



MEETING NOTICE AND AGENDA

MANSFIELD INLAND WETLANDS AGENCY

AUDREY P. BECK MUNICIPAL BUILDING ■ 4 SOUTH EAGLEVILLE ROAD ■ COUNCIL CHAMBER

MONDAY, JULY 18, 2016 ■ 6:30 PM

SPECIAL MEETING

1. CALL TO ORDER AND ROLL CALL

2. APPROVAL OF MINUTES

- A. June 20, 2016 – SPECIAL MEETING

3. COMMUNICATIONS

- A. CONSERVATION COMMISSION MINUTES
- B. MONTHLY BUSINESS MEMORANDUM

4. PUBLIC HEARINGS

- A. 6:30 PM ■ W1569 – T. AINSWORTH, WOODLAND ROAD (PARCEL ID 18.67.3), SINGLE FAMILY HOME
Memo from Inland Wetlands Agent
- B. 6:35 PM ■ W1564 – STORRS LODGES, 218 UNITS, HUNTING LODGE ROAD (PARCEL ID 15.21.3)
Memo from Inland Wetlands Agent

5. OLD BUSINESS

- A. W1564 – STORRS LODGES, 218 UNITS, HUNTING LODGE ROAD (PARCEL ID 15.21.3)
- B. W1569 – T. AINSWORTH, WOODLAND ROAD (PARCEL ID 18.67.3), SINGLE FAMILY HOME
- C. OTHER

6. NEW BUSINESS

- A. W1482-APPLICATION RENEWAL REQUEST: UNITED SERVICES, NORTH FRONTAGE ROAD
Memo from Inland Wetlands Agent
- B. W1558-MODIFICATION REQUEST: MEHRENS, 214 WORMWOOD HILL ROAD
Memo from Inland Wetlands Agent
- C. W1570 – FUNK AND LITTLE, 30 CENTRE STREET, GEOTHERMAL WELLS AND SITE WORK
Memo from Inland Wetlands Agent
- D. W1571 – C. LOUKAS, 46 JONATHAN LANE, INGROUND POOL
Memo from Inland Wetlands Agent
- E. W1572 – R. BOBB, 840 WORMWOOD HILL ROAD, AQUATICS MANAGEMENT
Memo from Inland Wetlands Agent
- F. J-6- TOWN OF MANSFIELD, OPPOSITE OF 247 HANKS HILL ROAD AND 23 HICKORY LANE
Memo from Inland Wetlands Agent
- G. W1563- TOWN OF MANSFIELD, BICENTENNIAL POND, REQUEST FOR A MODIFICATION
Memo from Inland Wetlands Agent
- H. W1573 – G. SOTZING, 144 HILLYNDALE ROAD, ABOVE GROUND HOT TUB
Memo from Inland Wetlands Agent

7. REPORTS FROM OFFICERS AND COMMITTEES

8. OTHER COMMUNICATIONS AND BILLS

- A. DEEP NOTICE OF TENTATIVE DETERMINATION STATEWIDE GENERAL PERMIT
- B. LETTER FROM KATHRYN STROTHER RATCLIFF, 60 BUNDY LANE
- C. OTHER

9. ADJOURNMENT

MINUTES

DRAFT Minutes
Mansfield Inland Wetlands Agency
Regular Meeting
Monday, June 6, 2016
Council Chambers, Audrey P. Beck Municipal Building

Members present: J. Goodwin, C. Ausburger, B. Chandy, R. Hall, G. Lewis, K. Rawn, B. Ryan, V. Ward,
Members absent: S. Westa
Alternates present: K. Fratoni
Alternates absent: P. Aho, T. Berthelot
Staff present: J. Kaufman, Wetlands Agent
L. Painter, Director of Planning and Development

Chairman Goodwin called the meeting to order at 6:36 p.m. and appointed alternate Fratoni to act.

APPROVAL OF MINUTES:

a. MAY 2, 2016 – REGULAR MEETING

Ward MOVED and Chandy seconded to approve the 5/2/2016 minutes as presented. MOTION PASSED UNANIMOUSLY.

b. MAY 11, 2016 – FIELD TRIP NOTES

The notes from the 5/11/2016 field trip were noted.

c. MAY 16, 2016 – SPECIAL MEETING

Ryan MOVED and Hall seconded to approve the 5/16/2016 minutes as presented. MOTION PASSED UNANIMOUSLY.

COMMUNICATIONS:

The Conservation Commission meeting minutes and Kaufman's monthly business memo were noted. Kaufman called attention to the two violation notices that will be coming to the Agency for approval and requested that the Agency start thinking about how to address "after the fact" permits.

OLD BUSINESS:

A. W1561 – H. RAPHAELSON, DOG LANE, LOT SPLIT

Rawn MOVED, Hall seconded, to grant an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to Howard Raphaelson (File W1561) for a lot split on property owned by the applicant and located at Dog Lane (Assessor's Parcel ID 14.41.23) as shown on plans dated January 12, 2016, revised through March 16, 2016, and as described in application submissions.

In granting this license, the Agency has considered the relevant facts and circumstances as presented at public hearing and in light of the requirements and criteria set out in Section 10.2 and 10.3 of Mansfield's Inland Wetlands and Watercourses Regulations, makes a specific finding that the proposed activities will have no anticipated significant adverse impact on the wetlands or watercourses.

This action is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized.
2. The following revisions shall be made to the plans dated February 10, 2016, revised through March 16, 2016, and submitted to the Inland Wetlands Agent. The Plans shall be signed and sealed by both the Surveyor and Soil Scientist and recorded on the land records as part of the lot split:

- a. Note 3 on the Boundary Plan shall be removed.
- b. Site Development Plan:
 - i. To sustain the long-term functions and values of the wetland system, restrict future development close to the edge of the wetlands, application of fertilizers and pesticides, and the cutting of vegetation, a natural buffer of at least 40 feet from the edge of wetlands shall be maintained. There is a footing drain proposed to be located 10 feet from the edge of wetlands on lot 2. The buffer shall permit only construction and maintenance of this footing drain.
 - ii. A construction sequence, approved by the Mansfield Assistant Town Engineer, shall be added.
 - iii. House Site Development:
 1. Note 1 shall read "Land disturbance shall be kept to a minimum and shall not exceed the Limit of Disturbance indicated on the plan."
 2. The plan shall be revised so that the limit of disturbance is inside the edge of silt fence.
 3. Note 2 shall read "Driveway shoulders shall be stabilized immediately upon completion of rough grading. Shoulder seed bed preparation shall be used to entrap any sediment generated from exposed soil surfaces. Driveway roadbeds shall be stabilized with compacted road aggregates as soon as possible."
 4. Note 3 shall read: "Topsoil and excavated subsoil shall be stockpiled at least 50 feet from the edge of wetlands and within the limit of disturbance indicated on this plan if not used immediately for regrading. Each stockpile shall be ringed with sediment control measures such as hay bales and/or silt fence."
 5. Note 4 shall read "Any additional stockpiling of lumber and building materials shall be confined to the area of disturbance. Vehicular movement shall be directed to established parking areas."
 6. Note 5 shall read: "Once the proposed structure is enclosed, all site improvements, such as well, footing drain, septic system, driveway, etc. shall be completed expeditiously and all exposed soil areas shall be fine graded and mulched."
 7. Add an additional note that states "Development of the of sewage disposal leaching areas shall be staged to follow house site preparation. Only the primary leaching system shall be cleared of existing vegetation. The septic system reserve area shall remain undisturbed if site conditions permit."
 - iv. General Notes
 1. Should "stilling basins" be required to manage the dewatering of excavated areas, the design shall be submitted to the Inland Wetlands Agent for review and approval by the Assistant Town Engineer. Construction of such stilling basins shall not begin until written authorization from the Inland Wetlands Agent is received by the property owner.
 2. Note C.-Change should in the second to last line to shall.
 - v. Plan implementation
 1. First paragraph shall read "During construction it shall be the responsibility of Howard Raphaelson (860-429-1340) or the current owner of record..."
 2. Add the following note: Prior to the start of construction, there shall be a pre-construction meeting with the Mansfield Inland Wetlands Agent, Zoning Enforcement

Officer, the site contractor to review the construction plan and develop inspection procedures and reporting requirements.

vi. Notes:

1. Revise note 5 to read “no brush or stumps shall be buried on the site.”
2. Revise note 8 to read “Any regulated activity within the upland review area of this site that are not specified on the plans approved by the Inland Wetlands Agency shall be reviewed with the Mansfield Inland Wetlands Agent to determine if it is necessary to go before the Inland Wetlands Agency.”
3. Remove Note 12
4. Note 15 remove “pursuant to section 6.5.j.3 of the Mansfield Subdivision Regulations.”

This approval is valid for five years (until June 6, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment. MOTION PASSED with Chandy, Hall, Rawn, Ryan in favor and Ausburger, Goodwin, Ward opposed. Fratoni disqualified herself and Lewis abstained.

B. W1562 – MEADOWBROOK GARDENS, 91 & 93 MEADOWBROOK LANE, 36 UNITS

Ryan MOVED, Rawn seconded, to grant an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to Uniglobe Investments, LLC (File W1562) for construction of 36 dwelling units on property owned by the applicants and located at 91 & 93 Meadowbrook Lane as shown on plans dated January 8, 2016, revised through May 16, 2016 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized; and
2. Under special requirements section on page 6 of 11 of the plans, the applicants shall change the note to “Construction activities between April 1st and September 30th shall follow the recommended strategies to protect wood turtles.”

This approval is valid for five years (until June 6, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Inland Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment. MOTION PASSED with Fratoni disqualifying herself.

C. W1564 – STORRS LODGES, 218 UNITS, HUNTING LODGE ROAD (PARCEL ID 15.21.3)

Tabled Pending Special Meeting on 6/20/16 Public Hearing.

D. W1566 – GROUNDWATER & ENVIRONMENTAL SERVICES, 7 STORRS ROAD, REMEDIAL SOIL EXCAVATION

Chandy MOVED, Ryan seconded, to grant an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to Groundwater and Environmental Services, Inc. (File W1566) for removal of petroleum impacted soil on property owned by the Magic Holdings, LLC. and located at 7 Storrs Road as shown on plans dated 4/18/2016 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provision being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized.

This approval is valid for five years (until June 6, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Inland Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment. MOTION PASSED with Fratoni disqualifying herself.

E. W1567 – R. HENNING, 166 MOULTON ROAD, WATER WHEEL

Ryan MOVED, Hall seconded, to grant an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to R. Henning (File W1567) for the installation of a water wheel on property owned by the applicant and located at 166 Moulton Road as shown on plans dated 1/15/2015 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provision being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized;

This approval is valid for five years (until June 6, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment. MOTION PASSED with Fratoni disqualifying herself.

NEW BUSINESS:

A. W1568 – R. SUSCA, 131 GURLEYVILLE ROAD, 10'X16' SHED

Ward MOVED, Ryan to receive the application submitted by R. Susca (IWA File 1568) under the Wetlands and Watercourses Regulations of the Town of Mansfield for the construction of a 10 by 16 foot shed on property located at 131 Gurleyville Road as shown on a map dated 4/21/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments. MOTION PASSED UNANIMOUSLY.

B. W1569 – T. AINSWORTH, WOODLAND ROAD (PARCEL ID 18.67.3), SINGLE FAMILY HOME

Chandy MOVED, Ryan seconded, to receive the application submitted by T. Ainsworth (IWA File 1569) under the Wetlands and Watercourses Regulations of the Town of Mansfield for construction of a single family home on property located on the west side of Woodland Road (parcel Id 18.67.3) as shown on a map dated 4/28/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comment. MOTION PASSED UNANIMOUSLY.

PUBLIC HEARING:

W1564 – STORRS LODGES, 218 UNITS, HUNTING LODGE ROAD (PARCEL ID 15.21.3)

The Public Hearing was not opened due to a failure on the part of The Chronicle to properly publish notice as requested; an error discovered just prior to the commencement of the meeting. Chairman Goodwin informed those present that no testimony would be taken this evening. The Agency set a Special Meeting for June 20th to commence the Public Hearing.

Reports from Officers and Committees:

A Field Trip was scheduled for 6/15/16 at 3:00 p.m.

Other Communications:

Noted.

Adjournment:

The Chairman declared the meeting adjourned at 7:07 p.m.

Respectfully submitted,

Vera S. Ward, Secretary

COMMUNICATIONS

Town of Mansfield
CONSERVATION COMMISSION
Meeting of 15 June 2016
Conference B, Audrey P. Beck Building
(draft) MINUTES

Members present: Aline Booth (Alt.), Neil Facchinetti, Quentin Kessel, Mary Harper (Alt.), Scott Lehmann, John Silander, Michael Soares. *Members absent:* Robert Dahn, Grant Meitzler. *Others present:* Jennifer Kaufman (Wetlands Agent), Thomas Ainsworth (W1569), Allison Hilding (W1564).

1. The meeting was **called to order** at 7:33p by Chair Quentin Kessel. Mary Harper has been appointed to the Commission as an Alternate Member. She and Booth were designated voting members for this meeting.

2. The **draft minutes** of the 18 May 2016 meeting were approved after (a) correction of “July 6th” to “June 6th” in the penultimate sentence of item 5c and (b) addition of item 8, “Conservation Easement Monitoring,” the text of which Kessel distributed.

3. IWA referrals.

a. **W1569 (Ainsworth, Woodland Rd).** The applicant proposes to construct a single-family house on a non-conforming 1-acre lot of record on Woodland Rd. This lot slopes down from the road to an extensive wetland (approximately 115 ft from and 20 ft below the elevation of Woodland Rd, judging by the map). All work would be in the regulated area. Approximately 400 cubic yards of fill would be needed near the road to provide a level site for the house and drive; the new contours indicate that the slope to wetlands from the house would steepen. The house would be about 65 ft (and its reserve septic system about 44 ft) from the wetland at its closest point. The house could not be moved significantly farther from the wetland without placing it too close to the road (setback is now only 26 ft). After some discussion, the Commission unanimously agreed (**motion:** Silander, Harper) to advise the IWA that:

There is a potential for a significant negative wetlands impact from this project, given its proximity to wetlands and the large volume of fill proposed. Particular care must be taken during and after construction to stabilize the steeper slope of the fill, utilizing shrubs, walls, or the like. Seeding this slope with lawn grass is not sufficient.

b. **W1568 (Susca, 131 Gurleyville Rd).** The applicant proposes to add a 10x16 ft shed on concrete piers to the back of his garage, on a level site approximately 50 ft up a gentle slope from wetlands. Following speculation about what the shed might be used for, the Commission unanimously agreed (**motion:** Booth, Faccinetti) to comment that:

While no significant impact on wetlands is to be expected from constructing the shed itself, the property owner should be cautioned that storage of fuels or chemicals there in significant amounts could pose such a risk, were they to leak into the environment.

4. **Conservation easement monitoring.** As noted in item 8 of the minutes for last month’s meeting, the Town Attorney has advised that any Commission activity – including monitoring conservation easements – involving more than one member constitutes a meeting requiring public notice. Kaufman suggested that Commission members who aren’t comfortable monitoring easements alone could go with a friend. Soares indicated that he has made similar

site visits by himself and will monitor the conservation easement on the Favretti property solo. Kessel will let Kaufman know when his “meeting” with Faccinetti to monitor the Elise Rd easement will occur. Ditto for Silander’s “meeting” with Lehmann to monitor the Silver Falls easement.

5. Storrs Lodges. Allison Hilding, who has formed Mansfield Environmental Trust, LLC, to intervene in IWA deliberations on W1564, distributed materials to the Commission, including (1) Verified Petition to Intervene dated 16 May 2016 and (2) Report dated 6 June 2016 by Michael W. Klemens, LLC, on the proposed Storrs Lodges development. She is concerned that over-development of the site (47 apartment buildings for 692 residents on 45 acres) will (a) compromise water quality in Cedar Swamp and Eagleville Brooks and (b) destroy habitat of wood frogs and other animals that utilize one vernal pool (and possibly others) on the site.

Ms. Hilding urged the Commission to review, in addition to (1) and (2), the following reports: (3) *Best development practices: conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States* (Calhoun & Klemens, 2002), (4) *Ponde Place Residential Apartment Community* (Eastern Connecticut Environmental Review Team, April 2009), and (5) *Willimantic River Watershed Summary: Willimantic River, Eagleville Brook, and Cedar Swamp Brook* (Willimantic River Watershed TMDL, September 2012). These (and other) documents are (or will be) posted on the Town website at

<http://www.mansfieldct.gov/content/1904/1932/14344.aspx>

Kessel suggested that whatever comment the Commission decides to make on W1564 take the general form “The Commission has reviewed the material listed below and finds that Of particular importance are these considerations/issues/points” Commission members should read through the available material before the July meeting with an eye for particulars that should inform – and be cited in support of – its position.

Kaufman expects that the public hearing on W1564 will be opened on 20 June and that the applicants will ask that it be immediately adjourned to 18 July (because the IWA does not yet have all the information it needs to render a decision, which would be grounds for denying the application). If the real hearing begins on 18 July, it will probably be continued to 1 August and perhaps beyond. After some discussion the Commission unanimously agreed (**motion:** Soares, Kessel) to ask that it be given sufficient time to review and comment on the application:

Due to the large amount of information being provided by the applicant, the Town’s consultant, and the intervener, the Commission asks that the IWA request extensions of the public hearing on W1564 to a date beyond the Commission’s meeting of 17 August so that the Commission has sufficient time to review this material and comment on the application.

6. Adjourned at 9:07p. Next meeting: 7:30p, Wednesday, 20 July 2016.

Scott Lehmann, Secretary, 17 June 2016.



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 13, 2016
To: Planning and Zoning Commission
From: Jennifer S. Kaufman, AICP, Environmental Planner/Inland Wetlands Agent
Subject: Monthly Business Report

AGENT APPROVALS

None

MONITORING AND ENFORCEMENT

Bicentennial Pond

On April 4, 2016, the Town of Mansfield was granted an Inland Wetlands License (File #1563) for organic matter/sediment removal and aquatic weed management at Bicentennial Pond. The work began in early June. On June 14, 2016, when the Department of Public Works was completing routine beach grooming to prepare for the start of the swim and camp season, they noticed that a small amount (under 1 gallon) of diesel fuel had spilled on to the beach. The diesel fuel was from the pump used by the contractor to complete the organic matter/sediment removal. As required, the spill was reported to CT DEEP. A small amount of beach sand was removed and taken to the transfer station for storage until it could be properly disposed of. After careful observation, it was determined that the diesel fuel had not entered the pond.

Carriage House Apartments

As reported at your May 2, 2016 meeting, on Tuesday, April 26th, I discovered that Aqua Compliance Specialists, the water company that manages Carriage House's water supply was completing an emergency water main repair. No erosion or sedimentation controls were in place during this activity and because of this and the heavy rain, sediment washed into the downgradient catch basins that drain directly to the wetlands through a concrete pipe. The contractors were approached and told to stop work immediately and install silt fence and hay bales at the outflow of the concrete pipe and to install silt socks in the two downgradient catch basins. I have monitored this and the issue has been resolved.

At your last meeting I stated that Carriage House would be coming in with a permit after the fact. However, after further review, Section 4.0 of the regulations states that "construction and operation, by

water companies as defined in section 16-1 or by municipal water supply systems as provided for in chapter 102, of dams, reservoirs and other facilities necessary to the impounding, storage and withdrawal of water in connection with public water supplies except as provided in sections 22a-401 and 22a-403” are permitted by right. While Carriage House is not a water company, Aqua Compliance Specialists, who completed the work is. Both Carriage House and Aqua Compliance Specialists have been informed that in the future they are to inform the Town of any construction and to use appropriate erosion and sedimentation controls.

OTHER

On July 7th, I attended a Municipal Inland Wetlands Agency Continuing Education Workshop on Legal and Administrative Updates. I have attached a summary of recent court cases prepared by the Connecticut Attorney General’s Office and handout regarding Expert Testimony.

I was also informed that the CT Model Inland Wetlands and Watercourses Regulations have been revised and should be distributed to municipalities later this summer. Once staff has received these regulations, we will convene a Regulatory Review Committee meeting to determine what modifications should be made to the Town’s Regulations.

EXPERT TESTIMONY

Expert testimony is a routine aspect of inland wetlands and watercourses application review, and it may figure prominently in commission order proceedings as well. Here are some basic pointers regarding how to handle expert presentations.

- Who is an "expert"?
 - An expert is someone who possesses specialized knowledge brought from training or experience (soil scientist, engineers of various stripes, ecologists, and so forth).
 - A municipal agency member may be an expert if he/she has such experience or training (but one is not an expert merely by virtue of being an agency member).
- Agency members in the public hearing context should develop or refine their ability to ask questions of any expert who presents before them, especially if the municipal inland wetlands agency cannot hire its own expert(s), as substantial evidence to support their determination may well rest upon a thorough exploration of what the expert before the agency is setting forth as an "expert opinion." (*Huck v. Inland Wetlands and Watercourses Commission*, 203 Conn. 525 (1987))¹
 - What is the expert's area of expertise and does the expertise of the expert elucidate the issue(s) before the agency about which a decision needs to be made?
 - Is testimony offered on an issue within that expert's area of expertise? (E.g., a "sanitary engineer" may be well capable of discussing the surficial surface water run-off impacts, but may not be professionally equipped to opine on the design requirements to cope with the run-off associated with the proposed development; one might need perhaps a civil engineer, a "P.E.", for that aspect of the proposal.)
 - What observations, and what kind of observations, did the expert make? For example, did the expert visit the site or did the expert formulate an opinion based on a paper or data-layer review?
 - What assumptions did the expert make? E.g., assumptions about design storms; or the capacity of the storm drain system, or the size of a detention basin relative to the projected size of a proposed development. Agency

¹ Reference is made to certain key cases that illustrate the summary comments. You are encouraged to read these for the fact patterns and the general discussion by the reviewing court.

members might want to inquire whether the expert has taken a conservative approach or is pushing the design envelope.

- What facts has the expert used to support his or her conclusions?
- Does the expert offer a conclusion(s) that reasonably follows from the facts, observations and assumptions?
- Every expert can (and should) be questioned, even about the testimony of other experts if there is more one similarly "expert" present and commenting on a particular aspect of the application. *See, e.g., the Huck case.*
- A municipal agency appropriately considers expert testimony and reports, submitted on behalf of parties/intervenors, as part of the record. An expert who shows up to speak during the public comment portion of a public hearing and is not presenting on behalf of a party or intervenor is really only offering "comment" like other members of the public. If, however, the agency offers such person the opportunity, if time allows, to provide comment under oath, then the testimony can be received as expert in nature, but it is subject to cross-examination by the parties to the application. (Agencies that are presented with this prospect, sometimes driven by neighborhood groups or associations wanting to make a more impactful presentation without intervening, need to be aware of the limitations on "public comment.")
 - If a municipal agency member is in fact an "expert," and wishes to apply that expertise to the consideration of a matter pending before the agency, it is incumbent upon that member to disclose that expertise on the record while the record is still "open," that is, prior to the time for deliberation.
 - By doing so, one neutralizes potential post-decision appeal allegations of surprise or bias or improper procedure by an applicant or intervenor, claiming that the agency did not afford the participant(s) a fundamentally fair proceeding on the application to conduct regulated activities (or on an order that has gone to hearing before the agency).
 - If it is important to understand whether the purported expertise of the applicant's expert is actually material and relevant to the issue(s) to be decided (see above), it is equally important for all and sundry to get a sense of whether the agency member's expertise also is material and relevant to the analysis of that issue or issues.
 - If an agency member discloses his/her expertise and actively opines on the expert issue(s) arising out of active consideration of a pending application, especially in the public hearing process, one should fully expect that the applicant's expert would/should have time to respond or even rebut the agency member's opinion, as the *Feinson* case observes (see below). (Note, the

distinction here is one between the agency member disclosing his/her expertise and actively opining on the expert issue(s) up for discussion in, say, the public hearing.)

- A lay commission without expertise in the area may not substitute its own judgment for contrary expert testimony. (*Feinson v. Conservation Commission*, 180 Conn. 421 (1980))
 - To do so without making public the basis of its decision and without offering the applicant an opportunity for rebuttal is to act arbitrarily and without fundamental fairness.
 - The municipal inland wetlands agency cannot disregard the only expert evidence on the issue when the agency members lack their own expertise or knowledge. (*Tanner v. Conservation Commission*, 15 Conn. App. 336 (1988))
 - For the rule in *Tanner* to apply, there has to exist on the record of the agency's proceeding an "absolute disregard of the unanimous contrary expert opinion." In *Tanner*, there were multiple experts and they were in agreement about the probable non-existence of any "adverse impact on the wetlands." This is the key issue, of course; that the experts had differing emphases or views of the proposed project based upon their particular subject matter expertise, did not mean that the commission could freely "pick and choose" among them as if there were a disagreement about the *adverse impact to the regulated resource(s)*.
 - Non-experts may offer reliable and substantial evidence (*Kaeser v. Conservation Commission*, 20 Conn. App. 309 (1989)), which may be relevant to an issue for determination by the agency; for example, "Every time we have a lot of rain, the water in the stream backs up behind the existing culvert over there." In other words, it is all of the evidence in the record on the issue of adverse impact, properly considered, and not a mere head count of experts that matters.
- Application fees can assist municipal inland wetlands agency with hiring their own expert(s) who, at a minimum, can review applicant's expert testimony or reports.
- Experts sometimes give opinions about their "concerns," or "*possible* impacts." That's mere speculation, and an agency shouldn't rely upon them. A properly prepared expert should be capable of rendering an opinion about what is "probable" or "reasonably likely" to occur respecting impacts. If the expert is not willing to commit to this level of prediction (and the agency should certainly ask about it), then the agency likely has good grounds to ignore the opinion altogether, and certainly ignore it in favor of a more definite opinion given by an opposing expert.

- Experts often testify on the "significance" of a wetland, but no such distinguishing standard exists in the Inland Wetlands and Watercourses Act (IWWA, "Act") to differentiate these resources as higher or lower on the scale of "value" – the term "significance" as used in the Act only modifies the word "impact" and not the words "wetland" or "watercourse." In other words, "impact" to a "low-value" wetland is nevertheless fully a "regulated activity" and is analyzed no differently than "impact" to a "high-value" wetland.

- Section 22a-36 of the IWWA, the Legislative Finding, is crucial to understanding *what is subject to regulation and why*.
"... Such unregulated activity has had, and will continue to have, a significant, adverse impact on the ..."

- Section 22a-42a(c)(1) "... The inland wetlands agency shall not hold a public hearing on such application unless the inland wetlands agency determines that the proposed activity may have a significant impact on wetlands or watercourses, ..."

- As an example of expert assumptions that the agency needs to probe, the expert may have "assumed" that the wetland was of no great significance, and, therefore, planned activities to occur on the site that otherwise would properly constitute an "impact" and under the guidance provided by the Act be subject to avoidance, or less impactful alternatives.

2016 MUNICIPAL INLAND WETLANDS AGENCY
CONTINUING EDUCATION WORKSHOP

Legal and Administrative Updates

By the Connecticut Attorney General's Office

RECENT COURT CASES

Appellate Court Case

1. *H-K Properties, LLC v. Town of Mansfield Planning & Zoning Comm'n*, 165 Conn. App. 488 (2016)

East Brook F, LLC, East Brook T, LLC, and East Brook W, LLC (defendants) filed an application for a special permit to build an addition to the East Brook Mall with the Town of Mansfield Planning and Zoning Commission (commission). By checking a box on the application, defendants acknowledged that they would notify neighboring property owners of their proposal pursuant to Article 5, § B (3) (c) of the Mansfield Zoning Regulations. The commission adopted the regulations by the authority granted to it through General Statutes § 8-7d (a).

The commission complied with proper notice requirements. The commission held a public hearing and approved defendants' application on February 21, 2012. On February 27, 2012 the commission published notice of its decision in the Willimantic Chronicle (Notice Date).

Defendants, however, never gave notice to neighboring property owners, including H-K Properties, LLC (plaintiff). Plaintiff appealed the commission's decision on October 26, 2012, eight months after the commission approved the application. Plaintiff argued that it had not received proper notice and, therefore, the commission's decision was not valid.

Defendants moved for dismissal of plaintiff's appeal based on untimeliness. They claimed that General Statutes § 8-8 (b) governed the appeal, and that the plaintiff lost its right to an appeal when it failed to appeal within 15 days of the Notice Date. Conversely, plaintiff claimed that § 8-8 (r) governed, and under that provision, plaintiff had not lost its right to an appeal, because it could appeal up to one year after the Notice Date.

The trial court heard the appeal and found in favor of plaintiff. The trial court ordered the matter remanded to the commission. The defendants appealed. The Appellate Court reversed the trial court's ruling, and vacated it for lack of subject matter jurisdiction over the plaintiff's appeal. In other words, the trial court could neither hear, nor decide the case because plaintiff had failed to appeal within 15 days of the Notice Date in accordance with § 8-8 (b).

Under § 8-8 (b), an aggrieved party must start an appeal in a zoning case within 15 days from the date the land use board publishes a notice of decision. Section 8-8 (r) alters the time-frame for an appeal when *a board* fails to comply with notice requirements. When a board fails to comply with notice requirements, an aggrieved party may appeal up to one year after the notice of decision.

Section 8-8 (r) was not triggered in this case. Section 8-8 (r), in pertinent part, reads: *In any case in which a board fails to comply with a requirement . . . any appeal . . . shall be taken not more than one year after the date of that decision or action.* Thus, § 8-8 (r) is triggered only in cases where *a board* fails to comply with notice requirements.

In this case, plaintiff argued that § 8-8 (r) was triggered because the commission failed to give plaintiff proper notice. The *commission*, however, did give plaintiff proper notice, because it duly published its decision; having done so, the publication gave "constructive notice" to the community, including the plaintiff. Thus, the commission did not fail any requirement and § 8-8 (r) was not triggered.

Plaintiffs also argued that § 8-8 (r) was triggered when the commission failed to make sure that defendants notified neighboring property owners as required by the commission's regulations. The Appellate Court rejected this argument. Although § 8-7(d) granted the commission authority to adopt the regulations such as these that imposed additional notice obligations on the applicant, the enabling statute did not require the commission to ensure that defendants comply. Thus, the commission had no duty to ensure that the defendants notified the plaintiff, the commission did not fail any requirement, and, once again, § 8-8 (r) was not triggered.

Since § 8-8 (r) was never triggered, § 8-8 (b) governed plaintiff's appeal. Based on § 8-8 (b), plaintiff's appeal was untimely and plaintiff lost its statutory right to appeal from the commission to the courts.

Major Points:

- Section 22a-43 of the Inland Wetlands and Watercourses Act incorporates the time requirements of § 8-8 into the appeals procedure. Generally, aggrieved parties must appeal within 15 days of the date that a commission publishes its notice of decision. However, where a board fails to meet requirements (such as notice requirements), an aggrieved party may appeal within one year of the date of notice of decision.
- A commission does not automatically assume a duty to ensure an applicant's compliance with regulations it adopts through the authority contained in § 8-7(d) for additional notices.

Superior Court Cases

1. *Dichello v. Hamden*, 2015 WL 7055199 (Oct. 16, 2015)

The plaintiff applied for a permit to construct a driveway, septic system, and utilities with associated grading for the purpose of accessing the upland area of a property that contained

wetlands. The plaintiff also intended to construct a single-family residence on the upland area. There were also offsite wetlands. Neighbors opposed the application and hired an expert to present findings to the commission. The commission denied the application, citing the applicant's failure to provide prudent and feasible alternatives to reduce the impact of the construction on the surrounding wetlands and failure to consider mitigation measures to reduce the adverse impact of the construction on wetlands. (Half the property was wetlands; the proposed driveway was 600 feet through wetlands and the application involved a proposal to fill wetlands.)

The plaintiff appealed the decision, arguing that feasible and prudent alternatives were presented to the commission and that detailed mitigation plans were provided, pursuant to § 22a-41(a). Furthermore, the plaintiff alleged that the commission had predetermined the denial of the permit before considering the evidence presented at the public hearing.

The court began its analysis by discussing the concept of fundamental fairness. Although an administrative agency's hearings are often informal and do not follow the strict rules of evidence, the hearings must be conducted "so as not to violate the fundamental rules of natural justice." In other words, parties involved in the hearings have a right to produce relevant evidence, know the facts on which the commission is asked to act, cross-examine witnesses, and offer rebuttal evidence. The court noted that there is a strong presumption that proceedings of municipal commissions are conducted in a fundamentally fair manner. However, not all procedural irregularities require the reviewing court to nullify the commission's decision.

The plaintiff's claims were: 1) that the commission failed to state the reasons for the denial of the application on the record; 2) the site inspection of the commission was scheduled *after* the public hearing had commenced; 3) the commission's expert gave opinions not covered by his report; and 4) the previous three claims and the general conduct of the hearings constituted predetermination by the commission.

In general, the court ruled that it was entitled to search the record in default of a set of reasons of record for the decision the commission did make; there was nothing in the content of the site inspection report that drove any of the issues explored in the public hearing; the circumstances surrounding the engagement of the commission's expert weren't material; and the expert's report and testimony were entirely open to rebuttal by the plaintiff's experts and adequate opportunity to do so was a matter of record.

As to the claim of predetermination, the court rejected the plaintiff's claim. A plaintiff has a difficult burden to prove predetermination. In order to prevail, the plaintiff must show that the agency members had made up their minds to deny the application no matter what evidence was used to support it: a claim of predetermination goes to the process by which a decision is made and not to the content of the decision. In fact, even if the commission had been entirely wrong in denying the application, it does not mean that its decision was predetermined. Ultimately, the court, having searched the administrative record, concluded that the commission displayed no improper conduct. The commission continued to ask for further information during the hearing and proposed alternatives to the plaintiff's plans, indicating that had not determined to deny the application; in fact, hiring an expert to review the application and report to it was itself an indication of the commission's lack of predetermination on this file.

Turning to its review of the merits of the commission's decision, the court noted the difficulties inherent in review of an entire record where the commission has not articulated on the record its reasoning. This task is made all the more difficult when a reviewing court applies other

precedent to its review, such as the Supreme Court's observation that what constitutes an "adverse impact" to the regulated resource(s) is a "technically complex issue" frequently requiring the testimony of experts. Where there is such conflicting testimony among experts, a commission's failure to articulate the reasoning for its decision on the record necessarily puts the reviewing court at a disadvantage when it comes to applying the substantial evidence standard of review. After all, one of the key aspects of the IWWA is the charge to regulatory authorities to *balance* the protection of the resource against the property owner's right to use his property.

The court summarized the main issue for determination as whether the proposed impact of the location of the driveway and of the house and associated septic system posed an adverse impact and constituted the only feasible and prudent alternative plan. Its review of the record, which was very detailed, allowed it to conclude that the commission had erred in denying the application.

The court did rule that the applicant provided feasible and prudent alternatives for the project and suggested measures to mitigate damage to the wetlands. The applicant had submitted an "alternative C" to the commission, which moved the house to an area where it was believed to have a less adverse impact on the surrounding wetlands. Additionally, alternative C moved the location of the driveway, which ran through the wetlands, and included a detailed planting procedure and invasive plant removal plan to mitigate storm water runoff. The commission's experts raised concerns about potential alterations to the hydrology of the site. However, the only alteration to the site recommended by the commission or its experts was the suggestion of a raised driveway, which the commission believed was not addressed by the applicant, leading to the denial of the application.

The court found that the issue was indeed addressed by the applicant's engineer, who opined that the construction of the raised structure would lead to additional soil compaction and tree clearing since a large crane would be needed to put the structure in place. The court found that the commission's soil scientist contradicted himself by proposing the raised structure, but had expressed concerns about soil compaction and clear cutting to make room for the standard driveway. Furthermore, the court found that the applicant's engineer was the only expert who, by virtue of his professional qualifications, was truly capable of assessing the requirements of building a raised structure in lieu of a standard driveway. In addition, the court stated that there was no disagreement by the commission or the experts opposing the applicant's mitigation proposals. Since these experts only made basic suggestions to modify the mitigation plan, the court found that the record did not support any finding that the mitigation proposed was inadequate under the factors for consideration contained in section 22a-41(a) of the IWWA.

The court ruled that there was but one conclusion to which the commission could have come; it sustained the plaintiff's appeal and remanded the matter to the commission with an instruction to issue the permit with such reasonable conditions as it might further determine.

Major Points:

- The rules of fundamental fairness govern each and every commission proceeding.
- In order to prevail on a predetermination claim, the applicant must prove that the agency had made up its mind to deny the application no matter what evidence had been placed before it.

- The impact to the regulated resource(s) requires a close attention to how the "harm" is supported by the evidence. Where the testimony of experts on both sides of the issue is in play, it is important to focus carefully on what the factors for consideration require, and whether the "only feasible alternative" has been fairly proposed in light of the IWWA's requirement that conservation be balanced with respect for the right to use property.

2. *Preston v. Rabon*, 2016 WL 1164979 (Feb. 26, 2016)

Rabon filed a complaint with the commission, alleging that his neighbors, the Benjamins, had committed wetlands violations. The Preston Inland Wetlands Enforcement Officer issued a notice of violation to the Benjamins in response to Rabon's complaint, determining that the Benjamins had completed excavation within 100 feet of wetlands without a permit. It was later determined that the unpermitted excavation work extended into the Rabon property.

The commission approved the Benjamin's remediation plan, which included the Benjamin and Rabon properties, although the commission made no determination that the Benjamins had any legal right to access Rabon's land. Rabon denied the Benjamins access to his land. The Town of Preston then brought an action to compel Rabon either to allow the Benjamins to gain access to his land to perform the remedial work, or to compel him to perform the work himself.

The court rejected Rabon's assertion that he was an "innocent landowner" and therefore could not be compelled to remediate. The court noted that the commission was not compelling Rabon to pay for or perform the remediation himself; rather, the commission wanted Rabon to grant the Benjamins access to the property so that *they* could perform the remediation. Furthermore, the court reasoned that Rabon put himself in the position of having to allow the Benjamins to propose access to his land for remediation purposes due to his complaint. In other words, Rabon's failure to "react" to the existence of the violation also made him a violator. The court ordered Rabon to either allow the Benjamins access to remediate or to remediate the land himself within 45 days.

Major Points:

- The maintenance of a violation is a violation itself and exposes the party maintaining the violation to liability and costs of remediation, regardless of whether or not the party committed the initial violation. (A notice of violation can serve as a preliminary enforcement tool, in advance of issuing a formal order. Section 22a-44(a) of the IWWA, which provides for the issuance of orders, states that: 'If the inland wetlands agency or its duly authorized agent finds that any person is conducting *or maintaining* any activity, facility or condition which is in violation of sections 22a-36 to 22a-45, inclusive, or of the regulations of the inland wetlands agency, the agency or its duly authorized agent may issue a written order, by certified mail, to such person conducting such activity or *maintaining such facility or condition* to cease immediately such activity or to correct such facility or condition.' [emphasis added])
- Wetlands and wetland violations are not limited by property lines; they are a function of the documented adverse impact to the regulated resource(s).

3. *Crawford v. Fairfield*, 2016 WL 2728401 (Apr. 19, 2016)

In 2010, the defendants applied for and received a permit from the Fairfield Conservation Commission (commission) to transform a nursery into a medical office complex. The plan was to erect an 18,400 square foot building, a 15,000 square foot structure, and 170 parking spaces. The only regulated activity of concern was the parking lot in the upland review area. The commission issued the permit. However, the zoning commission rejected the defendants' application.

In 2014, the defendants presented a "modified development plan" to the commission in which only a single 25,000 square foot building and one hundred twenty-five (125) parking spaces were proposed. A soil scientist's report accompanied the comparison plan, which report concluded that no adverse impacts to regulated resources were now or previously involved. The defendants made no application for a new permit nor did they request a modification of the 2010 permit. After deliberation, the commission determined that neither a new inland wetlands permit nor a public hearing was needed.

The plaintiff challenged the ruling, claiming that a new permit and a public hearing was necessary.

The court rejected the plaintiff's assertion. The court determined that there was substantial evidence that allowed the commission to rule that a new permit or modification of the old permit was not necessary. Specifically, the court cited a soil scientist's finding that the new proposed building plan would be less impactful than the building plan that was approved by the same commission in 2010. Additionally, the permit was not modified or amended, meaning that a notification by publication was not necessary.

Major Points:

- Once a permit to conduct a regulated activity is issued, it runs with the land.
- A second permit application is unnecessary where a modified development plan is identical with respect to the effect on the regulated resource(s).
- If a permit is in place, a modified plan that would have less impact than the original submission does not require a new permit, so long as it is entirely within the scope of the prior issued permit.

4. *Calco Construction v. Farmington*, May 12, 2016 (Dubay, J.)

On August 8, 2014, Calco Construction and Development Company and The Gardens, LLC (plaintiffs) filed an application with the Inland Wetlands and Watercourses Commission of the Town of Farmington (commission) to conduct regulated activities associated with developing a residential subdivision.

The subject property consists of approximately 14.23 acres, including approximately 4.24 acres of delineated inland wetlands.

Plaintiffs wanted to conduct activities within the 150 foot upland review area located on the property. There was no proposal to conduct regulated activities within the two wetland systems on the property. Initially, plaintiffs proposed a twelve-lot, conventional subdivision with a 600 foot road ending in a cul-de-sac. After consultations with town staff, the proposal was revised to a twelve-lot, clustered subdivision. The cluster subdivision would convey all wetlands on the property to the town as open space.

On October 6, 2014, the commission opened the public hearing for the application. The commission closed the public hearing on December 10. On January 4, 2015, the entire commission met and each commissioner raised issues he had with the application. On January 7th the commission again met to consider plaintiffs' application. At the end of the meeting, the commission established a subcommittee of three commissioners and one alternate "to review the existing record, organize the materials so that the commission could better consider the evidence as it related to their concerns, and draft a motion."

