumers indicates that Mansfield is capturing more than its share of employment in food services, health care, and other services, but less than its share of retail employment. The level of retail activity is expected to grow with the completion of Storrs Center, although a large share of the new businesses are in food services (see Table 6.2).

Table 6.2: Concentrations of Local Consumer Services: Mansfield vs. Rest of Region (jobs/1,000 Population)

	MANSFIELD	REMAINDER OF TOLLAND & WINDHAM COUNTIES
Retail	22.2	35.7
Accommodation & Food Services	43.0	21.7
Health Care & Social Assistance	42.8	18.1
Other Services	11.8	9.5

Source: Quarterly Census of Employment and Wages, U.S. Department of Labor; U.S. Census Bureau, 2013

B) MANSFIELD'S ECONOMIC STRUCTURE HAS FISCAL IMPLICATIONS.

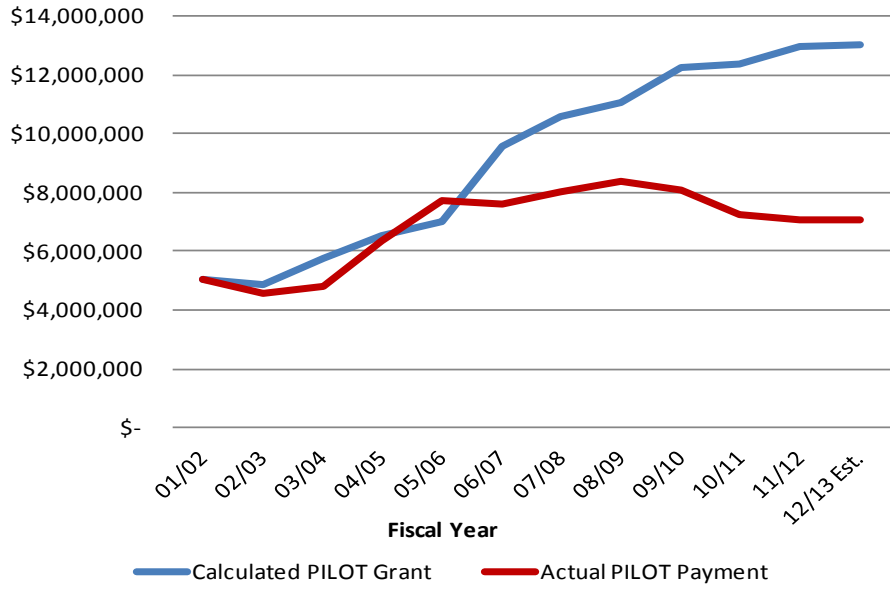
The key role played by UConn in Mansfield's economy has significant impacts not only on the nature of employment and business activity, but also on local tax revenue. The tax-exempt status of UConn and other state-owned property makes the town heavily dependent on state aid for local revenue, particularly given that **the value of tax exempt property in Mansfield exceeds the value of taxable property**. Intergovernmental transfers accounted for 37.45% of the Town's revenues in FY 2014, almost double the average of 18.8% for Connecticut municipalities in the 10,000-30,000 population range.[2]

The largest source of intergovernmental transfers, the state's Payment In Lieu of Taxes (PILOT) for state-owned properties, is based on an effective tax rate that is about one-quarter of that paid by private property owners and in recent years the state has not paid the full amount. Moreover, major sources of state aid, including PILOT payments and Pequot Grants (unrestricted grants to municipalities from the proceeds of a state fund based on casino gaming revenue), have been flat or declining in recent years (see Figures 6.1 and 6.2). While UConn provides some public services that reduce the Town's costs such as water and sewer services to some town residents and businesses, free access to the university bus system for residents, and campus police, these services are unlikely to fully compensate for the lower effective tax rate paid on UConn property.

1 Data on subsectors is not available at the municipal level.

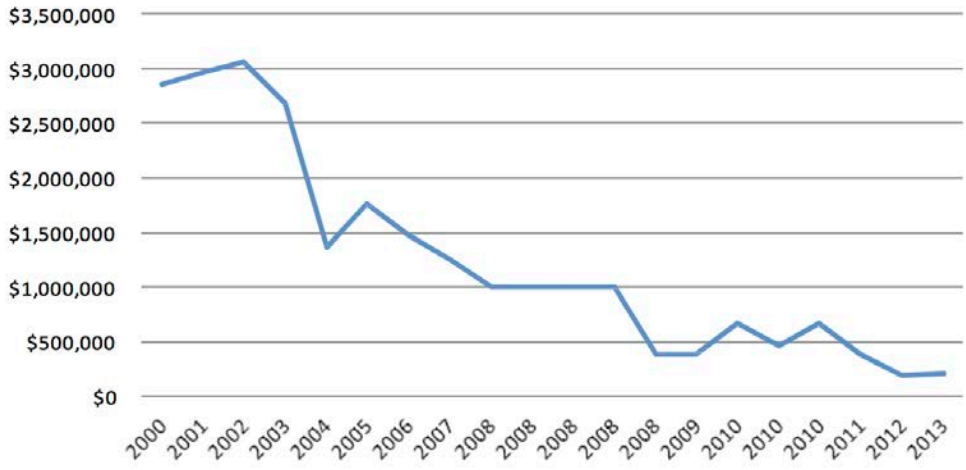
2 Source: Connecticut Office of Policy and Management

Figure 6.1: Mansfield PILOT Grant—Calculated and Actual by Fiscal Year, FY2002–2013



Source: Town of Mansfield

Figure 6.2: Mansfield Pequot Grant, 2000–2013



Source: Town of Mansfield

Declines in state aid create greater dependence on local revenues to maintain local public services. The ability to expand commercial and industrial land uses and tax revenues can reduce pressures to increase property tax rates with the attendant burden on residential taxpayers. Municipal tax studies have shown that commercial and industrial properties, along with agricultural land and open space, generate significantly more revenue than the cost of municipal services they require, whereas residential properties, especially single family houses, generate costs in excess of revenues (particularly because of the costs of school funding).[3]

Grand list data for Mansfield indicates that while the share of assessed property value comprised of commercial (including multi-family residential properties) and industrial property in FY2011 was about average relative to other Connecticut communities in the 10,000 to 30,000 population range, the assessed value per capita is very low. Because the overall cost of municipal services generally rises in proportion to population, this indicates that the cost of services absorbed by commercial and industrial property taxes in Mansfield is also relatively low. It also suggests that commercial and industrial property development in Mansfield could be significantly increased without leading to excessive development relative to other communities of its size (see Table 6.3).

Table 6.3: Measures of Fiscal Capacity Derived from Commercial/Industrial (C/I) Tax Base: Mansfield vs. Other Connecticut Communities Population 10,000-30,000, FY2011

	C/I ASSESSED VALUE AS PERCENT OF TOTAL GRAND LIST	C/I ASSESSED VALUE PER CAPITA
Mansfield	13.2%	$4,879
Mansfield Rank	29 of 66	58 of 66
Median	12.4%	$13,193
Range	1.1% - 40.9%	$2,822–$48,042

Source: Connecticut Office of Policy and Management

3 See, for example, *Planning for Agriculture: Guide for Connecticut Municipalities, 2012. Edition.* The report cites data from nine Connecticut communities with populations ranging from 5,000 to 25,000 that show commercial and industrial properties costing municipalities a median of $0.27 in services per $1.00 in tax revenues compared to costs of $1.09 for residential properties. Agricultural/open space land costs a comparable $0.31 in services. It also cites national data showing a median of $0.29 in services for commercial and industrial properties and $0.35 in services for agricultural land/open space versus $1.16 for residential properties.

LIGHT INDUSTRY: A GOOD FIT FOR MANSFIELD?

Many towns and cities are finding that light industrial businesses, when appropriately located, can be a great fit for their community. Unlike heavy industry—which often brings impacts such as noise and heavy truck activity—many light industrial uses occur without disruption to neighbors, and offer benefits such as jobs and contributions to the local tax base. Examples include warehouse space, wholesale facilities, and limited assembly or production activities—for instance, manufacture of high tech medical devices or production of gourmet foods.

Communities can craft zoning regulations that specify what is and is not permitted in a light industrial area. For instance, Mansfield could require that light industrial uses not pose nuisances, including smoke, gas, odors, dust, noise, vibrations, soot, or disruptive lighting. Mansfield could also regulate outdoor activities (e.g., loading, service, vehicle or equipment storage) to prevent disruption to neighbors.

Increases in commercial values resulting from the Storrs Center development are not reflected in the above comparison; however, the Storrs Center Fiscal Impact Study completed in October 2012 projects that the addition of Storrs Center to the Grand List will increase assessed commercial property values very significantly—by about 50 percent in 2014. Even with this increase, Mansfield will still remain on the low end of comparably-sized communities in assessed commercial and industrial property values per capita.

C) MANSFIELD'S WORKFORCE IS HIGHLY EDUCATED.

Understanding the skills and employment status of Mansfield's working residents can be important in determining what kinds of businesses and economic sectors the town is best positioned to attract as well as which of these are a good match for the employment needs of residents. In this regard, it is important to distinguish the characteristics of jobs in Mansfield, which are described above, from the characteristics of the town's workforce. Many employed residents of Mansfield work in other communities and conversely, many of Mansfield's workers live elsewhere.[4]

Lead Employment Sectors. Given the large number of local jobs in the education and health services sectors, it is not surprising that over half of the town's working residents work in these sectors, a much higher proportion than in the rest of the Tolland-Windham region or the larger Hartford Consolidated Statistical Area (CSA). The retail trade and the combined arts, entertainment and recreation, and accommodation and food services sectors are next in importance (employing about 11% and 8% of residents respectively) and employ approximately the same proportion of residents as the region and the CSA. Small proportions of residents are employed in other industries, both in absolute terms, and in most cases, relative to the region and CSA.

Type of Employment. Half of Mansfield's working residents are employed in generally higher-paying management, business, science, and arts occupations, a considerably higher proportion than at the regional and CSA levels. Fewer, but still considerable numbers, are also employed in sales and office occupations, and in service occupations, in roughly the same proportions as at the regional and CSA levels. Residents working in these occupations are likely to include UConn students working in retail sales and food service occupations. Very few residents are employed in blue collar occupations such as construction, production, and transportation (see Figure 6.3).

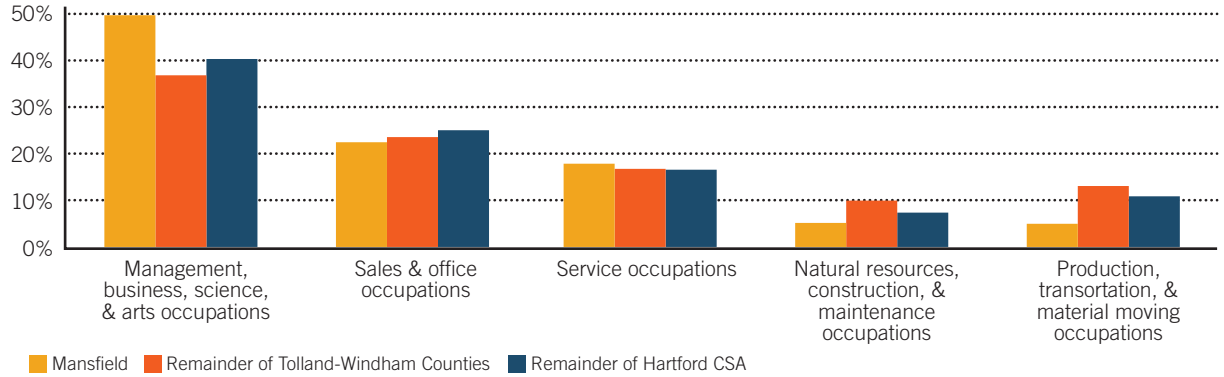
Education Levels. Consistent with high levels of employment in highly-skilled occupations, Mansfield residents are also highly educated. This is particularly evident in the percentage of residents over 25 with graduate or professional degrees. One-third hold such degrees, more than double that at the regional or CSA level. The town's highly-educated workforce can provide a considerable advantage in attracting businesses

4 According to data from the 2006-2010 American Community Survey, 41 percent of working Mansfield residents worked in other communities whereas 60 percent of workers employed in Mansfield lived elsewhere.

seeking highly-skilled workers (see Figure 6.4). The high educational and skill levels of Mansfield residents contribute to relatively high family incomes and low family poverty rates[5] (see Table 6.4).