At a January 21, 2015 meeting, the subcommittee raised concerns about the application. The subcommittee members explained the evidence that supported these concerns. A motion to deny the application was raised. The subcommittee had drafted the motion. The motion contained a list of alternatives for plaintiffs to consider, as well as information found to be lacking. Following some discussion regarding the content of the motion and members' views, the commission approved the motion to deny the application unanimously. The commission denied the application because (1) the proposed activities would have adverse and substantial impacts on wetlands and watercourses and there were other possible feasible and prudent alternatives (which plaintiffs failed to present), and (2) in the alternative, the commission determined that the application was incomplete.

Plaintiffs raised several arguments related to process and record support for its decision. The court could not sustain an appeal on the basis of any of the plaintiffs' claims. The two claims raised by the plaintiffs that had some novelty are the following procedural claims:

The formation and deliberation of the subcommittee was not improper.

Plaintiffs argued that the formation of a subcommittee and deliberation of the subcommittee violated Gen. Stat. § 22a-42 and § 9-2 of the Farmington Ordinances because the commission created a subcommittee. Thus, according to the plaintiffs, the commission improperly delegated the responsibility and obligation of all voting members to a subcommittee without authority.

Plaintiffs also argued that the delegation was improper because the legislature intended to have a full complement of commissioners deliberate every decision. The court rejected plaintiffs' argument based on the plain meaning of § 22a-42(c), which requires only a quorum for decision making. The court reasoned that it would be "illogical" to conclude that a statute calling for a specific number of members and alternate members required all commissioners to deliberate every decision. In any event, the record indicates that the full commission met on January 4, 2014 to deliberate over the application.

Next, plaintiffs argued that deliberating and drafting a motion for decision is "too critical a part of the decision-making process" and that the full commission must be involved. The court rejected plaintiffs' argument. The court explained that a motion is a tool for a commission to

accept, modify, or reject a proposal: the drafting of a motion does not imply consent to the contents of the motion in whole or in part. The court deemed that it was acceptable for the subcommittee to have written a motion for denial of the application and have subsequently raised it before the commission for its consideration.

The court cannot hear claims based on the Freedom of Information Act (FOIA) because plaintiffs did not exhaust administrative remedies.

Plaintiffs alleged that the subcommittee, as a public agency, violated the Connecticut Freedom of Information Act (FOIA), General Statutes § 1-200 *et seq.* The court rejected plaintiffs' claim. Section 1-206 (d) of FOIA provides that appeals by aggrieved parties must be in accordance with the provisions of § 4-183¹. Plaintiffs should have appealed a claimed violation of the FOIA to the Freedom of Information Commission (FOIC) proper. By not lodging their claim in the appropriate forum, the plaintiffs failed to exhaust administrative remedies, and the court lacked jurisdiction in this appeal under the Inland Wetlands and Watercourses Act over the alleged FOIA violations.

Major Points:

- Commissions may properly delegate the review of the record created for an application to a subcommittee composed of commission members, so long as the report or product of the subcommittee's work is considered by the commission.
- A prepared motion placed before a commission is not improper so long as there is consideration and deliberation by a quorum of the commission.

5. *Martin v. Simsbury*, 2016 WL 673417, January 26, 2016

Martin (plaintiff) applied for a building permit on a property he owns in Simsbury. Plaintiff's application was denied. Zoning compliance officers expressed concerns regarding the property's potential for the presence of wetlands soil, which condition needed to be resolved before a permit could be issued. One of the officers required that plaintiff either (1) confirm that his property did not have wetlands soil, or (2) pursue a determination (declaratory ruling) from the Simsbury Inland Wetlands Commission (commission) in order to resolve his claim that his property was not subject to the Inland Wetlands and Watercourses Regulations of the Town of Simsbury.

Plaintiff did not initiate the process of pursuing a determination from the commission because he insisted that the regulations were not intended for people like him who had no wetlands on their property. Plaintiff pointed to the "official approved inland wetlands map" as the basis for his refusal to file for a ruling. He argued that it would not make sense for him to seek a determination of that which he insisted he already knew.

Plaintiff purported to appeal "the decision" of the commission. The municipal defendants (defendants) moved to dismiss the appeal for (1) lack of personal jurisdiction for failure to name

¹ Under § 4-183 of the Administrative Procedure Act, "A person who has exhausted all administrative remedies available within the agency and who is aggrieved by a final decision may appeal to the Superior Court...."

the appropriate party (the Inland Wetlands Commission had not been named), and (2) failure to exhaust his administrative remedies.

Plaintiff simply did not initiate the administrative process with respect to obtaining a wetlands determination and cannot bypass that step by simply captioning his disagreement with prior decisions in related administrative matters as an appeal. Because the plaintiff failed to pursue his administrative remedies, this court granted the defendants' motion to dismiss.

Major Point:

- Aggrieved parties must exhaust administrative remedies before appealing to the courts.

PUBLIC HEARINGS



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 12, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: Woodland Road (Parcel ID 18.67.3) (File W1569)
T. Ainsworth
Description of Work: Construction of a Single Family Home
Map Date: 4/28/2016

PROJECT OVERVIEW AND ANALYSIS

The applicant proposes to construct a single family home on a one-acre lot on the west side of Woodland Road (Parcel ID 18.67.3). The site slopes to the west at an approximate grade of 10% towards a forested wetland. The understory is characterized primarily by a dense growth of Japanese barberry and skunk cabbage. The wetland drains to a year round brook that eventually leads to the Fenton River. The site is within the Windham Waterworks Public Watershed.

There are no activities proposed in the wetlands. The applicant estimates that approximately 15,000 square feet within the upland review area will be disturbed. Below indicates the separating distance of each project activity from the edge wetlands:

Project Activity	Distance to the edge of wetlands (feet)
Site Grading	40
Primary Septic Leach Field	70
Reserve Septic Leach Field	55
Well	92
Foundation Drain	61
Driveway	73

A March 28, 2016 memo from Sherry McGann, Eastern Highland Health District (EHHD) Sanitarian, indicates that the property is suitable for sewage disposal. Prior to construction, an engineer's system design plan must be submitted to EHHD to ensure that the system complies with the requirements of CT Public Health Code section 19-13-B103.

The proposed site grading may have the potential to impact wetlands. Approximately 400 cubic yards of imported fill will be used to grade the site. At their June 15, 2016 meeting, the Conservation Commission stated that "particular care must be taken during and after construction to stabilize the steeper slope." Because the finished slope will be upwards of 30%, the applicant should submit a planting plan or additional

measures to ensure that the slope will be stabilized over the long-term. Derek Dilaj, Assistant Town Engineer, also reviewed the application submittals and conveyed the following:

1. Staging and minimizing disturbed area will be critical for construction on this property. The applicant has indicated reference to Erosion and Sedimentation Control Measures from the USDA that shall be implemented. Additional reference should be made to the 2002 Erosion and Sedimentation Control Guidelines from CTDEEP.
2. Per the 2002 Erosion and Sedimentation Control Guidelines with slopes between 2:1 and 3:1 wings should be installed every 50 feet.
3. Notes on the plan shall include a provision that repairs to erosion and sediment control shall be made within 24 hours of the failure. Failure shall mean when the fence has been overtopped, undercut or bypassed, the fence has been moved out of position, or the geotextile has been damaged. If these conditions occur multiple times the applicant shall install a secondary silt fence upslope.

The applicant was asked to address the concern regarding the long-term stabilization of the slope and the concerns outlined in Mr. Dilaj's July 12, 2016. The applicant has submitted revised plans addressing these concerns and therefore, it is my opinion, that there will be no significant impact to the wetlands.

NOTIFICATIONS

- The applicant has submitted certified mail receipts for notices mailed to abutters.

TOWN OF MANSFIELD
DEPARTMENT OF PUBLIC WORKS



AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILLE ROAD
MANSFIELD, CT 06268-2599

Engineering Division

From: Derek M. Dilaj, P.E., Assistant Town Engineer
To: Jennifer Kaufman, , Inland Wetlands Agent
Copy: John Carrington, P.E., Town Engineer
Date: July 12, 2016
Date Received: July 10, 2016
Date Reviewed: July 11, 2016
Engineering Project #: E-1516014
Re: Site Plan for Tom Ainsworth Woodland Road
Designer: David A. Smith, PE
KWP Associates
250 Killingly Road
Pomfret Center, CT
Plans: "Septic System Design Prepared for Tom Ainsworth, Woodland Road, Mansfield, Connecticut"

The subject property is located on Woodland Road north of its intersection with Wildwood Road. The existing site grades from east to west at approximately a 10% slope towards wetlands in the western portion of the site. The proposed work includes importing of fill material, construction of a gravel driveway, septic system, and single family home. The property is within the Windham Water Works Public Water Supply Watershed. It appears the applicant has moved as much of the disturbance as possible to the front of the lot farthest from the wetland system and considered stabilization from any discharge from the foundation drain.

I have completed a general review of the plan set provided by the applicant. The following are comments realized during the review and should be addressed by the applicant:

Site Considerations

1. Staging and minimizing disturbed area will be critical for construction on this property. The applicant has indicated reference to Erosion and Sedimentation Control Measures from the USDA that shall be implemented. Additional reference should be made to the 2002 Erosion and Sedimentation Control Guidelines from CTDEEP.
2. Per the 2002 Erosion and Sedimentation Control Guidelines with slopes between 2:1 and 3:1 wings should be installed every 50 feet.
3. Notes on the plan shall include a provision that repairs to erosion and sediment control shall be made within 24 hours of the failure. Failure shall mean when the fence has been overtopped, undercut or bypassed, the fence has been moved out of position, or the geotextile has been damaged. If these conditions occur multiple times the applicant shall install a secondary silt fence upslope.

Planting Plan for Slopes on Ainsworth Woodland Road Property

In order to insure there are no problems with runoff or erosion into the wetlands we propose to plant the areas with 3 to 1 and 2 to 1 slopes with a combination of fast growing groundcovers.

We will use *Lamium galeobdolon* and Japanese pachysandra.

Both plants are suited to our growing zone and grow quickly forming a thick carpet using rhizomes. They grow well in shaded forested areas and require little maintenance. They are also drought resistant and are not favored by deer for food. We will plant cuttings that will establish quickly and will mulch the area to help the plants retain moisture and prevent runoff until the plants fill in.



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 14, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: Hunting Lodge Road (Assessor's Parcel ID 15.21.3) (File W1564)
Storrs Lodges, LLC
Description of Work: Construction of a 218-unit apartment complex
Map Date: 3/18/2016, revised through 6/10/2016

PROJECT OVERVIEW AND ANALYSIS

At your July 18, 2016 meeting a public hearing will be held regarding the above referenced application. As of July 13, 2016, the following communications have been received:

Applicant Submittals

1. *Application*
2. A March 18, 2016 WETLANDS ASSESSMENT&IMPACT ANALYSIS: *SUMMARY OF FINDINGS*
3. A March 30, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *VERNAL POOL INVESTIGATION*
4. An April 4, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *WATER QUALITY INVESTIGATION*
5. An April 4, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *FUNCTIONS & VALUES ASSESSMENT*
6. An April 4, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *WETLAND MITIGATION*
7. An April 6, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *REVIEW OF STORMWATER SYSTEM*
8. An April 14, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *VERNAL POOL INVESTIGATION*
9. A June 14, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *WATER QUALITY INVESTIGATION*
10. A June 14, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *SOIL TESTING*
11. A June 14, 2016 WETLANDS ASSESSMENT-SUPPLEMENTAL: *VERNAL POOL INVESTIGATION*
12. A letter dated February 28, 2016 from CT DEEP Regarding State Species of Concern
13. An Engineering Design and Drainage Report (Both a Summary and Full Report) Dated March 18, 2016
14. Plans Dated March 18, 2016, revised through June 10, 2016
15. FA Hesketh's Responses to the GEI Consultants Revised dated 5/31/2016 and revised through 6/10/2016
16. A July 12, 2016 Letter from Attorney Fahey requesting the Public Hearing not be continued to 8/1/16.
17. A February 12, 2011 Report from Michael Klemens Re: River Sound Development
18. A July 12, 2016 Memo from Attorney Sherwood re: Prudent and Feasible Alternative Analysis
19. A July 12, 2016 Memo from the Applicant's team re: Response to Intervention Petition Dated 5/16/16

Intervenor Submittals

1. A letter dated June 6, 2016 from the Law Offices of Keith Ainsworth on behalf of the Mansfield Environmental Trust and Beverly Sims
2. Mansfield Environmental Trust and Beverly Sim's verified petition to intervene dated May 16, 2016 pursuant to CGS 22a-19 (a).
3. A letter from Michael W. Klemens dated June 6, 2015
4. A Vernal Pool Analysis Map of Storrs Lodges Prepared by Michael Klemens dated May 2016
5. Michael Klemens Curriculum Vitae, undated
6. A letter to Cheryl Chase, Director of the Inland Water Resources Division, CT DEEP from Michael Klemens dated September 10, 2013
7. A report from Connecticut Ecosystems LLC Entitled Wetlands Report Ponde Place, July 5, 2007
8. April 2009 Eastern Connecticut Environmental Review Team Report for Ponde Place
9. A 2002 MCA Technical Paper Series: No. 5 Best Development Practices Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States by Calhoun and Klemens

GEI, Consultants (IWA's Independent Consultant) Submittals

1. A Memo from Kimberly Bradley and John McGrane of GEI Consultants to Jennifer Kaufman dated May 12, 2016
2. A Memo from Kimberly Bradley and John McGrane of GEI Consultants to Jennifer Kaufman dated June 29, 2016

Conservation Commission Minutes

1. April 20
2. May 18
3. June 15

Comments from the Public

1. A letter from Kathy and Brian Usher dated May 24, 2016
2. An email response to Kathy Usher from Linda Painter dated May 25, 2016
3. A letter from Susan and Michael Zito, 44 Westgate Lane dated July 9, 2016
4. A letter from Robert and Jennie Talbot, 26 Southwood Road dated July 10, 2016
5. An email from Chris Simon, 17 Silver Falls dated July 12, 2016

The intervenor's expert is unable to attend this public hearing and the applicant is unable to attend the August 1, 2016 meeting. For this reason, the applicants have requested that the Agency hear their presentations and public comment and continue the hearing until another meeting where all parties can complete their presentations and cross examination. Therefore, I recommend that after the presentations are made on July 18, 2016, you continue the public hearing to your next regularly scheduled meeting on September 6, 2016, unless you feel that scheduling a special meeting is necessary. Per section 11.2 of the Regulations, the public hearing must close on September 14, 2016.

NOTIFICATIONS

- The applicant has submitted certified mail receipts for notices mailed to abutters.

RECOMMENDATION/SUGGESTED MOTION

If you agree with this recommendation, the following motion is in order:

_____ MOVES, _____ seconds to continue the public hearing on the Inlands Wetlands Application of Storrs Lodges, LLC to construct a 218 unit apartment complex and located at Hunting Lodge Road (Assessor's Parcel ID 15.21.3) (IWA File 1564) to September 6, 2016.

44 WESTGATE LANE
STORRS, CT. 06268
860 429-3978
July 9, 2016

Dear Inland Wetlands Agency Members,

We have lived at the above address, in the vicinity of the proposed "Storrs Lodges" Construction proposal, for the past 36 years. We are very familiar with this wetlands area and value its existence. Building on this site is not acceptable to us, especially with regard to our concerns about clean water having lived through the UConn toxic dumping site on Hunting Lodge Rd. Building on this site jeopardizes our well water as well as disturbing aquatic life therein. We believe that your committee should be protecting our natural resources and hope that you will reject the proposed building permit.

Thank you for your kind attention.

Susan Zito


Sincerely,

Michael Zito


July 10, 2012
Robert and Jennie Talbot
26 Southwood Road
Storrs, CT 06268

Mansfield Inlands Wetlands Agency
Town of Mansfield
4 South Eagleville Road
Storrs, CT 06268

To Whom It May Concern:

As residents of Storrs and frequent walkers on the trail through the UCONN Forrest between North Eagleville and Birch Road, we are very concerned about the proposed Storrs Lodges Apartment Complex.

We feel the proposed project is too large and close to wetlands and a vernal pool and would have a negative impact on them. These wetland and vernal pool are important natural resources for wild life and should be protected. The proposed road to Northwood Road is too close to the vernal pond and has the potential to pollute it and the wetlands.

Thank you for your consideration on this problem,



Jennie Talbot
Robert Talbot

Jessie Richard

Subject: FW: Submission for the July 18th 2016 public hearing on "Storrs Lodges" application for an inland wetlands permit

From: Chris Simon [<mailto:chris.simon.uconn@gmail.com>]

Sent: Tuesday, July 12, 2016 4:25 AM

To: Jennifer S. Kaufman <KaufmanJS@MANSFIELDCT.ORG>

Cc: Chris Simon <chris.simon@uconn.edu>; Stephen Chiswell <shrunkminds@gmail.com>

Subject: Submission for the July 18th 2016 public hearing on "Storrs Lodges" application for an inland wetlands permit

Dear Chairman JoAnn Goodwin and Members of the Mansfield Inland Wetlands Agency,

I am a professor of Ecology and Evolutionary Biology at the University of Connecticut. I live at 17 Silver Falls Lane and Cedar Swamp Brook runs in back of my house. I have lived in Storrs for 25 years. We built our current house 12 years ago.

I am writing to oppose the development of the wetlands property on which Storrs Lodges are proposed to be built. Unfortunately, I am away conducting research and will not be able to attend the public hearings this summer.

I have taught environmental science for 30 years, first at the University of Hawaii and then at UCONN. I know from many case studies that development of this sort is unsafe for wetlands. In many instances developers promise to take care in construction and sometimes to build new wetlands to replace the wetlands they destroy. But restoration is orders of magnitude more expensive than protecting a site in the first place. As you know, wetlands provide many ecosystem services that are irreplaceable. I worry about the impact of the development and later run-off on the vernal pool and the Cedar Swamp Brook drainage. The winter salt load alone could markedly change the ecosystem.

The site obviously contains wetlands that will be severely impacted by the proposed use and development.

I urge you to deny their permit.

Sincerely,

Chris Simon
17 Silver Falls
Storrs, CT 06268

Fahey & Landolina, Attorneys LLC

A Connecticut Limited Liability Company

Thomas W. Fahey, Jr.
Carl T. Landolina

487 Spring Street
Windsor Locks, Connecticut 06096
Telephone: (860) 627-8300
Facsimile: (860) 627-6817
EMail: tom@faheyland.com
carl@faheyland.com

July 12, 2016

Jo Ann Goodwin, Chair
Mansfield Inland Wetlands Agency
Audrey Beck Municipal Building
4 South Eagleville Road
Mansfield, CT 06268

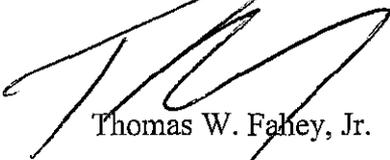
Re: Storrs Lodges Application No. W1564

Dear Ms. Goodwin:

I am writing to confirm that the applicant and its representatives will be unavailable on August 1, 2016 and request that the public hearing not be continued to that date.

Please be further advised that we intend to cross examine all witnesses who testify at the public hearing on the referenced matter.

Very truly yours,



Thomas W. Fahey, Jr.

TWF/kmw

NEW BUSINESS



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 13, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: North Frontage Road (Parcel ID 38.101.2-1) (File W1482)
United Services
Description of Work: Request for Permit Renewal for Construction of an Office Building
Map Date: June 27, 2011

PROJECT OVERVIEW AND ANALYSIS

On August 2, 2011, the Agency granted an inland wetland license to construct a 28,000 square foot office building with associated parking on North Frontage Road to United Services. Because the license expires on August 2, 2016, the applicants are seeking renewal. Pursuant to section 7.9 of the Regulations,

Any application to renew a permit shall be granted upon request of the permit holder unless the Agency finds that there has been a substantial change in circumstances which requires a new permit application or an enforcement action has been undertaken with regard to the regulated activity for which the permit was issued.

There have been no changes in the scope of the project as submitted in 2011 and no changes to the facts or circumstances involved with the wetlands or watercourses or use of the land since the 2011 application. The project was not initiated due to issues with state and federal financing. Financing has now been secured and the applicants anticipate that they will commence work as soon as possible. They anticipate that construction will be complete within 18 months of the groundbreaking.

The applicants have satisfied all of the application requirements for renewal. Therefore, I recommend that the Agency renew the license for another period of 5 years.

NOTIFICATIONS

The applicant has submitted certified mail receipts for notices mailed to abutters.

SUGGESTED MOTION

If the Agency agrees with my recommendation, the following motion is in order:

_____ MOVE to renew an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to United Services (File W1482) for construction of an office building and associated parking on property owned by the applicants and located on North Frontage Road (Parcel ID 38.101.2-1) as shown on plans dated 6/27/2011, revised through 9/21/2011 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls (as shown on the plans) shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized.

This approval is valid for five years (until July 18, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.



United Services, Inc.

July 8, 2017

Creating healthy communities

Jennifer S. Kaufman, AICP
Environmental Planner
Inland Wetlands Agent
Town Of Mansfield
4 South Eagleville Road
Storrs-Mansfield, CT 06268

Dear Ms. Kaufman:

United Services, Inc respectfully requests a renewal of the application for an Inland Wetlands License for the property we, through our related corporation, own on North Frontage Road in Mansfield. This License was originally granted on August 1, 2011 (File W1482). At that time the property was part of a larger parcel owned by Kevin Tubridy, though the subsequent division of the property and sale to United Social & Mental Health Resources was reflected in the application and all plans and engineering reports submitted at the time. (Please note that United Services, Inc. and United Social & Mental Health Resources, Inc. are both wholly owned subsidiaries of United Social & Mental Health Services, Inc. The three corporations exist due to grant reporting requirements, but are governed by a shared Board of Directors and have the same management team.)

There are no changes to the scope of the project as submitted in the previous application, which I have included, along with a copy of the approval letter.

None of the work on the project has been completed, though we have finally identified financing and anticipate work will begin this fall. We are planning a formal groundbreaking in September, and anticipate construction will be complete within 18 months of the groundbreaking.

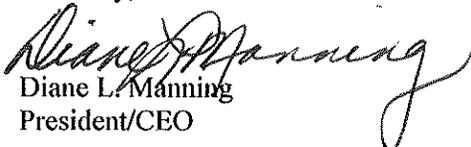
The work was not completed due to problems in receiving state and federal funding to support the project. While we have already invested more than \$1 million in United Social & Mental Health Services funds for site acquisition, engineering and architectural work, as well as debt service, we now have USDA financing, bank financing and anticipate limited state financing to complete the project.

There are no changes in facts or circumstances involved with or affecting wetlands or watercourses or use of the land since the permit was issued.

We have noticed the abutters per the regulations, and have included a list of the abutters and copies of Certified Mail receipts.

Please contact me with any questions and concerns. We appreciate the consideration of the Town of Mansfield Inland Wetlands Agency of this request.

Sincerely,


Diane L. Manning
President/CEO

www.UnitedServicesCT.org

**TOWN OF MANSFIELD
INLAND WETLAND AGENCY**

AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILL ROAD
STORRS, CT 06268
(860) 429-3330

Tuesday, August 02, 2011

United Services, Inc.
1007 North Main Street
PO Box 839
Dayville, CT 06241-0839

Re: Mansfield's IWA Approval
IWA file #1482

Dear Ms. Manning,

At a meeting held on 8/1/11, the Mansfield Inland Wetlands Agency adopted the following motion:

“to grant an Inland Wetlands License under the Wetlands and Watercourses Regulations of the Town of Mansfield to United Services, Inc. (File W1482), for construction of an office building with related parking area and other site improvements, on property owned by Kevin Tubridy, located at North Frontage Road, as shown on a map dated June 27, 2011 and as described in other application submissions.

This action is based on a finding of no significant impact, and is conditioned on the following provisions being met:

1. All erosion and sediment controls (as shown on the plans) shall be in place prior to construction, maintained during construction, and removed when disturbed areas are completely stabilized.

This approval is valid for a period of five years (until August 1, 2016), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.”

If you have any questions regarding this action, please call the Planning Office at 429-3330.

This letter constitutes your license.

Very truly yours,



Katherine K. Holt, Secretary
Mansfield Inland Wetlands Agency

Cc: Kevin Tubridy
BL Companies

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 429-3330
FAX: 860-429-6863

FOR OFFICE USE ONLY
File # _____
W _____
Fee Paid _____
Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name UNITED SERVICES, INC.

Mailing Address 1007 NORTH MAIN STREET, P.O. BOX 839

DAYVILLE, CT Zip 06241-0839

Telephone-Home 860-774-2020 Telephone-Business 860-774-2020

Title and Brief Description of Project

"PROPOSED OFFICE BUILDING"

REFER TO "STATEMENT OF USE" FOR DESCRIPTION

Location of Project NORTH FRONTAGE ROAD (38.101.2-1 & 38.101.6-1)

Intended Start Date FALL 2011

Part B - Property Owner (if applicant is the owner, just write "same")

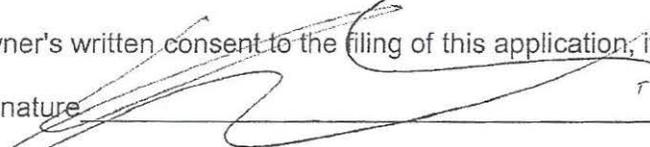
Name KEVIN TUBRIDY

Mailing Address 25 LEDGEBROOK DRIVE

MANSFIELD, CT Zip 06250

Telephone-Home 860-974-2995 Telephone-Business 860-423-0334

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature  date 6/27/11

Applicant's interest in the land: (if other than owner) FUTURE OWNER

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

THIS PROPOSAL IMPLIMENTS MANY BEST MANAGEMENT PRACTICES AND
NUMEROUS STORMWATER INFILTRATION SYSTEMS TO MINIMIZE IMPACTS TO
THE EXISTING WETLANDS. NO WORK IS PROPOSED INSIDE THE WETLANDS.
SIMILARLY, THERE IS NO PROPOSED WORK WITHIN THE FLOOD ZONE.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. (See guidelines at end of application – page 6.)

- 2) Applicant's map date and date of last revision JUNE 27, 2011
- 3) Zone Classification PLANNED BUSINESS 1
- 4) Is your property in a flood zone? X Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name	Address
REFER TO ATTACHED "TOWN OF MANSFIELD - ABUTTERS LIST"	

2) **Written Notice to Abutters** . You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** (This is not needed for exemptions).

Part I - Additional Notices, if necessary

1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to

the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

- 3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)

Part L - Filing Fee

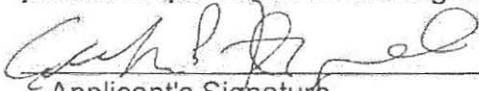
Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

___ \$1,000. ___ \$750. ___ \$500. ___ \$250. \$125. ___ \$100. ___ \$50. ___ \$25.

\$60 State DEP Fee

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.


Applicant's Signature

28 June 2011
Date

Godfrey P. Filigora (as Agent for United Svc.)

Project Description
North Frontage Road
Mansfield, CT

The proposed activities include construction of an office building with associated parking driveway, drainage, utilities and appurtenances. The new parking lot is +/- 64' at the closest point to the wetland line with associated site grading +/- 52' to the closest point to the wetlands line. The proposed development footprint is approximately 3.5 acres on the 6.025 acre property. There are not proposed activities within the wetlands. Approximately 1 acre of area is disturbed outside the wetland but within the 150' upland review area. Approximately 18,000 CY of earthwork is necessary to prepare the site for this development. Excavated soil will be reused onsite. Processed gravel will be imported as pavement and building bases.

Construction vehicles and machinery capable of conducting the proposed earthwork and development will be used onsite. Construction is anticipated to start in the Fall of 2011 and complete in the Spring of 2012. The wetlands will be protected using sedimentation and erosion control devices such as geotextile silt fence, hay bales, silt sacks in catch basins and other measures consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. We do not have any knowledge of any previous wetland application for this property.

Statement of Use
North Frontage Road
Mansfield, CT

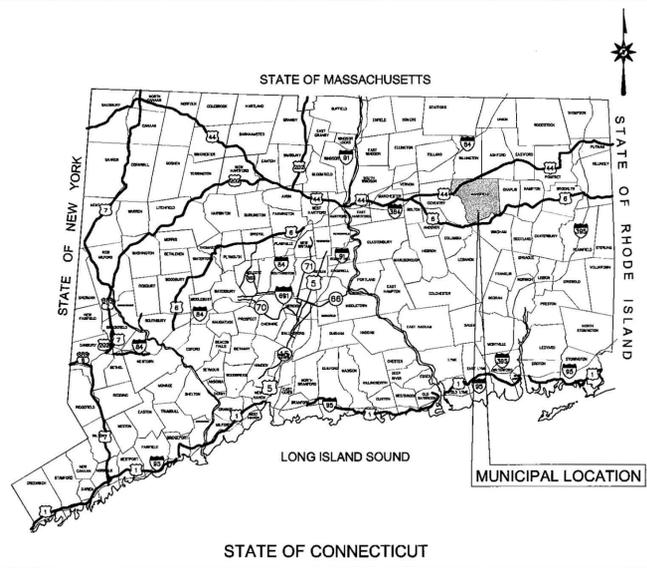
United Services, Inc. is proposing to develop a two-story professional office building of approximately 28,000 SF to consolidate existing operations in the Windham area. The building would be built on approximately 6 acres at the junction of North Frontage Road and Mansfield City Road. The site development is located within a wetland 150-foot upland review area and therefore is also under jurisdiction of the Mansfield Inland Wetland Agency. An Application for Permit is being submitted concurrently to the Inland Wetland Agency.

United Services would move its present outpatient operations from locations on Mansfield Avenue in Willimantic and Route 6 in Columbia to this site, as well as incorporating several smaller office sites throughout the area. At the time of occupancy, approximately 80 professional and support staff will have their offices at this location. The staff would include Psychiatrists, Primary Care Physicians, Advanced Practice Registered Nurses, Clinical Social Workers, Licensed Professional Counselors, Case Managers, Family Support workers, Vocational Counselors, Prevention and Early Intervention staff, as well as the clerical and secretarial supports necessary. The building as designed could accommodate more than 100 staff without additions, but is also designed for future expansion if necessary.

United Services programs operating from this location would include the Enhanced Care Clinic, which provides outpatient care for behavioral health issues for all ages. These services include emergency, urgent and routine evaluation, as well as individual, family and group treatment. Community and Family Education would also be provided. In home supports for individuals and families would also be based here, with staff travelling to community sites to deliver services. In addition, we anticipate that we will include Primary Care services for clients who have difficulty in accessing such care from existing services, particularly due to psychiatric disabilities.

Licensed office hours at the site would be Monday through Thursday, 9 am to 8 pm, and Friday 9 am to 5 pm. Staff may access the building during other hours for support activities not including direct outpatient services. Many clients use public transportation to come to appointments; others use medical taxis or private vehicles.

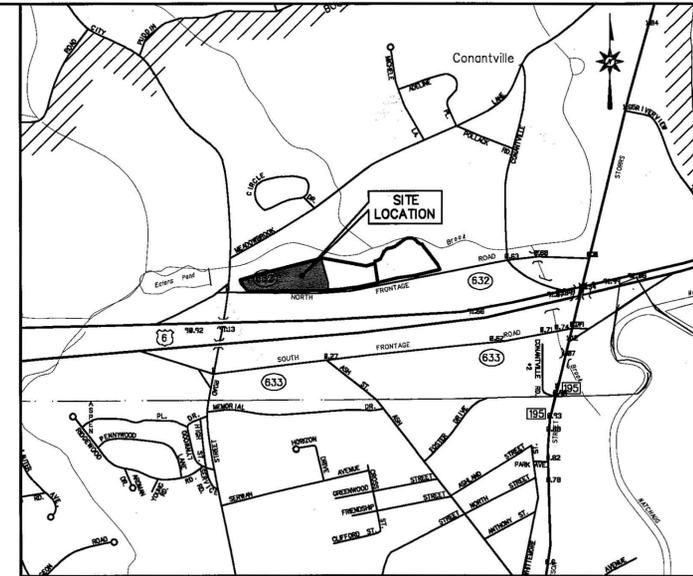
United Services has experienced a more than 100 percent increase in the number of clients served and services delivered in our adult clinic since 2007, and our child and family services have grown more than 40 percent. We are developing this office space to be able to meet increased community need and changing models of healthcare delivery that include rapid response, community based as well as office based services and professional levels of care integrated with natural community supports. We have provided these services for more than 47 years in the Windham/Mansfield area, and are excited to continue to grow to meet our neighbors' needs.



LOCATION MAP
N.T.S.

APPLICATION FOR SPECIAL PERMIT AND INLAND WETLANDS AGENCY OF THE TOWN OF MANSFIELD

PROPOSED OFFICE BUILDING NORTH FRONTAGE ROAD MANSFIELD, TOLLAND COUNTY, CT



VICINITY MAP
SCALE: 1"=1000'

PREPARED FOR:
UNITED SERVICES, INC.
1007 NORTH MAIN STREET
P.O. BOX 839
DAYVILLE, CT 06241

PREPARED BY:



ARCHITECTURE ENGINEERING PLANNING LANDSCAPE ARCHITECTURE
LAND SURVEYING ENVIRONMENTAL SCIENCES

355 RESEARCH PARKWAY
MERIDEN, CONNECTICUT 06450
(203) 630-1406
(203) 630-2615 Fax

**FOR PERMITTING PURPOSES ONLY
NOT RELEASED FOR CONSTRUCTION**

CONTENTS

SITE DEVELOPMENT

- TITLE SHEET
- TOPOGRAPHIC SURVEY (BY OTHERS - UNDER SEPARATE COVER)
- GN-1 GENERAL NOTES
- DM-1 DEMOLITION PLAN
- SP-1 SITE PLAN
- GD-1 GRADING AND DRAINAGE PLAN
- SU-1 SITE UTILITY PLAN
- EC-1 SEDIMENTATION & EROSION CONTROL PLAN
- EC-2 EROSION CONTROL NOTES & DETAILS
- LL-1 LANDSCAPE PLAN
- LP-1 SITE LIGHTING PLAN
- DN-1, 2, 3, 4 DETAIL SHEETS

ARCHITECTURAL (BY OTHERS)

- RENDERING
- P-1 CONCEPT SITE PLAN
- P-2 PROPOSED FIRST FLOOR PLAN
- P-3 PROPOSED SECOND FLOOR PLAN
- P-4 PROPOSED BUILDING ELEVATIONS
- P-5 PROPOSED BUILDING ELEVATIONS
- P-6 PROPOSED ENTRANCE SIGN

CAD FILE: CV11C381601

THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES

DEVELOPER:
KEVIN TUBRIDY
25 LEDGEBROOK DRIVE
MANSFIELD, CT 06250
(860) 423-0334

OWNER:
UNITED SERVICES, INC.
1007 NORTH MAIN STREET, P.O. BOX 839
DAYVILLE, CT 06241-0839
(860) 774-2020

DATES

DATE: JUNE 27, 2011
REVISION: SEPTEMBER 21, 2011

APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING
BY *[Signature]*
DATE 10/17/11



GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL SITE AND BUILDING CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER AND ARCHITECT IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
3. THE CONTRACTOR SHALL ABIDE BY ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
5. THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
6. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
7. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
8. IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST COSTLY SHALL APPLY.
9. ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTOR'S AND SUBCONTRACTOR'S RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS FOR USE IN BIDDING AND CONSTRUCTION.
10. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
11. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
12. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
13. THE CONTRACTOR SHALL COMPLY WITH CFR29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.

SITE PLAN NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT SPECIFICATION MANUAL AND TOWN OF MANSFIELD STANDARDS AND CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN TOWN CONSTRUCTION PERMITS, INCLUDING SEWER AND WATER CONNECTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO BIDDING.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND CIVIL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
5. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN.
6. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS BY OTHERS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING AND THE RAISED CONCRETE SIDEWALKS AND RAMPS.
7. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
8. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
9. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING AS APPLICABLE UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
10. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS.
11. REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
12. TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
13. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
14. THE CONTRACTOR SHALL ABIDE BY ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
15. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PAVEMENT MARKING PAINT MIXTURE PRIOR TO STRIPING.
17. PARKING SPACES SHALL BE STRIPED WITH 4" SWL; HATCHED AREA SHALL BE STRIPED WITH 4" SWL AT A 45° ANGLE, 2' ON CENTER. HATCHING, SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
18. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER.
19. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
20. THE ARCHITECT AND ENGINEER ARE NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
21. THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
22. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "TOPOGRAPHIC SURVEY - NORTH FRONTAGE ROAD" NORTH FRONTAGE ROAD, MANSFIELD, CT, DATED 5/23/05, SCALE 1"=60', PREPARED FOR KEVIN TURBRIDY, JOB #207006 BY DATUM ENGINEERING.
23. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, CIVIL ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
24. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
25. PAVEMENT MARKINGS SHALL BE HOT APPLIED TYPE IN ACCORDANCE WITH CONNDOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
26. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
27. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
28. THE PROJECT PARCEL IS LOCATED PARTLY WITHIN A FEMA DESIGNATED FLOOD HAZARD AREA.
29. THERE ARE WETLANDS LOCATED ON THE SITE.
30. FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL.
31. THE CONTRACTOR SHALL REMOVE CONFLICTING PAVEMENT MARKINGS IN THE STATE HIGHWAY BY METHOD APPROVED BY CONNDOT.
32. CONNDOT ENCROACHMENT PERMIT SHALL BE OBTAINED BY CONTRACTOR WHO SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THE WORK. THE OWNER SHALL POST CONNDOT ENCROACHMENT PERMIT BOND.



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NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS	No.	Date	Desc.
1.	09/21/11	REVISED PER TOWN APPROVAL CONDITIONS	

Designed	B.S.S.
Drawn	B.S.S.
Checked	
Approved	
Scale	NO SCALE
Project No.	11C3816
Date	06/27/11
CAD File:	GN11C381601

APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION
BY: *[Signature]*
DATE: 10/11/11

FOR PERMITTING PURPOSES ONLY
NOT RELEASED FOR CONSTRUCTION

GN-1

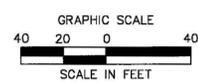
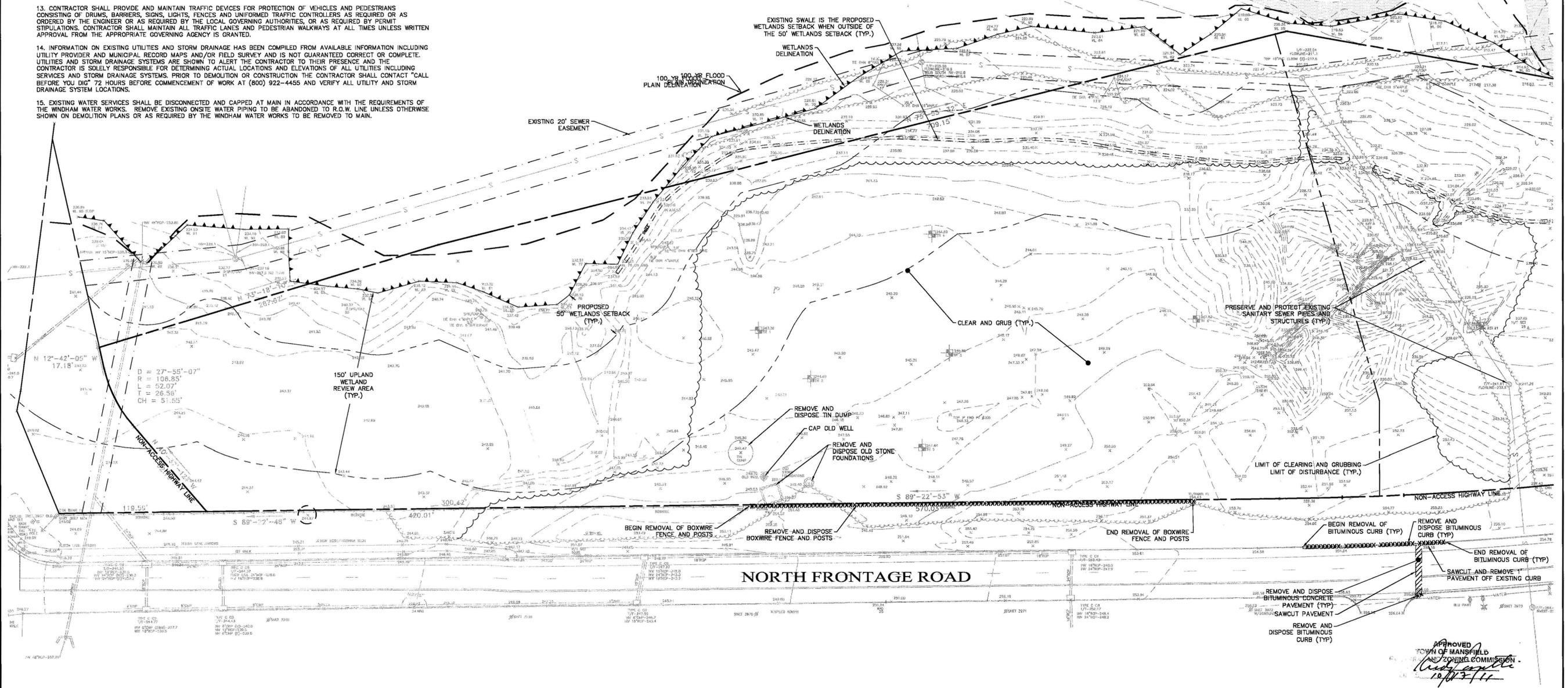
DEMOLITION NOTES

1. ALL FOUNDATIONS AND SLABS INDICATED ON THIS PLAN ARE TO BE REMOVED FROM SITE. CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
2. SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND/OR DEMOLITION PLAN SHALL BE INSTALLED BY THE DEMOLITION CONTRACTOR PRIOR TO START OF DEMOLITION AND CLEARING AND GRUBBING OPERATIONS.
3. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF-SITE LANDFILL, BY AN APPROVED HAULER. HAULER SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS.
4. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF ALL BUILDING DEMOLITION DEBRIS IN AN APPROVED OFF-SITE LANDFILL.
5. ASBESTOS OR HAZARDOUS MATERIAL, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIAL CONTRACTOR.
6. THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF DEMOLITION.
7. THE CONTRACTOR SHALL CUT AND PLUG, OR ARRANGE FOR THE APPROPRIATE UTILITY PROVIDER TO CUT AND PLUG ALL SERVICE PIPING AT THE STREET LINE OR AT THE MAIN, AS REQUIRED BY THE UTILITY PROVIDER, OR AS OTHERWISE NOTED OR SHOWN ON THE CONTRACT DRAWINGS. ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL INVESTIGATE THE SITE PRIOR TO BIDDING TO DETERMINE THE EXTENT OF SERVICE PIPING TO BE REMOVED, CUT OR PLUGGED. THE CONTRACTOR SHALL PAY ALL UTILITY PROVIDER FEES FOR ABANDONMENTS AND REMOVALS.
8. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING DEMOLITION ACTIVITIES. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, AND OR PROPERTY CORNERS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
9. THE DEMOLITION CONTRACTOR SHALL STABILIZE THE SITE AND KEEP EROSION CONTROL MEASURES IN PLACE UNTIL THE COMPLETION OF HIS WORK OR UNTIL THE COMMENCEMENT OF WORK BY THE SITE CONTRACTOR, WHICHEVER OCCURS FIRST, AS REQUIRED OR DEMED NECESSARY BY THE ENGINEER OR OWNER'S REPRESENTATIVE. THE SITE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE MAINTENANCE OF EXISTING EROSION AND SEDIMENTATION CONTROLS AND FOR INSTALLATION OF ANY NEW EROSION AND SEDIMENTATION CONTROLS AS PER THE SEDIMENT AND EROSION CONTROL PLAN, AT THAT TIME.
10. THE CONTRACTOR SHALL PUMP OUT BUILDING FUEL AND WASTE OIL TANKS (IF ANY ARE ENCOUNTERED) AND REMOVE FUEL TO AN APPROVED DISPOSAL AREA BY A LICENSED WASTE OIL HANDLING CONTRACTOR IN STRICT ACCORDANCE WITH STATE REQUIREMENTS.
11. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
12. THE CONTRACTOR SHALL ADHERE TO ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN PROXIMITY OF OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY PROVIDER FEES SHALL BE PAID BY THE CONTRACTOR.
13. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES, OR AS REQUIRED BY PERMIT STIPULATIONS. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY IS GRANTED.
14. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES INCLUDING SERVICES AND STORM DRAINAGE SYSTEMS. PRIOR TO DEMOLITION OR CONSTRUCTION THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
15. EXISTING WATER SERVICES SHALL BE DISCONNECTED AND CAPPED AT MAIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE WINDHAM WATER WORKS. REMOVE EXISTING ON-SITE WATER PIPING TO BE ABANDONED TO R.O.W. LINE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE WINDHAM WATER WORKS TO BE REMOVED TO MAIN.

16. THE CONTRACTOR IS RESPONSIBLE FOR SECURING A DEMOLITION PERMIT FROM THE TOWN OF MANSFIELD BUILDING DEPARTMENT AND MUST FURNISH THE REQUIRED APPLICATION MATERIAL AND PAY ALL FEES.
17. BACK FILL DEPRESSIONS, FOUNDATION HOLES AND REMOVED DRIVEWAY AREAS IN LOCATIONS NOT SUBJECT TO FURTHER EXCAVATION WITH SOIL MATERIAL APPROVED BY THE OWNER'S GEOTECHNICAL ENGINEER AND COMPACT, FERTILIZE, SEED AND MULCH DISTURBED AREAS NOT SUBJECT TO FURTHER SITE CONSTRUCTION. BUILDING FOUNDATION AREA TO BE BACK FILLED IN 8" LIFTS WITH GRAVEL FILL OR MATERIAL SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT. COMPACT TO 95% MAX. DRY DENSITY PER ASTM D1557 AT 2% OF OPTIMUM MOISTURE CONTENT. EMPLOY WATERING EQUIPMENT FOR DUST CONTROL.
18. THE CONTRACTOR SHALL REPAIR PAVEMENTS BY INSTALLING TEMPORARY AND PERMANENT PAVEMENTS IN PUBLIC RIGHTS OF WAYS AS REQUIRED BY LOCAL GOVERNING AUTHORITIES AND THE STATE AND PER PERMIT REQUIREMENTS DUE TO DEMOLITION AND PIPE REMOVAL ACTIVITIES.
19. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER AND/OR TOWN OF MANSFIELD.
20. THE EXISTING PAVEMENT MAY BE USED IN FILL AREAS, EXCEPT UNDER THE PROPOSED BUILDING AREA AND IN AREAS OF SELECT FILL, IF SCARIFIED AND BROKEN TO 3" MAXIMUM SIZE AND SMALLER AND AS APPROVED BY THE GEOTECHNICAL ENGINEER.
21. NO WORK ON THIS SITE SHALL BE INITIATED BY THE CONTRACTOR UNTIL A PRE-CONSTRUCTION MEETING WITH OWNER AND THE CIVIL ENGINEER IS PERFORMED. THE CONTRACTOR SHOULD BE AWARE OF ANY SITE INFORMATION AVAILABLE SUCH AS GEOTECHNICAL AND ENVIRONMENTAL REPORTS. THE CONTRACTOR SHALL HAVE MARK OUTS OF EXISTING UTILITIES COMPLETED PRIOR TO MEETING.
22. THE CONTRACTOR SHALL ARRANGE FOR AND INSTALL TEMPORARY OR PERMANENT UTILITY CONNECTIONS WHERE INDICATED ON PLAN OR AS REQUIRED. MAINTAIN UTILITY SERVICES TO BUILDINGS TO REMAIN. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS FOR INSTALLATION AND PAY UTILITY PROVIDER FEES.
23. THE CONTRACTOR SHALL NOT COMMENCE DEMOLITION OR UTILITY DISCONNECTIONS UNTIL AUTHORIZED TO DO SO BY THE OWNER.
24. THE CONTRACTOR OR DEMOLITION CONTRACTOR SHALL INSTALL TEMPORARY SHEETING OR SHORING AS NECESSARY TO PROTECT EXISTING AND NEW BUILDINGS AND UTILITIES DURING CONSTRUCTION AND DEMOLITION. SHEETING OR SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THIS STATE AND EVIDENCE OF SUCH SUBMITTED TO THE OWNER PRIOR TO INSTALLATION.
25. NO SALVAGE SHALL BE PERMITTED UNLESS PAID TO THE OWNER AS A CREDIT.
26. ANY EXISTING POTABLE WELL AND ANY EXISTING SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND HEALTH CODE REQUIREMENTS.
27. ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOBSITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY, AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
28. THE CONTRACTOR SHALL COMPLY WITH CFR29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH PROTECTION REQUIREMENTS.

LEGEND

- SAWCUT LINE
- ~ LIMIT OF CLEARING & GRUBBING LIMIT OF DISTURBANCE
- XXXXXXXXXXXXXXXXXXXXX REMOVE AND DISPOSE CURB & FENCE
- REMOVE AND DISPOSE BITUMINOUS CONCRETE PAVEMENT



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PROPOSED OFFICE BUILDING
NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS	No.	Date	Desc.
	1.	09/21/11	REVISED PER TOWN APPROVAL CONDITIONS

Designed: BKB
Drawn: BKB
Checked: BKB
Approved: BKB
Scale: 1"=40'
Project No.: 11C3816
Date: 06/27/11
CAD File: DM11C381601

Title: **DEMOLITION PLAN**

Sheet No.

DM-1

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Layout: DML-1 24x36 40SC

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ZONING INFORMATION

LOCATION: MANSFIELD, CONNECTICUT			
ZONE: PLANNED BUSINESS 1 ZONE (PB-1) WITHIN THE DESIGN DEVELOPMENT DISTRICT			
USE: OFFICE (SPECIAL PERMIT REQUIRED)			
ITEM #	ITEM	REQUIREMENTS	PROPOSED
1	MINIMUM LOT AREA	NONE REQUIRED	262,447 S.F. 6.025 ACRES
2	MINIMUM LOT FRONTAGE	300 FEET	952 FEET
3	MINIMUM LOT DEPTH	NONE REQUIRED	158 FEET
4	MINIMUM FRONT SETBACK	T.B.D.*	±104.9 FEET
5	MINIMUM SIDE SETBACK	T.B.D.*	±162.5 FEET
6	MINIMUM REAR SETBACK	T.B.D.*	±84.9 FEET
7	MAXIMUM BUILDING HEIGHT	40 FEET	39 FEET
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	11 PERCENT

*SETBACKS TO BE DETERMINED DURING PERMITTING PROCESS PER THE DESIGN DEVELOPMENT DISTRICT SECTION OF THE TOWN OF MANSFIELD ZONING REGULATIONS

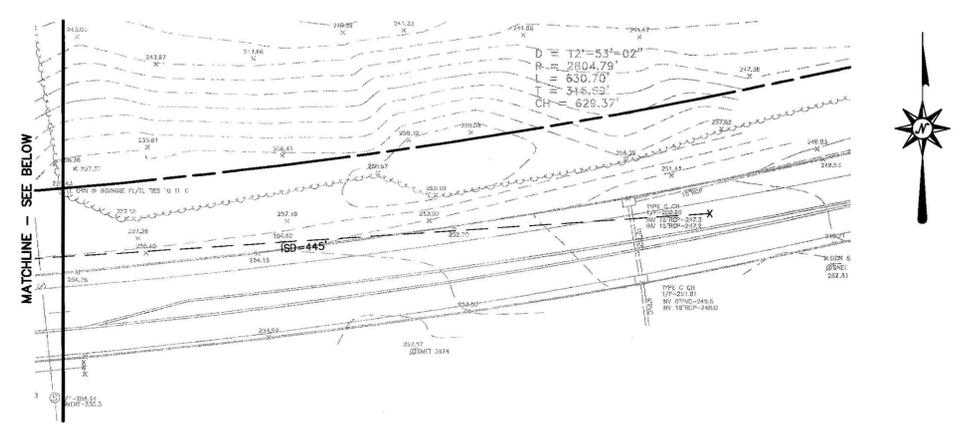
PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED
1	BUILDING SIZE	NONE REQUIRED	28,748 S.F.
2	PARKING REQUIRED BY TOWNSHIP	1 SPACE PER EVERY 250 SF OF FLOOR AREA (115)	142 SPACES
3	MINIMUM PARKING DIMENSIONS	9.5 FEET WIDE X 19 FEET LONG	9.5 FEET WIDE X 19 FEET LONG
4	MINIMUM AISLE WIDTH	24 FEET	24 FEET
5	MINIMUM FRONT SETBACK	T.B.D.*	29.7 FEET
6	MINIMUM SIDE SETBACK	T.B.D.*	10.1 FEET
7	MINIMUM REAR SETBACK	T.B.D.*	39.9 FEET
8	MINIMUM INTERIOR LANDSCAPING	ONE TREE PER 10 PARKING SPACES 10 PERCENT MINIMUM INTERIOR LOT LANDSCAPING AREA	ONE TREE PER 10 PARKING SPACES 12.2 PERCENT

*SETBACKS TO BE DETERMINED DURING PERMITTING PROCESS PER THE DESIGN DEVELOPMENT DISTRICT SECTION OF THE TOWN OF MANSFIELD ZONING REGULATIONS

LEGEND

- PAVEMENT REPAIR OVER UTILITY TRENCH
- STANDARD DUTY BITUMINOUS PAVEMENT
- BITUMINOUS CONCRETE SIDEWALK
- CONCRETE PAVEMENT/SIDEWALK
- SAWCUT LINE
- PROPOSED TREELINE & LIMIT OF DISTURBANCE
- 6' HIGH PVC FENCE
- 3' HIGH SPLIT RAIL FENCE
- 6" CONCRETE CURB
- FLUSH CONDITION SIDEWALK AT EDGE OF PAVEMENT
- PROPOSED SITE LIGHTING
- PROPOSED FUTURE ELECTRIC VEHICLE PARKING SPACE WITH ELECTRIC VEHICLE FUELING/CHARGING STATION



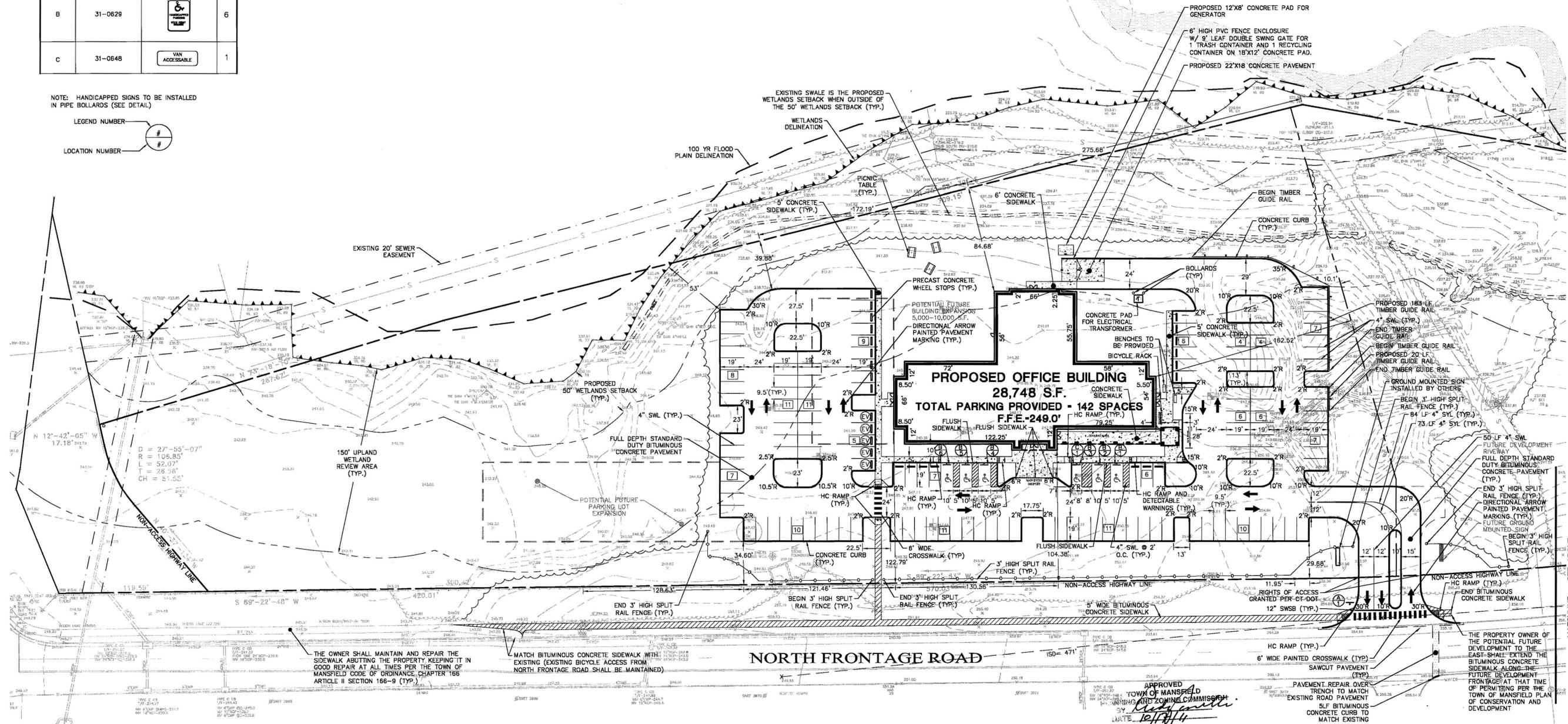
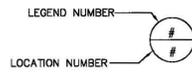
SIGN LEGEND

SIGN NO.	C-DOT NO.	LEGEND	QTY.
A	31-0552Z	30"	1
B	31-0629		6
C	31-0648		1

PAVEMENT MARKING KEY:

- 4" SYDL 4' SOLID YELLOW DOUBLE LINE
- 4" SYL 4' SOLID YELLOW LINE
- 4" SWL 4' SOLID WHITE LINE
- 12" SWSB 12' SOLID WHITE STOP BAR
- 4" BWL 4' BROKEN WHITE LINE 10' STRIPE 30' SPACE

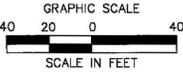
NOTE: HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL)



NO DRIVEWAY OR SIDEWALK WORK WITHIN THE NORTH FRONTAGE ROAD RIGHT-OF-WAY SHALL BEGIN UNTIL AN ENCROACHMENT PERMIT IS ISSUED BY THE STATE DEPARTMENT OF TRANSPORTATION

REFER TO GN-1 FOR SITE PLAN NOTES AND GENERAL NOTES

REFER TO DN-1 FOR MANSFIELD FIRE DEPARTMENT TRUCK TURNING MOVEMENTS



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MANSFIELD, TOLLAND COUNTY, CONNECTICUT

Revisions	Desc.	No.	Date
1.	REVISED PER TOWN APPROVAL CONDITIONS	1.	09/21/11

Designed by B.S.S.
Drawn by B.S.S.
Checked by
Approved by
Scale 1"=40'
Project No. 11C3816
Date 06/27/11
CAD File: SP11C381601

Title: **SITE PLAN**

Sheet No. **SP-1**

Sep. 26, 2011 11:36am B:\sps\11c3816\11c3816.dwg User: jfitts

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GRADING AND DRAINAGE NOTES

- SEE SHEET GN-1 FOR ADDITIONAL GENERAL NOTES.
- THIS DRAWING IS INTENDED TO DESCRIBE GRADING AND DRAINAGE ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, SITE UTILITY PLAN FOR UTILITIES, AND DETAIL SHEETS FOR DETAILS. SEE MEP DRAWINGS AND FOUNDATION DRAWINGS (BY OTHERS) FOR BUILDING CONNECTION LOCATIONS AND DETAILS.
- THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS FROM THE TOWN OF MANSFIELD AND CONNECTICUT DEPARTMENT OF TRANSPORTATION REQUIRED TO PERFORM ALL REQUIRED WORK, INCLUDING FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. THE CONTRACTOR SHALL POST ALL BONDS, EXCEPT CONNECTICUT DOT ENCROACHMENT PERMIT BOND, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE STATE AND LOCAL GOVERNING AUTHORITIES.
- ANY FILL WITHIN FORMER BUILDING FOUNDATION SHALL BE CHECKED BY TEST PIT AND PROOF-ROLLING AND SHALL BE OBSERVED BY THE OWNER'S GEOTECHNICAL ENGINEER. SUBGRADE SHALL BE FORMED WITH REMOVAL AND REPLACEMENT OF FILL AND REMOVAL AND REPLACEMENT OF SOFT SUBGRADE MATERIAL AS ORDERED BY THE GEOTECHNICAL ENGINEER. SEE GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATIONS FOR FURTHER DESCRIPTION.
- THE CONTRACTOR SHALL COMPACT FILL IN 8" MAXIMUM LIFTS UNDER ALL PARKING, BUILDING AND DRIVE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
- VERTICAL DATUM IS TO BE CONFIRMED WITH THE TOPOGRAPHIC SURVEY.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE TOWN OF MANSFIELD WETLAND AGENT PRIOR TO THE START OF WORK ON THE SITE.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE 2002 CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE TOWN OF MANSFIELD WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OR CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- ALL DISTURBANCE INCURRED TO TOWN OR STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF MANSFIELD AUTHORITY AND STATE OF CONNECTICUT.
- ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT SPECIFICATIONS MANUAL AND THE LOCAL MUNICIPALITY'S STANDARDS AND STATE DOT SPECIFICATIONS AS APPLICABLE FOR THE LOCATION OF THE WORK. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS, WHERE SPECIFICATIONS OR STANDARDS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION OR STANDARD SHALL BE SUPERIOR.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.

PRODUCT NOTES:

- SHOP DRAWINGS: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF MATERIALS AND STRUCTURES FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE SITE. ALLOW 14 WORKING DAYS FOR REVIEW.
- HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE HI-0 SURE-LOK 10.8 PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M294, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH BELL-AND-SPOUT JOINT MEETING THE REQUIREMENTS OF AASHTO M294. THE BELL SHALL BE AN INTEGRAL PART OF THE PIPE AND PROVIDE A MINIMUM PULL-APART STRENGTH OF 400 POUNDS. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE MADE OF POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
- HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE HI-Q PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO 252, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH COUPLING BANDS OR EXTERNAL SNAP COUPLERS COVERING AT LEAST 2 FULL CORRUGATIONS ON EACH END OF THE PIPE. SILT-TIGHT (GASKET) CONNECTIONS SHALL INCORPORATE A CLOSED SYNTHETIC EXPANDED RUBBER GASKET. MEETING THE REQUIREMENTS OF AASHTO D1056 GRADE 2A2. GASKETS SHALL BE INSTALLED ON THE CONNECTION BY THE PIPE MANUFACTURER. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.

WATER QUALITY UNIT NOTES:

THE STORMWATER TREATMENT SYSTEM MUST BE DESIGNED TO REMOVE A MINIMUM OF 80% OF THE TOTAL SUSPENDED SOLIDS BASED ON THE WATER QUALITY FLOWS OF THE 1-INCH DESIGN STORM FLOW. FOR DESIGN DATA, REFER TO THE TABLE BELOW ENTITLED "WATER QUALITY UNIT DATA TABLE". THE SYSTEM MUST BE INSPECTED AND CLEANED TO THE SHORTER OF A MINIMUM OF 6 MONTHS OR PER THE MANUFACTURER'S RECOMMENDATION. SHOP DRAWINGS OF THE PROPOSED DIVERSION MANHOLE AND TREATMENT SYSTEM MUST FIRST BE APPROVED BY THE DESIGN ENGINEER AND THE TOWN OF MANSFIELD PRIOR TO FABRICATION. SHOP DRAWING SUBMITTALS MUST INCLUDE:

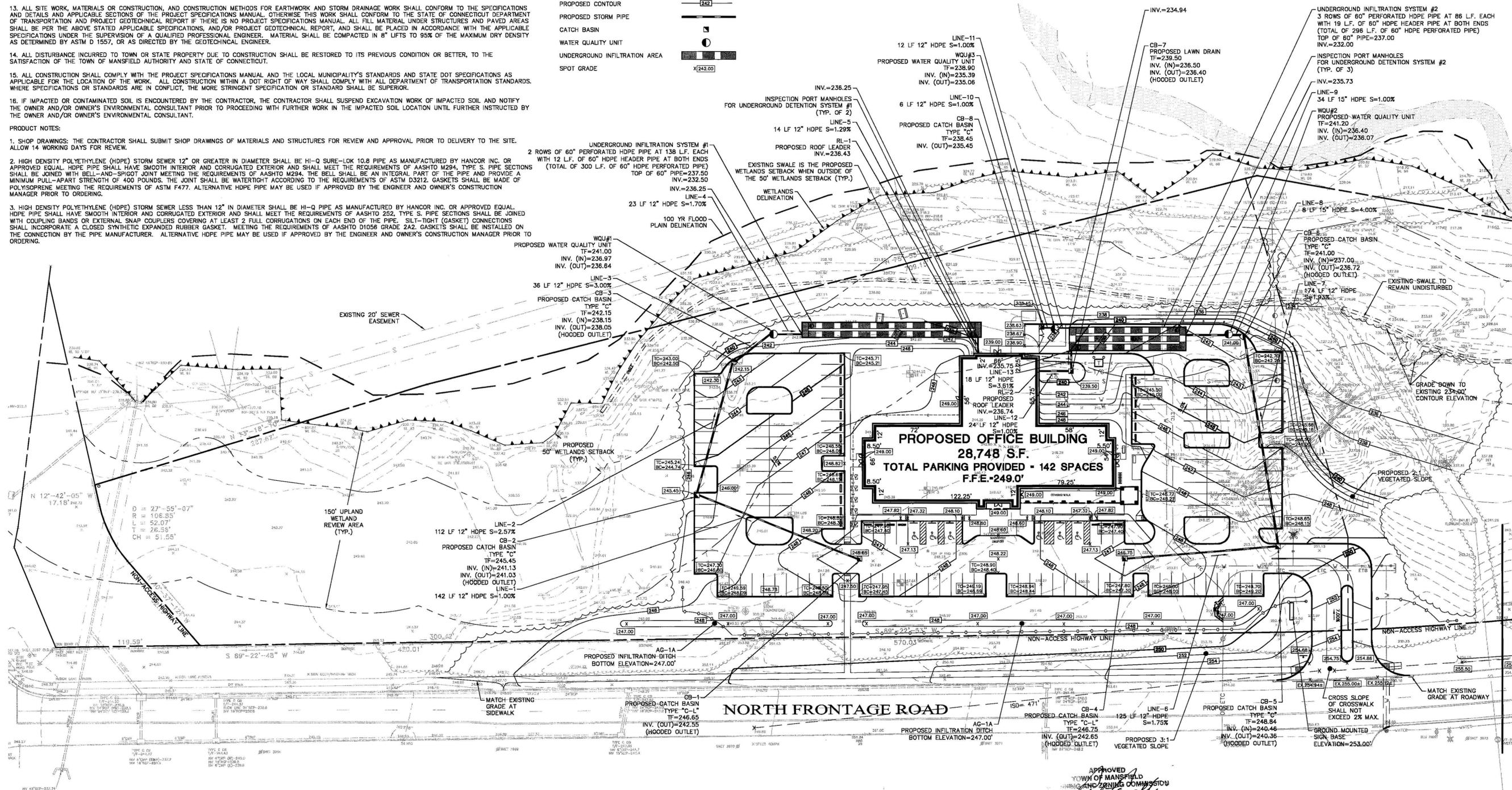
- "TREATED" FLOW FOR THE SPECIFIED SYSTEM AND MODEL, WHICH MUST EQUAL OR EXCEED THE WATER QUALITY FLOW.
- CALCULATIONS OR DOCUMENTATION VERIFYING THAT 80% (MINIMUM) OF THE AVERAGE ANNUAL TOTAL SUSPENDED SOLIDS WILL BE REMOVED FROM THE WATER QUALITY FLOW.
- DETAILED HYDRAULIC CALCULATIONS FOR DESIGN OF THE DIVERSION STRUCTURE (BYPASS WEIR ELEVATION) WHICH INCLUDE HYDRAULIC GRADE LINE ELEVATIONS FOR THE DESIGN STORM EVENT IN THE FIRST STRUCTURE LOCATED UPSTREAM OF THE SYSTEM AND ANY OTHER CRITICAL LOCATIONS (INCLUDE APPROPRIATE TAILWATER CONDITIONS IN THE ANALYSIS).
- ORIENTATION OF THE SYSTEM IN PLAN VIEW WITH RESPECT TO THE APPROVED PLANS (IF DIFFERENT THAN SHOWN ON THE APPROVED PLANS).
- PROPOSED SIZE AND ELEVATION OF CRITICAL WEIR, ORIFICE, PIPE INVERT ELEVATIONS, AND OTHER DESIGN ELEMENTS THAT CORRESPOND TO THE HYDRAULIC CHARACTERISTICS OF THE SYSTEM.

WATER QUALITY UNIT DATA TABLE:

WATER QUALITY UNIT #	DRAINAGE AREA (ACRES)	PERCENT IMPERVIOUS	TIME OF CONCENTRATION (MIN.)	DRAINAGE 10-YEAR DESIGN FLOW (CFS)	WATER QUALITY FLOW (1-INCH) (CFS)
1	0.910	77.5	10	4.11	0.70
2	0.967	86.9	10	4.62	0.83
3	0.123	90.2	10	0.63	0.11

LEGEND:

- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- CATCH BASIN
- WATER QUALITY UNIT
- UNDERGROUND INFILTRATION AREA
- SPOT GRADE



APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION
DATE: 10/17/11

GRAPHIC SCALE
0 20 40
SCALE IN FEET

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PROPOSED OFFICE BUILDING
 NORTH FRONTAGE ROAD
 MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISONS	Desc.	No.	Date
1.	REVISED PER TOWN APPROVAL CONDITIONS	1.	09/27/11

Designed B.S.S.
 Drawn B.S.S.
 Checked
 Approved
 Scale 1"=40'
 Project No. 11C3816
 Date 06/27/11
 CAD File: GD11C381601

Title
GRADING AND DRAINAGE PLAN

Sheet No.

GD-1

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UTILITIES CONSTRUCTION NOTES

UTILITY CONSTRUCTION NOTES

- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF MANSFIELD, STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION, WINDHAM WATER WORKS, CONNECTICUT LIGHT AND POWER, AT&T, CABLE COMPANY, AND TOWN OF MANSFIELD DEPARTMENT OF PUBLIC WORKS TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED, OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS.
- THIS PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO ARCHITECTURAL AND MEP DRAWINGS BY OTHERS FOR BUILDING CONNECTIONS. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROPOSED SANITARY SEWERS AND WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE CIVIL ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORSEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED, WHICH SHALL INCLUDE CONCRETE ENCASEMENT OF PIPING UNLESS OTHERWISE DIRECTED BY THE UTILITY PROVIDERS AND CIVIL ENGINEER.
- RELOCATION OF UTILITY PROVIDER FACILITIES SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
- CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
- BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
- A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER WITH A CONCRETE ENCASEMENT. AN 18-INCH TO 6-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROPOSED PIPING.
- SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
- MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.

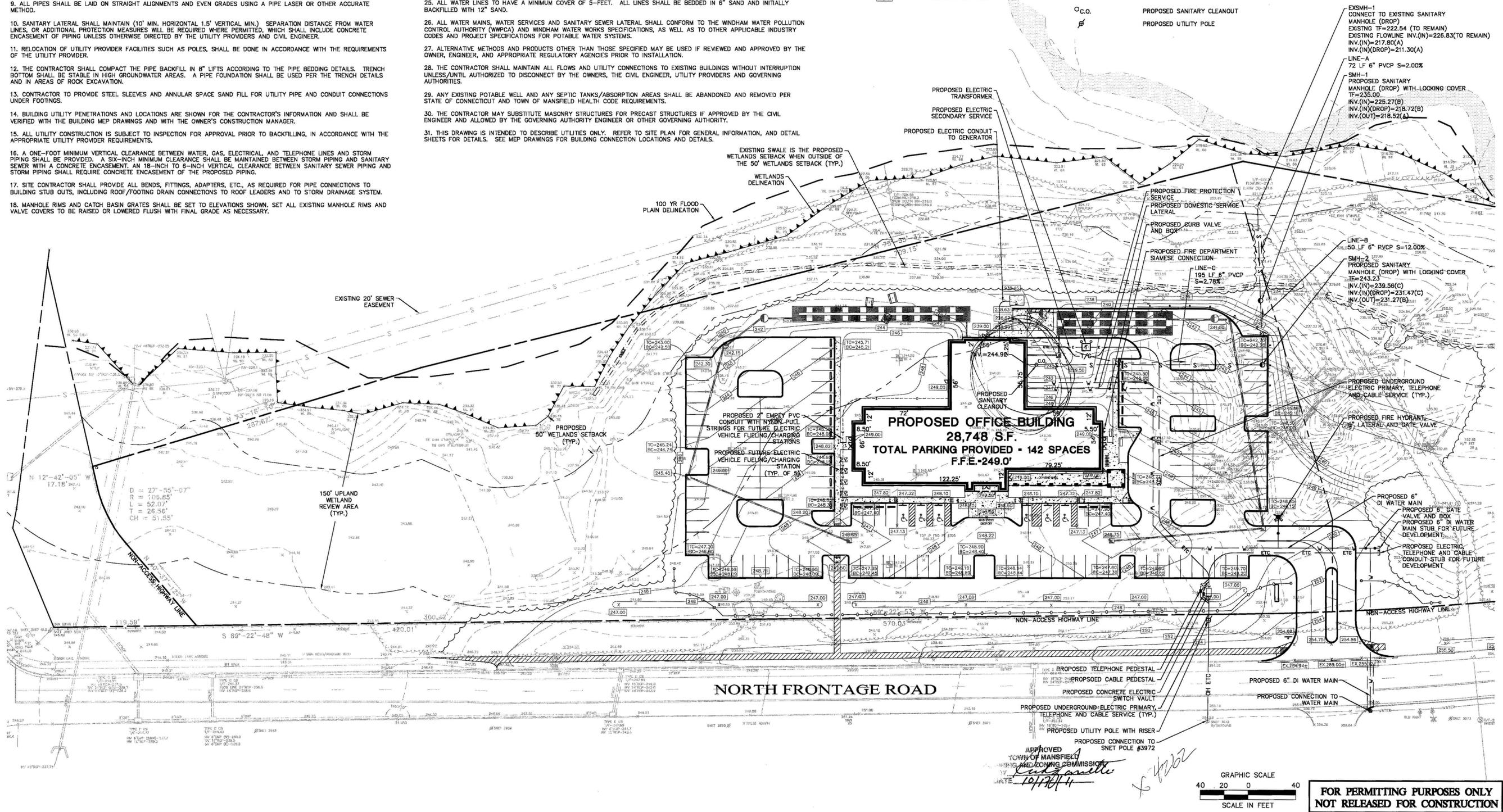
- SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
- CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO PYLON SIGNS AND SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER, TOWN OF MANSFIELD AND CONNECTICUT DEPARTMENT OF TRANSPORTATION.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "CALL BEFORE YOU DIG" AT (800) 922-4455 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
- ELECTRIC AND TELEPHONE SERVICES SHALL BE INSTALLED OVERHEAD FROM SERVICE POLE SNET #3972 TO A NEW UTILITY POLE ON THE NORTH SIDE OF ROUTE 632 IN THE STATE RIGHT-OF-WAY THEN UNDERGROUND TO THE TRANSFORMER OR BUILDING ON-SITE. THE CONTRACTOR SHALL PROVIDE AND INSTALL AND BACKFILL PVC CONDUITS (NUMBER AND SIZE TO BE DETERMINED PRIOR TO CONSTRUCTION) FOR TELEPHONE SERVICE, PVC CONDUITS (NUMBER AND SIZE TO BE DETERMINED PRIOR TO CONSTRUCTION) FOR ELECTRIC SERVICE PRIMARY, PVC CONDUITS (NUMBER AND SIZE TO BE DETERMINED PRIOR TO CONSTRUCTION) FOR ELECTRICAL SECONDARY PER BUILDING ELECTRICAL PLANS, AND PVC CONDUITS (NUMBER AND SIZE TO BE DETERMINED PRIOR TO CONSTRUCTION) FOR CABLE SERVICE. (SCHEDULE 80 UNDER PAVEMENT, SCHEDULE 40 IN NON PAVEMENT AREAS). SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 12" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS, AND 24" ON TELEPHONE AND CABLE CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC UTILITY PROVIDER, PHONE COMPANY AND CATV COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED TO FACILITATE INSTALLATION AND AS REQUIRED BY UTILITY PROVIDER. INSTALL CONCRETE ENCASEMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC PROVIDER.
- ALL WATER LINES TO HAVE A MINIMUM COVER OF 5'-FEET. ALL LINES SHALL BE BEDDED IN 6" SAND AND INITIALLY BACKFILLED WITH 12" SAND.
- ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERAL SHALL CONFORM TO THE WINDHAM WATER POLLUTION CONTROL AUTHORITY (WPCOA) AND WINDHAM WATER WORKS SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE INDUSTRY CODES AND PROJECT SPECIFICATIONS FOR POTABLE WATER SYSTEMS.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.
- ANY EXISTING POTABLE WELL AND ANY SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER STATE OF CONNECTICUT AND TOWN OF MANSFIELD HEALTH CODE REQUIREMENTS.
- THE CONTRACTOR MAY SUBSTITUTE MASONRY STRUCTURES FOR PRECAST STRUCTURES IF APPROVED BY THE CIVIL ENGINEER AND ALLOWED BY THE GOVERNING AUTHORITY ENGINEER OR OTHER GOVERNING AUTHORITY.
- THIS DRAWING IS INTENDED TO DESCRIBE UTILITIES ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS. SEE MEP DRAWINGS FOR BUILDING CONNECTION LOCATIONS AND DETAILS.

PRODUCT NOTES:

- SHOP DRAWINGS: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF MATERIALS AND STRUCTURES FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE SITE. ALLOW 14 WORKING DAYS FOR REVIEW.
- COPPER PIPE SHALL BE TYPE K TUBING WITH COMPRESSION FITTINGS.
- POLY VINYL CHLORIDE PIPE (PVC) FOR STORM AND SANITARY PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVC SHALL CONFORM TO ASTM D-3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS; ASTM-D2321 AND MANUFACTURERS RECOMMENDED PROCEDURE.
- MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
- PVC WATER MAIN PIPING SHALL CONFORM TO AWWA C900.

LEGEND

--- 101 ---	EXISTING CONTOUR	--- OH ETC ---	PROPOSED OVERHEAD ELECTRIC/TELECOMMUNICATIONS/CABLE LINE
x100.4	EXISTING SPOT GRADE	--- E --- E ---	PROPOSED ELECTRIC LINE
□	PROPOSED CATCH BASIN	--- ETC ---	PROPOSED ELECTRIC/TELECOMMUNICATIONS/CABLE LINE
○	PROPOSED STORM MANHOLE	--- W --- W ---	PROPOSED WATER LINE
○	PROPOSED STORM CLEANOUT	--- S ---	PROPOSED SANITARY SEWER LINE
--- 100 ---	PROPOSED CONTOUR	▬▬▬▬▬▬	UNDERGROUND INFILTRATION SYSTEM
--- 100 ---	PROPOSED STORM DRAINAGE PIPE	⊗	PROPOSED HYDRANT
---	---	⊕	PROPOSED TRANSFORMER
---	---	○ c.o.	PROPOSED SANITARY CLEANOUT
---	---	⊕	PROPOSED UTILITY POLE



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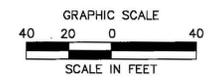
PROPOSED OFFICE BUILDING
 NORTH FRONTAGE ROAD
 MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS	No.	Date	Desc.
	1.	09/27/11	REVISED PER TOWN APPROVAL CONDITIONS

Designed By: B.S.S.
 Drawn By: B.S.S.
 Checked By:
 Approved By:
 Scale: 1"=40'
 Project No.: 11C3816
 Date: 08/27/11
 CAD File: SU11C381601

Title: **SITE UTILITY PLAN**
 Sheet No.:

SU-1



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 Layout: SU-1 2x4x8 40SC

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PROPOSED OFFICE BUILDING
NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS
No. Date Desc.
1. 09/27/11 REVISED PER TOWN APPROVAL CONDITIONS

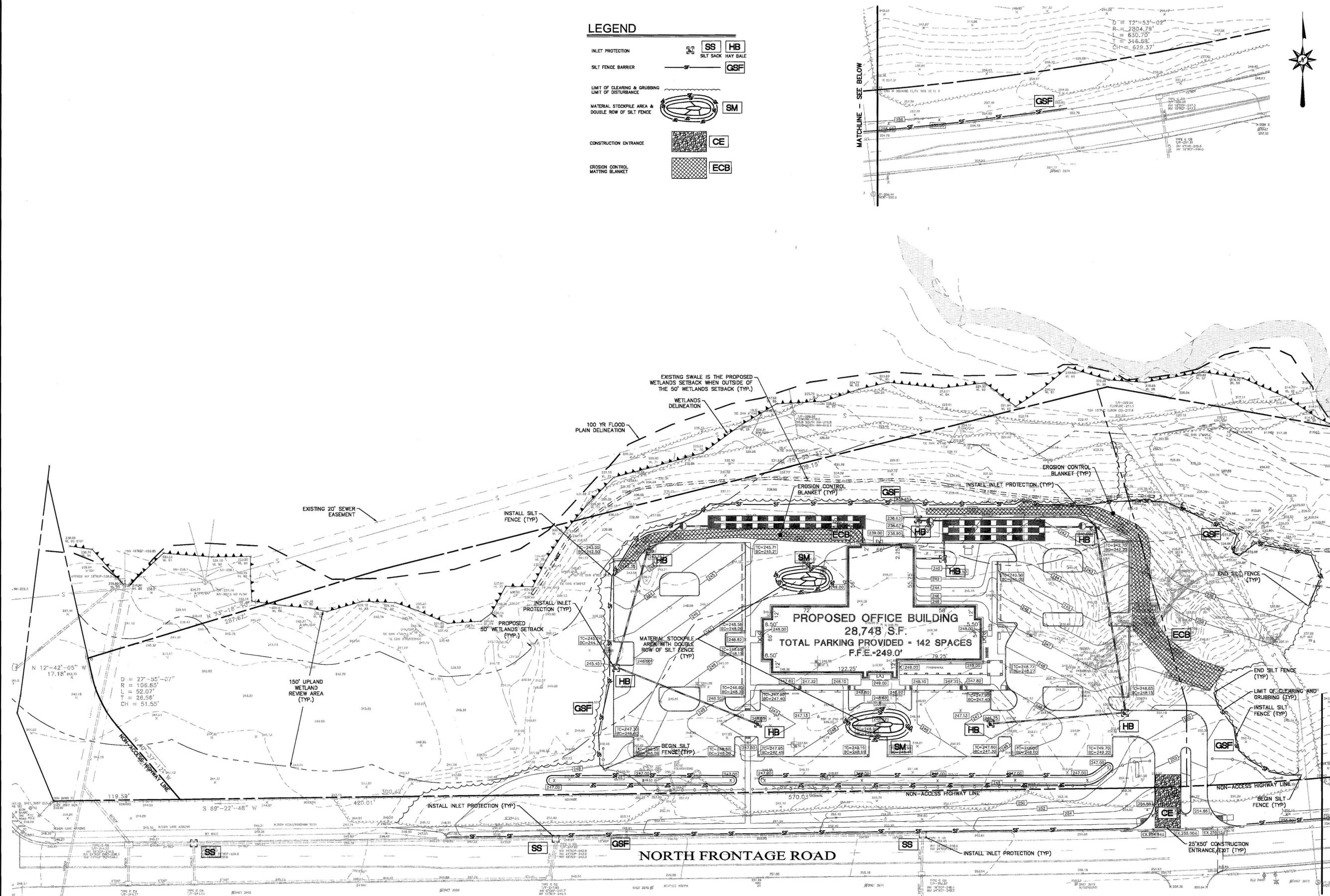
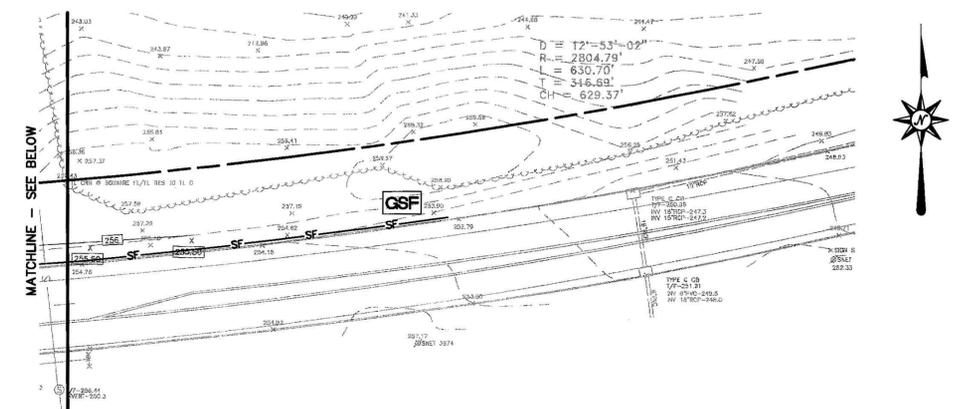
Designed By BKB
Drawn By BKB
Checked By
Approved By
Scale 1"=40'
Project No. 11C3816
Date 06/27/11
CAD File: EC11C381601

Sheet No.