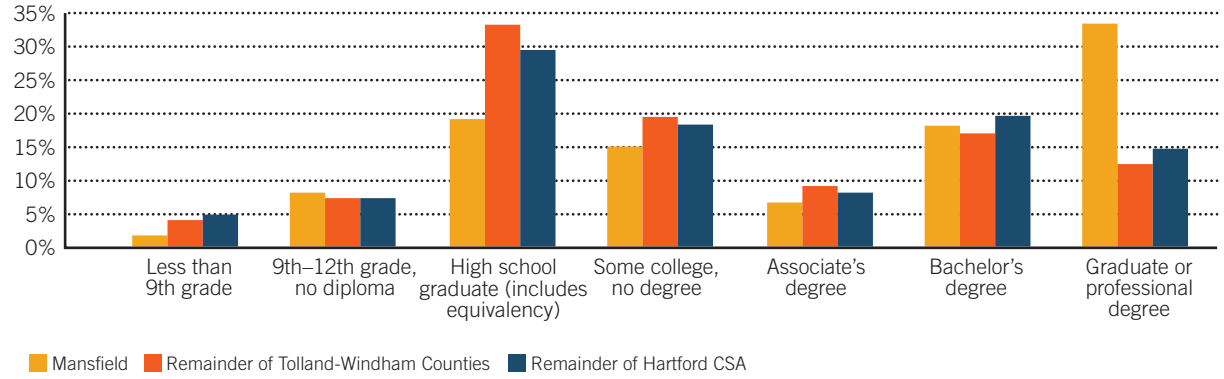
5 While household data is often used as a broader indicator of resident economic status, family data is used here to exclude the considerable number of student households, which would skew data downward and likely result in misleading comparisons to regional and CSA data.

Figure 6.3: Employment by Occupation, Population 16+ (2007–2011 average)



Source: American Community Survey; U.S. Census Bureau

Figure 6.4: Education Levels, Population Age 25+ (2007–2011 average)



Source: American Community Survey; U.S. Census Bureau

Table 6.4: Family Economic Status, 2007-2011 Average

	MANSFIELD	TOLLAND COUNTY	WINDHAM COUNTY	HARTFORD CSA
Median Family Income	$90,518	$80,333	$72,060	$83,214
Mean Family Income	$111,101	$93,033	$81,664	$102,093
Family Poverty Rate	5.1%	3.5%	8.5%	8.5%

Source: American Community Survey, U.S. Census Bureau

As noted earlier, Mansfield has a relatively low unemployment rate. However, unemployment rates vary significantly depending on educational levels. While the town residents without a high school diploma make up a relatively small proportion of the working age population (ages 25-64), they suffer disproportionately from high unemployment. Those with only a high school diploma are also somewhat more likely than average to be unemployed. This suggests the need for additional low- to middle-skill jobs and training opportunities to meet the employment needs of these residents (see Table 6.5).

Table 6.5: Unemployment Rate by Educational Attainment, Mansfield Residents Age 25-64: 2007-2011 Average

LEVEL OF EDUCATION	UNEMPLOYMENT RATE	% OF POPULATION 25-64
Less than high school graduate	43.2%	7.3%
High school graduate (includes equivalency)	8.2%	39.7%
Some college or associate's degree	3.0%	
Bachelor's degree or higher	1.2%	53.0%

Source: American Community Survey, U.S. Census Bureau

2. Key Existing Economic Sectors

Mansfield has a number of established economic sectors that should be sustained and potentially expanded. These include higher education, food and beverage services, health care, and agriculture.

A) HIGHER EDUCATION/UCONN

Higher education is Mansfield's leading "traded sector" by a wide margin, and is less a sector than a single dominant institution, the University of Connecticut. With over 22,000 students and over 5,000 faculty and staff, UConn draws income into the community and creates jobs. Direct employment at UConn has increased over the past decade. State government employment in Mansfield, primarily accounted for by UConn, increased by about 500 jobs between 2001 and 2011. The average state government wage in 2011 was almost $60,000, significantly more than for most other economic sectors within the town. Additional direct spending by students and visitors on off-campus housing, retail, food services, entertainment and recreation, and other local goods and services brings significant additional income to the town economy.

Direct income to the university is further circulated within the community through spending by the university, administration, faculty and staff on local goods and services. Other indirect sources of income and jobs are businesses that are operated by university faculty, including a considerable number of small consulting businesses, and businesses that have been established locally to commercialize university research.

Accommodation and food services businesses in Mansfield employ over 1,000 people (Storrs Center shown at left).

B) FOOD AND BEVERAGE SERVICES

The accommodation and food services sector employed 1,139 wage and salary workers in 2011. Most of the employment is in food and drinking places—Mansfield has only a small number of lodging establishments, including two hotels and one bed and breakfast. The relatively high proportion of jobs to local population in this sector likely reflects strong demand for food and beverage services among the large student population.

Employment in this sector increased by about 250 between 2001 and 2011, or over 25 percent. The quality of jobs, however, is very low with average wages of under $20,000 in 2011, lower than in any other economic sector for which data is available. Many of these jobs are part-time, which accounts in part for the low wage levels.

C) HEALTH CARE AND SOCIAL ASSISTANCE

This sector employed 1,134 wage and salary workers in 2011. It can also be considered partly traded and partly sheltered since some of the larger health care organizations such as Natchaug Hospital, VNA East and large specialty practices serve a regional population while some smaller practices primarily serve a local population. The relatively high proportion of jobs to local population in this sector indicates that a significant portion of clients are from outside the community.

Employment in this sector increased by about 250 between 2001 and 2011, or almost 30 percent. The average wage in 2011 was about $42,000, somewhat below the overall average wage for jobs in Mansfield.

D) AGRICULTURE

While not a major economic driver in terms of income or jobs, agriculture remains important to Mansfield. 22,175 acres of farm and forest (75% of Mansfield) contribute to the Town's economy by providing "ecosystem services," such as clean water, and by requiring lower levels of Town services than residences. Preserving these benefits is critical to Mansfield's business and fiscal success. Agricultural enterprises use the most business-related acreage in town (16%). Agriculture (farm and forest) provides residents with locally-grown food products, creates opportunities for value-added food processing businesses, and supports farm and forest-based tourism. Preserving and expanding the agricultural economy can help to maintain a diversified local economy, contribute to lower property taxes, and preserve the town's rural character—which also has potential as a major attraction for prospective businesses and employees.

There are many elements to maintaining and strengthening the town's agricultural identity, but one critical component is maintaining agricultural activity. Farmland that is conserved and farmed is the ultimate goal. In this regard, agriculture in Mansfield faces many of the same challenges being faced throughout the state, the region and even the country.

i) Private agriculture in Mansfield

Agriculture is changing across America. As farms get bigger in the Midwest, farms in New England are getting smaller but more numerous, up an average of 19% in New England between 2002 and 2007 (with a 0.1% increase in Connecticut). Following regional trends, the median farm size in Tolland County decreased from 38 acres in 2002 to 25 acres in 2007, while the number of farms increased from 398 to 484.[6] The 2007 Cen-

6 2007 Census of Agriculture. State and County Data: Connecticut.

Photo credit: James D. Gilligan

Mansfield's agricultural enterprises are a valued part of the town's economy (Mountain Dairy shown above).

Table 6.6: Mansfield's Agricultural Enterprises 2014

Arrowhead Farms	Honey, goat milk, pumpkins, berries, vegetables, angora wool, and non-edibles
Bailey's Maple Syrup and Honey, LLC	Maple syrup and honey
Bird Walk Farm	Eggs, seasonal lamb, pork, chicken
Cedar Ledge Tree Farm	Christmas trees. Natural stone for walls, walks, patios. Pumpkins. Firewood
Country Stop & Goods	Produce and country goods
Don's Rhubarb	Rhubarb
Foxfire Farm	Raw milk
Fox Fire Stables	Equine boarding facility with indoor and outdoor riding arenas.
Gardens at Bassetts Bridge Farm	Rhubarb, tomatoes, asparagus, pumpkins, blueberries, hanging baskets, annuals and perennials
G.M. Thompson and Sons, Inc.	Agricultural supply
Hillside Farm	Milk, mulch bark and feed hay
Ledgecrest Greenhouses	Annuals, perennials, herbs, vegetables plants and spring flowering plants
Maple Crest Farm	Rhubarb, blueberries, raspberries are sold wholesale. Tree fruit, jams, honey, yellow wax beans, potted raspberry plants. Aloe, Christmas cactus, hand-painted egg shells. By appointment only.
Matthews Farm	Blueberries
Mike's Stand	Organic tomatoes, peas, broccoli products from other farms as seasonally available.
Mountain Dairy	Milk and dairy products
Phenix Farm	Maple syrup, hay/alfalfa
Pleasant Valley Harvest	Organic fruits and vegetables
Round the Bend Farm	Vegetables
Sawmill Brook Farm	Equine board facility offering beginner through advanced lessons in all disciplines. Miles of trail riding. Facility also houses Magnolia Run horse rescue.
Shundahai Farm	Fruits and vegetables. CSA.
Storrs Farmers Market	Year-round farmers market
Storrs Regional FFA	Christmas trees, plants, eggs
Thistle Springs Farm	Hay and beef cattle. Sand and gravel
Thompson's Christmas Tree Farm	Christmas trees
Three Green Acres/ Chelsea's Blue Ribbon Lamb	Sheep-lamb for meat, wool blankets, show animals (Hampshire Sheep and Jersey Cattle)
Tri-County Greenhouse	Annuals, perennials, herbs and vegetables plants, mums
Twin Ponds Farm	Hay, lumber, firewood, nursery stock, plant stock, seasonal berries
University of Connecticut	Ice cream, eggs, plants and flowers. Annual live stock sale.
Valley Farms	Kobe-style beef, hogs, free-range eggs
Windover Farm	Heritage swine, cattle and sheep, pork and lamb.

sus of Agriculture identified 19 farms in Mansfield, five of which support farming as a primary occupation.[7] Agriculture in Mansfield is diverse, producing dairy products, livestock and meat products, fruits and vegetables, honey, maple syrup, Christmas trees and nursery stock, as well as agritourism experiences. Every two to three years, the Mansfield Agriculture Committee inventories all agricultural operations in town and develops a "Mansfield Grown" brochure and website link (*www.mansfieldct.org/mansfield grown*). The last inventory in 2012 identified close to 40 agricultural enterprises—19 self-identified as farms, plus other enterprises including one Community Supported Agriculture (CSA) operation, farm stands, agritourism destinations, and retail outlets. A 2010 survey by the Town identified close to 40 agricultural enterprises—19 self-identified as farms, plus other enterprises including farm stands, agritourism destinations, retail outlets, and so on. Agriculture in Mansfield is diverse, producing dairy products, livestock and meat products, fruits and vegetables, honey, maple syrup, Christmas trees and nursery stock, as well as agritourism experiences.

A 2010 Town survey identified approximately 40 agricultural enterprises in Mansfield, including farms, farm stands, and agritourism destinations (Stearns Farm shown above).

Scale of operations. While the Mansfield dairy farms own or lease over 1,800 acres of land, the majority of Mansfield farms are small, under 50 acres (some under 5 acres) and with sales less than $50,000. Seven (39%) of 19 Mansfield farms identified in the 2007 agricultural census had sales over $50,000 (2 horticultural operations, 3 dairy operations, 2 animal operations, including products, and 1 cattle and calves operation). While Mansfield farms make up just under 4% of farms in Tolland County, they account for more than 7% of the operations in Tolland County with sales over $50,000. Mansfield has one of only three dairy processing facilities in the state. This facility has a producer/handler license that enables it to compete with federal milk prices and remain competitive.