EC-1

LEGEND

- INLET PROTECTION **SS** **HB**
- SILT SACK HAY BALE
- SILT FENCE BARRIER **SF** **GSF**
- LIMIT OF CLEARING & GRUBBING
LIMIT OF DISTURBANCE
- MATERIAL STOCKPILE AREA &
DOUBLE ROW OF SILT FENCE **SM**
- CONSTRUCTION ENTRANCE **CE**
- EROSION CONTROL
MATING BLANKET **ECB**



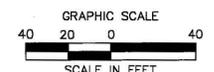
N 12°-42'-05" W
17.18'

D = 27'-35'-07"
R = 106.85'
L = 52.07'
T = 26.56'
CH = 51.55'

N 107°-52'-24" W
119.59'

S 89°-22'-48" W
420.01'

APPROVED
TOWN OF MANSFIELD
ZONING AND ZONING COMMISSION
DATE 10/19/11



SEE SHEET EC-2 FOR EROSION CONTROL NOTES & DETAILS
FOR PERMITTING PURPOSES ONLY
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EROSION CONTROL NOTES

SEDIMENT & EROSION CONTROL NARRATIVE
 THE SEDIMENT AND EROSION CONTROL PLAN WAS DEVELOPED TO PROTECT THE EXISTING ROADWAY AND STORM DRAINAGE SYSTEMS, ADJACENT PROPERTIES, AND ADJACENT WETLAND AREA FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION. A CONSTRUCTION SEQUENCE IS PROVIDED TO PROVIDE SURFACE RUNOFF EROSION CONTROLS PRIOR TO THE BEGINNING OF PROJECT DEMOLITION AND/OR CONSTRUCTION.

CONSTRUCTION SCHEDULE
 THE ANTICIPATED STARTING DATE FOR CONSTRUCTION IS FALL 2011 WITH COMPLETION ANTICIPATED SPRING 2012. APPROPRIATE EROSION CONTROL MEASURES AS DESCRIBED HEREIN, SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL DEMOLITION OR CONSTRUCTION ACTIVITY. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED.

CONTINGENCY EROSION PLAN
 THE CONTRACTOR SHALL INSTALL ALL SPECIFIED EROSION CONTROL MEASURES AND WILL BE REQUIRED TO MAINTAIN THEM IN THEIR INTENDED FUNCTIONING CONDITION. THE AGENTS OF THE TOWN OF MANSFIELD AND/OR CIVIL ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

CONSTRUCTION SEQUENCE
 THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:
 1. CONTACT TOWN OF MANSFIELD AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.

2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE TOWN OF MANSFIELD AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL TREE PROTECTION AND PERIMETER SILT FENCE.

3. CONSTRUCT STONE CONSTRUCTION ENTRANCES/EXITS AND WRAP FILTER FABRIC AROUND GRATES OF CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS. WRAP SILT SACKS WITH SILT FENCE AND OTHER EROSION CONTROL DEVICES INDICATED ON THESE PLANS AT PERIMETER OF PROPOSED SITE DISTURBANCE AND INSTALL ALL EROSION CONTROL MEASURES AND TREE PROTECTION INDICATED ON THESE PLANS. INSTALL SEDIMENT BASINS AND SEDIMENT TRAPS IF REQUIRED AT LOW AREAS OF SITE OR AS ORDERED BY THE ENGINEER OR AS SHOWN ON THESE PLANS.

4. CLEAR AND GRUB SITE. STOCKPILE CHIPS, STOCKPILE TOPSOIL. INSTALL EROSION CONTROLS AT STOCKPILES.

5. INSTALL SILT FENCE. COMMENCE INSTALLATION OF STORM DRAINAGE SYSTEM.

6. COMMENCE EARTHWORK. CONSTRUCT FILL SLOPE. INSTALL ADDITIONAL EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.

7. CONSTRUCTION STAKING OF ALL BUILDING CORNERS, UTILITIES, ACCESS DRIVES, AND PARKING AREAS.

8. ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.

9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

10. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST PROVIDE EVIDENCE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE TOWN OF MANSFIELD AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE TOWN OF MANSFIELD IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.

11. CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.

12. BUILDING FOUNDATION SUBGRADE AND PAD SUBGRADE PREPARATION.

13. BUILDING FOUNDATION CONSTRUCTION. BEGIN BUILDING SUPERSTRUCTURE.

14. THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND SILT FENCES, HAY BALES AND OTHER EROSION CONTROL DEVICES, AND FROM SEDIMENT TRAPS AS REQUIRED. REMOVAL SHALL BE ON A PERIODIC BASIS (EVERY SIGNIFICANT RAINFALL OF 0.25 INCH OR GREATER). INSPECTION OF EROSION CONTROL MEASURES SHALL BE ON A WEEKLY BASIS AND AFTER EACH RAINFALL OF 0.25 INCH OR GREATER. SEDIMENT COLLECTED SHALL BE DEPOSITED AND SPREAD EVENLY UPON SLOPES DURING CONSTRUCTION.

15. INSTALL SANITARY LATERAL AND UTILITIES. COMPLETE STORM DRAINAGE SYSTEM.

16. INSTALL SITE LIGHTING AND TRASH ENCLOSURE.

17. COMPLETE GRADING TO SUBGRADES AND CONSTRUCT PARKING AREA SUBGRADE.

18. CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS.

19. CONDUCT FINE GRADING.

20. PAVING OF PARKING AREAS AND DRIVEWAYS.

21. FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.

22. PLACE 4" TOPSOIL ON SLOPES AFTER FINAL GRADING IS COMPLETED. FERTILIZE SEED AND MULCH. SEED MATURE TO BE INSTALLED AFTER 15-JUNE 1 OR AUGUST 15-OCTOBER 1. USE EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED FOR SLOPES GREATER THAN 3:1 AND AS SHOWN ON LANDSCAPE PLANS OR EROSION CONTROL PLANS. FOR TEMPORARY STABILIZATION BEFORE SEEDING DATES USE ANNUAL RYE AT 4.0 LBS./1,000 S.F. FERTILIZE WITH 10-10-10 AT 1.0 LBS. OF NITROGEN PER 1,000 S.F. AND LIME AT 100 LBS./1,000 S.F. (MAX.).

23. LANDSCAPE ISLANDS INTERIOR NON-PAVED AREAS AND PERIMETER AREAS.

24. INSTALL SIGNAGE AND PAVEMENT MARKINGS.

25. CLEAN STORM DRAINAGE PIPE STRUCTURES, DETENTION SYSTEMS AND WATER QUALITY DEVICES OF DEBRIS AND SEDIMENT.

26. UPON DIRECTION OF THE TOWN OF MANSFIELD AGENT, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.

CLEARING AND GRUBBING OPERATIONS
 1. ALL SEDIMENTATION AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION BASINS AND STONE CONSTRUCTION ENTRANCE/EXIT, WILL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.

2. FOLLOWING INSTALLATION OF ALL SEDIMENTATION AND EROSION CONTROL MEASURES, THE CONTRACTOR SHALL NOT PROCEED WITH GRADING, FILLING OR OTHER CONSTRUCTION OPERATIONS UNTIL THE ENGINEER HAS INSPECTED AND APPROVED ALL INSTALLATIONS.

3. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CLEARING AND GRUBBING OPERATIONS SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENTATION AND EROSION CONTROL DEVICES.

4. FOLLOWING THE COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ALL AREAS SHALL BE STABILIZED WITH TOPSOIL AND SEEDING OR PROCESSED AGGREGATE STONE AS SOON AS PRACTICAL.

ROUGH GRADING OPERATIONS
 1. DURING THE REMOVAL AND/OR PLACEMENT OF EARTH AS INDICATED ON THE GRADING PLAN, TOPSOIL SHALL BE STRIPPED AND APPROPRIATELY STOCKPILED FOR REUSE.

2. ALL STOCKPILED TOPSOIL SHALL BE SEED, MULCHED WITH HAY, AND ENCLOSED BY A SILTATION FENCE.

FILLING OPERATIONS
 1. PRIOR TO FILLING, ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL BE PROPERLY IMPLEMENTED, MAINTAINED AND FULLY INSTALLED, AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THIS PLAN.

2. ALL FILL MATERIAL ADJACENT TO ANY WETLAND AREAS, IF APPLICABLE TO THIS PROJECT, SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN). BULK SHALL BE PLACED IN LIFT THICKNESSES NOT GREATER THAN THAT SPECIFIED IN PROJECT SPECIFICATIONS AND/OR THE PROJECT GEOTECHNICAL REPORT. LIFTS SHALL BE COMPACTED TO 98% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS OR IN THE GEOTECHNICAL REPORT.

3. AS GENERAL GRADING OPERATIONS PROGRESS, ANY TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED, AS NECESSARY, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT BASINS OR SEDIMENT TRAPS.

PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND BUILDING CONSTRUCTION OPERATIONS.
 1. SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. HAY BALES MAY BE USED IF SHOWN ON THE EROSION CONTROL PLANS OR IF DIRECTED BY THE CIVIL ENGINEER.

FINAL GRADING AND PAVING OPERATIONS
 1. ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.

2. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.

3. PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.

4. AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE HAS BEEN INSPECTED AND APPROVED BY THE TOWN OF MANSFIELD.

INSTALLATION OF SEDIMENTATION AND EROSION CONTROL MEASURES

1. SILTATION FENCE
 A. DIG A SIX INCH TRENCH ON THE UPHILL SIDE OF THE DESIGNATED FENCE LINE LOCATION.

B. POSITION THE POST AT THE BACK OF THE TRENCH (DOWNHILL SIDE), AND HAMMER THE POST AT LEAST 1.5 FEET INTO THE GROUND.

C. LAY THE BOTTOM SIX INCHES OF THE FABRIC INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUN-OFF.

D. BACKFILL THE TRENCH AND COMPACT.

II. HAY BALES
 A. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PARALLEL TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

B. BALES SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER.

C. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES.

D. THE GAPS BETWEEN BALES SHALL BE WEDGED WITH STRAW TO PREVENT WATER LEAKAGE.

E. THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE, TO ENSURE THAT RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER, BUT NOT AROUND IT.

OPERATION AND MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES

I. SILTATION FENCE
 A. ALL SILTATION FENCES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.

B. SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY EXCEED A HEIGHT OF ONE FOOT.

II. HAY BALES
 A. ALL HAY BALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.

B. DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.

EROSION AND SEDIMENT CONTROL PLAN
 1. HAY BALE FILTERS OR SILTATION FENCE WILL BE INSTALLED AT ALL CULVERT OUTLETS IF CULVERT OUTLETS ARE APPLICABLE TO THIS PROJECT AND ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.

2. CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIP RAP CHANNELS, ENERGY DISSIPATORS WILL BE INSTALLED AS SHOWN ON THESE PLANS AND AS NECESSARY.

3. CATCH BASINS WILL BE PROTECTED WITH HAY BALE FILTERS, SILT SACKS, SILTATION FENCE, OR OTHER INLET PROTECTION DEVICES PER DETAILS, THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.

4. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

5. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO DEMOLITION AND/OR CONSTRUCTION WHENEVER POSSIBLE.

6. ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE DEMOLITION AND CONSTRUCTION PERIOD.

7. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED OR AS DIRECTED BY THE CIVIL ENGINEER OR BY LOCAL GOVERNING OFFICIALS.

8. SEDIMENT REMOVED FROM EROSION CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE EROSION CONTROL PLANS, NOTES, AND DETAILS.

9. THE CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFICATION OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND TOWN OF MANSFIELD OFFICE OR GOVERNING AUTHORITY OF ANY TRANSFER OF THIS RESPONSIBILITY AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

SEDIMENT AND EROSION CONTROL NOTES
 1. THE SEDIMENT AND EROSION CONTROL PLAN IS ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL TREATMENT FOR THIS SITE. SEE SEDIMENT AND EROSION CONTROL DETAILS AND CONSTRUCTION SEQUENCE. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

2. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN, AND CONTACT INFORMATION SHALL BE PROVIDED AT THE TIME OF CONSTRUCTION. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

3. AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED WITH THE TOWN OF MANSFIELD TO ENSURE IMPLEMENTATION OF THE EROSION CONTROL MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF THIS BOND AND FOR INQUIRIES TO THE TOWN OF MANSFIELD FOR INFORMATION ON THE METHOD, TYPE AND AMOUNT OF THE BOND POSTING UNLESS OTHERWISE DIRECTED BY THE OWNER.

4. VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT OF 0.25 INCHES OR GREATER BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPs ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
 A) A SUMMARY OF THE SITE CONDITIONS, E&S BMPs, AND COMPLIANCE;
 B) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION

5. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF MANSFIELD. THE CONTRACTOR SHALL KEEP A COPY OF THE GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION.

6. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, CIVIL ENGINEER, TOWN OF MANSFIELD OR GOVERNING AGENCIES. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED.

7. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS BEFORE AND AFTER EACH STORM (0.25 INCHES OR GREATER RAINFALL), OR AT LEAST WEEKLY, TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.

8. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH, RIP RAP ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.

9. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE OR AS SHOWN WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.

10. INSTALL PERIMETER SEDIMENT CONTROLS PRIOR TO CLEARING OR CONSTRUCTION. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SILT FENCE UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE FENCE.

11. STONE CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED AT START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.

12. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN 2 MONTHS.

13. COMPLY WITH REQUIREMENTS OF CGS SECTION 22A-430B FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH DEP RECORD KEEPING AND INSPECTION REQUIREMENTS.

14. STONE CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY ON SITE EXCAVATION AND SHALL BE MAINTAINED DURING ALL EXCAVATION AND CONSTRUCTION ACTIVITIES.

15. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.

16. SILT FENCE AND OTHER SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS PRIOR TO WORK IN ANY UPLAND AREAS.

17. EXCAVATED MATERIAL FROM TEMPORARY SILT TRAPS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.

18. INSTALL SILT FENCE ACCORDING TO MANUFACTURER'S INSTRUCTION, PARTICULARLY, BURY LOWER EDGE OF FABRIC INTO GROUND. SILT FENCE SHALL BE INSTALLED AT LEAST 10 FEET FROM THE TOE OF THE SLOPE AND APPROVED BY THE CIVIL ENGINEER. FILTER FABRIC USED SHALL BE MIRAFI 100X OR EQUIVALENT. SEE SPECIFICATIONS FOR FURTHER INFORMATION.

19. WHERE INDICATED ON EROSION CONTROL PLANS USE NEW HAY BALES AND REPLACE THEM WHENEVER THEIR CONDITION DETERIORATES BEYOND REASONABLE USABILITY. STAKE HAY BALES SECURELY INTO GROUND AND BUTT TIGHTLY TOGETHER TO PREVENT UNDERCUTTING AND BYPASSING.

20. INSTALL TEMPORARY DIVERSION DITCHES, FLUNG POOLS, SEDIMENT BASINS, SEDIMENT TRAPS AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE STABILIZED. LOCATION OF TEMPORARY SEDIMENT BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE CIVIL ENGINEER AND GOVERNING OFFICIAL.

21. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY PITS, SEDIMENT TRAP, SEDIMENT BASIN OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINAGE SYSTEM OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR.

22. BLOCK END OF STORM SEWERS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.

23. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. OTHER DUST CONTROL MEASURES TO BE USED AS NECESSARY INCLUDE WATERING DOWN DISTURBED AREAS, USING CALCIUM CHLORIDE, AND COVERING LOADS ON DUMP TRUCKS.

24. PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN THE SEDIMENT BASINS DURING CONSTRUCTION AND CLEAN ACCUMULATED SILT WHEN NECESSARY OR WHEN ONE FOOT OF SEDIMENT HAS ACCUMULATED OR PER SPECIFIC CLEANOUT MARKER ELEVATION. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY AND AS DIRECTED BY THE CIVIL ENGINEER OR OWNER'S CONSTRUCTION REPRESENTATIVE. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY BALES AND SILT FENCE WHEN LEVEL REACHES HALF THE HEIGHT OF THE HAY BALE OR ONE FOOT AT SILT FENCE. DISPOSE OF SEDIMENT LEGALLY EITHER ON OR OFF SITE.

25. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

26. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.

27. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF UTILITY AND STORM PIPE TRENCHES SO AS TO ALLOW THE TRENCH TO INTERCEPT ALL SILT LADEN RUNOFF.

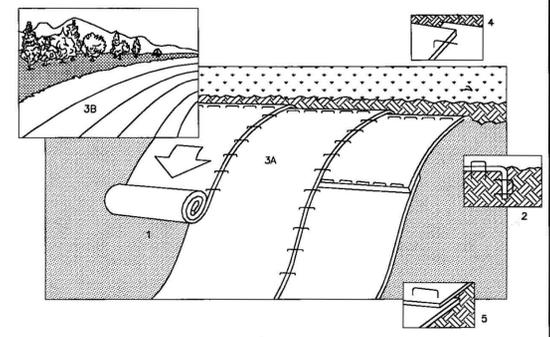
28. CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING.

29. ANY STOCKPILES OF STRIPPED MATERIALS ARE TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL. HAUL ROADS BOTH INTO AND AROUND THE SITE ARE TO BE SPRAYED AS NEEDED TO SUPPRESS DUST. TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARDED TO AID IN THE CONTROL OF AIRBORNE DUST. DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.

30. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

31. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS WHEN AUTHORIZED BY LOCAL GOVERNING AUTHORITY. FILE NOT (NOTICE OF TERMINATION) WITH GOVERNING AUTHORITY RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

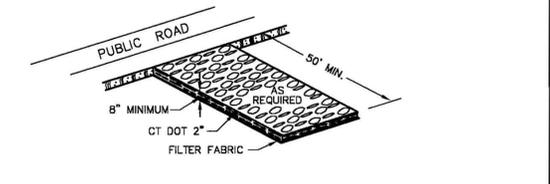
32. ANY SEDIMENTATION BASINS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER DISTURBED ACRE CONTRIBUTING TO THE BASIN.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

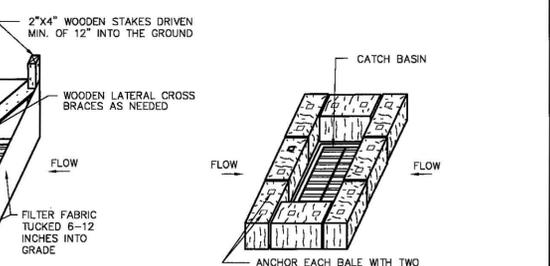
EROSION CONTROL MATTING BLANKET

N.T.S. BL-EC-010



CONSTRUCTION ENTRANCE

N.T.S. CTC-001



SILT FENCE INSTALLATION AT CATCH BASINS AT LOW POINTS

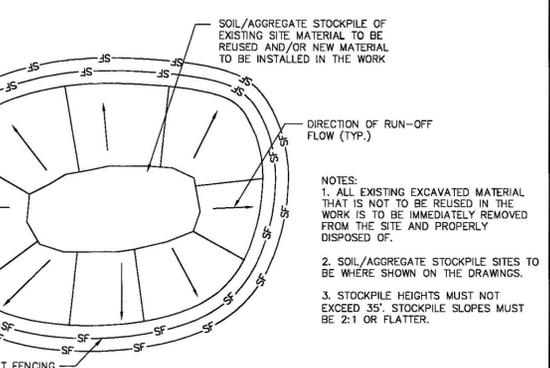
STORMWATER INLETS WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT.

HAY BALE FILTER INSTALLATION AT CATCH BASIN AT LOW POINTS

STORMWATER INLETS WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT.

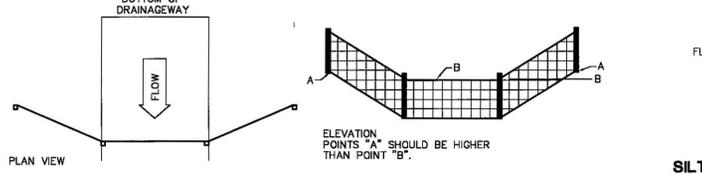
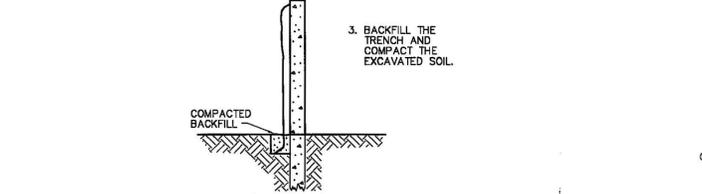
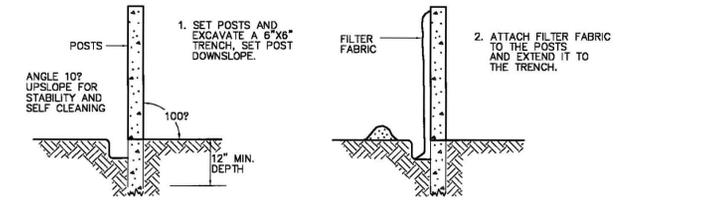
CATCH BASIN EROSION CONTROL

N.T.S. BLEC-012



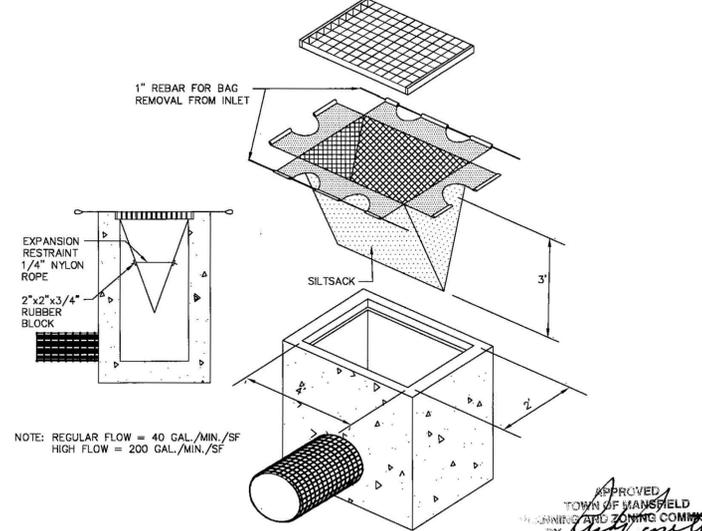
MATERIALS STOCKPILE DETAIL

N.T.S. BLEC-006



GEOTEXTILE SILT FENCE

N.T.S. ZEC-007



SILTSACK DETAIL

N.T.S. BLEC-005

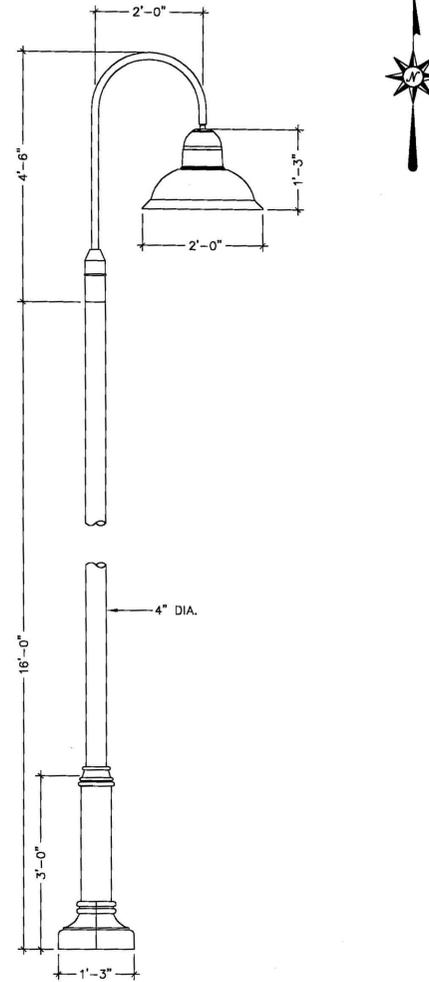


ARCHITECTURE
 ENGINEERING
 PLANNING

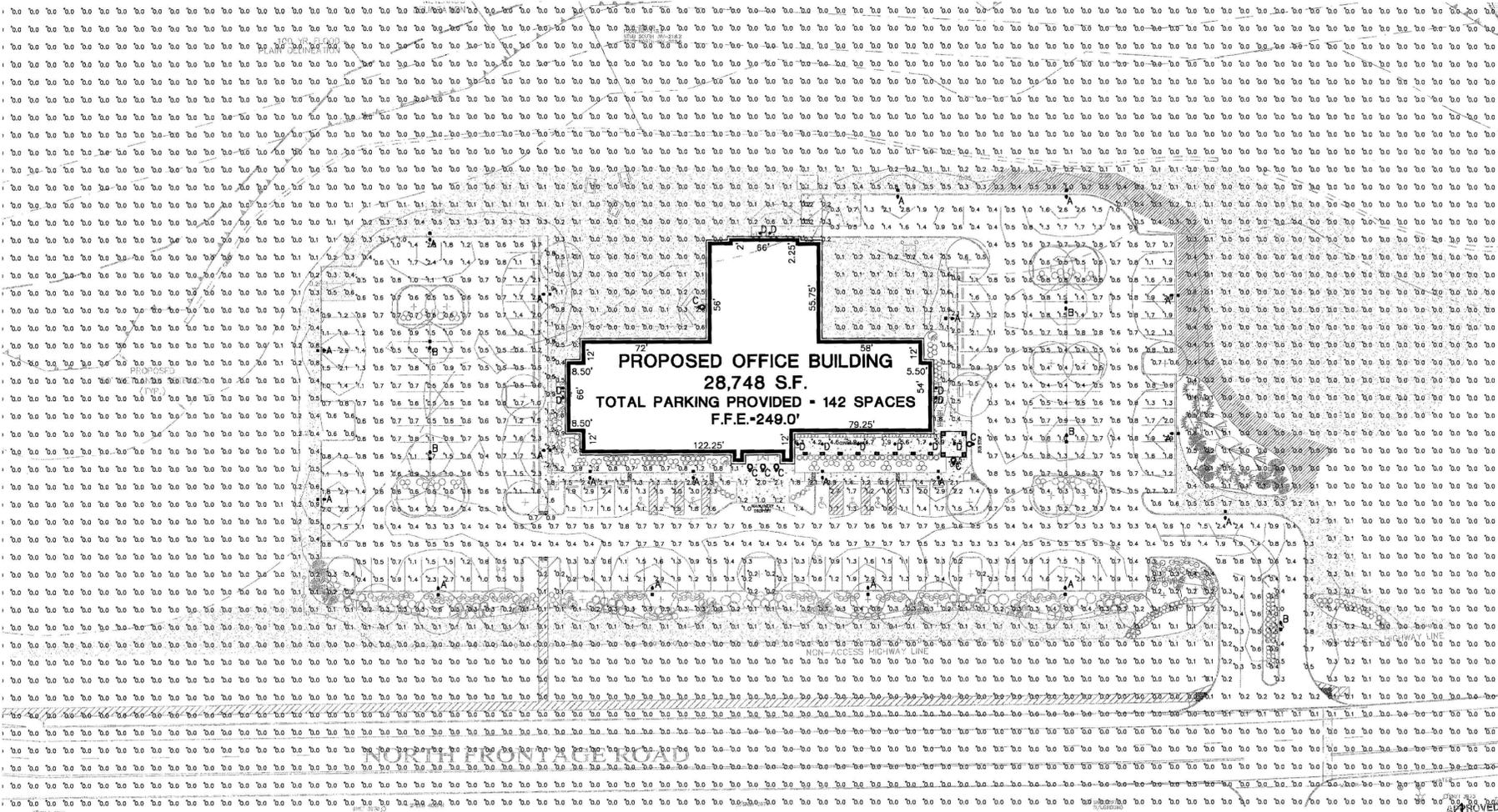
Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
⊙	A	19	UCM-T3-60LED-BW-FTG	UNIVERSE SERIES MEDIUM SCALE POST TOP LUMINAIRE WITH SPECULAR REFLECTORS AND CLEAR FLAT GLASS LENS, STAINLESS STEEL HARDWARE, CAPTIVE FASTENERS	60 LEDS IN 20 ARRAYS OF 3 EACH. LUMINAIRE OUTPUT: 3486 Lms.	UCM-T3-60LED-BW-FTG.IES	3505	1.00	71.6
⊙	B	5	UCM-T5-60LED-BW-FTG	UNIVERSE SERIES MEDIUM SCALE POST TOP LUMINAIRE WITH SPECULAR REFLECTORS AND CLEAR FLAT GLASS LENS, STAINLESS STEEL HARDWARE, CAPTIVE FASTENERS; S100K	60 LEDS IN 20 ARRAYS OF 3 EACH. LUMINAIRE OUTPUT: 3207 Lms.	UCM-T5-60LED-BW-FTG.IES	3212	1.00	70.4
⊙	C	6	UCS-ANG-12LED-BW S100K	SMALL SCALE UNIVERSE LUMINAIRE; DIE-CAST ALUMINUM BALLAST HOUSING AND LENS FRAME; SPUN ALUMINUM ANGLED HOOD; COATED GLASS GLOBE; NON CUTOFF	12 LEDS; S100K; LUMEN RATING-1086	UCS-ANG-12LED-BW.IES	1085	1.00	32
⊙	D	12	LF6LED 6LFLED5 35K	6" LiteFrame LED Downlight Semi-diffuse Alzak Reflector	PHILIPS FORTIMO DLM 1100	3332.ies	916	1.00	18.5

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Canopy	+	4.3 fc	6.5 fc	1.7 fc	3.8:1	2.5:1
Parking Area	+	0.9 fc	3.1 fc	0.2 fc	15.5:1	4.5:1
Spill Area	+	0.0 fc	2.0 fc	0.0 fc	N / A	N / A
Walk Ways	+	1.5 fc	2.8 fc	0.5 fc	5.6:1	3.0:1
Walk Ways	+	0.7 fc	2.6 fc	0.2 fc	13.0:1	3.5:1
Walk Ways	+	1.4 fc	3.4 fc	0.4 fc	8.5:1	3.5:1

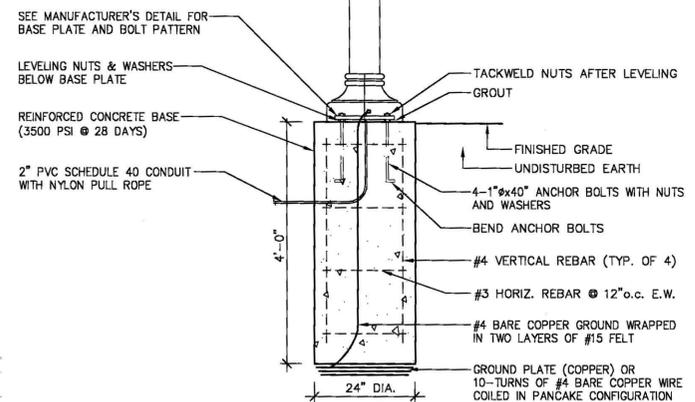
NOTE:
ALL EXTERIOR LIGHTING PHOTOMETRIC CALCULATIONS FOR THIS PROJECT ARE DONE USING VISUAL PROFESSIONAL EDITION SOFTWARE.



DECORATIVE STREET LIGHT



NOTE:
CONTRACTOR RESPONSIBLE FOR INSTALLATION OF PRE-CAST CONCRETE BASES, TRENCHING AND LAYING OF CONDUIT WITH SWEEPS IN AND OUT OF BASE, A DRIVEN GROUND ROD WITH BARE COPPER WIRE AT EACH BASE, AND INSTALLATION OF THE POLE AND LAMPS. CONTRACTOR RESPONSIBLE FOR PROVIDING AND INSTALLATION OF WIRE FROM THE LIGHTING PANEL TO EACH POLE LAMP.



DECORATIVE STREET LIGHT BASE



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PROPOSED OFFICE BUILDING
NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS
No. Date
1. 09/21/11 REVISED PER TOWN APPROVAL CONDITIONS

Designed R.Z.
Drawn R.Z.
Checked
Approved
Scale 1"=40'
Project No. 11C3816
Date 06/27/11
CAD File: LP11C381601

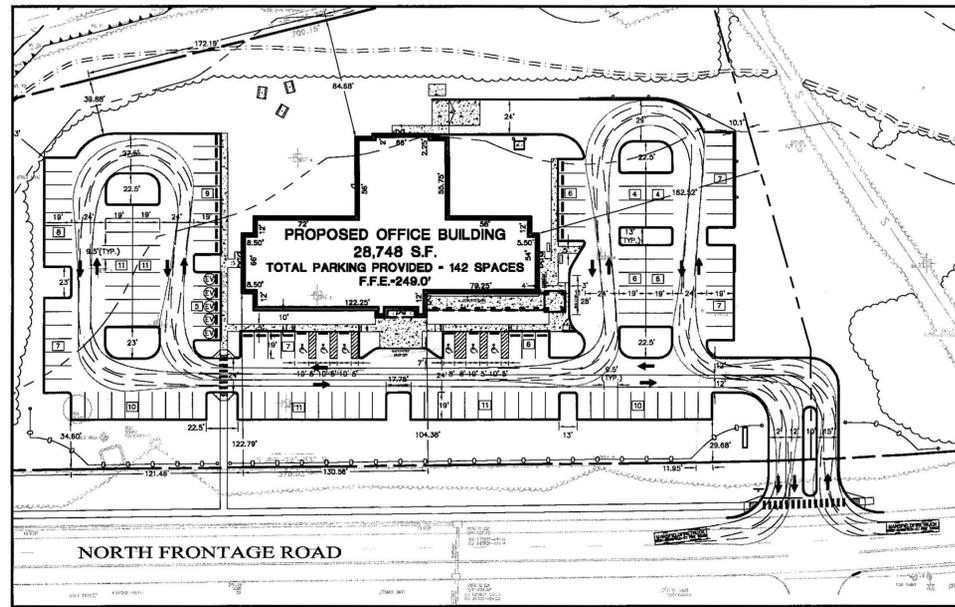
SITE LIGHTING PLAN

Sheet No.

LP-1

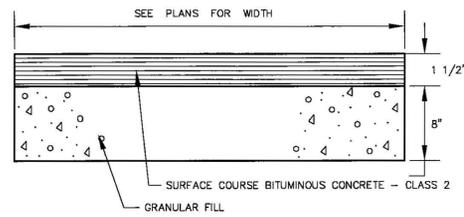
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TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION
BY: [Signature]
DATE: 10/24/11



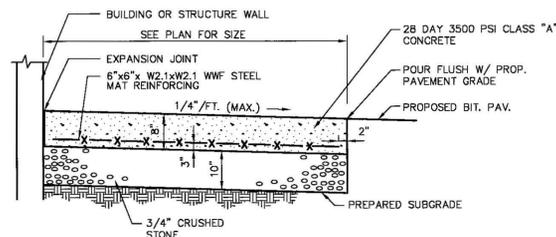
MANSFIELD FIRE DEPARTMENT TRUCK TURNING MOVEMENTS

SCALE: 1"=60'



BITUMINOUS WALK

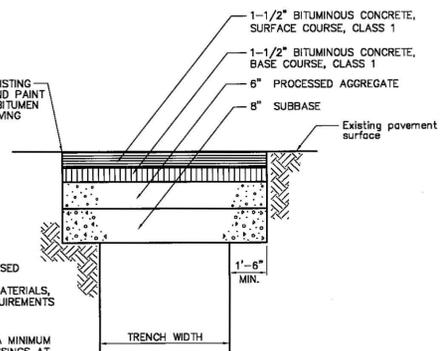
N.T.S. CTSR-002



SECTION VIEW

CONCRETE PAVEMENT

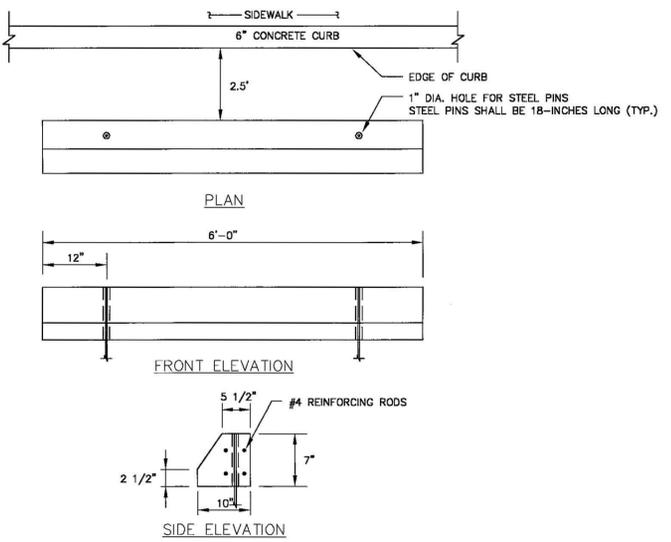
N.T.S. BLPC-002



NOTE: 1) ALL BITUMINOUS CONCRETE, PROCESSED AGGREGATE, SUBBASE AND LIQUID BITUMEN SHALL CONFORM TO THE MATERIALS, EQUIPMENT AND CONSTRUCTION REQUIREMENTS AS PER STATE SPECS.
2) THE CONTRACTOR SHALL MAINTAIN A MINIMUM 15' WIDE TRAVELWAY AT ROAD CROSSINGS AT ALL TIMES DURING CONSTRUCTION. THE USE OF STEEL PLATES IS PERMITTED, PER CONDOT USE STEEL PLATE REQUIREMENTS AND RESTRICTIONS.

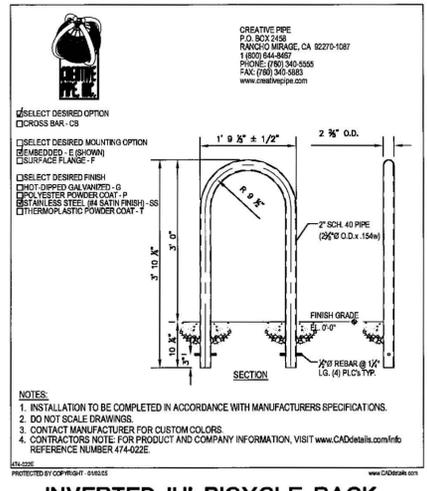
PAVEMENT REPAIR OVER TRENCH

N.T.S.



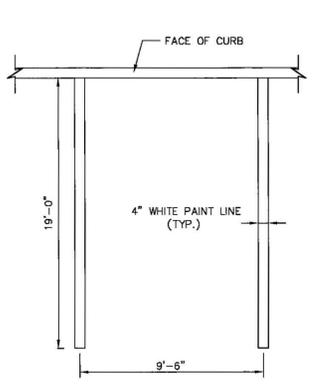
PRECAST CONCRETE WHEEL STOP

N.T.S. ZPC-041



INVERTED 'U' BICYCLE RACK

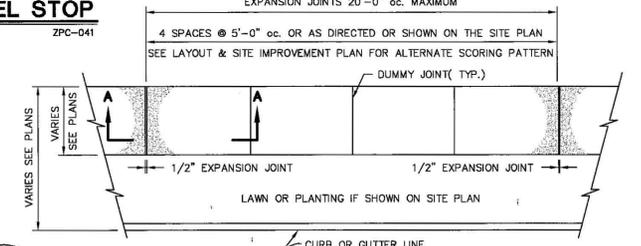
N.T.S.



NOTE:
1. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.
2. SEE PLAN FOR ACTUAL SPACE LOCATION AND DIMENSIONS.