The 2007 Census showed that the average net income for farms in Tolland County was $15,307, up significantly from an average of $5,833 in 2003 but still significantly below the state average of $25,087.[8] Assuming the average net income for Mansfield farms is the same as for Tolland County it is not surprising that only 26% of Mansfield farms support farming as the primary occupation, versus 55% of all Connecticut farms and 49% of farms in New England. If we assume the 19 farms in Mansfield make the average Tolland County farm income it would account for 0.1% of all the income earned by residents in Mansfield.[9] In a 2010 survey of Mansfield farmers, some of the major challenges identified by respondents were "financial stability, lack of funding, [and] input costs."

7 2007 Census of Agriculture. Data by Zip Code: 06268 and 06269.

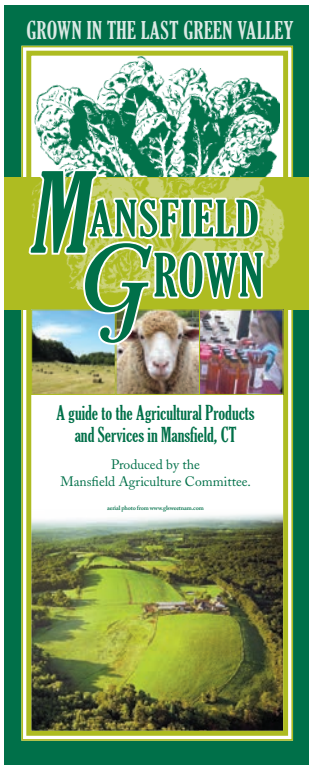
8 2007 Census of Agriculture. State and County Data: Connecticut.

9 Assumes 11,027 jobs in the community at average salary of $49,637 per Peter Kwass, Mansfield Economy Fact Sheet.

Employment. Data from the 2010 Census showed that less than 2% of the Mansfield population was employed in agriculture compared with Connecticut communities with the highest proportion of residents employed in agriculture, such as Scotland and Preston that have between 4% and 8% of the population.[10] The majority of farms in Tolland County do not hire farm labor and of the farms that do, 90% hire fewer than 10 workers. The Connecticut Department of Labor reports 398 jobs in Tolland County in the agriculture, fishing and hunting sector in 2011, making up just 1% of all Tolland County jobs.[11] Access to farm labor is a challenge for local and regional farms.

Markets. According to the 2010 survey of Mansfield farmers, the majority of farmers market their products direct to consumers through roadside stands or farmers markets and/or sell wholesale to restaurants and stores. Of the 19 operations with self-identified farmers, 11 do direct marketing only, one does wholesale only and seven do a combination of direct marketing and wholesale. While this type of marketing and sales usually ensures that farmers get the highest possible price for their products, it also requires that farmers spend a lot of time building and maintaining relationships with many individual buyers. Direct marketing and direct wholesale marketing also puts the burden of transportation and distribution on the farmer.

Mansfield is home to a year-round farmers market, Storrs Farmers Market, providing a direct-market outlet to local farmers and value-added producers. (Currently just under 30% of the producers listed on the Storrs Farmers Market website are from Mansfield.) In addition to the Farmers Market, the Town produces a "Mansfield Grown" brochure featuring a guide to locally produced agricultural products and services—the brochure includes 29 farms and stores (in addition to the farmers market) providing locally produced goods. One Mansfield farm offers a CSA (Community Supported Agriculture) program. *Farmfresh.org*, a local food guide for Southern New England, identifies 6 producers in Mansfield with farm stands making direct sales to consumers.



The Mansfield Grown brochure provides information on local agricultural products and producers.

Ownership and Management. Mansfield has a mix of entrepreneurial and lifestyle farmers. The vast majority of farm households in the U.S. rely on off farm income to support themselves[12] and there is no evidence this is likely to change. In 2012, off-farm income sources are forecasted to account for about 84% of the national average farm household income, compared with about 16% from farming activities.[13] Farming is often a lifestyle choice as much as an economic endeavor. This means that farmers often lack, or fail to apply, the business skills required to grow their enterprises, establish track records

10 Percentage of Population with Farming, Fishing & Forestry Jobs in Connecticut by Zip Code: 06268 and 06269. *http://zipatlas.com/us/ct/storrs-mansfield/zip-code-comparison/percentage-farming-jobs.htm*

11 Tolland County: Covered Employment and Wages by Industry. 2011 QCEW Program Data. *http://www1.ctdol.state.ct.us/lmi/cty_tolland.asp*

12 Schnepf, Randy. "U.S. Farm Income." Congressional Research Service. December 10, 2012.

13 Schnepf, Randy. "U.S. Farm Income." Congressional Research Service. December 10, 2012.

CSA stands for Community Supported Agriculture, a popular way for consumers to buy food directly from farmers through a subscription program. In this model, the consumer pays for a "farm share" (a percentage of the food produced that season) up front and receives a weekly box of produce during the growing season. This provides farmers the opportunity to do marketing and have cash flow during the winter and spring seasons.

of sales, and qualify for investments that would help them further expand. While those who choose to farm as a lifestyle can and do make important contributions to the agricultural landscape, the environment, and other indirect economic and social aspects of quality of life, continuing agriculture into the future will likely require a mix of lifestyle farmers and entrepreneurial farmers. The entrepreneurial farmers will require the same type of business planning, management, and financing assistance that any small business needs. By understanding the potential for farming as a business, the Town can encourage innovative enterprises and help connect agricultural entrepreneurs with appropriate business-related services.

The average age of farmers in Connecticut is 57.6, higher than the New England average of 56.6.[14] While the average age of farmers has been a concern regionally and nationally for a number of years, in recent years more young people have been choosing to farm. With the presence of UConn, Mansfield is in a position to engage young people in its agricultural community in ways that would be harder for a more isolated community. There is evidence that some young people are already interested in farming in Mansfield. More can be done to attract and retain a new generation of farmers. Young farmers often find farmland unaffordable. It will also be important to work with the current generation on transition plans where there is interest in passing the farm to another generation.

ii) UConn agriculture in Mansfield

As Connecticut's land grant university, UConn owns and maintains approximately one quarter of the active farmland in Mansfield, and is home to several agricultural operations including an Equine Center specializing in the breeding of Morgan horses, the Dairy Center and Creamery, Livestock Unit and Poultry Unit. Many of these facilities are open to the public 365 days a year, making UConn a popular agri-tourism destination. UConn's Dairy Bar, serving award winning ice cream produced in the Creamery from UConn dairy cows, is one of the top 10 tourism destinations in Connecticut, attracting over 200,000 visitors per year.[15] UConn officials are committed to keeping the agricultural land it currently uses in active use.[16]

14 2007 Census of Agriculture. State and County Data.

15 Schirm, Nicole. "Education and so much more!" Holstein World; New England Holstein Annual. March 2013.

16 Phone Interview. Greg Weidemann, Dean, UConn College of Agriculture and Natural Resources. 4/8/13.

3. Potential Growth Opportunities

A) RESEARCH AND TECHNOLOGY

The increasing emphasis at UConn on research and development and university-industry relationships provide Mansfield with an opportunity to capture technology companies spinning out of UConn and those seeking research partnerships with the university.

The State of Connecticut economic development strategy includes a focus on UConn as a driver of 21st century economy prosperity. Major planned investments by the State in UConn over the next 10-20 years promise to significantly affect the Mansfield economy.

- **NextGenCT.** This initiative, which includes significant investments in campus facilities and increases in faculty and enrollments, focuses on expanding the level of research, technology commercialization and new enterprise development at the Storrs Campus, which could spur increased demand for R&D, office, and light manufacturing space in Mansfield. The increase in students and faculty could also generate growth in other economic sectors including retail, accommodation and food services, and other consumer services.
- **UConn Technology Park.** The Tech Park, as currently envisioned, will involve the build-out of up to 900,000 square feet over a 10-20 year timeframe. The first building in the park, the Innovation Partnership Building (IPB), will be State-owned and operated. Most of the other buildings are expected to be privately developed and to house corporate research facilities, emerging technology firms, and possibly federal labs. While Tech Park land is expected to remain State property, these private facilities are envisioned to be equipment-intensive and thus to generate a high level of property taxes to Mansfield on the improvements (buildings and equipment). While the nature, scale and timing of the Park's construction remain undetermined at this time, its completion has the potential to result in significant business development, job creation, and local property tax revenues over time. In the shorter run, the graduation of firms from the new incubator could increase the number of second stage firms desiring to expand within Mansfield as they seek to maintain proximity to UConn facilities and relationships with UConn researchers.
- **UConn Technology Commercialization Partners.** UConn and the State of Connecticut have greatly expanded resources to support technology commercialization and entrepreneurship. UConn's Office of the Vice President for Research operates a variety of programs specifically aimed at promoting technology-based economic development related to UConn's research strengths. These programs provide resources for companies seeking the expertise of UConn faculty and researchers, manage the intellectual property created at the university in life and physical sciences, assist in creating new start-up companies based on technologies developed by faculty and staff, and accelerate the establishment and development of entrepreneurial companies through incubator space and support services.

- **Connecticut Innovations (CI)** is another important source of support for startup and early stage companies. CI provides a variety of financing and technical assistance tools, including SBIR matching grants, the TechStart Accelerator Program, the Seed Investment Fund, ELI Whitney Fund early stage venture capital funding, the Clean Tech Fund, and the BioScience Facilities Fund, which finances wet lab and related space.

Mansfield already has a small base of research and development (R&D) and technology firms that, while generally small and not highly visible, generate income, tax revenues, and high-quality employment, and have the potential to grow. While the UConn campus provides fertile ground for technology commercialization and entrepreneurship, Mansfield is hampered by a shortage of R&D space and land zoned for R&D facilities as firms grow and look for larger space. Some firms are reported by UConn staff and Town officials to have relocated outside of Mansfield for this reason. Without the development of additional R&D space, Mansfield will continue to lose growing technology firms to other communities.

B) PROFESSIONAL AND BUSINESS SERVICES

Mansfield has a significant number of small firms (generally four or fewer employees) that provide a wide range of business and professional services in regional or even national markets. These include engineering and architectural services, computer programming and computer systems design, graphic design, environmental consulting, management consulting, and other business services. As described earlier, these types of businesses (classified under professional and technical services and administrative services) have been growing in the Tolland-Windham region during the past decade but not in Mansfield. More attention to accommodating the growth needs of these types of firms could yield more business and employment growth within Mansfield.

C) RETAIL AND CONSUMER SERVICES

Data indicate that Mansfield has a relatively small retail sector. Increases in students and faculty at UConn as well as the ability to realize the growth opportunities described above will increase the base of consumers (i.e., residents, employees, and students), potentially creating greater demand for retail and consumer service businesses. However, because the Mansfield population has typically dropped during the summer, the seasonal nature of the market has made it difficult in the past for some retail and service businesses to survive over the long term. More summer programs on campus, as well as advertising to year-round residents, would help support retail, especially in Storrs Center and other areas near campus. As UConn upgrades residence halls with air conditioning and other improvements, it is expected that summer programs will expand.

The new Storrs Center has met with considerable initial success in leasing ground floor space to commercial tenants. Anecdotal evidence suggests that the Storrs Center

merchants did better than expected in the summer of 2013, their first summer. The experience at Storrs Center with commercial lease and occupancy rates during the next few years will provide one indication of the potential for further expanding retail and consumer services within the town.

D) TOURISM

Mansfield has a wide variety of tourism attractions that could draw more visitors, particularly from within the southeastern New England market. Mansfield is located approximately 22 miles from I-91, a major North/South transportation corridor, and 30 miles from I-90, a major East/West corridor. The town is 20 miles from Hartford, 85 miles from Boston and 137 miles from Manhattan. This location places the town in a prime tourism location. While the town lacks a major tourism destination, its location in the Last Green Valley combined with a mix of arts, history and cultural heritage, outdoor recreation, and tourism venues and events offer a diverse tourism experience.

- **Arts.** Mansfield offers a number of high-quality performing and visual arts attractions, primarily through UConn. For more information, see Chapter 5: Community Life.
- **History and Cultural Heritage.** Historical and cultural heritage attractions include: the Gurley Gristmill, the only remaining stone mill of its kind in Connecticut; the Mansfield Historical Society and Museum, which offers exhibits and educational programming related to Mansfield's 300 year history; and the Connecticut State Museum of Natural History, which hosts exhibits integrating Connecticut's natural and cultural history.
- **Outdoor Recreation.** Several parks and recreation areas are located within the town, including Mansfield Hollow State Park, the Albert E. Moss Forest, Shelter Falls Park, the David Storrs Chapin Coney Rock Preserve, the Knowlton Hill Preserve, and the Wolf Rock Nature Preserve. These sites offer a wide range of outdoor recreation activities, including hiking, biking, boating, fishing, bird watching, rock climbing, and cross-country skiing. The new Adventure Park at Storrs, an aerial park, offers a family-oriented rope and zip line course. Special events include the annual Willimantic Down River Canoe and Kayak Race from Tolland to Mansfield, and Walktober, a series of hundreds of hikes and other regional events that attract thousands of visitors annually from New England and beyond.
- **Agri-tourism.** According to the 2007 census of agriculture 2% of CT farms (and 2% of Tolland County farms) offered agri-tourism and recreational services, ranking Connecticut number three in New England for the percentage of farms involved in agri-tourism. Local agri-tourism attractions include UConn, Cedar Ledge Tree Farm, with a range of fall and Christmas season activities, and Bassett's Bridge Farm, best known for its stroll gardens displaying perennials, annuals, herbs, shrubs, and trees. These provide a powerful engine for further development of agri-tourism, cross-marketing eco-tourism, and adventure tourism opportunities that can be compatible with agricultural enterprises.

Photo credit: Peter Morenus/UConn

UConn's Ballard Institute & Museum of Puppetry is a unique attraction, drawing people of all ages.

Mansfield offers a range outdoor recreation activities, including kayaking, hiking, fishing and cross-country skiing (River Park shown above).

The 2013 Tourism Impact Report commissioned by the The Last Green Valley (TLGV) demonstrates the potential for tourism as an economic growth sector. Tourism activities in the region have grown substantially over the past few years, from 1.3 million visitors with $158 million in economic impact in 2010 to 1.9 million visitors in 2013 with $278 million in economic impact. While 66% of visitors to the Last Green Valley are day trippers (compared to 35% statewide), the number of visitors with overnight stays increased from 25% to 34%. Visitors with higher household incomes spent more per visit; however, those with lower incomes visited more frequently.[17]

Mansfield and the surrounding region are well-positioned to tie into the state's tourism branding and marketing initiative, "Connecticut...Still Revolutionary." The initiative seeks to link the state's historic past with its legacy and continued role as a center of innovation. The region's historic sites, some tied to Revolutionary War figures such as Nathan Hale, Samuel Huntington, and Governor Jonathan Trumbull, its role in the industrial revolution, and its significance today as a center of leading edge research at UConn, can all be capitalized upon to strengthen the region's position as a tourism destination.

Expanding tourism in Mansfield could strengthen the town's economy and, in particular, create more activity during the quiet summer months when UConn is not in full session. Expanding agri-tourism offers the additional benefit of providing supplemental income to farmers. This is likely to require more intensive local efforts to highlight the town's attractions within the regional tourism market that could include the development of themed trails, tourism packages, and special events, and working with other towns in the region to provide a more diverse and appealing visitor experience. It may also require further development of local visitor infrastructure (e.g., inns, bed and breakfasts, and campgrounds) that could help to attract more visitors to Mansfield and increase their spending while here.

E) AGRICULTURE: LOCAL MARKETING AND VALUE-ADDED PRODUCTION

Connecticut in general and Mansfield in particular are both utterly dependent on food that comes from hundreds and even thousands of miles away. A 2012 report by the Zwick Center for Food and Resource Policy estimated that locally produced food accounts for 2.5% of Connecticut's total food expenditures. That means 97.5% of the value of all food is imported from other states and countries.

Although Connecticut is likely to remain dependent on other states and countries for food, increasing the amount of food produced locally is a worthy goal. The Governor's Council on Agricultural Development has proposed a target of 5% of food expenditures on locally-grown food by the year 2020. One of the ways of facilitating increased local production is through more effective marketing. Mansfield is well served by a year-

17 2013 Tourism Impact Report summary sheet, commissioned by The Last Green Valley and prepared by Witan Intelligence.

round farmer's market and has one active CSA farm. Mansfield can build on this modest current agricultural marketing platform and benefit from lessons learned by others and the structures they develop.

Those seeking to farm full-time (and even part-time) often need to move from production of raw materials to production of value-added products. Even those producing raw materials, must, if they choose to market at any significant scale, meet ever higher safety and quality standards to find and maintain a footing in the marketplace. Some of the costs associated with value-added production—trainings and certifications, labeling and packaging, and enhanced distribution—can be shared among groups of farmers, but only when there is sufficient volume of similar product to warrant it. With the exception of its dairy operation, Mansfield's agricultural activity is so diverse and currently at a scale so small as to make it difficult to justify individual farmers investing in any particular type of shared value-added facility. However, if subsidized facilities come on line, existing and future Mansfield farmers will have the opportunity to develop new products and serve new markets. Such a facility could enable the Town to promote a regional approach to agricultural facilities and marketing.

ECONOMIC DEVELOPMENT RESOURCES

The development of Mansfield's economy is influenced by its economic development resources. These include its human resources, entrepreneurial climate, physical infrastructure, economic institutions, and general quality of life. Effectively utilizing these resources and filling critical resource gaps can support and accelerate economic development efforts.

ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT RESOURCES

Programs and services available to technology businesses are described in the "Potential Growth Opportunities" section above. Other regional and state programs and services for businesses include the following:

- **Small Business Development Centers (SBDCs).** The SBDC's central office and one of its regional centers are located at UConn's Storrs campus. SBDCs provide businesses with assistance on a range of business functions, including business plan development, financial planning, loan packaging, marketing, employee management, and regulatory compliance. They also provide specialized assistance in government contracting, international trade, and for minority, women and veteran businesses.
- At the state level, the **Connecticut Development Authority** (now including Connecticut Innovations) offers financing programs addressing a range of business needs. In addition to the Bioscience Facilities Fund described earlier, these include loans and loan guarantees for small and mid-sized businesses; grants, seed financing, venture capital, and loans for early-stage and technology-intensive businesses; targeted programs providing export financing, loans and loan guarantees for advanced energy projects; and loans for IT companies.
- The **Connecticut Department of Economic and Community Development** offers two business loan programs, the Small Business Express Program and loans to manufacturers for projects with strong economic development potential. DECD, both directly and through partner organizations, provides technical assistance to businesses on a range of issues, and also works with qualifying businesses to provide state tax incentives.

CAREER EDUCATION AND WORKFORCE DEVELOPMENT RESOURCES

- Workforce development services for jobseekers and employers in Mansfield are provided by the **Eastern Connecticut Workforce Investment Board (WIB)**, one of five regional workforce investment boards in Connecticut. The career center serving Mansfield is located in Willimantic. Services to job seekers include job search assistance, career counseling, job development and placement, seminars on a wide range of topics, training referrals, and training funds for individuals with high barriers to employment to be used for training by certified training providers. Services to employers include employee recruitment assistance, reimbursement for on-the-job training, and workforce literacy assistance. The WIB also provides services to at-risk and out-of-school youth.
- **Windham Technical High School** is the regional technical school serving Mansfield and 19 other communities. The school serves high school students who seek a combination of traditional academics and training in a trade or technology field. The school offers students training in architectural technology, electrical, automotive technology, electronics, carpentry, health technology, heating, ventilation and air conditioning, manufacturing technology, and culinary arts. It also offers adults training as dental assistants.
- **Eastern Connecticut State University,** in addition to its bachelor's and post-graduate degree programs,

offers short-term (six months or less) on-site and on-line training in a range of career fields.

- **UConn** offers a range of adult learning opportunities, both on-site and on-line.

CULTURE, RECREATION AND TOURISM RESOURCES

- **Mystic Country** (*www.mystic.org*) (Eastern Regional Tourism District) is the state's designated marketing organization for eastern Connecticut, operated by the Chamber of Commerce of Eastern Connecticut. The organization hosts a detailed tourism website, produces and distributes a printed visitors' guide, provides advertising opportunities for tourism businesses, and assists meeting and event planners. With the highest-profile tourism attractions, notably the casinos, Mystic Seaport, and the Long Island Sound coastline, concentrated in the southeast, the northeast suffers from a less intensive focus than was the case when it had its own marketing organization.
- **The Last Green Valley Inc.** (*www.tlgv.org*) is a 35-town National Heritage Corridor in eastern Connecticut and south-central Massachusetts that promotes heritage and natural resource tourism as part of its mission. TLGV hosts an extensive website that includes a calendar of events and an interactive map, publishes guides and maps, and sponsors special events such as the annual Walktober. It also provides co-operative advertising opportunities for its business members.
- **WindhamARTS** was organized to foster and promote the arts and cultural life of the Windham Region. It has been named by the state as Northeast CT's Designated Regional Service Organization for the arts. The organization hosts an on-line arts calendar.

In addition to these regional organizations, the Windham Region Chamber of Commerce and the Tolland County Chamber of Commerce publish downloadable and printed brochures that provide extensive listings of tourism venues and events, lodging, restaurants and other visitor information. However, the chambers have not been actively involved in tourism development strategies or focused marketing initiatives.

PHYSICAL INFRASTRUCTURE AND HOUSING

The quality of public infrastructure to serve businesses and the availability of housing to meet workforce needs are important factors in economic development. In Mansfield, the limited availability of water and sewer service, and its absence in many areas zoned for business development, as well as the limited range of housing choices present potential barriers to future economic development. Housing and physical infrastructure are addressed in detail in other sections of the Plan (see Chapters 7 and 9).

ECONOMIC DEVELOPMENT CAPACITY & GRANT PROGRAMS

Economic development functions in Mansfield are handled by the Town Manager and the Director of Planning and Development. Mansfield does not have a dedicated staff position for economic development.

- Town staff are assisted by a recently re-established **Economic Development Commission,** whose mission is to conduct research into local economic conditions and trends, make recommendations regarding economic development, and coordinate the activities of and cooperate with organizations to promote economic development.
- Two chambers of commerce serve Mansfield businesses—the **Windham Regional Chamber of Commerce and the Tolland County Chamber of Commerce.** Both chambers provide tourism information and also focus on business networking, advertising and promotional opportunities and legislative affairs. As relatively small chambers, neither plays an extensive role in economic development.

- In 2014, Mansfield joined the **Capitol Region Council of Governments (CRCOG),** which provides a wide variety of services to its member communities, including transportation planning assistance and coordination with CTDOT. Another possible resource with this move to the Capitol Region is the **Metro-Hartford Alliance**, the economic development organization for the Hartford region, including all members of CRCOG. As part of its efforts, Metro-Hartford Alliance prepares the Hartford Region Comprehensive Economic Development Strategy (CEDS), which prioritizes projects and is required to obtain project funding from the Economic Development Administration. Mansfield is currently covered by the 2010 Eastern Connecticut CEDS, which will remain in effect until the Hartford Region CEDS is updated to include Mansfield and other new CRCOG communities.
- At the state level, the Office of Policy and Management manages the **Small Town Economic Assistance Program (STEAP),** which funds economic development, community conservation and quality of life projects for localities that are ineligible to receive Urban Action bonds.
- The State Department of Economic and Community Development manages the **Small Cities Community Development Block Grant (CDBG) Program**, which provides funding and technical support to communities with populations of less than 50,000 for projects that achieve local community and economic development objectives.