TYPICAL PARKING SPACE DETAIL

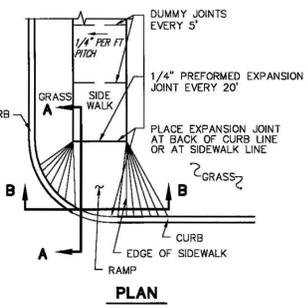
N.T.S. BLPC-003



PLAN VIEW

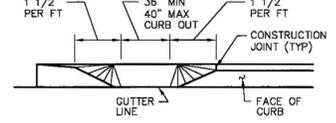
CONCRETE SIDEWALK DETAIL

N.T.S. BLSR-001

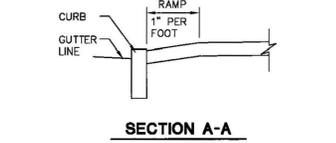


SIDEWALK RAMP DETAIL

N.T.S. BLSR-002



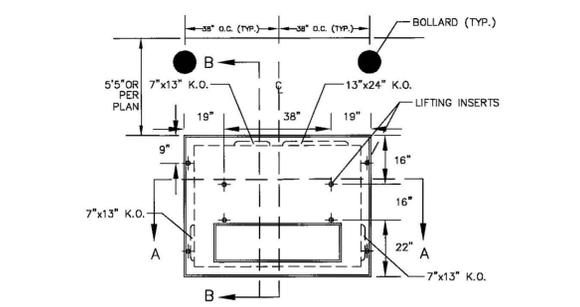
SECTION B-B



SECTION A-A

EXTRUDED CONCRETE CURBING

N.T.S. BLPC-005



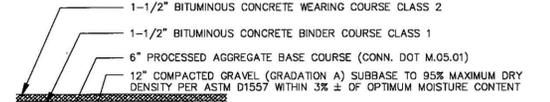
SECTION A-A

SECTION B-B

NOTE:
1. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS
2. SHALL MEET ALL PROVISIONS OF ELECTRIC CO.
3. SHALL BE INSTALLED 5' OFF CURB AND PROTECTED BY BOLLARDS.
4. SEE DETAIL FOR STEEL BOLLARD INSTALLATION
5. CONTRACTOR SHALL CONFIRM PAD SIZE AND BOLLARD LOCATION WITH ELECTRIC COMPANY

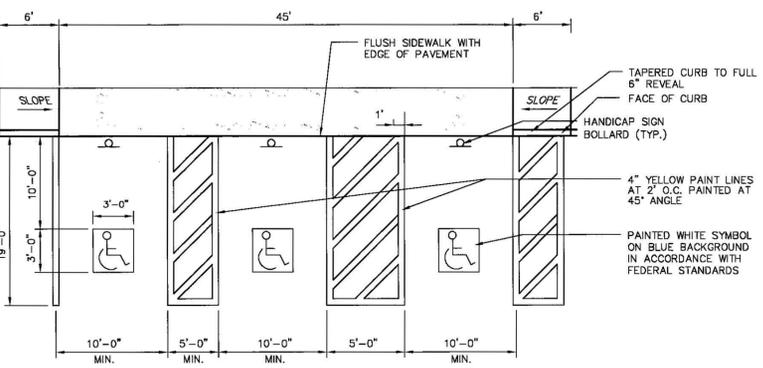
TRANSFORMER PAD

N.T.S.



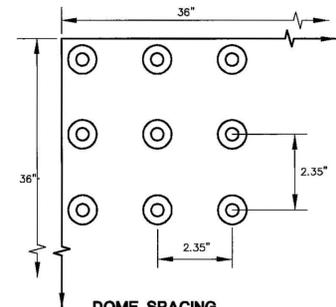
STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT

N.T.S.

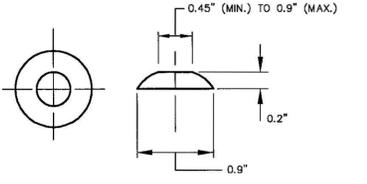


ACCESSIBLE PARKING SPACE AND RAMP DETAIL

N.T.S. BLPC-004



DOMES SPACING



DOMES SECTION

N.T.S.

SIDEWALK RAMP DETECTABLE WARNING

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PROPOSED OFFICE BUILDING
 NORTH FRONTAGE ROAD
 MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS	No.	Date	Desc.
	1.	09/21/11	REVISED PER TOWN APPROVAL CONDITIONS

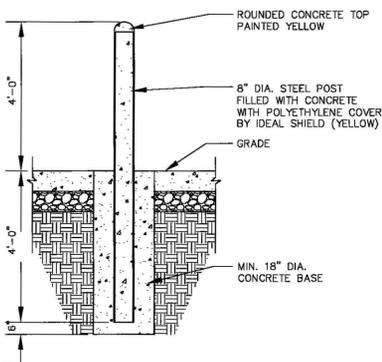
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Drawn by BKB
Checked by BKB
Approved by BKB
Scale AS SHOWN
Project No. 11C3816
Date 08/27/11
CAD File: DN11C381601

Title: **DETAILS**

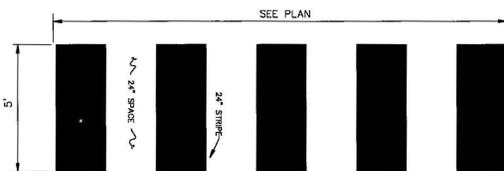
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DN-1

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 User: BSKalovich

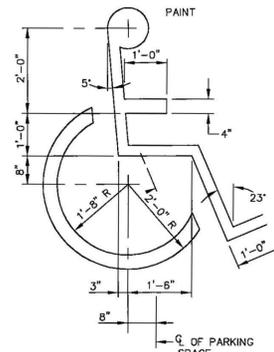
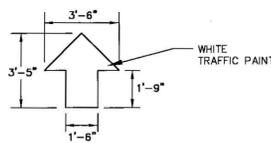


PROTECTIVE POST (BOLLARD) DETAIL
N.T.S. BLSE-005

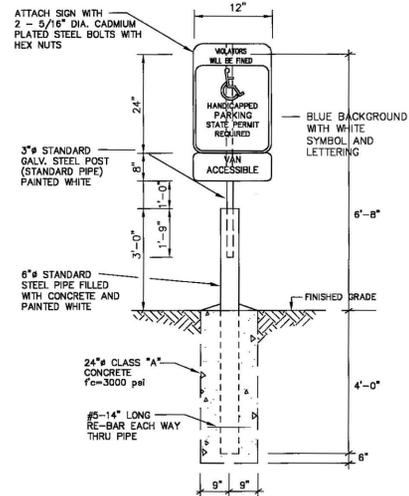


CROSSWALK MARKINGS
N.T.S.

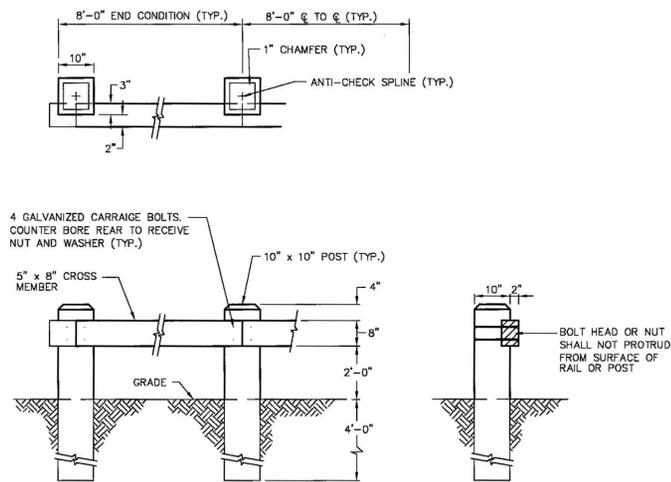
TYPICAL PAVEMENT MARKINGS
N.T.S. ZPC-061



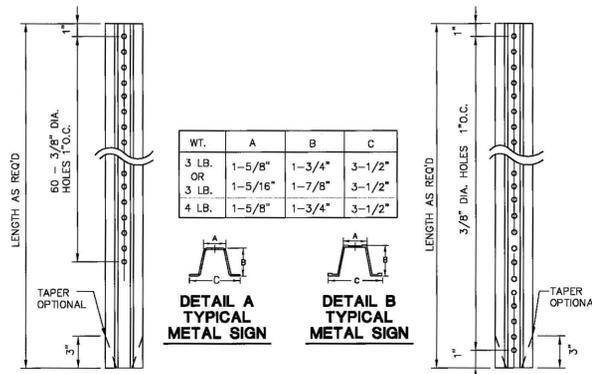
INTERNATIONAL HANDICAP SYMBOL
N.T.S. CTSR-001



HANDICAP SIGN BOLLARD DETAIL
N.T.S.



TIMBER GUIDE RAIL
N.T.S. BLGR-002

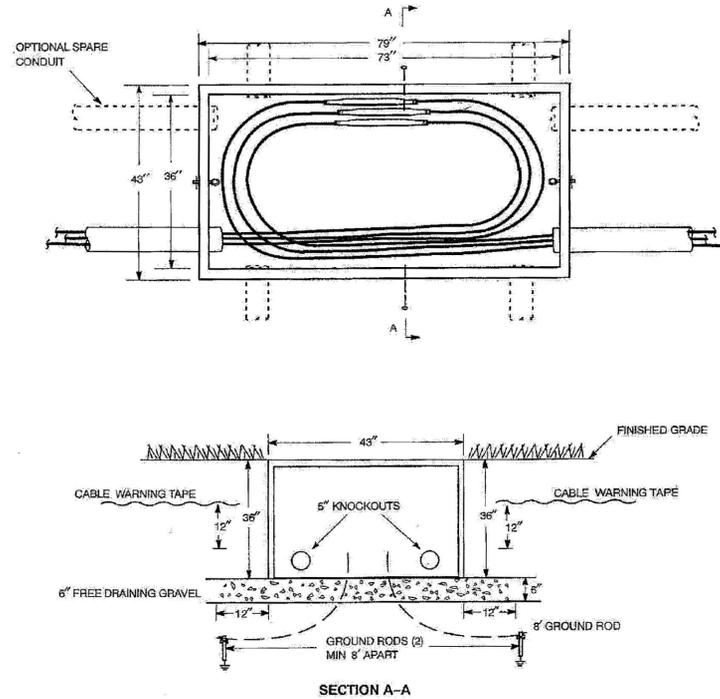


DETAIL A HOLE LOCATION

DETAIL B HOLE LOCATION

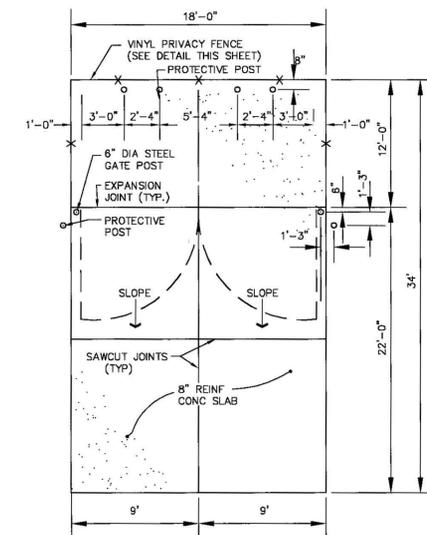
NOTES:
STEEL FOR POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499-81 GRADE 60 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1-76 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT OF 90 LBS OR GREATER PER LINEAR YARD.
AFTER FABRICATION ALL STEEL POSTS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A-123.
SIGN MOUNTING HEIGHT TO BE APPROVED BY THE ENGINEER.
ALL SIGNS IN STATE ROW TO MEET CTDOT SPECIFICATIONS FOR BREAKAWAY SIGNS. SEE CTDOT STANDARD DETAIL SHEET 'TYPICAL METAL SIGN POSTS AND SIGN MOUNTING DETAILS' AND CTDOT FORM 816

TYPICAL METAL SIGN POSTS
N.T.S. BLSB-001

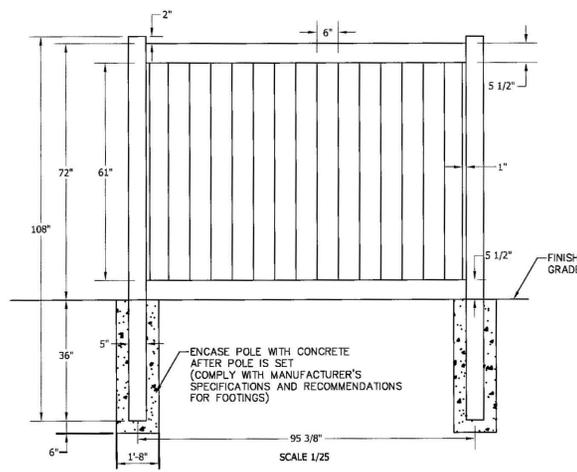


Notes:
1. Install polymer concrete vault. Vault is rated for occasional vehicular traffic, however, do not install in roadway applications. Vault shall be used to splice one three-phase cable, maximum #4/0 AL.
2. The excavation shall be carried to a minimum depth of 6" below the bottom and 12" beyond the edge.
3. Install two 8' galvanized steel ground rods adjacent to the vault and ground per DTR 78.151. Provide #6 Cu bond for communications companies.
4. Select splices from DTR 33.501-502.
5. Install warning tape 12" above top of conduit.
6. Install schedule 40 PVC conduit, minimum 4" diameter. Install conduit plugs in spare conduits.

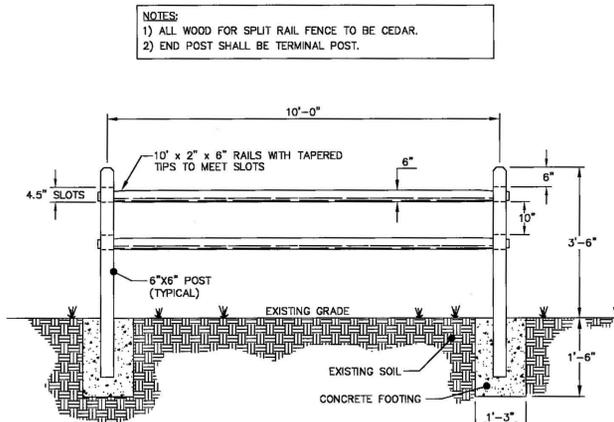
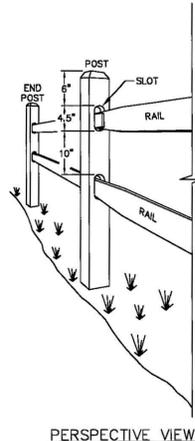
ORIGINAL	VAULT - POLYMER CONCRETE - FOR SPLICING THREE-PHASE PRIMARY - DIRECT-BURIED CONDUIT SYSTEM		CT/MA
32208	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 51.601
APPROVED			
32208			



TRASH ENCLOSURE PLAN
N.T.S. BLSE-004



6' HIGH PVC PRIVACY FENCE DUMPSTER ENCLOSURE
N.T.S.



SPLIT RAIL FENCE
N.T.S.

APPROVED
TOWN OF MANSFIELD
ZONING COMMISSION
20/12/11

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PROPOSED OFFICE BUILDING
NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

REVISIONS

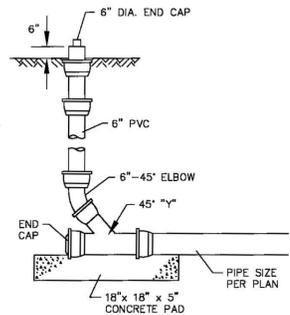
No.	Date	Desc.
1.	08/21/11	REVISED PER TOWN APPROVAL CONDITIONS

Designed BKB
Drawn BKB
Checked
Approved
Scale AS SHOWN
Project No. 11C3816
Date 06/27/11
CAD File: DN11C381601

Title
DETAILS
Sheet No.

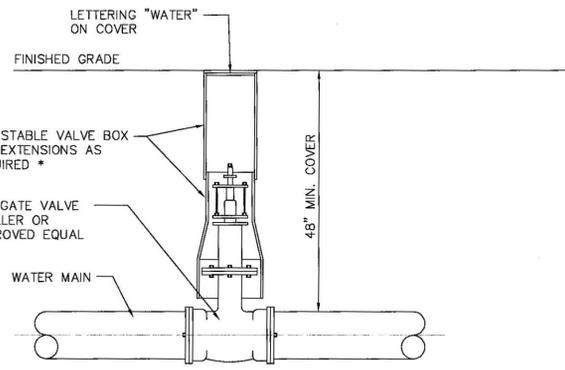
DN-2

Sep 26, 2011 11:56am B:\projects\11C3816\DWG\11C381601.dwg User: V11C3816\DWG\11C381601.dwg



CLEANOUT DETAIL IN LANDSCAPED AREA

N.T.S. BLSS-007

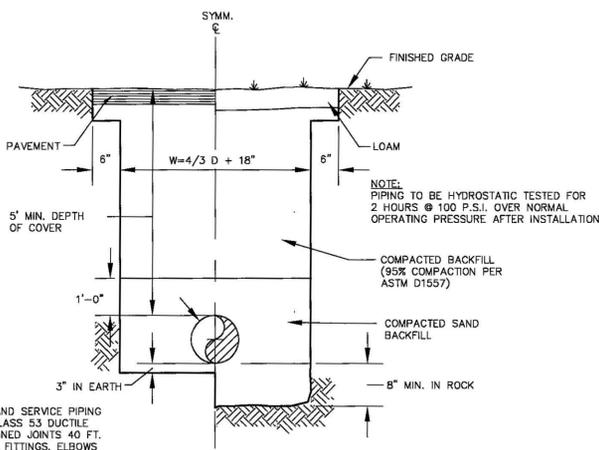


TYPICAL GATE VALVE AND VALVE BOX DETAIL

N.T.S. BLWD-002

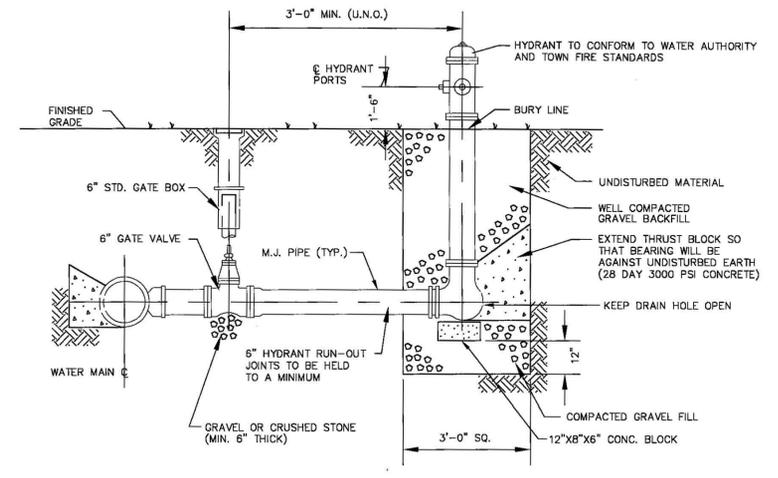
* NOTE: IF EXTENSIONS ARE NECESSARY CONTRACTOR SHALL SET "PLUMB" AND ALIGN PROPERLY FOR ACCESS TO OPERATING NUT.

NOTE: FIRE LINE PIPING AND SERVICE PIPING > 3" I.D. TO BE CLASS 53 DUCTILE IRON WITH RESTRAINED JOINTS 40 FT. EACH SIDE OF ALL FITTINGS, ELBOWS AND APPURTENANCES. DOMESTIC PIPING < 3" I.D. TO BE TYPE K COPPER PER ASTM B 88.



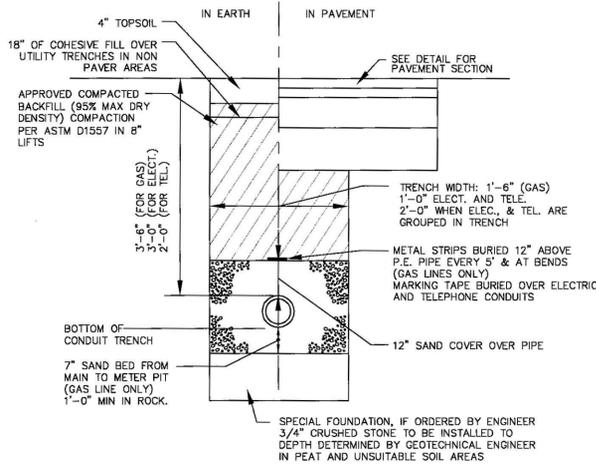
TYPICAL WATER MAIN AND SERVICE TRENCH DETAIL

N.T.S. BLWD-005



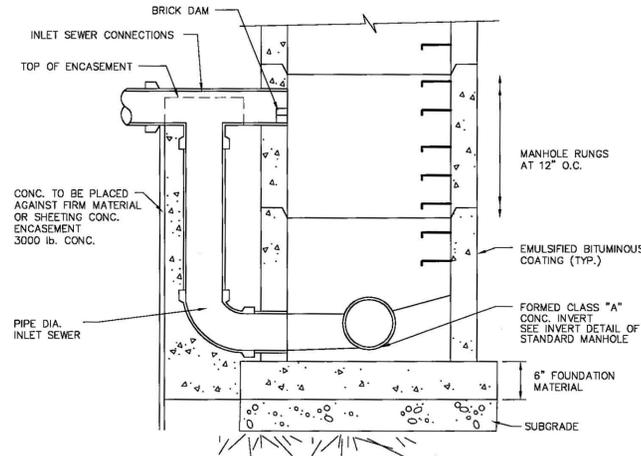
HYDRANT ASSEMBLY DETAIL

N.T.S. BLWD-003



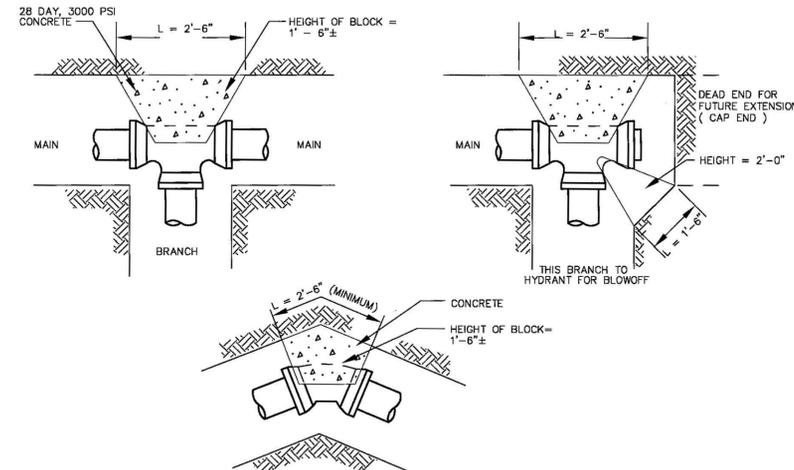
ELECTRICAL, TELEPHONE AND GAS TRENCH DETAIL

N.T.S. BLUD-001



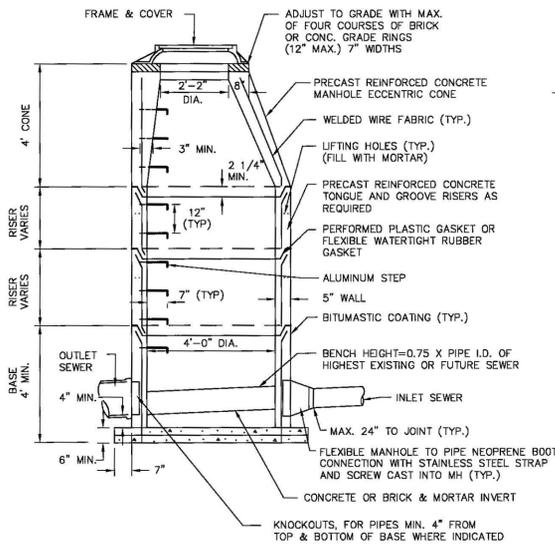
DROP MANHOLE

N.T.S. BLSS-012



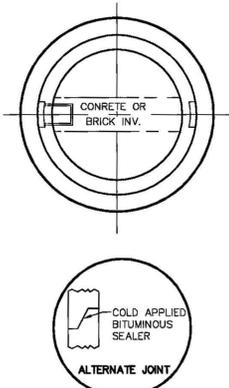
THRUST BLOCKS FOR WATER LINES

N.T.S. BLWD-001



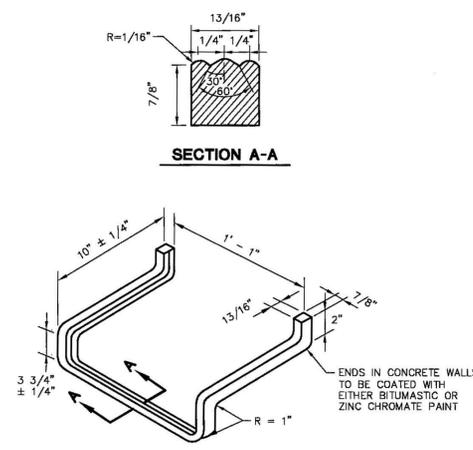
PRECAST SANITARY MANHOLE

N.T.S. BLSS-001



STANDARD MANHOLE FRAME AND COVER

N.T.S. BLSS-002



STANDARD MANHOLE STEP

N.T.S. BLSS-005

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' & 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1" OF INSIDE DIAMETER INCREASE.
2. WHEN INLET SEWER INVERT TO OUTLET SEWER INVERT ELEVATION EXCEEDS 24" USE DROP CONNECTION.

NOTE: FRAME & GRATE TO BE CAMPBELL FOUNDRY COMPANY-PATTERN NUMBER 1221 WITHOUT COVER VENT HOLES

NOTE: STEPS TO BE FORGED ALUMINUM

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ZONING COMMISSION
10/17/11

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REVISIONS	No.	Date	Desc.
1.	09/21/11	REVISED PER TOWN APPROVAL CONDITIONS	

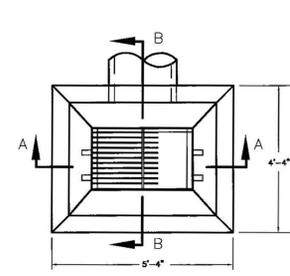
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Date: 06/27/11
CAD File: DN11C381601

Title: DETAILS

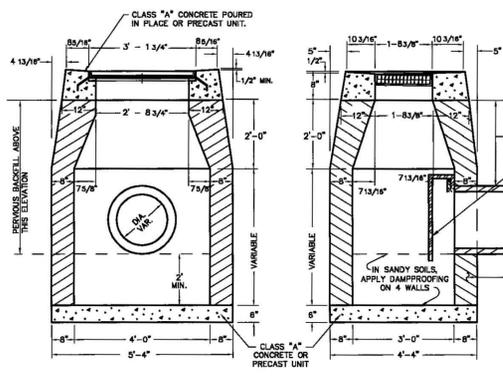
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DN-3

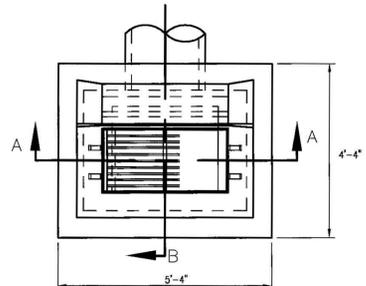
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 Page: 001 of 2 2/23/2011 11:35



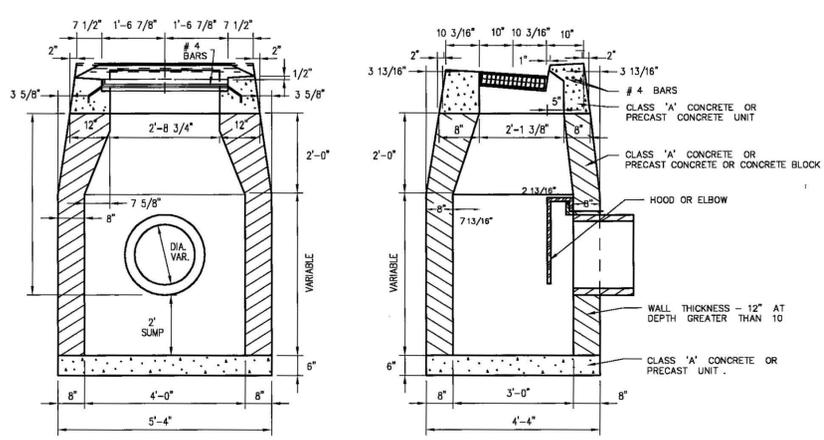
NOTE:
DRAINAGE OPENINGS IN 4 WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL.



SECTION A-A
SECTION B-B
TYPE 'C-L' CATCH BASIN
N.T.S. ZDD-028

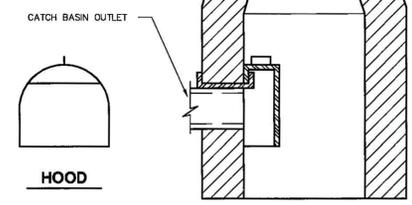


NOTE: DRAINAGE OPENINGS IN 4 WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL.



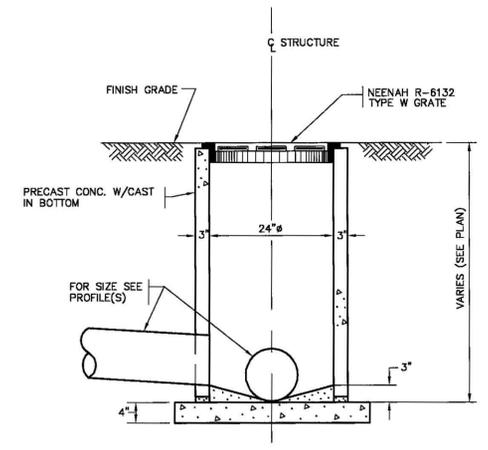
SECTION A-A
SECTION B-B
TYPE 'C' CATCH BASIN WITH HOOD
N.T.S. CTDD-001

HOOD TO BE INSTALLED AT ALL OUTLET PIPES AT ALL CATCH BASINS, EXCEPT WHERE NOTED. PVC ELBOW MAY BE USED IN PLACE OF CAST IRON BELLTRAP.

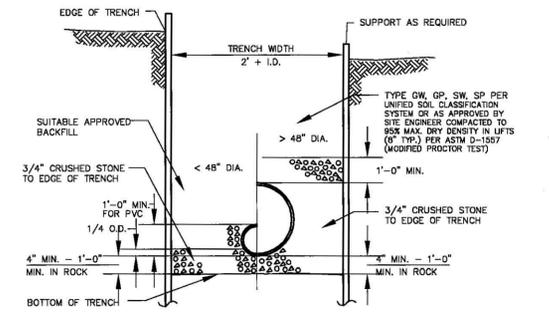


NOTE:
NEENAH - R-3711 OR EQUAL

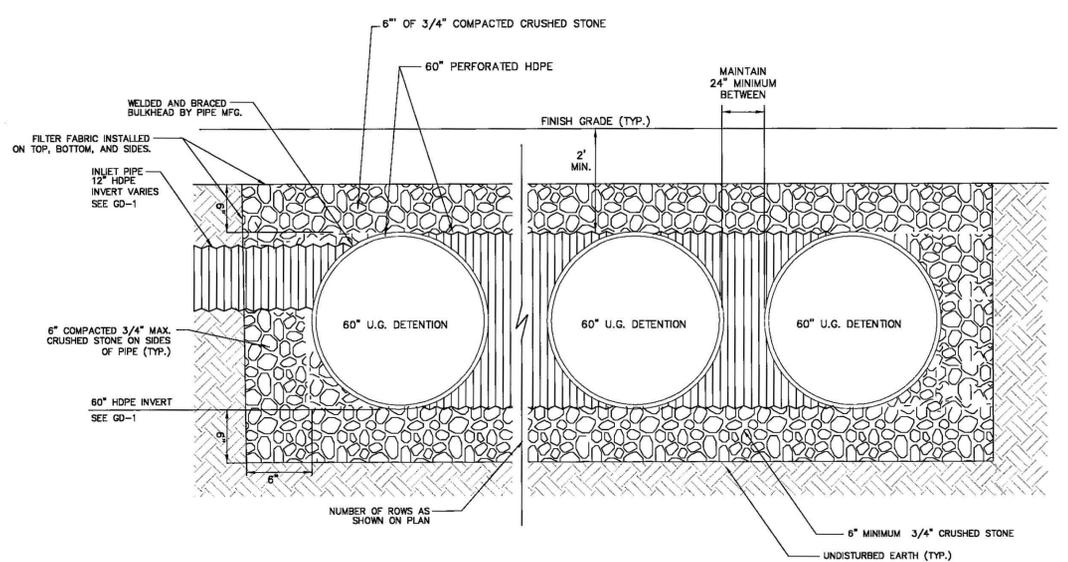
HOODED OUTLET
N.T.S. CTDD-004



LAWN DRAIN DETAIL
N.T.S. ZDD-013

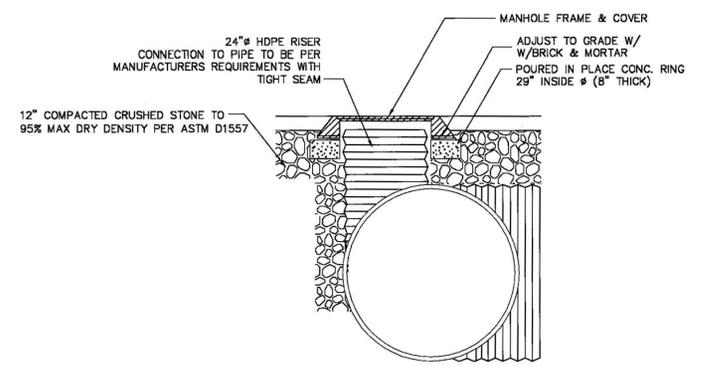


TYPICAL STORM SEWER TRENCH SECTION
N.T.S. BLDD-004



NOTES:
1. CONTRACTOR SHALL PERFORM THE PIPE INSTALLATION AND BACKFILL OPERATIONS IN ACCORDANCE WITH PIPE MANUFACTURER'S INSTRUCTIONS. IT IS IMPERATIVE THAT THE BACKFILL AROUND THE HDPE PIPE BE PLACED AND COMPACTED IN ACCORDANCE WITH THOSE INSTRUCTIONS.
2. REFER TO GRADING AND DRAINAGE PLAN (GD-1) FOR LAYOUT AND ADDITIONAL DETAILS.

UNDERGROUND INFILTRATION SYSTEM
N.T.S.



TYPICAL MANHOLE INSPECTION PORT WITHOUT STRUCTURE
N.T.S.

APPROVED
MANSFIELD
ENGINEERING
COMMISSION
12/11/11

**FOR PERMITTING PURPOSES ONLY
NOT RELEASED FOR CONSTRUCTION**



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355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax



PROPOSED OFFICE BUILDING
NORTH FRONTAGE ROAD
MANSFIELD, TOLLAND COUNTY, CONNECTICUT

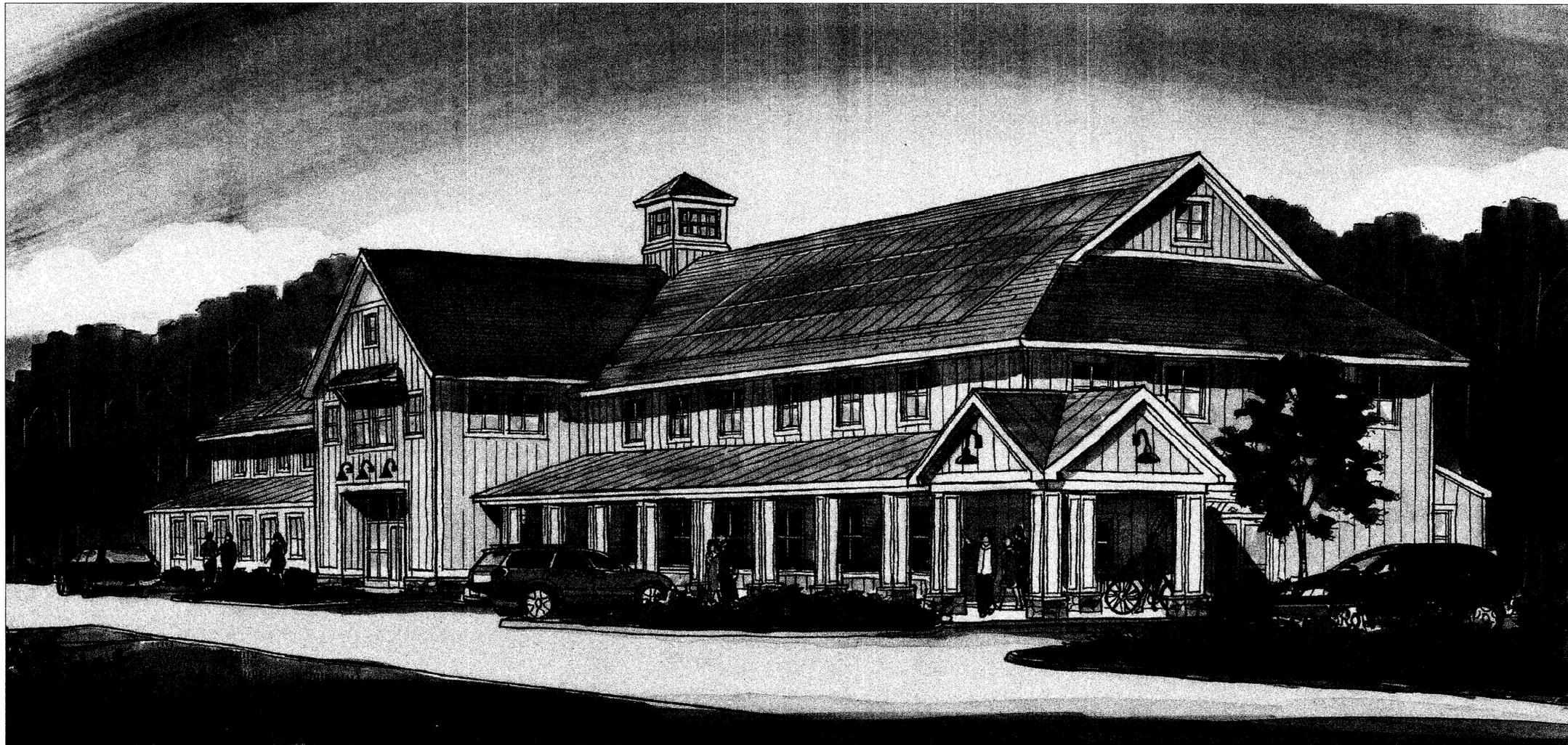
REVISIONS	Desc.	Date
No. 1.	09/21/11 REVISED PER TOWN APPROVAL CONDITIONS	

Designed	BKB
Drawn	BKB
Checked	
Approved	
Scale	AS SHOWN
Project No.	11C3816
Date	06/27/11
CAD File:	DN11C381601

Title
DETAILS
Sheet No.

DN-4

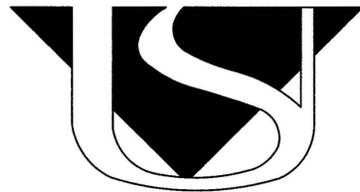
Sep 26, 2011 11:35am B:\admin\11C3816\DWG\DN11C381601.dwg



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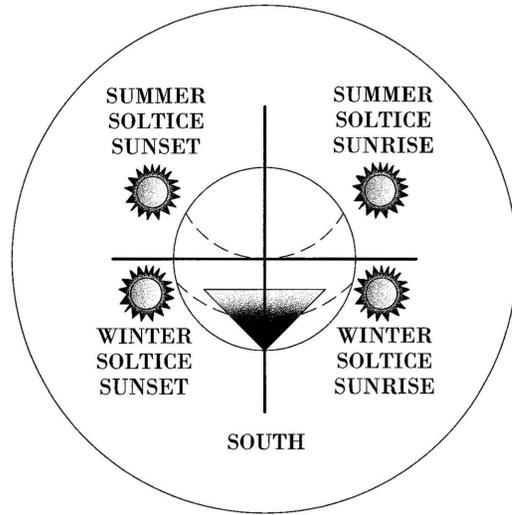
United Services, Inc.

Creating healthy communities

APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION

APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION
BY *[Signature]*
DATE *12/10/11*

TO ECSU ATHLETIC FIELDS



UNITED SERVICES, INC.

POSSIBLE FUTURE DEVELOPMENT

NEW OFFICE BUILDING



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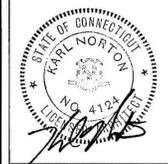


PROJECT PLANNERS

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BY *[Signature]*
DATE *10/18/11*



PROJECT NO	2011-XXX
DATE	06-27-11
DRAWN BY	
CHECKED BY	KN

SCALE	1" = 50'
REV	
REV	
REV	

CONCEPT SITE PLAN

P-1

MANSFIELD CITY ROAD

ENTRANCE TO ROUTE 6 BYPASS

HIGH STREET

PROPOSED 50' WETLAND SETBACK AS RECEIVED ON ADJACENT PROPERTY.

OPTIONAL GEOTHERMAL WELL FIELD

PROPOSED INCREASE TO 50' WETLAND SETBACK AT EXISTING DRAINAGE SWALE LOCATION.