ACTION PLAN

Each chapter within this Plan includes an action plan: a set of suggestions for how to put the Plan to work and begin transforming ideas into action. Each action plan identifies some of the **entities that are expected to have a key role in** achieving specific action items (town departments, committees/ commissions, outside organizations, etc.); a target timeframe to complete each action; and the types of resources that we anticipate may be needed for implementation (staff time, volunteer time, operating budget, capital improvement program, grants, etc.).
Action plans include:

- **Goals** that describe the outcomes our community hopes to achieve;
- **Strategies** for advancing each goal; and
- **Actions**—specific steps our community can take over the short term (before end of 2019), medium term (between 2020 and 2024) and long term (between 2025 and 2035) in support of each strategy.

Action plans are tools for focusing efforts and resources on the issues our community cares about most. The action plans will:

- Guide town officials as they continue to shape policies and allocate resources in the years to come;
- Refocus the efforts of town staff and committees as they work to advance community goals;
- Provide a foundation for developing annual budgets and workplans; and
- Evolve over time in response to new opportunities and circumstances.

Action plans set the agenda for our community's many officials, volunteers, committee members and staff for the years ahead, and align their work with the community's vision **but do not provide a guarantee that resources will be available to advance each action.** While these action plans are comprehensive in nature, they are not intended to preclude the Town from pursuing other actions as opportunities arise. **As additional actions and initiatives are contemplated, they should be evaluated with regard to how the action will help to advance the vision and goals** contained in the overall Plan.

Key of Abbreviations	
TOWN DEPARTMENTS & SERVICES	
Building & Housing Inspection	Town of Mansfield Department of Building & Housing Inspection
DPW	Town of Mansfield Department of Public Works
Facilities	Town of Mansfield Facilities Management Department
Finance	Town of Mansfield Finance Department
Fire	Division of Fire & Emergency Services / Office of the Fire Marshal
Fire Marshal	Office of the Fire Marshal
Human Services	Town of Mansfield Department of Human Services
Information Technology	Town of Mansfield Information Technology Department
Library	Town of Mansfield Public Library
Parks & Rec	Town of Mansfield Parks & Recreation Department
Planning	Town of Mansfield Planning & Zoning Office
Police	Mansfield Resident State Trooper's Office
OTHER ABBREVIATIONS	
CT DEEP	State of Connecticut Department of Energy and Environmental Protection
CT DPH	State of Connecticut Department of Public Health
EHHD	Eastern Highlands Health District
Emergency Management	Emergency Management Advisory Council
IWA	Inland Wetland Agency
PZC	Planning & Zoning Commission
Town/Gown	Town/University Relations Committee

Goal 6.1
Mansfield has balanced economic development efforts with sensitivity to preserving the town's unique blend of rural character and college town amenities to create an attractive location for businesses, workers and residents.

Additional economic development will provide multiple benefits, including increasing the number and type of available jobs and helping the Town to offset the impact of continuing declines in state revenues on municipal operations, services and budgets. These objectives must be balanced with the desire to preserve and protect the rural character of residential areas of the community.

Measures of Effectiveness:
- Number of businesses locating on previously developed sites
- Increase in assessed value of taxable commercial and light industrial properties

Strategy A | Ensure Mansfield has sufficient resources and capacity for economic development.

ACTIONS	WHO	WHEN	RESOURCES
1. Collaborate with local, state and regional entities to advance economic development efforts. Potential partners include Mansfield Downtown Partnership, UConn, MetroHartford Alliance, Small Business Development Center, DECD, CT Department of Agriculture, Northeast Connecticut Economic Alliance, and CTInnovations.	Economic Development Team Town Council	Ongoing	Staff Time
2. Expand economic development capacity of Town staff. Given their extensive other duties, it will be difficult for either the Town Manager or Director of Planning and Development to play a lead operating and staff role in economic development efforts. Consequently, if practicable, the Town should consider creating a staff position or contracting for these services. This expansion of service could be done independently or by partnering with neighboring towns to fund a joint position or contract.	Town Council	Short Term	Operating Budget

SHORT TERM = 2015–2019	MEDIUM TERM = 2020–2024	LONG TERM = 2025–2035

Strategy B | Continue to focus new commercial and light industrial development in the Four Corners, Storrs Center, Perkins Corner and Route 195/Route 6 areas to preserve rural character in other parts of the community *(see Section 1.B of this chapter for more information on light industry as an option for Mansfield).*

See Chapter 8 for additional information on why these areas have been identified as the primary commercial/business development focus areas. For strategies and actions related to expanding agricultural businesses and activities, see Goal 6.4.

ACTIONS	WHO	WHEN	RESOURCES
1. Expand allowable uses in the four target areas to include Research and Development (R&D) and light industrial uses. *See text box in Section 1.B of this chapter for a description of light industrial uses.*	*See Goal 6.5 for specific strategies and actions related to land use and zoning, including identification of development standards to be addressed.*		
2. Consider expanding R&D and light industrial uses to the UConn's Depot Campus if the property transitions from State to private ownership.	*See Goal 6.5 for specific strategies and actions related to land use and zoning, including identification of development standards to be addressed.*		
3. Allow for small-scale commercial businesses and development in the King Hill Road, Route 32/Route 195, Mansfield Depot and Mansfield Center areas. Development standards for each area should take into account surrounding context. For example, new development in the King Hill Road area may differ in form and scale (due to its location adjacent to the core UConn campus) from development in Mansfield Center, one of Mansfield's historic villages.	*See Goal 6.5 for specific strategies and actions related to land use and zoning.*		
4. Support improvements to water, wastewater and transportation infrastructure, including bicycle and pedestrian improvements, in the four commercial target areas to support business growth and redevelopment. Availability of public infrastructure is a critical component for economic and business development; this type of infrastructure allows for more compact development, reducing the amount of land needed for development. Two of the four target areas (Storrs Center and Route 195/Route 6 areas) currently have water and wastewater infrastructure. Water and sewer infrastructure for Four Corners are expected to be available in 2016. In the longer term, water and sewer service to Perkins Corner may be available through connections to Windham water and sewer services. *See Goals 9.1 and 9.2 for more specific actions related to transportation, water and wastewater infrastructure.*	Town Council PZC	Ongoing	CIP Grants Bonds Property owners Developers

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy C | Maintain and enhance community services and amenities that make Mansfield a great place to live and work. *See Chapter 5 for related goals and strategies.*

ACTIONS	WHO	WHEN	RESOURCES
1. Promote continuing education and professional development programs available through UConn and ECSU. Include information on Town website and promote through Library and Mansfield Community Center publications.	Parks & Rec Information Technology Library Economic Development	Ongoing	Staff Time
2. Offer a wide variety of community enrichment services and programming. *For information on existing services and additional strategies and actions, see Chapter 5.*	Parks & Rec Library Human Services	Ongoing	Staff Time Operating Budget
3. Expand housing and transportation options.	*See Goals 7.4 and 9.1 for specific strategies and actions.*		
4. Increase diversity of available consumer goods and services.	*See Goals 6.2 and 6.3 for specific strategies and actions.*		
5. Collaborate with UConn and ECSU to help elementary, middle and high school students develop their knowledge, skills and talents. Potential areas for partnership/collaboration include: • *Summer enrichment programs* • *Entrepreneurship programs for high school students* • *Enhancements to STEM education in public schools* • *Related Arts* *For additional education strategies involving the Region 19 Board of Education and the Mansfield Board of Education (MBOE), see Goal 5.2.*	Region 19 Board of Education Mansfield Board of Education	Medium Term	Staff Time Operating Budget

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy D | Promote Mansfield's assets and amenities.

ACTIONS	WHO	WHEN	RESOURCES
1. Develop marketing materials showcasing Mansfield's amenities and services for use by local realtors and UConn to encourage new employees to live in Mansfield. As UConn continues to expand faculty and staff, efforts should be made to encourage new employees to live in Mansfield. A 'Welcome to Mansfield' package could include information on schools, community services and amenities, neighborhoods, housing options and regional assets such as nature-based recreation activities and proximity to cities such as Hartford, Providence, Boston and New York. Information and collaterals could also be made available on the Town website. As these materials could also be helpful in attracting faculty and students, the Town should seek funding support from UConn.	Economic Development Commission UConn Economic Development Team	Short Term	Staff Time Volunteer Time Operating Budget UConn

Strategy E | Offer a welcoming environment to young professionals, entrepreneurs and innovators to attract and retain talent.

ACTIONS	WHO	WHEN	RESOURCES
1. Enlist local and regional organizations to develop and implement a program of professional development and enrichment activities. Potential organizations include MetroHartford Alliance, Windham and Tolland Chambers of Commerce, UConn, Windham Arts, Innovation East, the Small Business Development Center, Mansfield Downtown Partnership and regional EDCs. Possible activities include: • *Organizing networking events* • *Developing venues and events for showcasing talent* • *Professional development opportunities* • *Promoting cultural, entertainment and recreational events* • *Recognizing accomplishments of residents through local publications and events*	Economic Development Commission	Medium Term	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Goal 6.2
Mansfield has an entrepreneurial environment that supports business formation, expansion, and retention.

Measures of Effectiveness:
- Increase in total number of businesses

Strategy A | Establish a business retention and expansion (BRE) program.

ACTIONS	WHO	WHEN	RESOURCES
1. Develop a business visitation program using surveys or structured interviews to assess business status and identify outstanding or potential issues. Items for consideration/inclusion in the program include: • *Identifying target businesses based on criteria such as size, location, growth potential, and possibility of the business relocating out of Mansfield due to existing concerns* • *Developing mechanisms to address issues identified in visits, either directly or through referral to other organizations, and follow-up to ensure that issues are resolved* • *Developing protocols for visits, tracking, and follow-up* • *Identifying key issues and business needs based on surveys/interviews* • *Identifying volunteers with business knowledge to conduct surveys and interviews* • *Providing training for staff and volunteers to ensure consistency and program effectiveness* • *Involving regional chambers of commerce in helping to recruit volunteers*	Economic Development Commission Economic Development Team	Ongoing	Staff Time Volunteer Time Operating Budget
2. Include agricultural enterprises in BRE activities. The Agriculture Committee can assist in targeting farm businesses for BRE outreach.	Economic Development Commission Agriculture Committee	Ongoing	Staff Time Volunteer Time
3. Prepare a Business Retention and Expansion plan with more specific strategies to foster entrepreneurship, small business development and talent retention.	Economic Development Commission	Medium Term	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy B | Connect businesses with information and resources.

ACTIONS	WHO	WHEN	RESOURCES
1. Strengthen relationships with state and regional business organizations to expand knowledge of and access to business assistance resources. Examples include CT Small Business Development Center, Northeast CT Economic Alliance, MetroHartford Alliance, CT Department of Economic and Community Development, CT Department of Agriculture, UConn Cooperative Extension	Economic Development Team	Ongoing	Staff Time
2. Provide opportunities for businesses to connect with one-another.	Economic Development Commission Agriculture Committee Economic Development Team	Ongoing	Staff Time Operating Budget
3. Expand and periodically update the business and agriculture sections of the Town website. The pages should be clearly accessible from the homepage and include the following information: • *Community profile* • *Information on how to locate a business in Mansfield* • *Information on permitting process with links to key pages* • *Information on assistance programs* • *Information on available sites* • *Testimonials from existing businesses and farmers* • *Links to local, state and regional organizations, organized by type with a brief description of each* • *Primary point of contact*	Economic Development Commission Agriculture Committee Information Technology Economic Development Team	Short Term	Staff Time Volunteer Time
4. Identify available commercial and agricultural properties for sale/lease and market through sites such as CERC's Site Finder website (*www.ctsitefinder.com*), *www.farm-link.uconn.edu*, and *www.newenglandfarmlandfinder.org*.	Economic Development Team	Short Term	Staff Time Operating Budget
5. Partner with area organizations and nearby communities to host informational events on topics of interest to local businesses. Coventry has an existing program in place; the Town should explore partnering on future programs of common interest to businesses in both communities.	Economic Development Commission Agriculture Committee	Short Term	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019 | **MEDIUM TERM** = 2020–2024 | **LONG TERM** = 2025–2035

Strategy C | Reduce regulatory barriers to business growth. *For recommended changes to zoning regulations, see Goal 6.5.*

ACTIONS	WHO	WHEN	RESOURCES
1. **Improve the permitting process by providing clear information, streamlining review and providing on-line service.**	*See Goal 6.5 for specific recommendations.*		
2. **Periodically evaluate and update permit fee structure to ensure that it is not a barrier to economic development.** As part of any review, the Town should review fees in comparable communities to remain competitive.	Economic Development Team Town Council	Ongoing	Staff Time
3. **Work with state and regional organizations and other communities to advocate for regulatory change at the state level to make Connecticut a more business-friendly state.** Potential partners include the Connecticut Conference of Municipalities, Windham and Tolland Chambers of Commerce, Capitol Region Council of Governments, MetroHartford Alliance and CERC.	Economic Development Team	Ongoing	Staff Time

Strategy D | Promote local businesses and celebrate their success.

ACTIONS	WHO	WHEN	RESOURCES
1. **Work with area businesses to reinvigorate the Mansfield Business and Professionals Association (MBPA).**	Economic Development Commission Economic Development Team Windham Chamber of Commerce	Ongoing	Staff Time Volunteer Time
2. **Update the Town's website to include business and agricultural portals that showcase local businesses, farms and products.** Information can include business listings, highlights of local products and experiences, and recognition of local business success stories, such as chamber awards.	Economic Development Commission Agriculture Committee Economic Development Team Information Technology	Short Term	Staff Time Volunteer Time

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
3. Include articles and features in the Town newsletter spotlighting local businesses and agricultural/forestry enterprises.	Economic Development Commission Agriculture Committee	Ongoing	Staff Time Volunteer Time
4. Develop local business and agriculture guides. A local business guide and map can help inform residents about the variety of goods and services available in the community.	Economic Development Commission Agriculture Committee Economic Development Team Mansfield Downtown Partnership	Short-Medium	Staff Time Volunteer Time Operating Budget Ad/Sponsors
5. Continue to encourage residents and businesses to buy local. Past efforts have focused on holiday shopping events. The program could be expanded to have a more year-round focus.	Economic Development Commission Economic Development Team Mansfield Downtown Partnership	Medium Term	Staff Time Operating Budget

Strategy E | Expand local business assistance programs.

ACTIONS	WHO	WHEN	RESOURCES
1. Seek funding for capital improvement projects that will support local business growth consistent with Town objectives. Possible funding sources include the Connecticut Small Town Assistance Program and Small Cities grants.	Economic Development Commission Economic Development Team Mansfield Downtown Partnership	Ongoing	Staff Time Grants CIP
2. Consider developing local small business programs. Revolving loan and grant programs can help small businesses and farms finance improvements needed to help them succeed and grow. Funding for these types of programs may be available through state and federal grants, including the Department of Housing's Small Cities program.	Economic Development Commission Town Council Economic Development Team	Medium-Long	Staff Time Grants

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Goal 6.3
Mansfield has a growing and diversified economy that helps to maintain the high-quality services desired by residents.

Measures of Effectiveness:

- Increase in number of businesses in sectors identified as potential local and regional growth sectors
- Number of businesses related to UConn R&D or faculty expertise establishing operations in Mansfield
- Increases in, improvements to, or expanded access to tourism venues
- Number and square footage of new office, R&D, and light industry establishments
- Increase in assessed value of taxable commercial, industrial and agricultural properties
- Increase in number and diversity of job opportunities

Strategy A | Establish a regional business marketing program.

ACTIONS	WHO	WHEN	RESOURCES
1. Collaborate with nearby towns on regional marketing efforts. Potential activities include: • *Joint grant applications for economic development activities including marketing and shared staff* • *Development of regional marketing materials* • *Development of informal collaborative efforts such as cross-referrals of prospects that are not a good fit with the initial contact community.*	Economic Development Commission Agriculture Committee UConn Economic Development Team	Ongoing	Staff Time Operating Budget Grants
2. Conduct outreach to commercial property developers that specialize in businesses aligned with the Town's marketing and development objectives. Lab space and multi-tenant space for early stage technology firms are potential targets for discussion.	Economic Development Team Economic Development Commission	Ongoing	Staff Time Volunteer Time
3. Target businesses in economic sectors that are strong and growing regionally, technology businesses related to UConn, agricultural-related businesses and businesses providing underrepresented consumer goods and services. Initial efforts should focus on firms that are well-matched to current commercial property inventory; targeting can be broadened as more specialized facilities (e.g. with lab space) are developed. *See Strategy B for additional actions related to UConn-related businesses.*	Economic Development Commission UConn Economic Development Team Mansfield Downtown Partnership Agriculture Committee	Medium Term	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019	MEDIUM TERM = 2020–2024	LONG TERM = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
4. Strengthen relationship with the Connecticut Department of Economic and Community Development (DECD) to encourage referrals of firms and site selection consultants seeking a location in Connecticut for businesses consistent with target economic sectors.	Economic Development Team	Ongoing	Staff Time
5. Pursue state and federal funding to support economic development activities and projects. Potential sources include Small Cities CDBG grants, US Economic Development Administration (EDA) grants, US Department of Agriculture (USDA) grant and loan programs.	Economic Development Team	Ongoing	Staff Time Operating Budget CIP (If match required)
6. Organize familiarization tours for businesses, site selectors, and commercial property developers to highlight available properties and the Town's assets and amenities. Tours could involve Town officials, real estate professionals, business leaders and university representatives, as appropriate.	Economic Development Commission Economic Development Team	Short–Medium	Staff Time Volunteer Time Operating Budget
7. Develop a menu of state and local incentives to support development of businesses and properties aligned with Town objectives. Potential incentives include: • *Providing local Tax Increment Financing (TIFs) to finance public improvements associated with desired development projects, potentially in conjunction with a state TIF for large-scale projects through Connecticut Innovations* • *Fixing the assessment of privately developed and owned buildings for up to seven years* • *Offering funding to reduce the development costs of incubators or other multi-tenant facilities (potential funding sources include Small Cities and STEAP grants)* • *Supporting funding applications to Connecticut Innovations Bioscience Facility Fund* • *Working with developers to obtain brownfields remediation funding* • *Acquiring and land-banking property*	Town Council Economic Development Commission Economic Development Team	Short–Medium	Staff Time Operating Budget Grants CIP

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
8. Work with the Town of Windham and the CT Department of Economic and Community Development to explore creation of an Airport Development Zone for the Windham airport. Airport development zones provide local property tax and state corporate tax incentives to businesses engaged in manufacturing, R&D related to manufacturing and other services related to the airport.	Economic Development Team Economic Development Commission Finance Town Council	Short–Medium	Staff Time Operating Budget

Strategy B | Collaborate with UConn to maximize the local economic benefits of the University's presence.

ACTIONS	WHO	WHEN	RESOURCES
1. Increase efforts to capture businesses graduating from UConn's Technology Incubation Program (TIP) in Mansfield. These firms often need small scale R&D and office space with special fit-up for wet or dry lab space; however, demand has been insufficient for private developers or property owners to develop space involving the additional costs generated by fit-up requirements. Possible activities include: • *Quantifying demand, both existing and previous, through documentation of TIP graduates that moved to other communities due to lack of space* • *Updating zoning regulations to expand areas where R&D businesses are allowed and streamlining review procedures (See Goal 6.5, Strategy C for specific recommendations)* • *Identifying potential funding sources and partners for a small-scale R&D start-up/incubator facility. The Axis901 project in Manchester (coworking space owned by the Town and developed through a partnership with Manchester Community College and First Niagara Bank) could be a potential model.*	Economic Development Commission Economic Development Team	Ongoing	Staff Time Operating Budget Grants
2. Work with UConn to explore the potential for public-private partnerships to redevelop under-utilized state-owned land such UConn's Depot Campus and the Bergin Correctional Facility for mixed public and private use. Possible actions include: • *Working with the Town and other stakeholders to explore reuse options.* • *Conducting site and feasibility studies, including potential for adaptive reuse of historic buildings* • *Exploring potential for brownfields assessment and remediation grants to address possible contamination*	UConn Economic Development Team Mansfield Downtown Partnership	Medium Term	Staff Time Operating Budget UConn Private funds

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy C | Promote Mansfield as a tourism destination.

ACTIONS	WHO	WHEN	RESOURCES
1. Collaborate with nearby communities and The Last Green Valley to develop joint marketing efforts and promote more effective and targeted marketing of northeast Connecticut by Mystic Country and the Connecticut Office of Culture and Tourism.	Economic Development Commission Economic Development Team Mansfield Downtown Partnership	Ongoing	Staff Time Volunteer Time
2. Support UConn in developing additional summer adult and youth summer learning programs, using empty dormitory rooms for lodging.	Town Council	Ongoing	Staff Time
3. Supplement and enhance regional tourism development and marketing activities, with a particular emphasis on summer tourism. Expanding summertime activity to achieve a greater balance with other seasons will help provide a more stable market for businesses serving local consumers and visitors and increase year-round job opportunities.	Tourism-related businesses Economic Development Commission Economic Development Team Mansfield Downtown Partnership	Short-Medium	Volunteer Time Staff Time Operating Budget
4. Develop a local tourism promotion organization. Other small communities with significant tourism assets have developed marketing efforts to supplement regional efforts. Activities could include: • *Development of a visitor website and packages* • *Organization of special events* • *Development of theme trails* • *Installation of wayfinding signage* • *Operation of a visitor kiosk in Storrs Center* • *Promotion of additional tourism infrastructure (such as more lodging rooms)*	Tourism-related businesses Economic Development Team Mansfield Downtown Partnership	Short–Medium	Staff Time Operating Budget Grants

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy D | Collaborate with surrounding communities to generate mutually desirable economic activity.

ACTIONS	WHO	WHEN	RESOURCES
1. Work with surrounding communities to convene periodic joint meetings of Economic Development Commissions to discuss economic activity, challenges and opportunities and potential collaborations.	Economic Development Commission Economic Development Team	Ongoing	Staff Time Volunteer Time Operating Budget
2. Participate in efforts to update the regional Comprehensive Economic Development Strategy (CEDS).	Economic Development Team	Ongoing	Staff Time
3. Explore potential for partnering with one or more nearby municipalities on a joint economic development project. Connecticut General Statutes allow for municipalities to partner on joint development projects, whereby municipalities can share in both the costs and revenues of a project. Regional projects can be more competitive in obtaining state and federal grants. Potential projects that may benefit from such an approach include: • *Technology incubator/start-up space* • *Development of regional value-added processing, aggregation and distribution facilities (such as meat processing) that would support local agricultural enterprises* *See Goal 6.3, Strategy B, Action 1 and Goal 6.4, Strategy F for more information on these projects/needs.*	Economic Development Commission Town Council Economic Development Team Agriculture Committee	Medium-Long	Staff Time Operating Budget CIP Grants

SHORT TERM = 2015–2019	MEDIUM TERM = 2020–2024	LONG TERM = 2025–2035

Goal 6.4
Agriculture is valued by the community and expanding with increased acreage, higher production and growing market opportunities.