OPTIONAL SOLAR PANELS GENERATOR

WETLANDS BOUNDARY

EXISTING CITY SEWAR

OPTIONAL ELECTRIC CAR PARKING SPACES AND CHARGING STATIONS

MAIN ENTRY DROP OFF

BUS STOP

BUS SHELTER

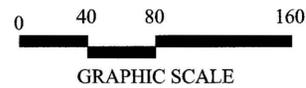
NORTH FRONTAGE ROAD

FUTURE PARKING EXPANSION

FUTURE BUILDING EXPANSION

PROPOSED 2 STORY 28,000 SF OFFICE BUILDING

PROPOSED PARKING 150 +/- SPACES



ECSU ATHLETIC FIELDS

RT. 6 ENTRANCE

RT. 6 EXIT

EAST BROOK HEIGHTS CONDOMINIUMS

EAST BROOK MALL

EAST BROOK MALL WEST ENTRANCE

LEDGEBROOK OFFICE COMPLEX

RT. 6 EXIT

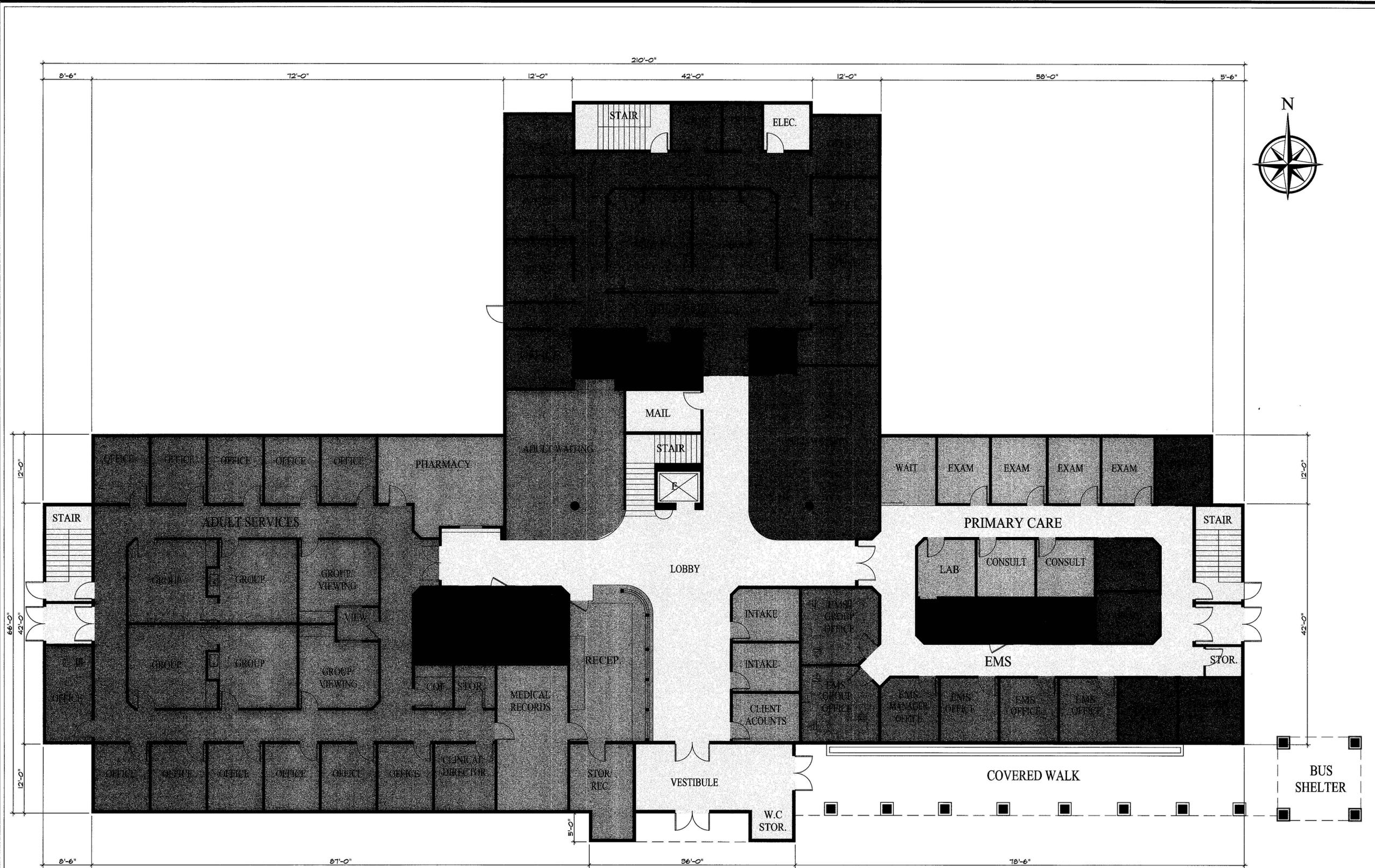
RT. 6 ENTRANCE

FOSTER APARTMENTS



AERIAL SITE PLAN
NOT TO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION



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BY *[Signature]*
DATE 7/17/11

PROJECT NO. 2011-XXX	SCALE 1/8" = 1'-0"
DATE 06-27-11	REV
DRAWN BY JE	REV
CHECKED BY KN	REV

PROPOSED FIRST FLOOR PLAN- 16,340SF
TOTAL BUILDING GROSS SF-28,748 sf

PROPOSED
FIRST FLOOR
PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

P-2

NEW OFFICE BUILDING



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DATE 10/17/11



PROJECT NO	2011-XXX
DATE	06-27-11
DRAWN BY	JE
CHECKED BY	KN

SCALE	1/8" = 1'-0"
REV	
REV	
REV	

PROPOSED
SECOND FLOOR
PLAN

P-3



PROPOSED SECOND FLOOR PLAN 12,408 SF

PRELIMINARY - NOT FOR CONSTRUCTION

NEW OFFICE BUILDING



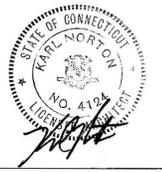
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BY: *[Signature]*
DATE: 10/17/11



PROJECT NO
2011-XXX
DATE
06-27-11
DRAWN BY
CHECKED BY
KN

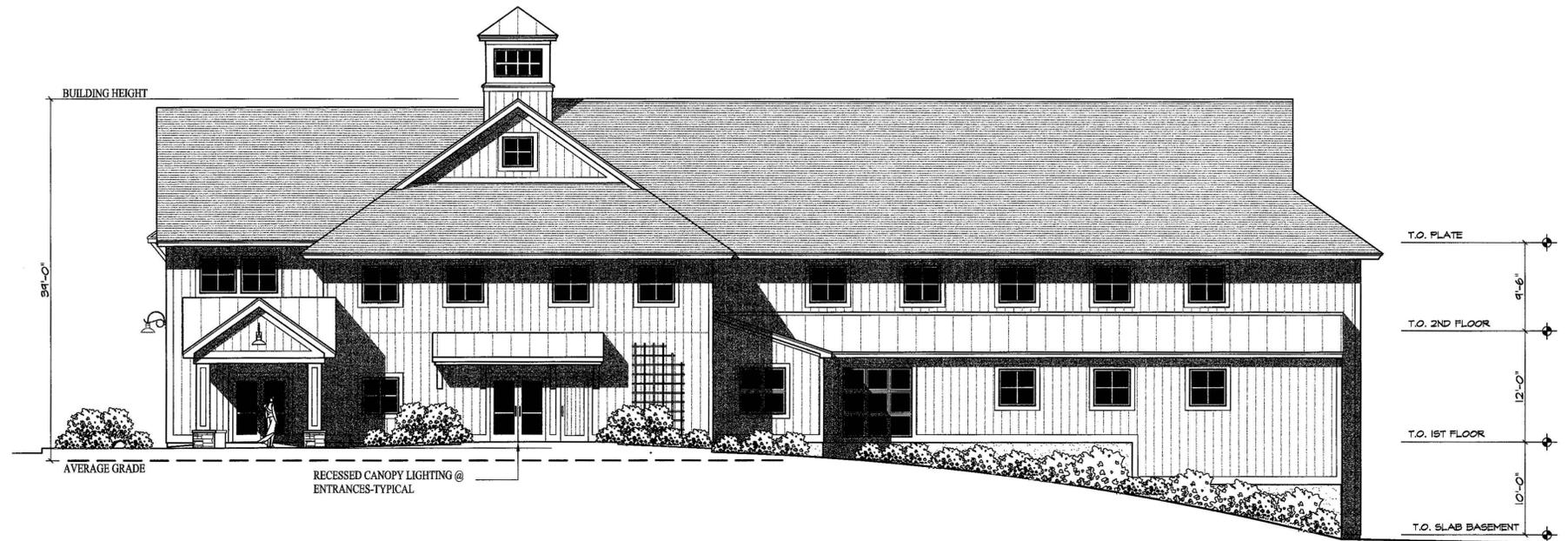
SCALE
1/8" = 1'-0"
REV
REV
REV

PROPOSED BUILDING ELEVATIONS

P-4



SOUTH ELEVATION



EAST ELEVATION

PRELIMINARY - NOT FOR CONSTRUCTION

NEW OFFICE
BUILDING



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OPTIONAL GEOTHERMAL HVAC
SYSTEM WELL LOCATION

NORTH ELEVATION



WEST ELEVATION

APPROVED
TOWN OF MANSFIELD
PLANNING AND ZONING COMMISSION
BY *[Signature]*
DATE 10/18/11



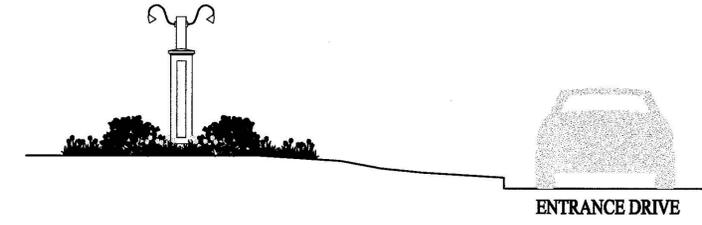
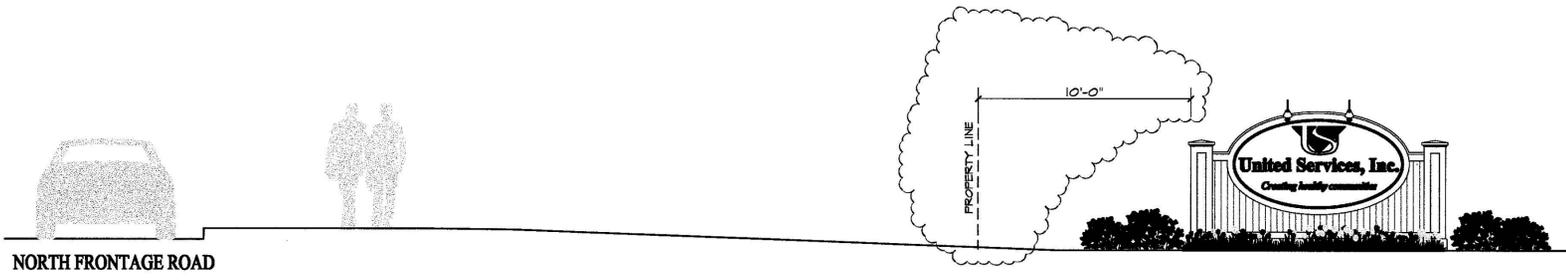
PROJECT NO.
2011-XXX
DATE
06-27-11
DRAWN BY
CHECKED BY
KN

SCALE
1/8"=1'-0"
REV
REV
REV

PROPOSED
BUILDING
ELEVATIONS

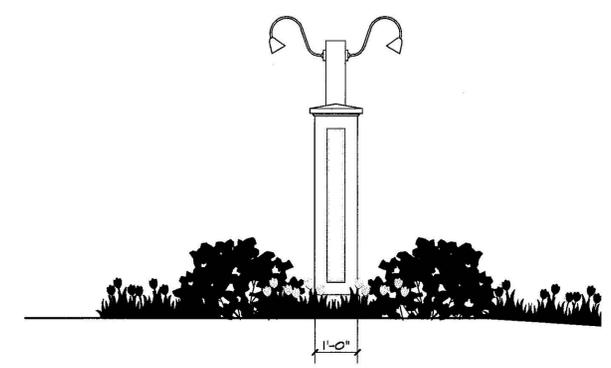
PRELIMINARY - NOT FOR CONSTRUCTION

P-5



UNITED SERVICES SIGN SIDE ELEVATION
1/4" = 1'-0"

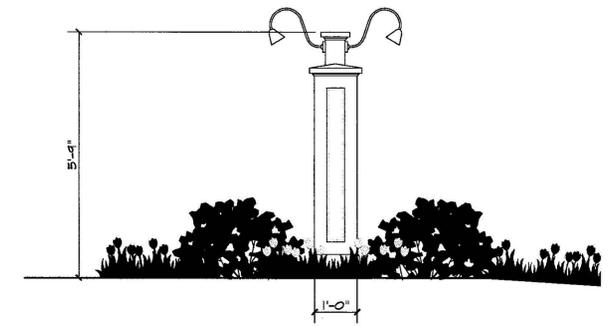
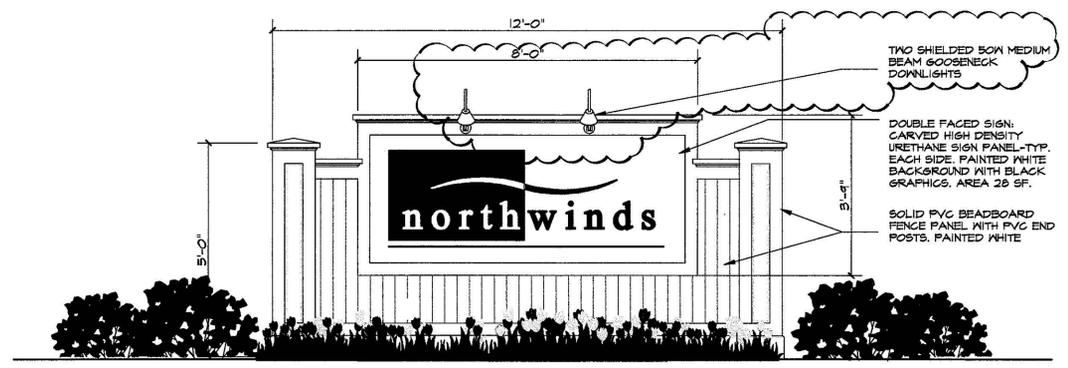
UNITED SERVICES SIGN END ELEVATION
1/4" = 1'-0"



UNITED SERVICES SIGN SIDE ELEVATION
1/2" = 1'-0"

UNITED SERVICES SIGN END ELEVATION
1/2" = 1'-0"

NOTE: REFER TO SITE PLAN FOR SIGN LOCATION.



FUTURE ENTRANCE SIGN SIDE ELEVATION
1/2" = 1'-0"

FUTURE ENTRANCE SIGN END ELEVATION
1/2" = 1'-0"

NOTE: FUTURE ENTRANCE SIGN TO BE LOCATED ON EAST SIDE OF ENTRANCE DRIVE AFTER LOT SPLIT.

NEW OFFICE BUILDING

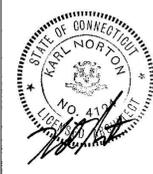


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BY *[Signature]*
DATE 12/10/14



PROJECT NO 2011-XXX
DATE 06-27-11
DRAWN BY
CHECKED BY KN

SCALE AS NOTED
REV P&Z 09-22-11
REV
REV

PROPOSED
ENTRANCE
SIGN

Engineering Summary Report

Proposed Office Building Mansfield, Connecticut

Prepared For Submission To:
Town of Mansfield

June 27, 2011

BL Project Number: 11C3816

Prepared For:
United Services, Inc.
1007 North Main Street
P.O. Box 839
Dayville, CT 06241

Prepared By:
BL Companies
355 Research Parkway
Meriden, Connecticut
(203) 630-1406 Fax (203) 630-2615



Engineering Summary Report Proposed Office Building Mansfield, Connecticut

TABLE OF CONTENTS

Site Location Map (Figure LM-1)	2
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Existing Conditions.....	3
Proposed Conditions	6
Results, Conclusions and Sanitation Report	9

Appendices

Appendix A: Design Criteria & Methodology

Appendix B: Existing Drainage Area Map ED-1
Proposed Drainage Area Maps PD-1, PD-2

Appendix C: HydroCAD Analysis

Appendix D: Proposed Drainage Pipe Analysis

Appendix E: NCRS Soil Map and Classifications

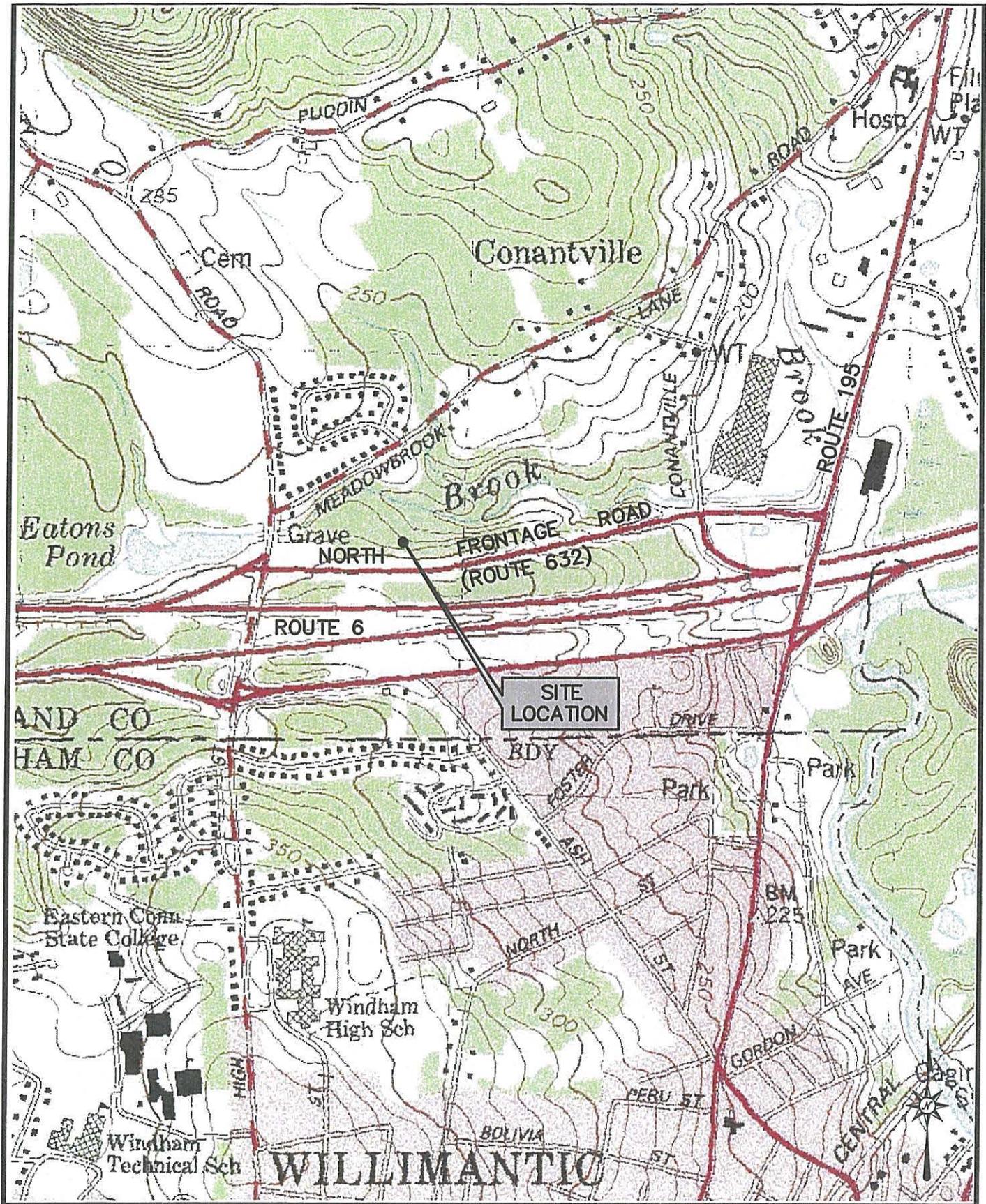
Appendix F: Flood Insurance Rate Map Panel #090128 0020 C

Appendix G: Operations and Maintenance Plan

Appendix H: Water Quality Volume Calculations

Appendix I: Wetlands Delineation Letter from Highland Soils, LLC (June 3, 2011)

Site Location Map (Figure LM-1)



SITE LOCATION MAP
 PROPOSED OFFICE BUILDING
 NORTH FRONTAGE ROAD
 MANSFIELD, CONNECTICUT

Designed T.A.M.
 Drawn T.A.M.
 Checked
 Approved
 Scale 1"=1000'
 Project No. 11C3816
 Date 06/08/11
 CAD File LOC11C381601

FIGURE 1

Project Summary

The project, located on North Frontage Road in Mansfield, is a proposed new 28,748 square foot office building and associated parking area on a vacant, vegetated site. The site demolition that will occur includes removal of the existing trees, old stone foundations, and minor curb cuts and pavement removal in North Frontage Road for proposed utility connections.

No work is proposed within the adjacent wetland upland review area and no new stormwater discharge locations are proposed. The disturbed site area stormwater will be collected and treated on-site to improve quality and infiltrate into the ground via underground perforated infiltration pipes.

The site is located in FEMA Flood Hazard Area C and A3 as shown on the FIRM Map #090128 0020 C, Panel 20 of 20. No portion of the proposed work however, is situated in the Flood Hazard Area A3 (100 year flood plain).

Existing Conditions

General Conditions

The site is located to the northeast of the intersection of Mansfield City Road and North Frontage Road in Mansfield, CT. The “Site”, is approximately 6.03 acres. The site is bordered by Conantville Brook to the north, North Frontage Road and land of the Connecticut Department of Transportation across North Frontage Road to the south, Mansfield City Road and Eatons Pond to the west and commercial buildings to the east.

Currently the site is undeveloped and heavily wooded. The total existing impervious site area is negligible.

The proposed developed portions of the site are located in FEMA Zone “C”, areas of minimal flooding, per FIRM Map #090128 0020 C, Panel 20 of 20. Refer to Appendix F. North of the proposed development is Flood Hazard Zone “A3”, areas of 100-year flood. No work is proposed in or around this area.

Slopes on the site range from approximately 1.25 to 67 percent, with a high elevation of approximately 255-feet in the south central portion of the site and a low elevation of approximately 216-feet in the northeast portion of the state. Soils, taken from the NRCS Soil Survey Geographic (SSURGO) database for the State of Connecticut, dated March 31, 2011 are listed in Table 1. An NRCS Soil Survey Map is included in Appendix E.

**Table 1
 Soils Data**

Map Symbol	Hydrologic Soil Group	Map Unit Name
3	D	Ridgebury, Leicester, and Whitman Soils, extremely stony
306	B	Udorthents-Urban Land Complex
58C	A	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony
59D	A	Gloucester gravelly sandy loam, 15 to 35 percent slopes, extremely stony

Existing Drainage

The site generally drains from south to north over land to one analysis point that discharges to Conantville Brook. For the purposes of this study, +/- 7.26 acres of the site are evaluated since that is the only area on-site that is affected by the proposed development drainage area (EDA-1). Characteristics of these drainage areas are summarized in Table 2 and peak flows for all analyzed storms are summarized in Table 3. All calculation details may be found in Appendix A and C.

**Table 2
 Predevelopment Drainage Area Characteristics**

Subwatershed ID	Area (ac)	Composite Curve Number (CN)	Time of Concentration (minutes)
EDA-1	7.26	42	33.2

Peak flows for all analyzed storms discharge to “Analysis Point A” which ultimately discharges to the Conantville Brook and are summarized in Table 3; details may be found in Appendix B.

**Table 3
 Predevelopment Conditions Peak Flows**

Analysis Point	Peak Flow (cfs)		
	2-yr	10-yr	25-yr
Analysis Point ‘A’	0.01	0.40	1.06

Existing Utilities

Existing sanitary sewer is located on-site. A lateral that services the Connecticut Department of Transportation Building to the south of the site bisects the property. An existing sanitary sewer main is located to the north of the proposed development as well. There are currently no water, electric, and telecommunication utilities on-site. Water, electric, and telecommunication services will be connected into existing lines along North Frontage Road to the south of the site.

An abandoned water well is currently on the southwest corner of the site and will be capped and abandoned during demolition activities.

Existing Wetlands

There are existing wetlands located on the site and to the north of the northern property line. Refer to Appendix I for the wetland delineation letter.

Proposed Conditions

General Conditions

The site demolition that will occur includes removal of the existing trees, old stone foundations, and minor curb cuts and pavement removal in North Frontage Road for proposed utility connections.

The proposed development includes a 28,748 square foot office building , a 148 parking space parking lot, a driveway, on-site concrete sidewalks, bituminous concrete sidewalks to North Frontage Road from the building, site utilities, and two storm conveyance systems that discharge to separate underground infiltration systems on-site.

Approximately 43,150 square feet of the proposed site development lie within the wetland 150' upland review area.

Proposed Drainage

The proposed service plaza improvements still encompass the same tributary drainage area of the +/- 7.26 acres as mentioned in the previous existing conditions section. Refer to proposed drainage area mapping in Appendix B for developed Drainage Areas. Three water quality control systems and two underground infiltration systems will be located on site.

The soils in the area of under both Underground Infiltration Systems are classified as Gloucester gravelly sandy loam (59D) according to NRCS, classified as hydrologic soil group A soil, (See Appendix E). These soils are conducive to infiltration. According to the National Resources Conservation Service Web Soil Survey (NCSS), this soil type has a high to very high capacity of the most limiting layer to transmit water (5.95 in/hr to 19.98 in/hr). We assumed an infiltration rate of 6 inches/hour in our calculations.

Approximately 1.12 Ac of the proposed development will enter the storm conveyance system on the western side of the site (PDA-1A) into Underground Infiltration System #1. That runoff will be routed through the system to a water quality unit which will treat the first 1" storm runoff. After treatment, the runoff collected will enter the underground infiltration system. The proposed Underground Infiltration System #1 consists of 2 Rows of 60" HDPE pipe 138 L.F. each with two 60" HDPE header pipes 12 L.F. each at both ends (Inv.=232.50). The total length of infiltration pipe is 300 L.F. Total tributary area to this system is 1.12 acres of CN-85 cover. The infiltration system pipes have been sized to accommodate the 25 year storm per Town of Mansfield Standards. The water is retained and is designed to infiltrate into the gravel lining that will recharge the soils water table. The system is designed to infiltrate completely in approximately 26 hours for a 25-year storm.

Approximately 1.36 Ac of the proposed development will enter the storm conveyance system on the eastern side of the site (PDA-1B) into Underground Infiltration System #2. That runoff will be routed through the system to a water quality unit which will treat the first 1" storm runoff. After treatment, the runoff collected will enter the underground infiltration system. The proposed Underground Infiltration System #2 consists of 3 Rows of 60" HDPE pipe 86 L.F. each with two 60" HDPE header pipes 19 L.F. each at both ends (Inv.=232.00). The total length of infiltration pipe is 296 L.F. Total tributary area to this system is 1.36 acres of CN-77 cover. The infiltration system pipes have been sized to accommodate the 25 year storm per Town of Mansfield Standards. The water is retained and designed to infiltrate into the gravel lining that will recharge the soils water table. The system is designed to infiltrate completely in approximately 26 hours for a 25-year storm.

Approximately 2.93 Ac. of the proposed site (PDA-1C) will flow overland through the wooded portion of the site and enter an existing swale situated north of the limits of development onsite where the runoff is infiltrated into the ground.

Approximately 0.90 Ac of the proposed development located along the frontage of the site and parallel to North Frontage Road, will overland sheet flow to the proposed Above-ground Infiltration Area #1 (PDA-1D) consists of a 500-foot long depressed connection area for runoff. This area infiltrates the 25-year storm into the ground in less than 24 hours.

Approximately 0.95 Ac. of the proposed site (PDA-1E) will flow overland through wooded and grassed portions of the site and enter the wetlands, identical to pre-development conditions.

The site has been designed so that all of storm water runoff from the paved parking lot and driveway areas will be collected by on-site catch basins and associated storm piping located in the service plaza area. Three hydrodynamic separators are proposed before each respective outlet. All proposed catch basin outlet pipes will incorporate hooded outlets and 2-foot deep sumps. The most basic preventative measure of the storm water treatment train is to implement regular pavement sweeping in the parking lot areas. The lawn and landscaped areas can also provide a secondary level of filtration and infiltration. No quantifiable credit is given to this green space, but it can contribute to water quality. The proposed water quality units have been sized to meet the Connecticut DEP Water Quality design criteria, refer to Appendix H for the calculations.

The hydraulic study of the on-site drainage system has been designed to comply with the requirements set forth in the State of Connecticut Department of Transportation Stormwater Drainage Manual, dated 2000, as amended. There is one existing and one proposed analysis point on-site. The drainage systems have been analyzed under proposed conditions for a 25-year storm.

A hydrology study was completed for the project area to quantify the peak rate of storm water runoff as a result of this project. To accurately compare these two components, an

analysis of the tributary area to the design points for existing and proposed conditions was determined as the ‘control’ limit of areas considered.

Rainfall depths of Tolland County were used for the calculation of peak flow rates and are listed in Table 4.

**Table 4
Rainfall**

Return Period	24-hr Rainfall Depth
2-year	3.20 inches
10-year	4.80 inches
25-year	5.50 inches

The on-site hydrology study comparing the existing vs. proposed development peak rate of runoff has been prepared using the SCS dimensionless hydrograph method for the 24-hour 2, 10, and 25-year rainfall events. HydroCAD 7.0 software was utilized for the hydrologic analysis. The following chart reflects a summary of the peak rate of runoff from the 2, 10, and 25-year rainfall events. Hydrology data can also be found in Appendix C.

Characteristics of the proposed drainage areas are summarized in Table 5.

**Table 5
Post development Drainage Area Characteristics**

Subwatershed ID	Area (ac)	Composite Curve Number (CN)	Time of Concentration (minutes)
PDA-1A	1.12	85	8.9
PDA-1B	1.36	77	5.0
PDA-1C	3.88	47	24.2
PDA-1D	0.90	44	5.7

Basins B and C have no discharge since the water is detained and will infiltrate into the soils surrounding the Underground Infiltration Basins for each. Peak flows for stormwater drainage that reaches Analysis Point A that discharges to Conantville Brook are summarized in Table 6; details may be found in Appendix C.

Table 6
Post-Development Conditions Peak Flows

Analysis Point	Peak Flow (cfs)		
	2-yr	10-yr	25-yr
Analysis Point 'A'	0.00	0.12	0.25

A comparison of peak flows at Analysis Point A that discharges to Conantville Brook are summarized in Table 7.

Table 7
Summary of Peak Flows Discharged
To Conantville Brook

	Peak Flow (cfs)		
	2-yr	10-yr	25-yr
Existing Conditions	0.01	0.40	1.06
Proposed Conditions	0.00	0.12	0.25
Difference	-0.01	-0.28	-0.81

Proposed Utilities

As stated previously, only sanitary sewer is located on-site. The building will connect into the sanitary sewer interceptor main located to the north of the site. Water, electrical, and telecommunications services will connect in the existing utilities south of the site along North Frontage Road.

Results, Conclusions and Sanitation Report

As shown in Table 7 above, Analysis Point A for the site for the 2-, 10-, and 25-year peak flow rates from Pre-Development to Post-Development have been reduced from the pre-development flows. The inclusion of the infiltration systems along with a decrease in area discharging to the north of the site has resulted in a decrease in peak flow rates from pre-development to post-development. A benefit to the proposed drainage improvements includes the removal of pollutants in the stormwater by use of hooded pipe outlets and 2 foot sumps in the catch basins and water quality structures.

Sanitation Report: The proposed sanitary system for the proposed office building has been preliminarily coordinated with the water and sewer authorities. The Windham Water

Works has indicated that they have the ability to serve the site with water for both domestic and fire protection. The Sanitary Sewer authorities are the Town of Mansfield Department of Public Works and the Windham Sewer Department (DPW). The DPW and the Windham Sewer Department have indicated that system capacity is available and the proposed office building may connect, pending future coordination to meet the authority's standards and specifications, which typically comes after Town approval. The proposed sanitary sewer system shall comply with the standards and specifications of the regulating authorities including the state and local Health Department requirements and all other applicable regulations.

Appendix A: Design Criteria & Methodology

Design Criteria & Methodology

1. Calculation methods follow Connecticut Department of Transportation Drainage Manual, 2002, including revisions thereto.
2. Hydrology is Rational Method: $Q=CIA$

Q = flow (cubic feet per second - cfs)
C = runoff coefficient
A = drainage area (acres – ac)
I = rainfall intensity (inches per hour – in/hr)
3. Design Storm = 25-year for storm sewer
4. Connecticut Rainfall Intensity – Duration (Table B-2.1) was used.
5. Time of Concentration (T_c) is via Seelye Chart for overland flow and Kirpich Chart for channel flow. Minimum T_c = 5 minutes.
6. Pipe capacity was calculated using Manning's Equation. Hydraulic grade lines were computed using backwater methods using StormCAD version V8 XM - computer program by Haestad Methods.
7. Calculations for the drainage system were completed using StormCAD version V8 XM - computer program by Haestad Methods.
8. Runoff Coefficient used for pervious areas is 0.3 and for impervious areas 0.9.
9. Pipe Material – HDPE for proposed piping.
10. Minimum pipe size = 12"
11. The proposed site is located within FEMA Zone C (area of minimal flooding). See attached FEMA FIRM.

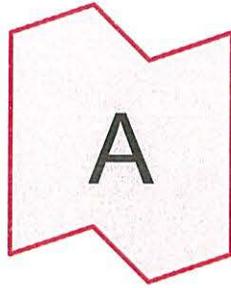
Note: All drainage areas for each catch basin can be seen on sheet PD-2 (Appendix B: Proposed Subcatchment Drainage Area Mapping)

Appendix B: Existing and Proposed Drainage Area Maps

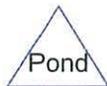
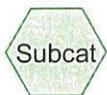
- Existing Drainage Area Map, ED-1
- Proposed Drainage Area Map, PD-1
- Proposed Subcatchment Drainage Area Map, PD-2

Appendix C: HydroCAD Analysis

- **Existing Conditions**
- **Proposed Conditions**



Analysis Point A



11C3816 PRE

Type III 24-hr 2 YR Rainfall=3.20"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1:

Runoff Area=7.260 ac Runoff Depth=0.01"

Flow Length=542' Tc=27.9 min CN=42 Runoff=0.01 cfs 0.008 af

Link A: Analysis Point A

Inflow=0.01 cfs 0.008 af

Primary=0.01 cfs 0.008 af

Total Runoff Area = 7.260 ac Runoff Volume = 0.008 af Average Runoff Depth = 0.01"

Subcatchment EDA-1:

Runoff = 0.01 cfs @ 21.79 hrs, Volume= 0.008 af, Depth= 0.01"

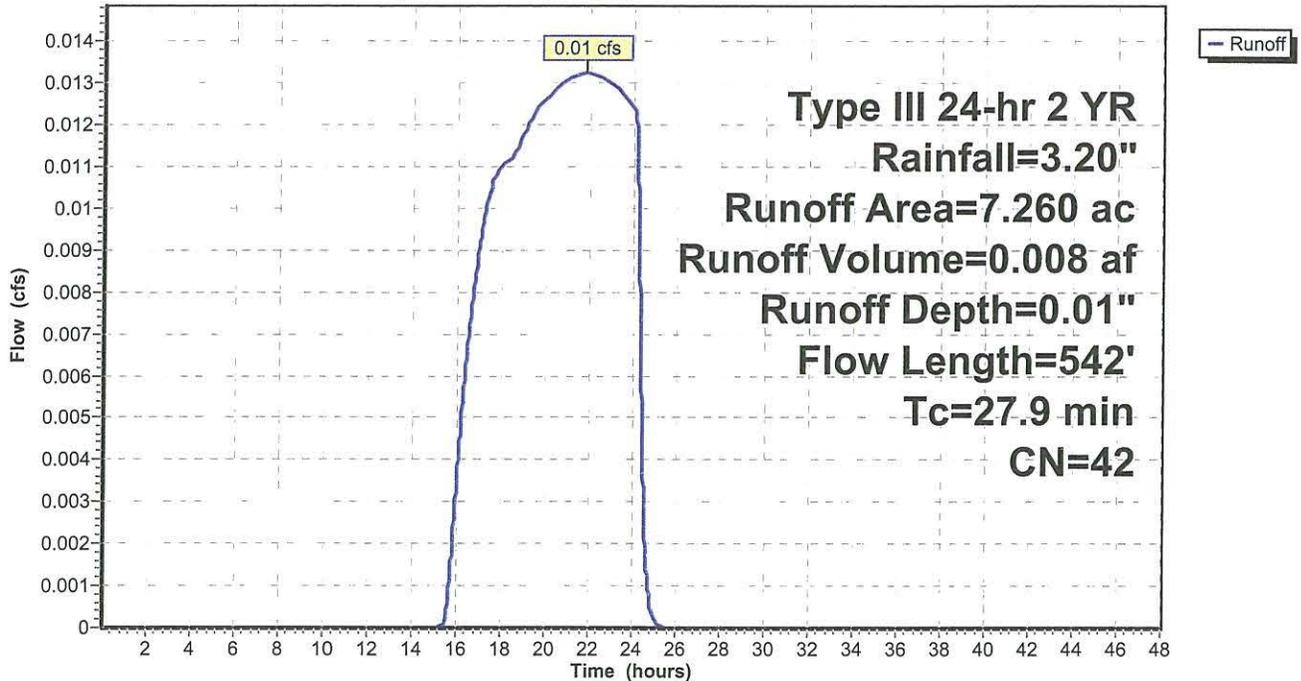
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
5.258	36	Woods, Fair, HSG A
0.681	49	50-75% Grass cover, Fair, HSG A
1.066	60	Woods, Fair, HSG B
0.045	69	50-75% Grass cover, Fair, HSG B
0.180	79	Woods, Fair, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.010	98	Paved parking & roofs
7.260	42	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0360	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
10.9	442	0.0727	0.7		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
27.9	542	Total			

Subcatchment EDA-1:

Hydrograph

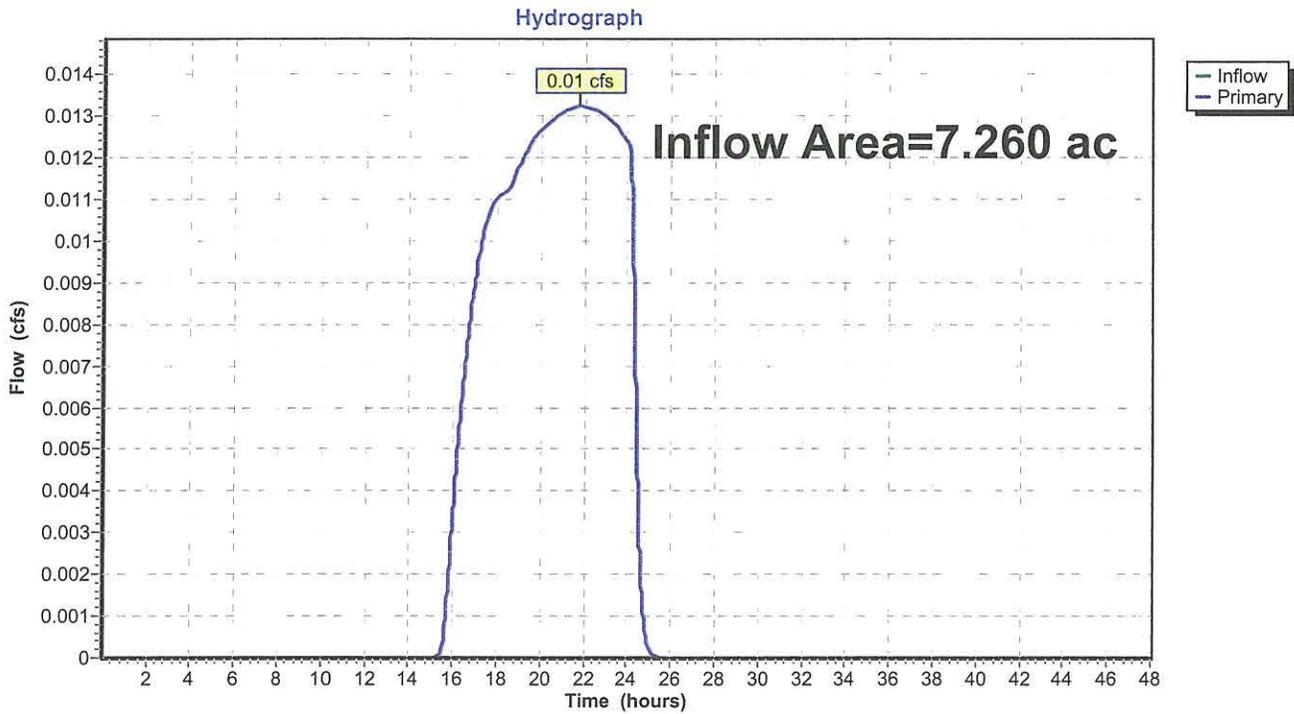


Link A: Analysis Point A

Inflow Area = 7.260 ac, Inflow Depth = 0.01" for 2 YR event
Inflow = 0.01 cfs @ 21.79 hrs, Volume= 0.008 af
Primary = 0.01 cfs @ 21.79 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A



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Type III 24-hr 10 YR Rainfall=4.80"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1:

Runoff Area=7.260 ac Runoff Depth=0.26"

Flow.Length=542' Tc=27.9 min CN=42 Runoff=0.40 cfs 0.159 af

Link A: Analysis Point A

Inflow=0.40 cfs 0.159 af

Primary=0.40 cfs 0.159 af

Total Runoff Area = 7.260 ac Runoff Volume = 0.159 af Average Runoff Depth = 0.26"

Subcatchment EDA-1:

Runoff = 0.40 cfs @ 12.74 hrs, Volume= 0.159 af, Depth= 0.26"