In addition to being an economic development asset, agricultural lands and open spaces also provide ecosystem and revenue benefits to the Town. *See Goal 10.3, Strategy B, Action 4 for specific recommendations on how the Town can continue to preserve and enhance open space and agricultural lands.*

Measures of Effectiveness:
- Increase in agricultural acreage, managed forests, production and distribution
- Increase in average farm income
- Increase in number of full-time farmers
- Number of Mansfield farms supplying products to local schools, businesses and institutions

Strategy A | Increase visibility of agriculture to strengthen the agricultural identity of the town and region. *See Goal 5.4 for additional strategies related to increasing access to local food.*

ACTIONS	WHO	WHEN	RESOURCES
1. Promote food production by non-farming residents and private, non-commercial agricultural activities. Connect residents with programs and resources for growing their own food at home or in community gardens. *See Goal 5.4, Strategy A, Action 1 and Goal 5.6, Strategy A, Action 3 for specific actions on increasing the availability of community gardens.*	Agriculture Committee Parks & Rec	Ongoing	Staff Time Volunteer Time Operating Budget
2. Feature local products at community events.	All Departments	Ongoing	Staff Time Operating Budget
3. Preserve scenic vistas of working agriculture. *See related action under Goal 3.4, Strategy A.*	PZC Agriculture Committee Town Council	Ongoing	Staff Time
4. Develop a program to recognize local farmers who are making a contribution to agriculture and forestry.	Agriculture Committee	Short Term	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
5. Identify Mansfield as an agricultural community through signs. Post signs at town gateways showing support for agriculture; develop signage to identify preserved agricultural lands; increase the visibility of agricultural producers through directional signs, both permanent and temporary/seasonal.	Agriculture Committee DPW	Short Term	Staff Time Volunteer Time Operating Budget
6. Encourage schools to promote agriculture. Highlight local foods on school menus; incorporate nutritional and agriculture-based curriculum, and provide students with experiential learning opportunities through farm visits, taste tests and composting.	Agriculture Committee Mansfield Board of Education Region 19 Board of Education UConn	Short–Medium	Staff Time Volunteer Time Operating Budget

Strategy B | Promote agricultural experiences for the public.

ACTIONS	WHO	WHEN	RESOURCES
1. Encourage UConn to strengthen connections with local farms through events, trips to farms and other agri-tourism sites, purchasing food from local farms, etc.	Agriculture Committee	Ongoing	Volunteer Time Staff Time
2. Support and encourage agricultural education and activities for youth, including 4-H program and Region 19's Agri-Science Program. Potential activities include a recognition program for youth achievements in agriculture.	Agriculture Committee Mansfield Board of Education Region 19	Ongoing	Staff Time Volunteer Time
3. Organize events on farms, forest lands and at the Storrs Farmers Market.	Agriculture Committee	Ongoing	Volunteer Time Operating Budget
4. Work with other communities, regional organizations and the state to develop and brand an 'Agricultural Trail' to showcase local agri-tourism activities. Leverage the success of UConn's Dairy Bar to encourage visits to local farms and help connect interested farmers to other local and regional agri-tourism destinations, activities and initiatives. *See Goal 6.5, Strategy B, Action 2 for strategies to reduce regulatory barriers to agri-tourism in Mansfield.*	Agriculture Committee Economic Development Commission Economic Development Team	Short-Medium	Staff Time Volunteer Time Operating Budget

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy C | Continue to connect farmers with resources. *See Goal 6.2 for related strategies and actions.*

ACTIONS	WHO	WHEN	RESOURCES
1. Connect farmers with state programs and resources at the CT Department of Agriculture such as Farm-to-School, Farm-to-Chef, and Farm Viability Grants.	Agriculture Committee Economic Development Team	Ongoing	Staff Time Volunteer Time
2. Conduct outreach to farmers to ensure that they are aware of available local tax incentives. Examples include PA 490, abatements and exemptions unique to agricultural activities, and other business tax incentives such as those identified in *Goal 6.3, Strategy A, Action 7* as may be adopted by the Town Council.	Agriculture Committee Economic Development Team	Ongoing	Staff Time Volunteer Time
3. Include a representative from the UConn School of Agriculture and Natural Resources as a member of the Agriculture Committee.	Town Council UConn	Short Term	Volunteer Time
4. Support the development of a local farmers network to enhance opportunities for collaborating and sharing information.	Agriculture Committee Nearby Towns	Short Term	Volunteer Time
5. Partner with UConn to make information about upcoming speakers, events and research related to agriculture more easily accessible to farmers and the public.	Agriculture Committee Economic Development Team	Short Term	Staff Time Volunteer Time
6. Work with nearby communities to develop an annual or semi-annual event that brings together regional farmers and people from relevant support organizations. Potential topics include education on marketing channel selection and exploring the potential for a regional cooperative to facilitate sales to institutions, restaurants and grocery stores.	Agriculture Committee	Short–Medium	Volunteer Time Operating Budget Sponsors

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy D | Ensure that Town officials and the public understand the value of agriculture and forestry to Mansfield.

ACTIONS	WHO	WHEN	RESOURCES
1. Identify the full range of benefits related to agriculture and forestry and communicate to officials and the community. This will help communicate why agriculture is important to people with different priorities, such as contributions to sustainability, community character, economic development and climate change mitigation.	Agriculture Committee Open Space Preservation Committee Conservation Commission Economic Development Team	Ongoing	Staff Time Volunteer Time
2. Provide ongoing education to Town employees and commission/committee members on the importance of agriculture in the community, contributions to the community, and why it is the Town's policy to support agriculture. Identify potential impacts for each department, board and commission on agricultural viability and educate staff accordingly.	Agriculture Committee Economic Development Team	Ongoing	Staff Time Volunteer Time
3. Recruit farmers to serve on all relevant Town committees, commissions and boards to ensure that challenges and opportunities related to agriculture can be brought to the table. In addition to the Agriculture Committee, important groups include the Conservation Commission, Economic Development Commission, Open Space Preservation Committee, Sustainability Committee and Town/University Relations Committee.	Town Council Town Democratic and Republican Town Committees Agriculture Committee	Ongoing	Staff Time Volunteer Time
4. Ask Town boards and committees to identify any actions related to agriculture within annual reports.	Town Manager	Ongoing	Staff Time Volunteer Time

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy E | Support legislation, policies and regulations that increase farm viability.

ACTIONS	WHO	WHEN	RESOURCES
1. Advocate for changes to state legislation and policies to support farming and expanding markets. Potential issues include enabling legislation for agricultural tax incentives, health regulations related to production and processing of food, and coordinating regulations between states, such as weight of trucks.	Agriculture Committee Economic Development Commission Economic Development Team	Ongoing	Staff Time Volunteer Time
2. Conduct annual outreach with farmers to review existing regulations and identify impacts on the viability of their operations.	Agriculture Committee Economic Development Team	Ongoing	Staff Time Volunteer Time

Strategy F | Support the expansion of agricultural operations and agriculture-related businesses. *See Goal 3.2 for strategies and actions related to increasing available agricultural land.*

ACTIONS	WHO	WHEN	RESOURCES
1. Incubate and retain new farm operations. *See related business strategies under Goal 6.2, Strategy A and Goal 6.2, Strategy B.*	Agriculture Committee	Ongoing	Staff Time Volunteer Time
2. Encourage UConn to include representatives from the Town to ensure that new agricultural initiatives meet the needs of local and regional farmers.	Economic Development Team Agriculture Committee	Ongoing	Volunteer Time Staff Time
3. Support food processing and agricultural product distribution initiatives. The Last Green Valley calls for a regional food hub to process and distribute food, such as Willimantic's Commercially Licensed Cooperative Kitchen (CLiCK). Additional regional initiatives include a mobile slaughtering unit and multi-processing centers for meat, poultry, fruits and vegetables.	Agriculture Committee Economic Development Commission	Ongoing	Staff Time Volunteer Time
4. Consider establishing a small grant program to assist farmers in growing their business. Examples of potential projects include but are not limited to creation of a CSA, signs, marketing materials, and organic certification.	Town Council Agriculture Committee	Short-Medium	Operating Budget CIP Grants

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Strategy G | Support new market channels for local agricultural products.

ACTIONS	WHO	WHEN	RESOURCES
1. Increase the volume of local foods in public and private institutions (i.e. school food service, child care and pre-k programs, hospitals, correctional facilities, etc.). *See related action under Goal 6.4, Strategy C.*	Agriculture Committee Mansfield Board of Education Region 19 Board of Education	Ongoing	Volunteer Time Operating Budget
2. Work with UConn Dining Services to continue their programs to purchase local food. UConn has demonstrated commitment to procuring local foods whenever possible and is active in efforts to change procurement guidelines for State institutions to make it easier to buy local food. There are tentative plans to move UConn's production kitchens to a new facility at the Bergin campus which would allow more processing (cut, cook, chill, freeze) and make it easier for Dining Services to contract directly with local farmers.	Agriculture Committee	Ongoing	Volunteer Time Staff Time
3. Help make connections between farmers and new restaurants, stores and the distributors that supply them. The public school system already participates in the Connecticut Farm to School program by receiving fruits, corn, pumpkins and squash from an orchard in Killingly. The Farm to School program is actively recruiting farms. Restaurants can connect with local farmers by participating in a similar state Farm to Chef program.	Agriculture Committee Economic Development Team	Ongoing	Volunteer Time Staff Time
4. Incorporate SNAP EBT payment programs at the Storrs Farmers Market.	*See Goal 5.4, Strategy A, Action 3 for specific recommendations.*		

Strategy H | Support marketing of agricultural products and agriculture-related businesses.

ACTIONS	WHO	WHEN	RESOURCES
1. Identify projects for marketing local agriculture and apply for funds from the Connecticut Farm Viability Program. Potential projects include a 'Grown in Mansfield' brand and signage programs as identified in *Goal 6.4, Strategy A, Action 5.*	Agriculture Committee	Short Term	Staff Time Operating Budget Grants
2. Promote local farms and products on the Town website and at community events.	*See related strategies under Goal 6.2, Strategy D and Goal 6.4, Strategy A.*		

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

Goal 6.5
Mansfield's land use regulations are farm-friendly and support business retention and expansion efforts while protecting community character.

Measures of Effectiveness:
- Increase in non-residential grand list
- Increase in number of new businesses
- Increase in agricultural production and distribution
- Increase in number and square footage of new office, R&D and light industry businesses on redeveloped sites

Strategy A | Reduce barriers to business growth in Zoning and Subdivision Regulations.

ACTIONS	WHO	WHEN	RESOURCES
1. Revise subdivision process and requirements to distinguish between single-family subdivisions and non-residential/multi-family residential subdivisions. As the subdivision process is the sole opportunity to review single-family subdivisions, the standards and requirements are extensive. However, many of these requirements are duplicative or not applicable to multi-family residential and non-residential projects as these are either located in developed areas, are subject to another review process such as site plan review or special permit, or have detailed design and performance standards identified in the Zoning Regulations.	PZC	Short Term	Staff Time Community Challenge Planning Grant
2. Reduce the number of business uses needing special permit approval by including more robust development standards for specific uses to ensure quality development. Development review processes can also be a tool to direct businesses and uses to the four business target areas identified in *Goal 6.1, Strategy B*. Items to be considered include: • *Locations—approvals through site plan and/or zoning permit review may be more appropriate in major commercial areas than smaller neighborhood/village business areas which have residential neighborhoods in close proximity* • *Areas/situations where certain uses may not be appropriate in all locations, necessitating special permit review* • *Thresholds for requiring PZC site plan approval* • *Thresholds for administrative review and approval through zoning permit process* • *Specific standards and requirements for uses, site and building development*	PZC	Short Term	Staff Time Community Challenge Grant

SHORT TERM = 2015–2019	MEDIUM TERM = 2020–2024	LONG TERM = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
3. Refine existing provisions regarding non-conforming uses. Regulations for non-conforming uses, particularly commercial and higher density residential uses, should allow for continuation and potential limited expansions. Significant intensification inconsistent with the goals of this plan should be discouraged.	PZC	Short Term	Staff Time Community Challenge Grant
4. Update sign regulations to improve usability and allow for adequate business marketing while minimizing sign clutter and maintaining high aesthetic standards.	PZC	Short Term	Staff Time Community Challenge Grant

Strategy B | Support growth of agriculture and agri-tourism through changes to regulations.

ACTIONS	WHO	WHEN	RESOURCES
1. Update Zoning and Subdivision Regulations to remove barriers to farm viability. Issues to be reviewed/addressed include but are not limited to: • *Keeping of livestock* • *Compatible farm businesses* • *Signage* • *Parking* • *Farm worker housing* • *Hoop houses or other growing structures* • *Horticulture* • *Farm-energy opportunities* • *Agricultural activities on small residential lots* • *Buffers as part of new residential developments locating next to existing farms* Potential resources for model regulations include: Eastern RC&D's Guidance and Recommendations for Connecticut Municipal Zoning Regulations and Ordinances for Livestock (2012) and RIDEM's Community Guidance for Maintaining Working Farms and Forests (2012).	PZC	Short Term	Staff Time Community Challenge Grant
2. Review and revise Zoning Regulations to reduce barriers to agri-tourism activities. Agri-tourism can include pick-your-own programs, mazes and hayrides, farm-to-table events, weddings, fishing events, and other types of agriculture and natural resource tourism. Issues to be reviewed/addressed include design standards, signage, parking and review procedures.	PZC	Short Term	Staff Time Community Challenge Grant

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
3. Update Zoning Regulations to enable development of infrastructure that would support agriculture-related businesses, such as inputs, food waste, aggregation, processing, distribution, etc. Some of these activities may be water/wastewater intensive, requiring a location with access to public water and sewers.	PZC	Short Term	Staff Time Community Challenge Grant

Strategy C | Support expansion of Research and Development (R&D) and light industrial uses in appropriate locations. *See Map 8.3: Future Land Use for locations of proposed Mixed Use Centers and Commercial areas.*

ACTIONS	WHO	WHEN	RESOURCES
1. Update zoning regulations for areas designated as Mixed Use Centers and Commercial in the Future Land Use Plan to allow R&D uses. There are many different types of R&D uses, some of which require dry lab space (such as computers, electronics, robotics labs), wet lab space (where chemicals, drugs, other materials are handled), and biolabs (labs dealing with biological materials). Regulations should be updated to identify development standards and review procedures specific to R&D uses. Appropriate areas for consideration include Four Corners, Storrs Center, Route 6/Route 195/Pleasant Valley area in southern Mansfield and Perkins Corner. Issues to consider include: • *Areas/situations where certain uses may not be appropriate in all locations, necessitating special permit review* • *Thresholds for requiring PZC site plan approval* • *Thresholds for administrative review and approval through zoning permit process* • *Specific standards and requirements for uses, site and building development (See Goal 6.5, Strategy C, Action 4).* • *Environmental performance standards* • *Transportation connections* • *Wastewater disposal*	PZC	Short Term	Staff Time Community Challenge Grant

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

ACTIONS	WHO	WHEN	RESOURCES
2. Limit R&D businesses with biological laboratories to labs that meet the Centers for Disease Control (CDC) criteria for Biosafety Levels 1 and 2 until additional research is done to determine whether there are any areas where a Biosafety Level 3 lab could be located with appropriate safeguards and review procedures. Biosafety Level 4 labs should not be allowed. R&D businesses with biolabs should only be allowed with special permit approval; review criteria should include requirements for monitoring procedures to ensure conformance with federal safety standards.	PZC	Short Term	Staff Time Community Challenge Grant
3. Update zoning regulations for areas designated as Mixed Use Center and Commercial to allow light industrial uses. Light industrial uses include uses such as warehouses, wholesale facilities, and limited assembly production activities. Regulations should identify appropriate locations where such uses could be allowed. Areas and items to be considered include those identified above under *Goal 6.5, Strategy C, Action 1* as well as appropriate size/scale. Some areas may need size limitations to ensure compatibility with surrounding development.	PZC	Short Term	Staff Time Community Challenge Grant
4. Develop design standards and guidelines for R&D and light industrial uses, as well as appropriate industrial performance standards. Performance standards for industry involve measurable limits on noise, lighting, emissions and similar issues. Modern R&D and light industrial uses often have no external impacts. Design standards and guidelines will ensure compatibility with surrounding areas in terms of heights, massing, landscaping, character visible from the road, location of parking and similar issues.	PZC	Short Term	Staff Time Community Challenge Grant

SHORT TERM = 2015–2019	**MEDIUM TERM** = 2020–2024	**LONG TERM** = 2025–2035

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To the General Law Committee,

Please accept this correspondence as my testimony in support of bill H.B. 5293 repealing CGS Sec. 30-10, to allow for municipalities to make a land use decision on whether to allow for breweries, wineries, or distilleries vs. the involved process that is now part of the law.

Sincerely,

Adrienne McPherson
577 Wormwood Hill Rd.
Mansfield, CT 06250

CONNECTICUT FEDERATION
OF
PLANNING AND ZONING AGENCIES

ANNOUNCES

ITS

72nd ANNUAL CONFERENCE

THURSDAY, MARCH 26, 2020

AT THE

AQUA TURF COUNTRY CLUB
PLANTSVILLE, CONNECTICUT

Cost: $60.00 per person for Agencies that are members of the CFPZA
$70.00 per person for Agencies that are not members of the CFPZA

The enclosed registration from must be received by the Connecticut Federation of Planning & Zoning Agencies by mail, fax or email no later than Tuesday, March 24, 2020

Fax: (860) 677-5262 / email: cfpza@live.com

Questions? Contact Steve Byrne at (860) 677-7355 or cfpza@live.com

More info on back →

CONNECTICUT FEDERATION OF PLANNING AND ZONING AGENCIES

72nd ANNUAL CFPZA CONFERENCE

Aqua Turf Country Club
Plantsville, CT
Thursday, March 26, 2020

PROGRAM

5:00 p.m. **SOCIAL HOUR / REGISTRATION**

6:00 p.m. **DINNER**
Salad, Penne, NY Strip, Vegetables, Potato, Dessert

7:15 p.m. **AWARDS PRESENTATION**
- 12-Year Length of Service Awards
- Lifetime Achievement Awards

8:00 p.m. **TOPIC:** Alternative Solutions to Providing Affordable Housing

Originally signed into law in 1990, the Affordable Housing Act C.G.S. Sec. 8-30g, was supposed to remedy an acute shortage of affordable housing in this state. Instead, it became a source of adversarial relationships and costly litigation, leaving the affordable housing problem largely unresolved. Our principle speaker will revisit this state law passed a generation ago and offer some actions that can be taken at the local level which can assist a town to increase affordable housing and become exempt from the regulatory burdens of 8-30g. A question and answer session will follow where the evening's topic will be discussed as well as what might be done to more effectively achieve the goal of CGS Sec. 8-30g.

Principal speaker:

Hiram Peck III, AICP, CFM, ZEO, Director of Planning and Community Development, Avon, CT
A professional planner for over 25 years, Hiram has worked with municipalities, the federal government, regional planning agencies as well as private clients.

DIRECTIONS TO THE AQUA TURF

I-84 EAST FROM WATERBURY – Merge onto I-169 E via Exit 27 toward Meriden. Take the CT-10 exit, EXIT 3, toward Cheshire. Turn left onto CT-10 (Highland Ave.). Continue to follow CT-10. Stay straight to go onto Old Turnpike Road. Turn right onto Mulberry Street. Aqua Turf, 556 Mulberry Street is on right.

I-84 WEST FROM HARTFORD – Take the CT-10 exit, EXIT 29, on the left toward Milldale. Stay straight to go onto Mulberry Street. Aqua Turf, 556 Mulberry Street is on right.

FROM I-91 OR THE MERRITT PARKWAY – Merge onto I-169 E via Exit 27 toward Meriden. Take the CT-10 exit, EXIT 3, toward Cheshire. Turn left onto CT-10 (Highland Ave.). Continue to follow CT-10. Stay straight to go onto Old Turnpike Road. Turn right onto Mulberry Street. Aqua Turf, 556 Mulberry Street is on right.

SAVE THE DATE!

CFPZA Annual Conference – March 26, 2019

This year's Annual Conference will take place on Thursday, March 26, 2020 at the Aqua Turf, Southington, CT. Please consider attending this year's Annual Conference of the Connecticut Federation of Planning and Zoning Agencies. The night is sure to be both enjoyable and informative. This year's topic will be "Alternative Solutions to Providing Affordable Housing."

Originally signed into law in 1990, the Affordable Housing Act C.G.S. Sec. 8-30g, was supposed to remedy an acute shortage of affordable housing in this state. Instead, it became a source of adversarial relationships and costly litigation, leaving the affordable housing problem largely unresolved. Our principle speaker will be Avon's town planner, Hiram Peck, who will revisit this state law passed a generation ago and offer some actions that can be taken at the local level which can assist a town to increase affordable housing and become exempt from the regulatory burdens of 8-30g. Together with our moderator for the evening, Farmington's town planner Mark Devoe, a question and answer session will follow where the evening's topic will be discussed as well as what should be done to make 8-30g better at actually achieving its goal.

I know that many commissions require an education component for their commission members. At a cost of only $60.00 per individual, this conference is a cost-effective way to satisfy this requirement while providing an opportunity to socialize with commission members from other towns.

In addition, Length of Service awards will be presented to commission members who have served in any capacity for 12 or 25 years. If you have a commission member who is eligible for this recognition, please submit his or her name. Nomination forms will be included in the registration packet that will be sent to your commission in the coming weeks.

I hope to see you and members of your commission at this worthwhile event!

CONNECTICUT FEDERATION OF PLANNING AND ZONING COMMISSIONS
72nd ANNUAL CONFERENCE
THURSDAY, MARCH 26, 2020
AQUA TURF COUNTRY CLUB
PLANTSVILLE, CONNECTICUT

REGISTRATION FORM

Agency Name _____ Town _____

Individual's names	Position

Cost: **$60.00 per person for Agencies that are members of the CFPZA**
$70.00 per person for Agencies that are not members of the CFPZA

Number of Attendees _____ x $60.00 or $70.00 = $_____

Mail, fax or email this registration form to:

Connecticut Federation of Planning & Zoning Agencies
790 Farmington Avenue, Bld. 2B
Farmington, CT 06032
Fax: (860) 677-5262
cfpza@live.com

Make checks payable to: "Connecticut Federation of Planning and Zoning Agencies."

Reservations must be received by Tuesday, March 24, 2020.

Cancellations will be accepted until noon on March 25, 2020 by calling CFPZA at (860) 677-7355. All reservations not properly cancelled must be paid for.

CONNECTICUT FEDERATION OF PLANNING & ZONING AGENCIES
790 Farmington Avenue, Building 2B
Farmington, CT 06032
cfpza@live.com

STEVEN BYRNE
Executive Director
Telephone: (860) 677-7355

March 12, 2020

Dear Sir or Madam:

I hope this letter finds you well. I am writing to inform you about decisions made regarding the Connecticut Federation of Planning and Zoning Agencies' Annual Conference scheduled for March 26, 2020. Based on state guidelines for assemblies in excess of 100 persons, the conference will be postponed to Thursday, April 30, 2020 at the Aqua Turf Country Club. This year's topic has a significant impact on planning and zoning commissions across the state. Therefore, we made every effort to postpone the event rather than to cancel it. All checks received for the March 26th Conference will be returned. Checks already received will accompany this letter. Those received thereafter will be sent back in a separate mailing.

For the April 30th Conference, some changes will be made to streamline the registration process. Commissions will not receive a registration packet in the mail as you have in the past. Instead, commissions interested in registering are asked to go to the Federation's website at www.cfpza.org. All material needed to register can be downloaded from the website. As in the past, commissions are asked to complete the registration form and submit it by mail or email (cfpza@live.com). The award presentation intended for the March 26th Conference will be moved to the April 30th Conference. New nomination forms are not necessary.

Thank you for your patience and understanding as we make changes in reaction to this current situation. Many planning and zoning commissions across Connecticut look forward to the annual conference to get fresh ideas and network with other commissions. It is our hope that this postponement will be sufficient to allow us to hold the conference in a safe environment for all.

Very truly yours,

Steven E. Byrne

Steven E. Byrne
CT Fed. of Planning & Zoning Agencie