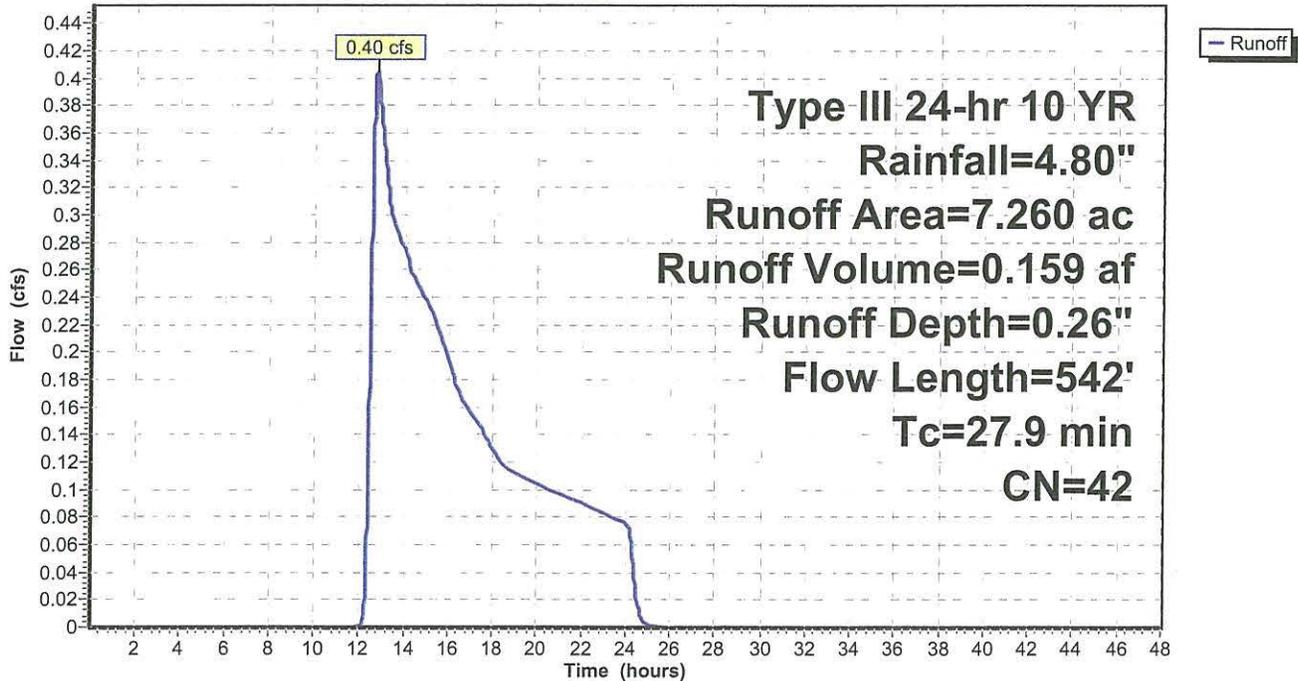
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
5.258	36	Woods, Fair, HSG A
0.681	49	50-75% Grass cover, Fair, HSG A
1.066	60	Woods, Fair, HSG B
0.045	69	50-75% Grass cover, Fair, HSG B
0.180	79	Woods, Fair, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.010	98	Paved parking & roofs
7.260	42	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0360	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
10.9	442	0.0727	0.7		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
27.9	542	Total			

Subcatchment EDA-1:

Hydrograph



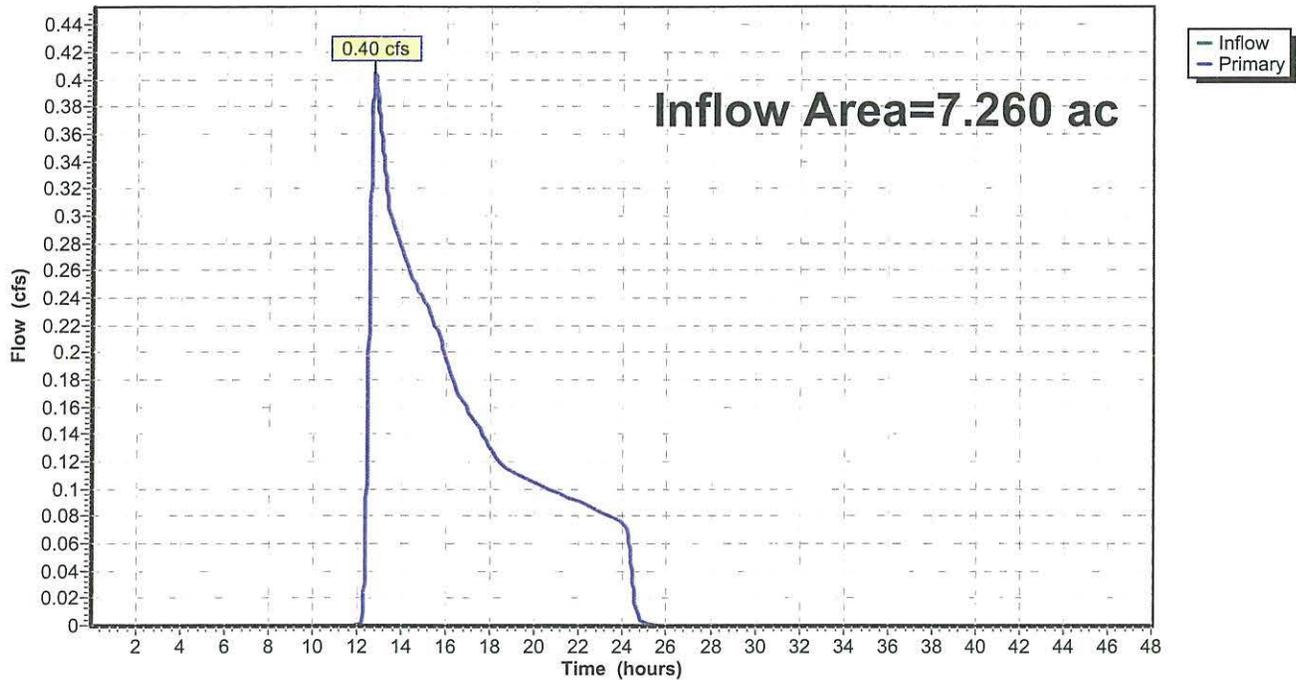
Link A: Analysis Point A

Inflow Area = 7.260 ac, Inflow Depth = 0.26" for 10 YR event
Inflow = 0.40 cfs @ 12.74 hrs, Volume= 0.159 af
Primary = 0.40 cfs @ 12.74 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A

Hydrograph



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Type III 24-hr 25 YR Rainfall=5.50"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1:

Runoff Area=7.260 ac Runoff Depth=0.45"

Flow Length=542' Tc=27.9 min CN=42 Runoff=1.06 cfs 0.274 af

Link A: Analysis Point A

Inflow=1.06 cfs 0.274 af

Primary=1.06 cfs 0.274 af

Total Runoff Area = 7.260 ac Runoff Volume = 0.274 af Average Runoff Depth = 0.45"

Subcatchment EDA-1:

Runoff = 1.06 cfs @ 12.65 hrs, Volume= 0.274 af, Depth= 0.45"

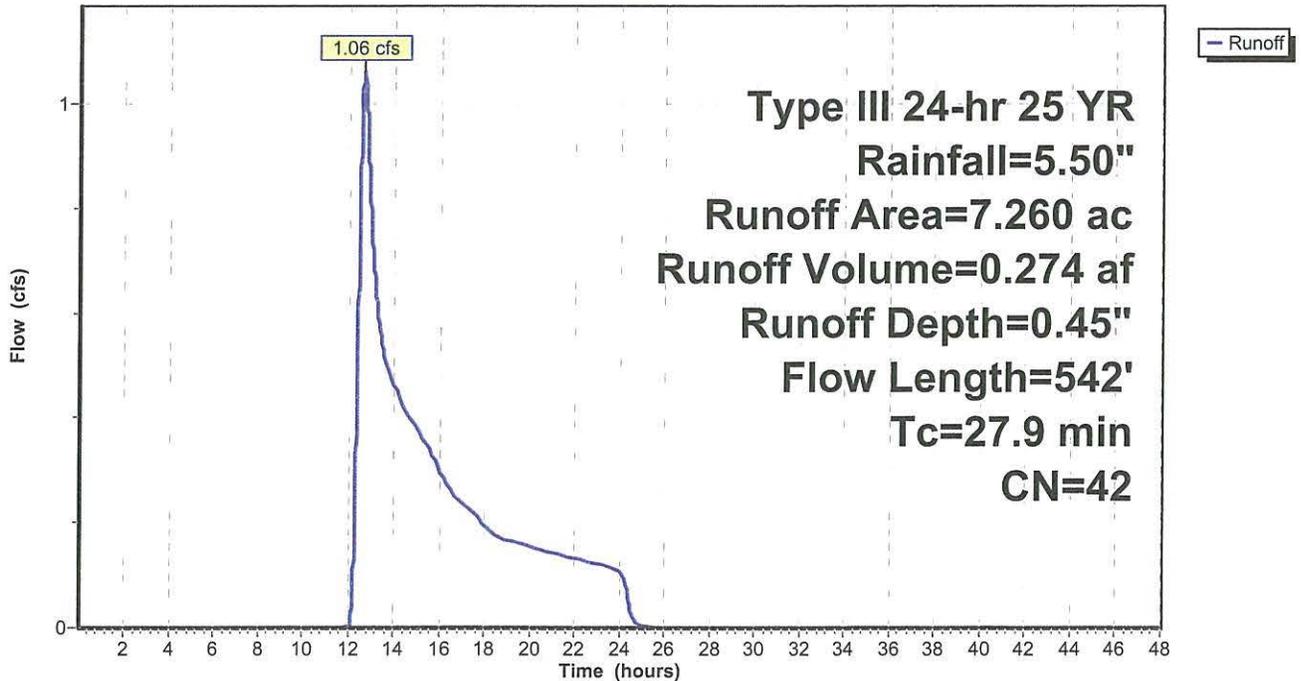
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
5.258	36	Woods, Fair, HSG A
0.681	49	50-75% Grass cover, Fair, HSG A
1.066	60	Woods, Fair, HSG B
0.045	69	50-75% Grass cover, Fair, HSG B
0.180	79	Woods, Fair, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.010	98	Paved parking & roofs
7.260	42	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.0	100	0.0360	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
10.9	442	0.0727	0.7		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
27.9	542	Total			

Subcatchment EDA-1:

Hydrograph



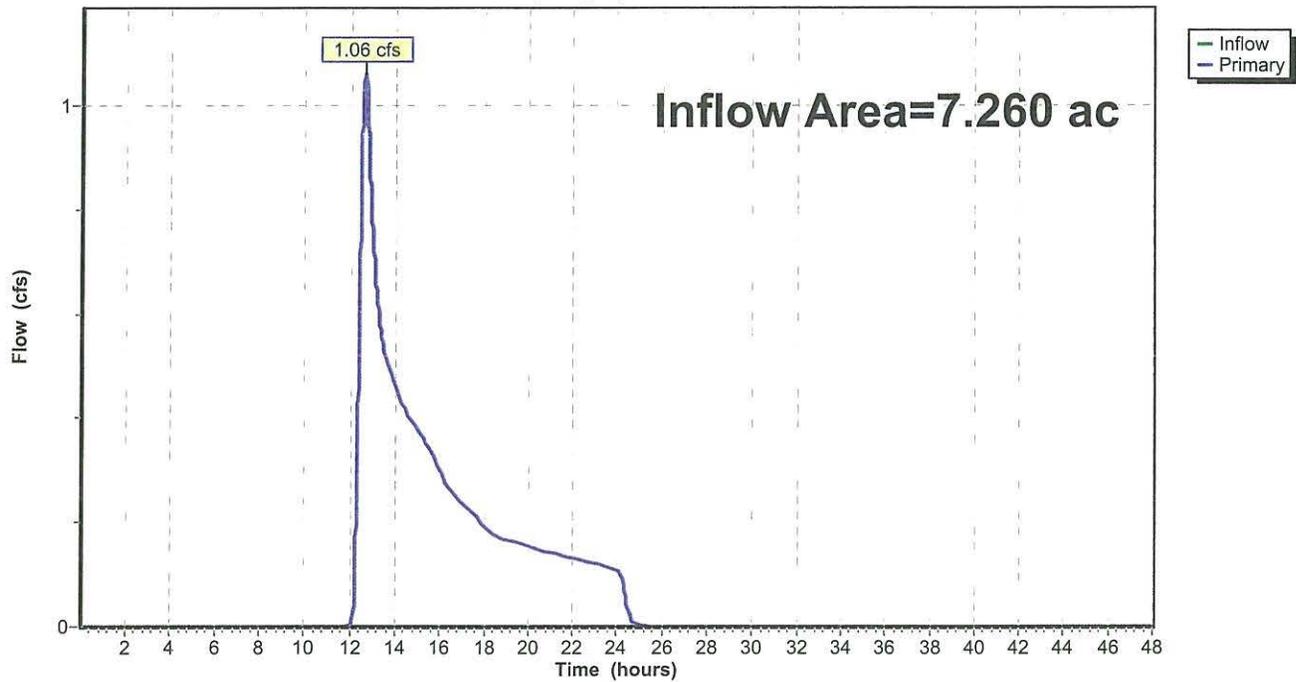
Link A: Analysis Point A

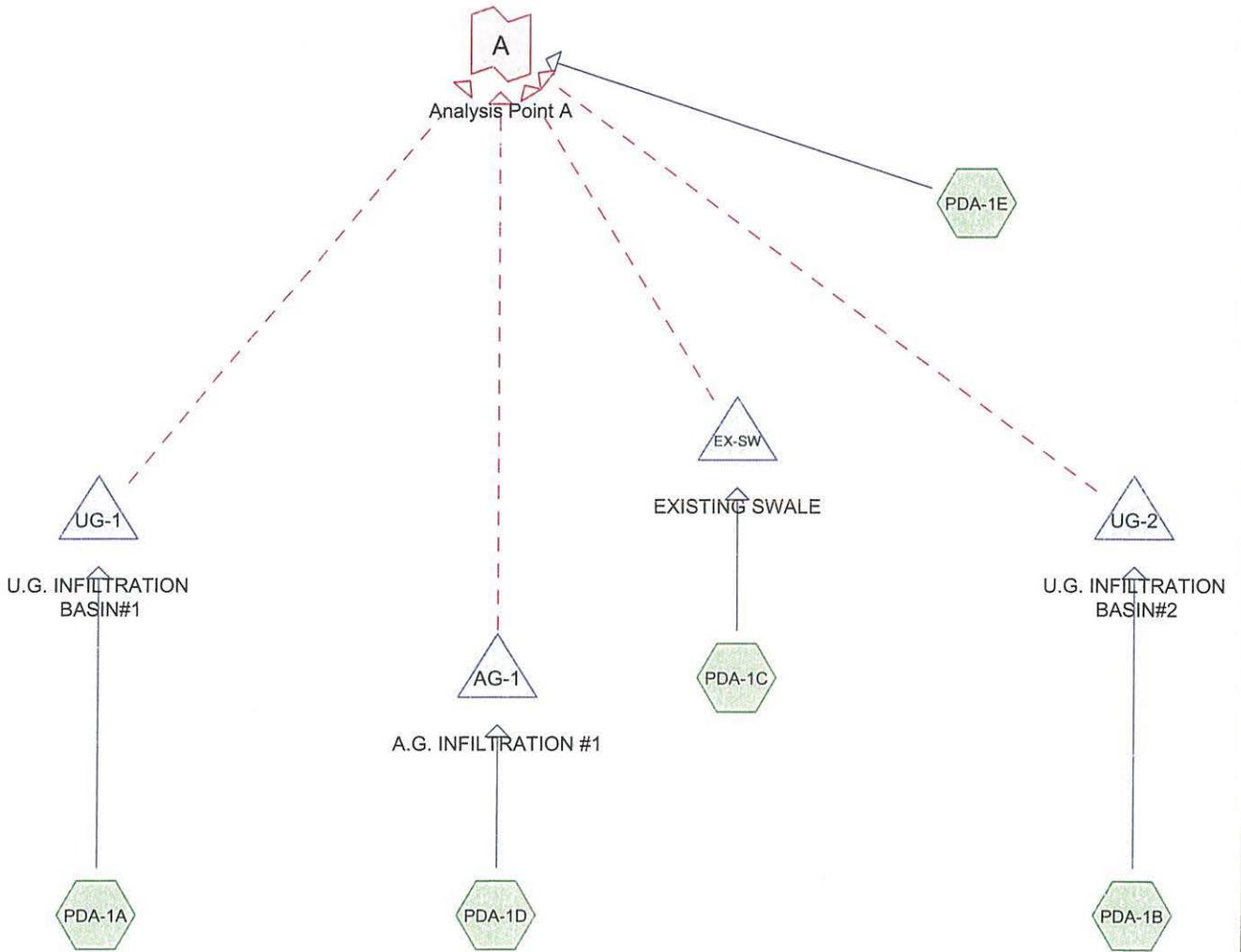
Inflow Area = 7.260 ac, Inflow Depth = 0.45" for 25 YR event
Inflow = 1.06 cfs @ 12.65 hrs, Volume= 0.274 af
Primary = 1.06 cfs @ 12.65 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A

Hydrograph





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Type III 24-hr 2 YR Rainfall=3.20"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: Runoff Area=1.120 ac Runoff Depth=1.76"
Flow Length=106' Tc=8.9 min CN=85 Runoff=2.09 cfs 0.164 af

Subcatchment PDA-1B: Runoff Area=1.360 ac Runoff Depth=1.21"
Tc=5.0 min CN=77 Runoff=1.95 cfs 0.137 af

Subcatchment PDA-1C: Runoff Area=2.930 ac Runoff Depth=0.13"
Flow Length=228' Tc=29.4 min CN=50 Runoff=0.06 cfs 0.031 af

Subcatchment PDA-1D: Runoff Area=0.900 ac Runoff Depth=0.03"
Flow Length=40' Tc=5.7 min CN=44 Runoff=0.00 cfs 0.002 af

Subcatchment PDA-1E: Runoff Area=0.950 ac Runoff Depth=0.03"
Flow Length=107' Tc=9.7 min CN=44 Runoff=0.00 cfs 0.003 af

Pond AG-1: A.G. INFILTRATION #1 Peak Elev=247.01' Storage=0 cf Inflow=0.00 cfs 0.002 af
Discarded=0.00 cfs 0.002 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

Pond EX-SW: EXISTING SWALE Peak Elev=232.00' Storage=4 cf Inflow=0.06 cfs 0.031 af
Discarded=0.06 cfs 0.031 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.031 af

Pond UG-1: U.G. INFILTRATION BASIN#1 Peak Elev=234.24' Storage=2,447 cf Inflow=2.09 cfs 0.164 af
Discarded=0.27 cfs 0.164 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.164 af

Pond UG-2: U.G. INFILTRATION BASIN#2 Peak Elev=233.32' Storage=1,811 cf Inflow=1.95 cfs 0.137 af
Discarded=0.27 cfs 0.137 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.137 af

Link A: Analysis Point A Inflow=0.00 cfs 0.003 af
Primary=0.00 cfs 0.003 af

Total Runoff Area = 7.260 ac Runoff Volume = 0.338 af Average Runoff Depth = 0.56"

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Type III 24-hr 2 YR Rainfall=3.20"

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Subcatchment PDA-1A:

Runoff = 2.09 cfs @ 12.13 hrs, Volume= 0.164 af, Depth= 1.76"

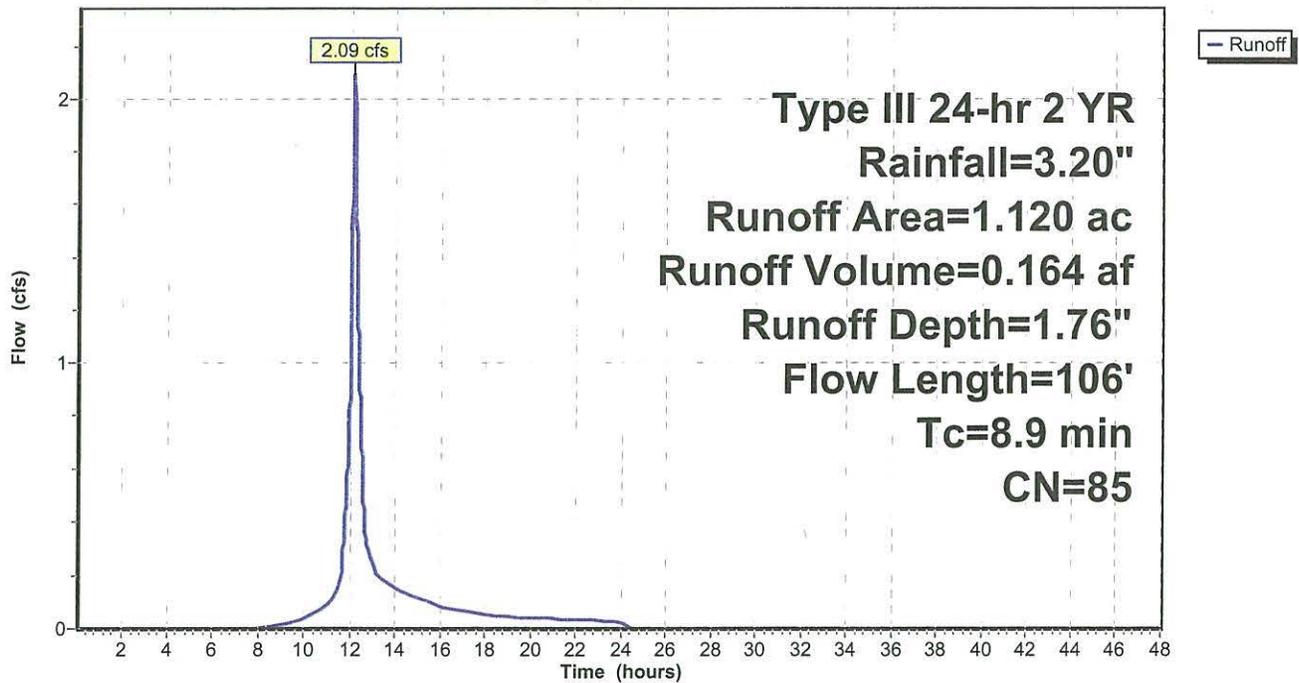
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
0.252	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.858	98	Paved parking & roofs
1.120	85	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	106	0.0283	0.2		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1A:

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Subcatchment PDA-1B:

Runoff = 1.95 cfs @ 12.08 hrs, Volume= 0.137 af, Depth= 1.21"

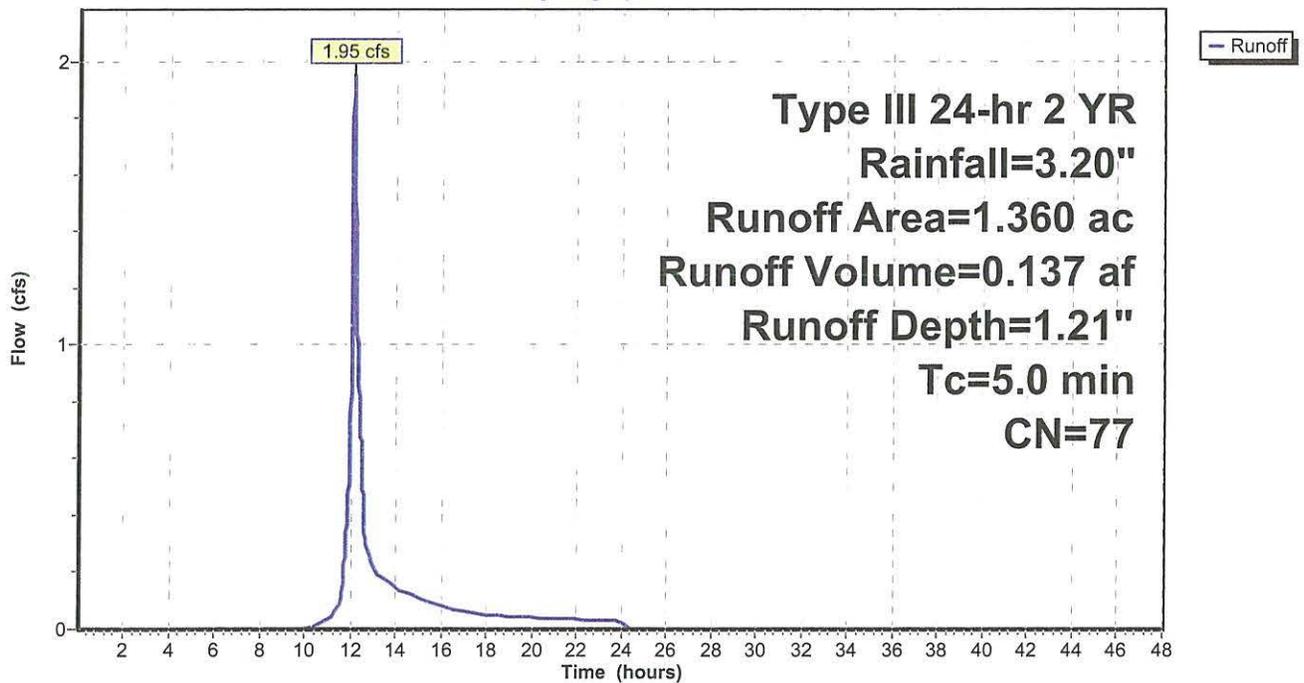
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
0.870	98	Paved parking & roofs
1.360	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, AB

Subcatchment PDA-1B:

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Subcatchment PDA-1C:

Runoff = 0.06 cfs @ 13.16 hrs, Volume= 0.031 af, Depth= 0.13"

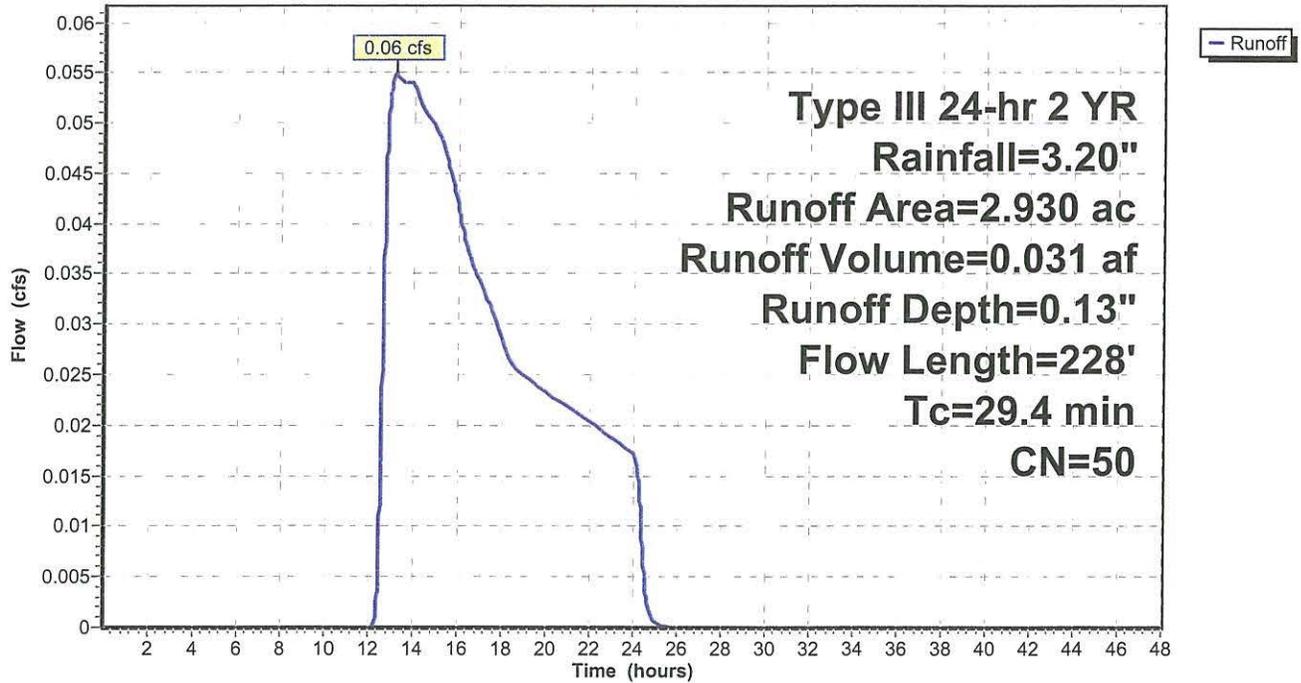
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
0.758	36	Woods, Fair, HSG A
1.230	39	>75% Grass cover, Good, HSG A
0.129	60	Woods, Fair, HSG B
0.062	61	>75% Grass cover, Good, HSG B
0.020	98	Paved parking & roofs
0.721	79	Woods, Fair, HSG D
0.010	80	>75% Grass cover, Good, HSG D
2.930	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	150	0.0333	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.2	78	0.0100	0.3		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
29.4	228	Total			

Subcatchment PDA-1C:

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Subcatchment PDA-1D:

Runoff = 0.00 cfs @ 15.70 hrs, Volume= 0.002 af, Depth= 0.03"

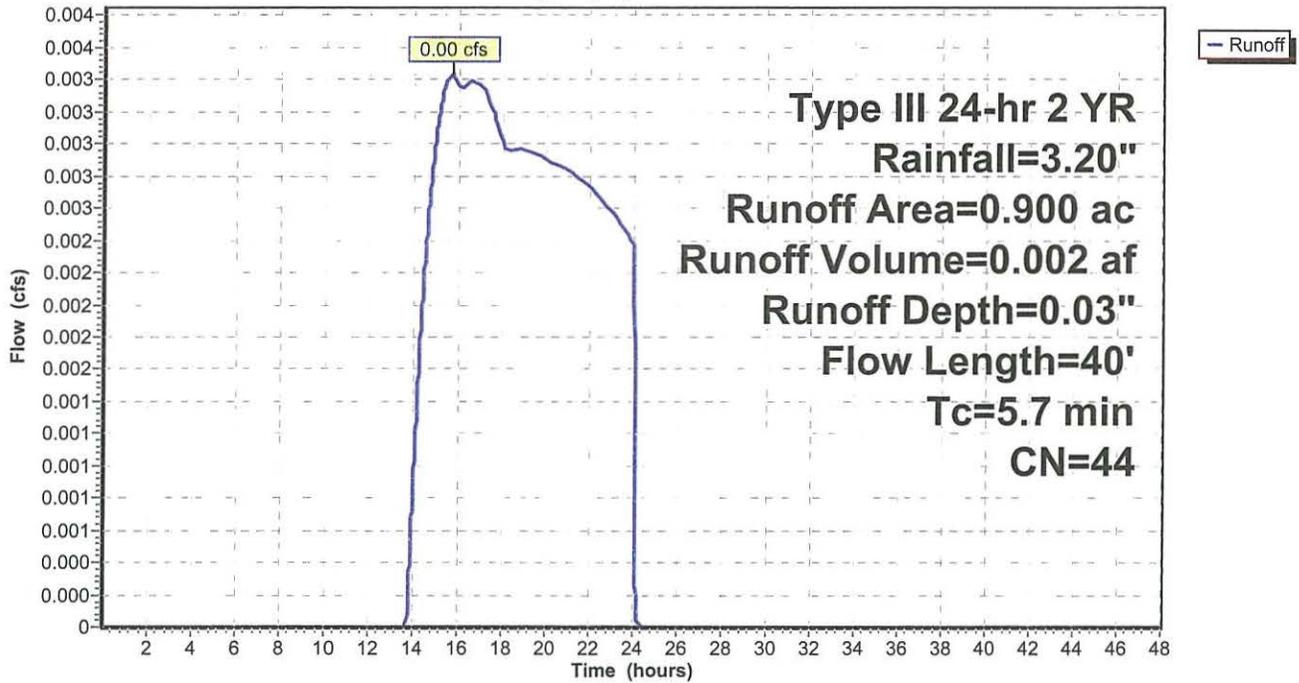
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
0.825	39	>75% Grass cover, Good, HSG A
0.075	98	Paved parking & roofs
0.900	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	40	0.0125	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1D:

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Subcatchment PDA-1E:

Runoff = 0.00 cfs @ 15.77 hrs, Volume= 0.003 af, Depth= 0.03"

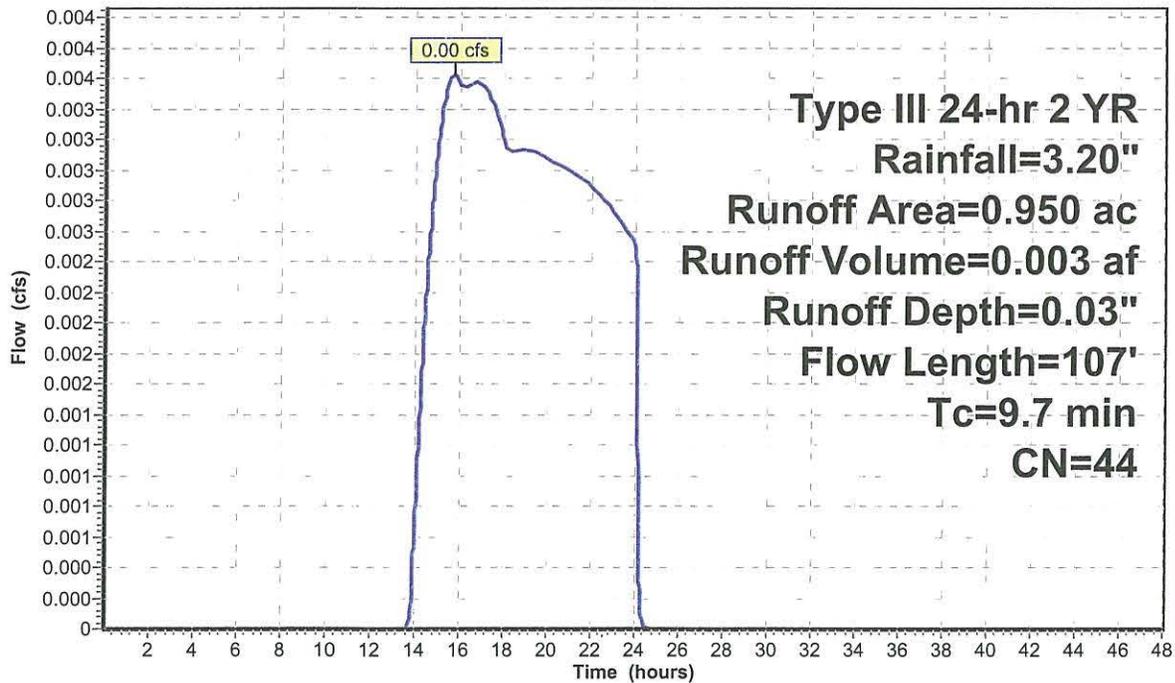
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.20"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.681	36	Woods, Fair, HSG A
0.043	84	50-75% Grass cover, Fair, HSG D
0.094	79	Woods, Fair, HSG D
0.950	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	107	0.1680	0.2		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"

Subcatchment PDA-1E:

Hydrograph



Runoff

Pond AG-1: A.G. INFILTRATION #1

Inflow Area = 0.900 ac, Inflow Depth = 0.03" for 2 YR event
 Inflow = 0.00 cfs @ 15.70 hrs, Volume= 0.002 af
 Outflow = 0.00 cfs @ 15.71 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.5 min
 Discarded = 0.00 cfs @ 15.71 hrs, Volume= 0.002 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 247.01' @ 15.71 hrs Surf.Area= 25 sf Storage= 0 cf
 Plug-Flow detention time= 0.9 min calculated for 0.002 af (100% of inflow)
 Center-of-Mass det. time= 0.9 min (1,136.6 - 1,135.7)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	1,269 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	0	0	0
248.00	2,538	1,269	1,269

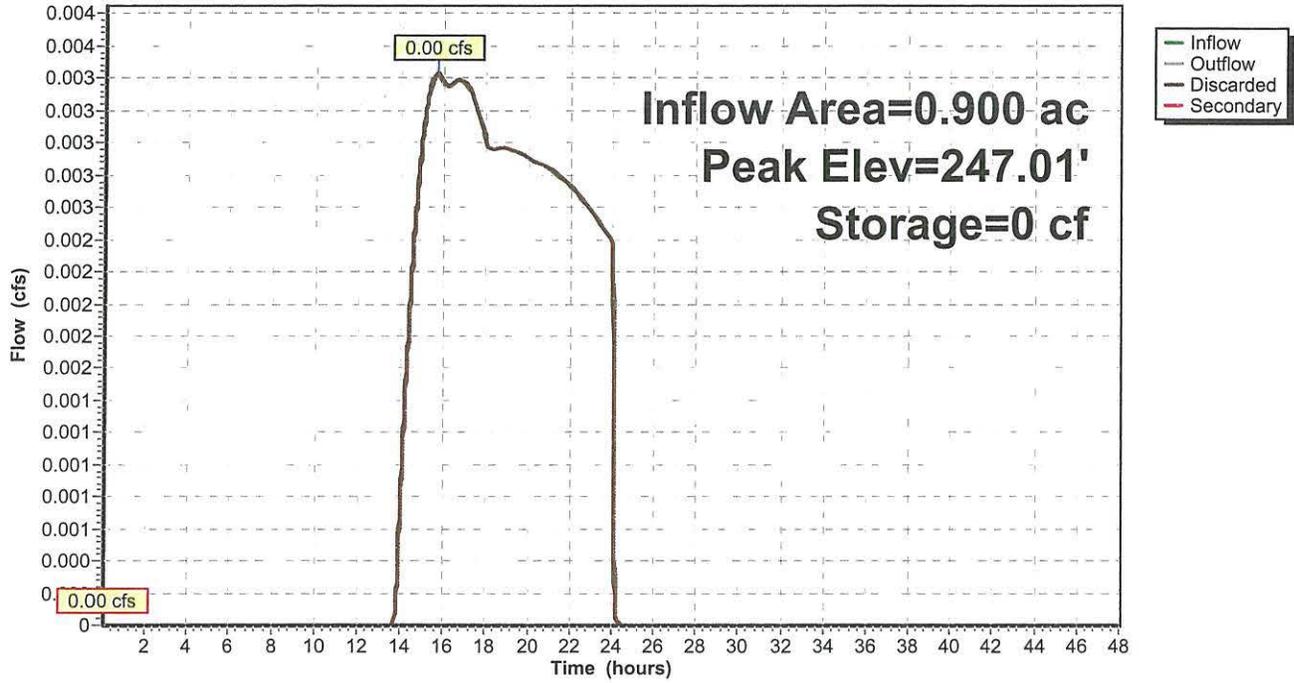
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	248.50'	90.0' long x 5.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65
			2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 15.71 hrs HW=247.01' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=247.00' (Free Discharge)
 ↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond AG-1: A.G. INFILTRATION #1

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Pond EX-SW: EXISTING SWALE

Inflow Area = 2.930 ac, Inflow Depth = 0.13" for 2 YR event
 Inflow = 0.06 cfs @ 13.16 hrs, Volume= 0.031 af
 Outflow = 0.06 cfs @ 13.18 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.9 min
 Discarded = 0.06 cfs @ 13.18 hrs, Volume= 0.031 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 232.00' @ 13.18 hrs Surf.Area= 2,400 sf Storage= 4 cf
 Plug-Flow detention time= 1.2 min calculated for 0.031 af (100% of inflow)
 Center-of-Mass det. time= 1.2 min (1,032.9 - 1,031.7)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	2,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,400	0	0
233.00	2,400	2,400	2,400

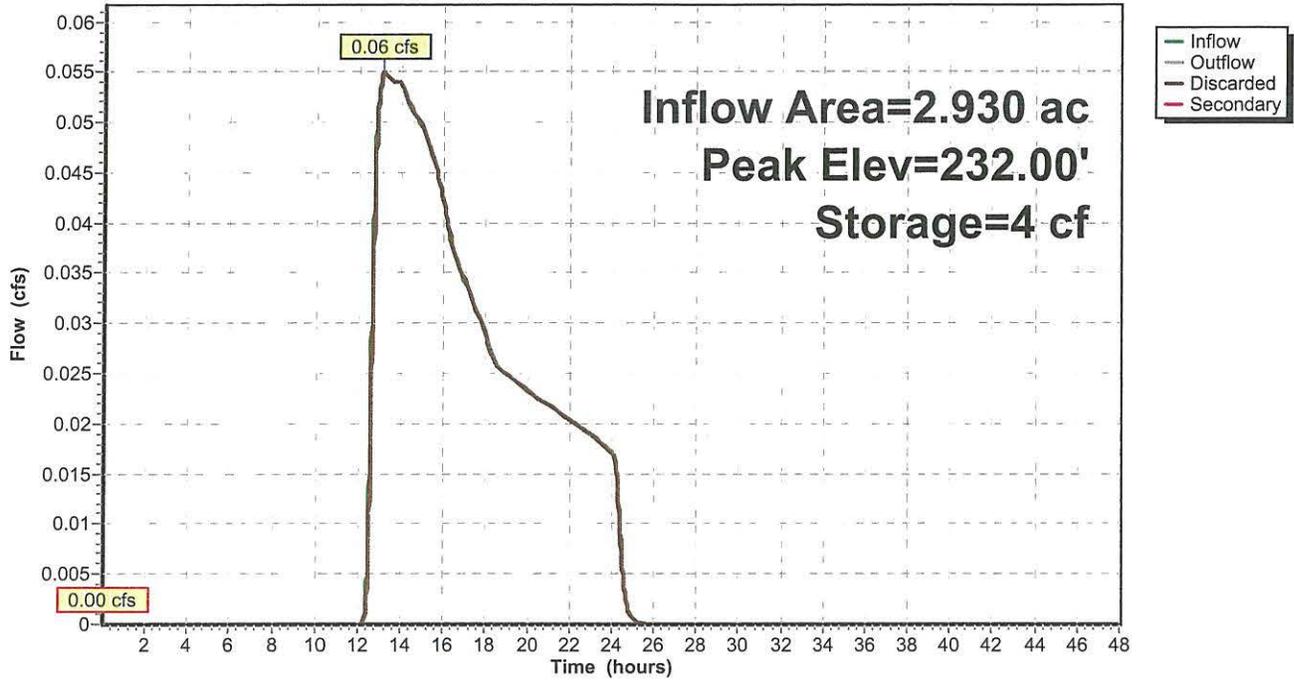
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	233.00'	800.0' long x 5.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65
			2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.33 cfs @ 13.18 hrs HW=232.00' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.33 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=232.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-SW: EXISTING SWALE

Hydrograph



Pond UG-1: U.G. INFILTRATION BASIN#1

Inflow Area = 1.120 ac, Inflow Depth = 1.76" for 2 YR event
 Inflow = 2.09 cfs @ 12.13 hrs, Volume= 0.164 af
 Outflow = 0.27 cfs @ 11.71 hrs, Volume= 0.164 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.27 cfs @ 11.71 hrs, Volume= 0.164 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 234.24' @ 12.89 hrs Surf.Area= 1,937 sf Storage= 2,447 cf
 Plug-Flow detention time= 70.5 min calculated for 0.164 af (100% of inflow)
 Center-of-Mass det. time= 70.5 min (899.3 - 828.8)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	1,433 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,622 cf Overall - 5,890 cf Embedded = 5,732 cf x 25.0% Voids
#2	232.50'	5,890 cf	60.0"D x 100.00'L Horizontal Cylinder x 3 Inside #1
		7,323 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	1,937	0	0
238.00	1,937	11,622	11,622

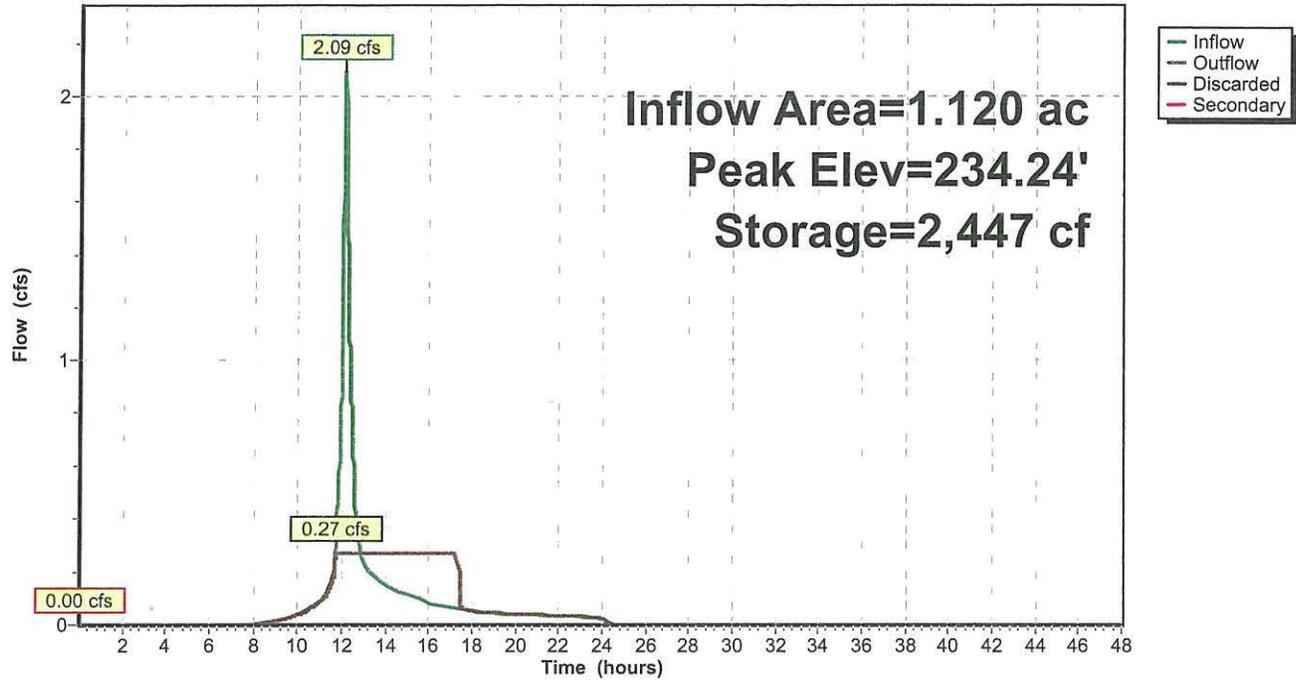
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	238.00'	4.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Discarded OutFlow Max=0.27 cfs @ 11.71 hrs HW=232.06' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.27 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=232.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-1: U.G. INFILTRATION BASIN#1

Hydrograph



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Type III 24-hr 2 YR Rainfall=3.20"

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Pond UG-2: U.G. INFILTRATION BASIN#2

Inflow Area = 1.360 ac, Inflow Depth = 1.21" for 2 YR event
 Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.137 af
 Outflow = 0.27 cfs @ 11.76 hrs, Volume= 0.137 af, Atten= 86%, Lag= 0.0 min
 Discarded = 0.27 cfs @ 11.76 hrs, Volume= 0.137 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 233.32' @ 12.74 hrs Surf.Area= 1,960 sf Storage= 1,811 cf
 Plug-Flow detention time= 50.4 min calculated for 0.137 af (100% of inflow)
 Center-of-Mass det. time= 50.4 min (901.8 - 851.4)

Volume	Invert	Avail.Storage	Storage Description
#1	231.50'	1,497 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,760 cf Overall - 5,773 cf Embedded = 5,987 cf x 25.0% Voids
#2	232.00'	5,773 cf	60.0"D x 98.00'L Horizontal Cylinder x 3 Inside #1
		7,270 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
231.50	1,960	0	0
237.50	1,960	11,760	11,760

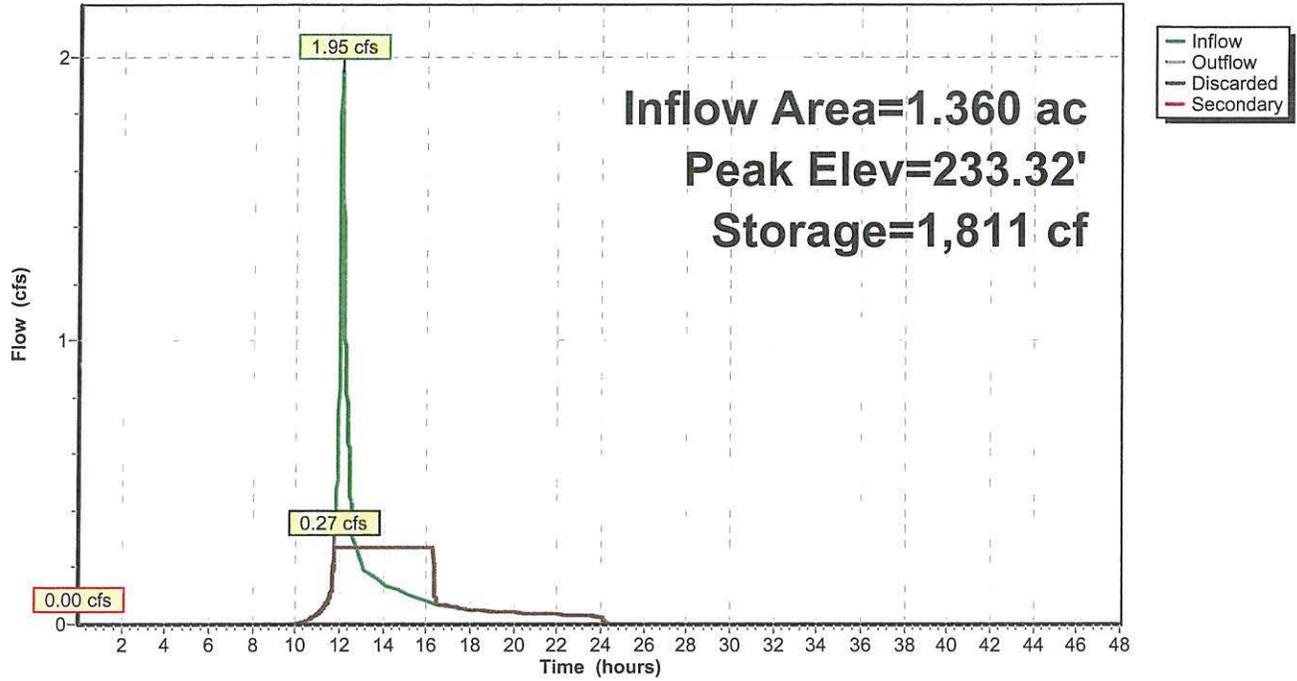
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	237.50'	237.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Discarded OutFlow Max=0.27 cfs @ 11.76 hrs HW=231.56' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.27 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=231.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-2: U.G. INFILTRATION BASIN#2

Hydrograph



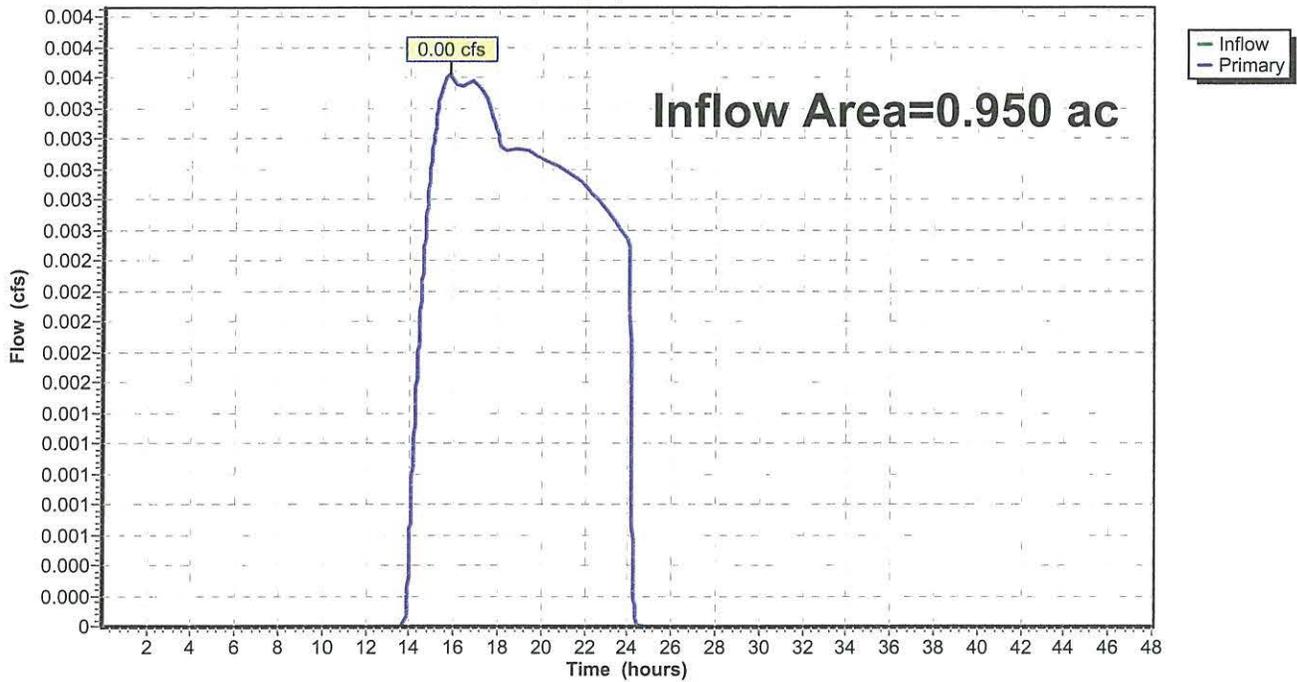
Link A: Analysis Point A

Inflow Area = 0.950 ac, Inflow Depth = 0.03" for 2 YR event
Inflow = 0.00 cfs @ 15.77 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 15.77 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: Runoff Area=1.120 ac Runoff Depth=3.18"
 Flow Length=106' Tc=8.9 min CN=85 Runoff=3.76 cfs 0.297 af

Subcatchment PDA-1B: Runoff Area=1.360 ac Runoff Depth=2.46"
 Tc=5.0 min CN=77 Runoff=4.06 cfs 0.278 af

Subcatchment PDA-1C: Runoff Area=2.930 ac Runoff Depth=0.61"
 Flow Length=228' Tc=29.4 min CN=50 Runoff=0.78 cfs 0.150 af

Subcatchment PDA-1D: Runoff Area=0.900 ac Runoff Depth=0.34"
 Flow Length=40' Tc=5.7 min CN=44 Runoff=0.12 cfs 0.025 af

Subcatchment PDA-1E: Runoff Area=0.950 ac Runoff Depth=0.34"
 Flow Length=107' Tc=9.7 min CN=44 Runoff=0.12 cfs 0.027 af

Pond AG-1: A.G. INFILTRATION #1 Peak Elev=247.22' Storage=63 cf Inflow=0.12 cfs 0.025 af
 Discarded=0.08 cfs 0.025 af Secondary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.025 af

Pond EX-SW: EXISTING SWALE Peak Elev=232.35' Storage=847 cf Inflow=0.78 cfs 0.150 af
 Discarded=0.33 cfs 0.150 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.150 af

Pond UG-1: U.G. INFILTRATION BASIN#1 Peak Elev=236.27' Storage=5,640 cf Inflow=3.76 cfs 0.297 af
 Discarded=0.27 cfs 0.297 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.297 af

Pond UG-2: U.G. INFILTRATION BASIN#2 Peak Elev=235.52' Storage=5,228 cf Inflow=4.06 cfs 0.278 af
 Discarded=0.27 cfs 0.278 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.278 af

Link A: Analysis Point A Inflow=0.12 cfs 0.027 af
 Primary=0.12 cfs 0.027 af

Total Runoff Area = 7.260 ac Runoff Volume = 0.777 af Average Runoff Depth = 1.28"

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Type III 24-hr 10 YR Rainfall=4.80"

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Subcatchment PDA-1A:

Runoff = 3.76 cfs @ 12.12 hrs, Volume= 0.297 af, Depth= 3.18"

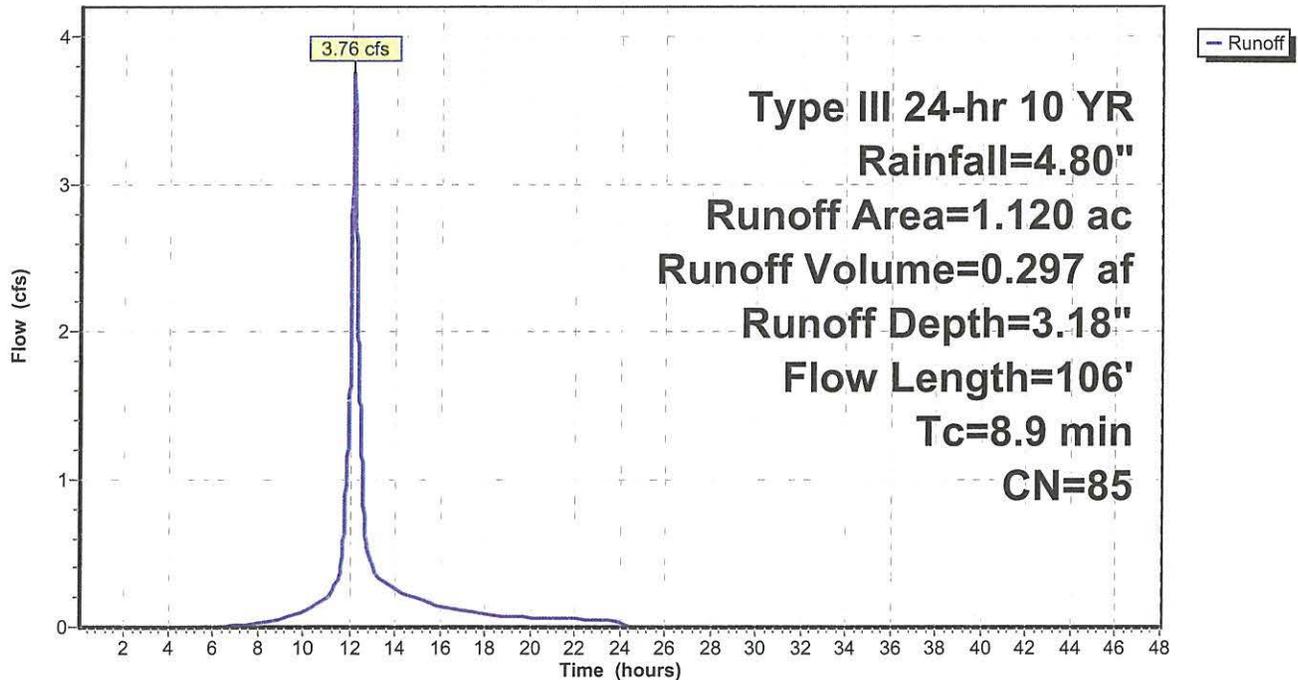
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
0.252	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.858	98	Paved parking & roofs
1.120	85	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	106	0.0283	0.2		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1A:

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Subcatchment PDA-1B:

Runoff = 4.06 cfs @ 12.08 hrs, Volume= 0.278 af, Depth= 2.46"

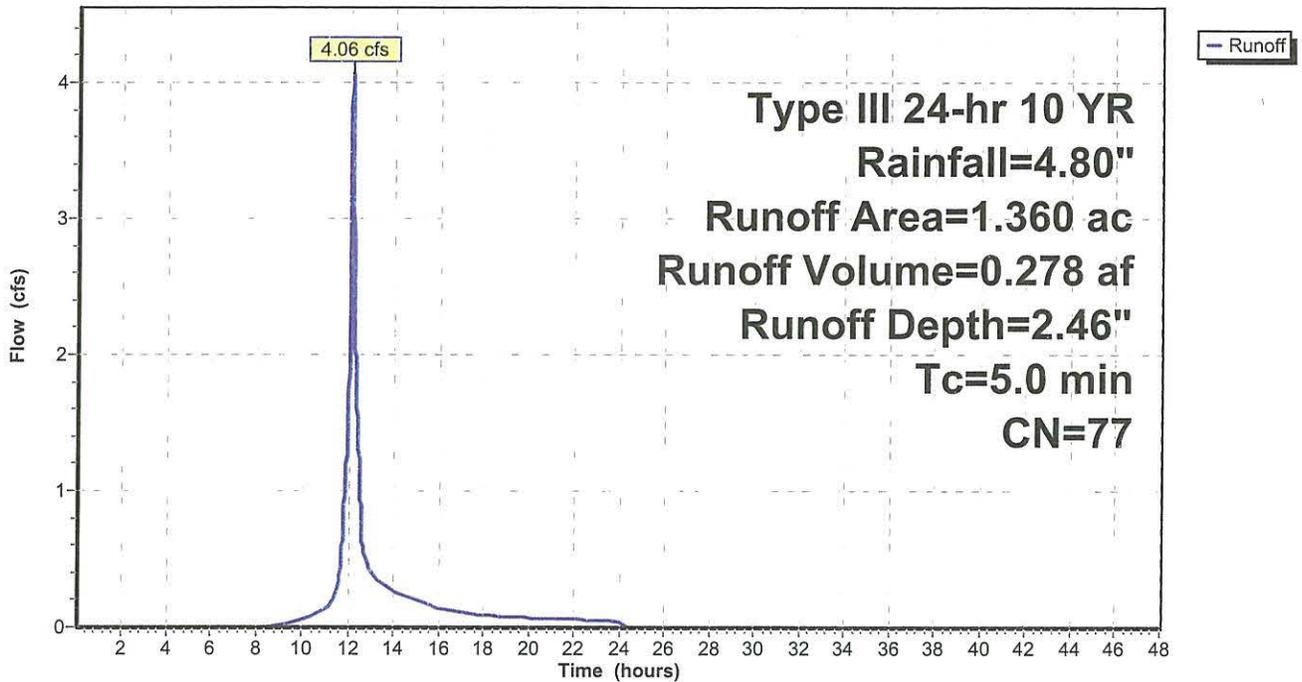
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
0.870	98	Paved parking & roofs
1.360	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, AB

Subcatchment PDA-1B:

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Subcatchment PDA-1C:

Runoff = 0.78 cfs @ 12.57 hrs, Volume= 0.150 af, Depth= 0.61"

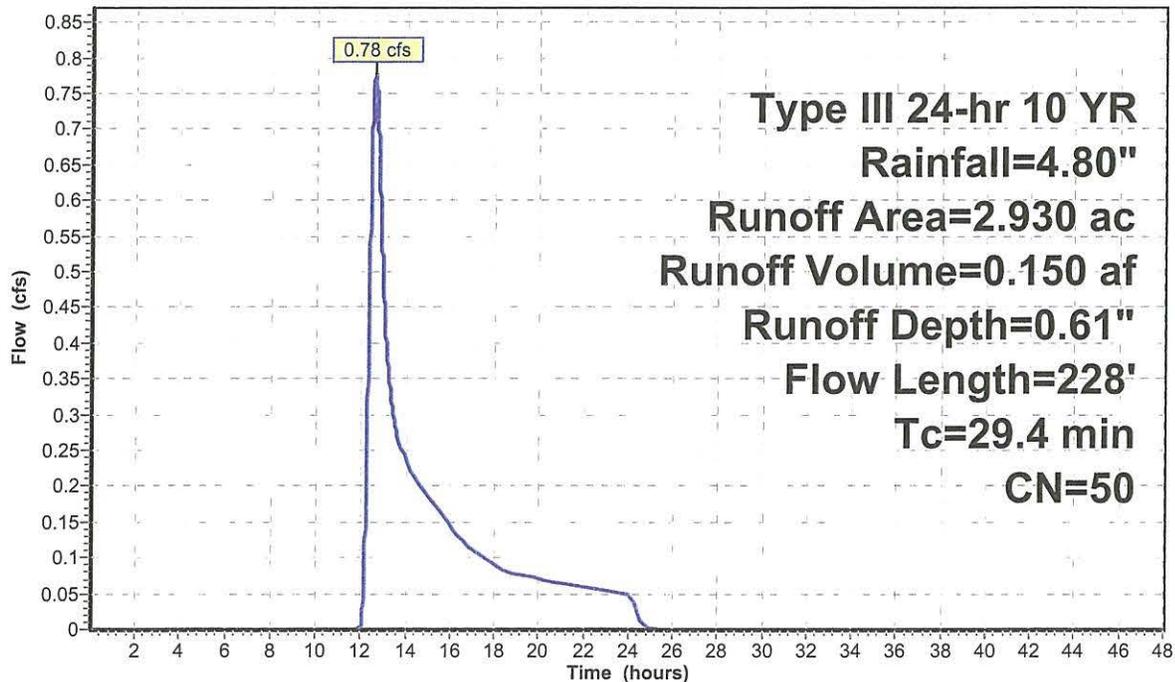
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
0.758	36	Woods, Fair, HSG A
1.230	39	>75% Grass cover, Good, HSG A
0.129	60	Woods, Fair, HSG B
0.062	61	>75% Grass cover, Good, HSG B
0.020	98	Paved parking & roofs
0.721	79	Woods, Fair, HSG D
0.010	80	>75% Grass cover, Good, HSG D
2.930	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	150	0.0333	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.2	78	0.0100	0.3		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
29.4	228	Total			

Subcatchment PDA-1C:

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Subcatchment PDA-1D:

Runoff = 0.12 cfs @ 12.35 hrs, Volume= 0.025 af, Depth= 0.34"

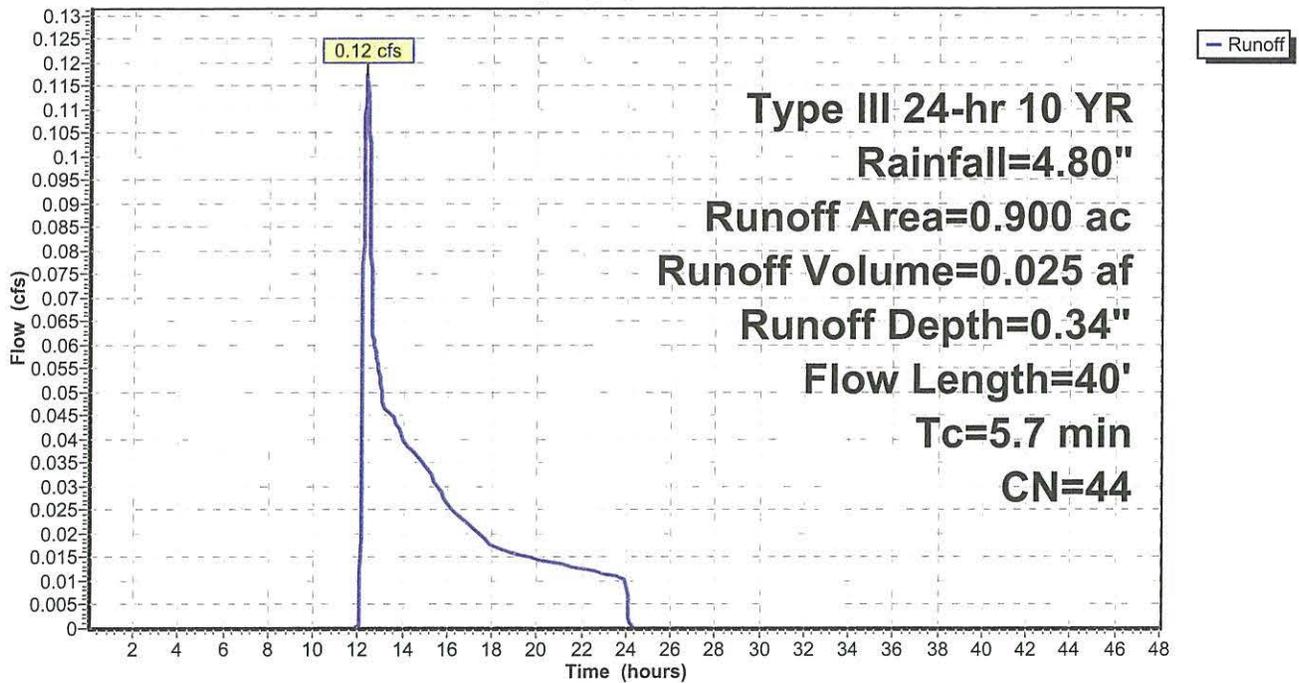
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
0.825	39	>75% Grass cover, Good, HSG A
0.075	98	Paved parking & roofs
0.900	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	40	0.0125	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1D:

Hydrograph



Subcatchment PDA-1E:

Runoff = 0.12 cfs @ 12.41 hrs, Volume= 0.027 af, Depth= 0.34"

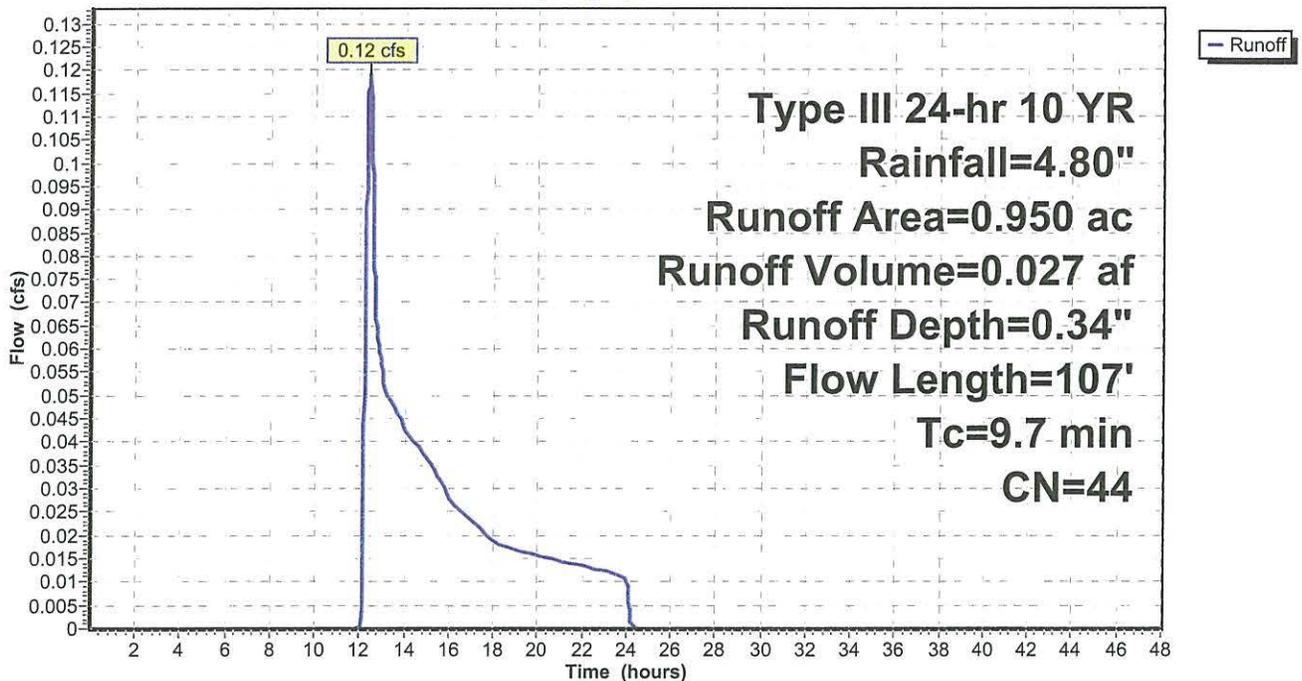
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 YR Rainfall=4.80"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.681	36	Woods, Fair, HSG A
0.043	84	50-75% Grass cover, Fair, HSG D
0.094	79	Woods, Fair, HSG D
0.950	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	107	0.1680	0.2		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"

Subcatchment PDA-1E:

Hydrograph



Pond AG-1: A.G. INFILTRATION #1

Inflow Area = 0.900 ac, Inflow Depth = 0.34" for 10 YR event
 Inflow = 0.12 cfs @ 12.35 hrs, Volume= 0.025 af
 Outflow = 0.08 cfs @ 12.54 hrs, Volume= 0.025 af, Atten= 33%, Lag= 11.5 min
 Discarded = 0.08 cfs @ 12.54 hrs, Volume= 0.025 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 247.22' @ 12.54 hrs Surf.Area= 567 sf Storage= 63 cf
 Plug-Flow detention time= 6.3 min calculated for 0.025 af (100% of inflow)
 Center-of-Mass det. time= 6.3 min (969.3 - 963.1)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	1,269 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	0	0	0
248.00	2,538	1,269	1,269

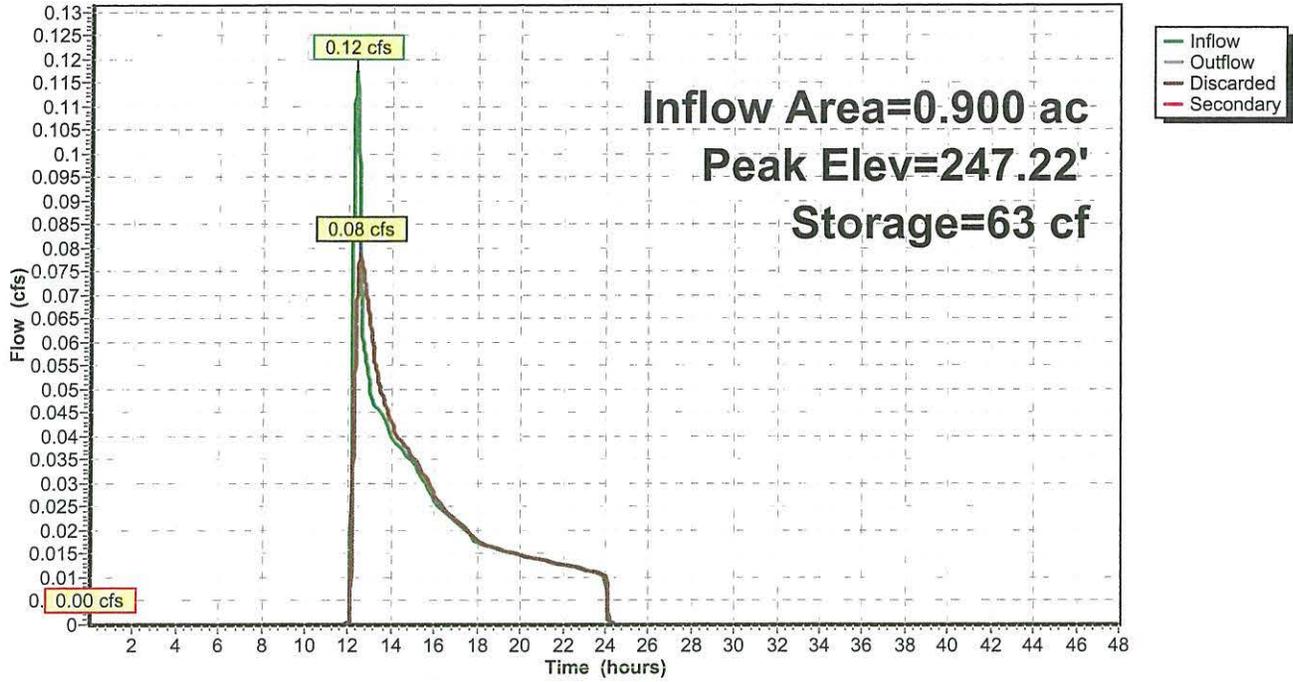
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	248.50'	90.0' long x 5.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65
			2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.08 cfs @ 12.54 hrs HW=247.22' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=247.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond AG-1: A.G. INFILTRATION #1

Hydrograph



Pond EX-SW: EXISTING SWALE

Inflow Area = 2.930 ac, Inflow Depth = 0.61" for 10 YR event
 Inflow = 0.78 cfs @ 12.57 hrs, Volume= 0.150 af
 Outflow = 0.33 cfs @ 12.30 hrs, Volume= 0.150 af, Atten= 57%, Lag= 0.0 min
 Discarded = 0.33 cfs @ 12.30 hrs, Volume= 0.150 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 232.35' @ 13.28 hrs Surf.Area= 2,400 sf Storage= 847 cf
 Plug-Flow detention time= 15.5 min calculated for 0.150 af (100% of inflow)
 Center-of-Mass det. time= 15.5 min (957.6 - 942.1)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	2,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,400	0	0
233.00	2,400	2,400	2,400

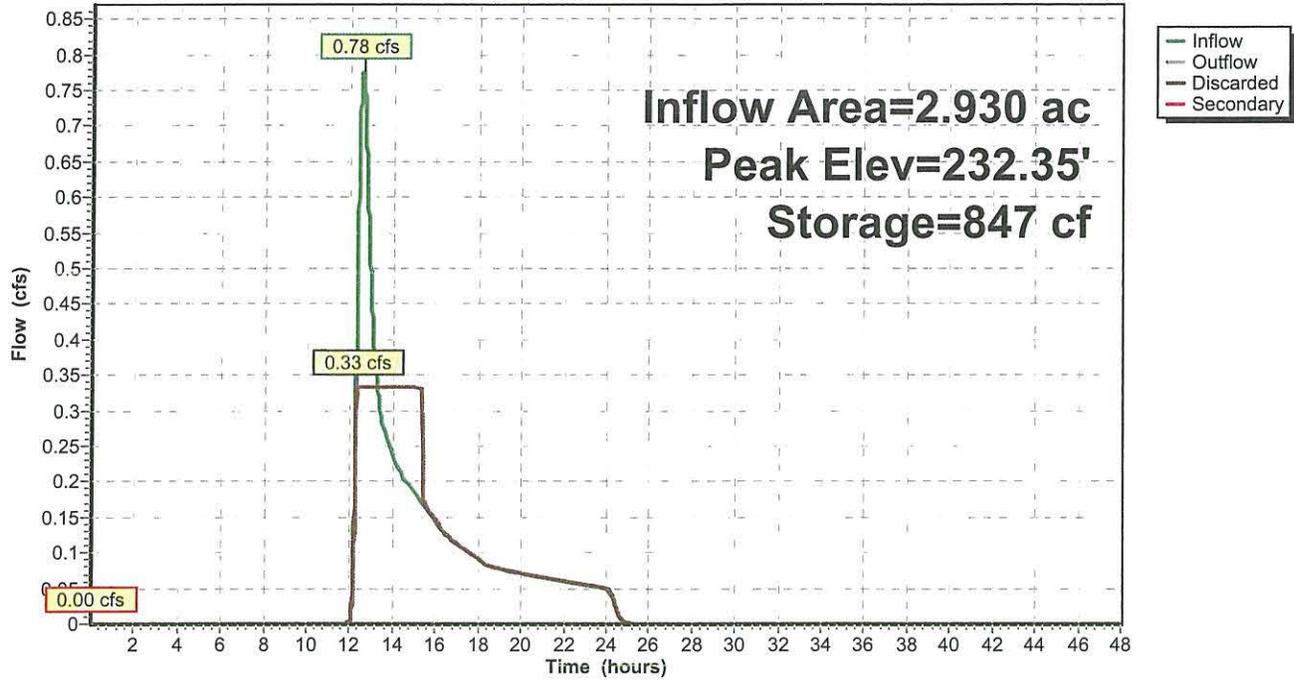
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	233.00'	800.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.33 cfs @ 12.30 hrs HW=232.01' (Free Discharge)
 ↗1=Exfiltration (Exfiltration Controls 0.33 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=232.00' (Free Discharge)
 ↗2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EX-SW: EXISTING SWALE

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Pond UG-1: U.G. INFILTRATION BASIN#1

Inflow Area = 1.120 ac, Inflow Depth = 3.18" for 10 YR event
 Inflow = 3.76 cfs @ 12.12 hrs, Volume= 0.297 af
 Outflow = 0.27 cfs @ 11.33 hrs, Volume= 0.297 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.27 cfs @ 11.33 hrs, Volume= 0.297 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 236.27' @ 13.85 hrs Surf.Area= 1,937 sf Storage= 5,640 cf
 Plug-Flow detention time= 187.7 min calculated for 0.297 af (100% of inflow)
 Center-of-Mass det. time= 187.7 min (999.5 - 811.8)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	1,433 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,622 cf Overall - 5,890 cf Embedded = 5,732 cf x 25.0% Voids
#2	232.50'	5,890 cf	60.0"D x 100.00'L Horizontal Cylinder x 3 Inside #1
		7,323 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	1,937	0	0
238.00	1,937	11,622	11,622

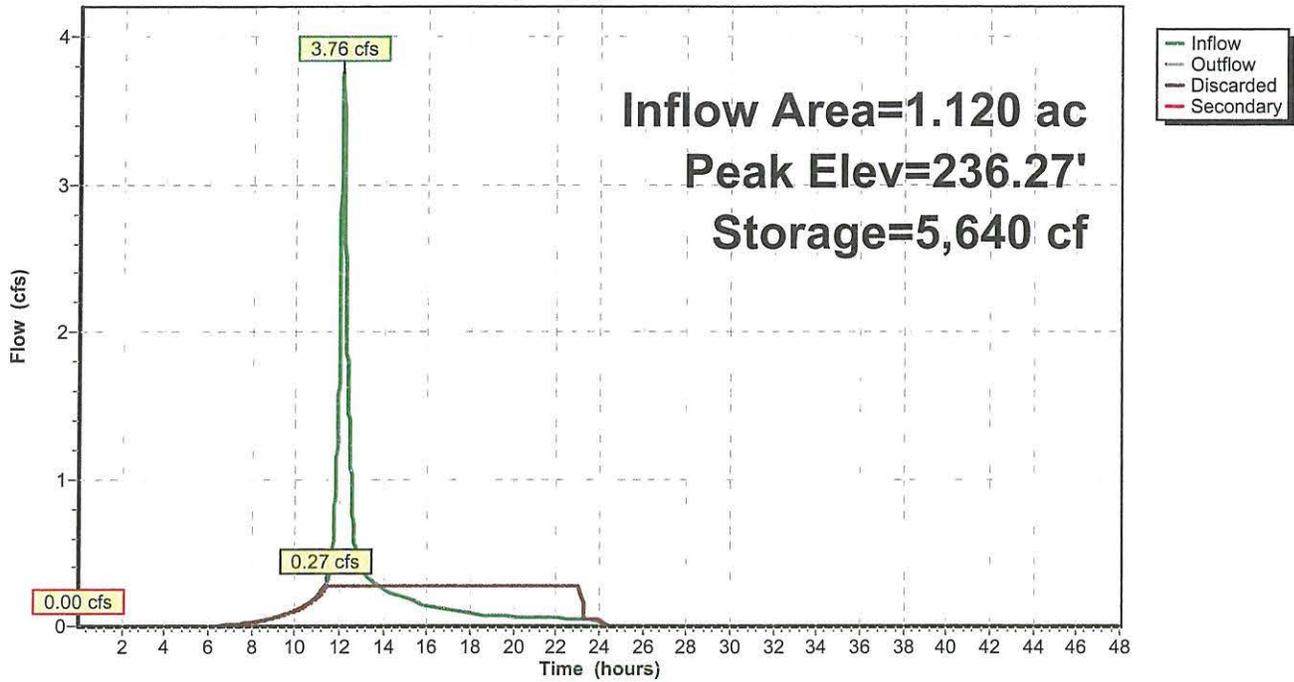
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	238.00'	4.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Discarded OutFlow Max=0.27 cfs @ 11.33 hrs HW=232.06' (Free Discharge)
 ↖1=Exfiltration (Exfiltration Controls 0.27 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=232.00' (Free Discharge)
 ↖2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-1: U.G. INFILTRATION BASIN#1

Hydrograph



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Type III 24-hr 10 YR Rainfall=4.80"

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Pond UG-2: U.G. INFILTRATION BASIN#2

Inflow Area = 1.360 ac, Inflow Depth = 2.46" for 10 YR event
 Inflow = 4.06 cfs @ 12.08 hrs, Volume= 0.278 af
 Outflow = 0.27 cfs @ 11.52 hrs, Volume= 0.278 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.27 cfs @ 11.52 hrs, Volume= 0.278 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 235.52' @ 13.88 hrs Surf.Area= 1,960 sf Storage= 5,228 cf
 Plug-Flow detention time= 181.5 min calculated for 0.278 af (100% of inflow)
 Center-of-Mass det. time= 181.4 min (1,012.1 - 830.7)

Volume	Invert	Avail.Storage	Storage Description
#1	231.50'	1,497 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,760 cf Overall - 5,773 cf Embedded = 5,987 cf x 25.0% Voids
#2	232.00'	5,773 cf	60.0"D x 98.00'L Horizontal Cylinder x 3 Inside #1
		7,270 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
231.50	1,960	0	0
237.50	1,960	11,760	11,760

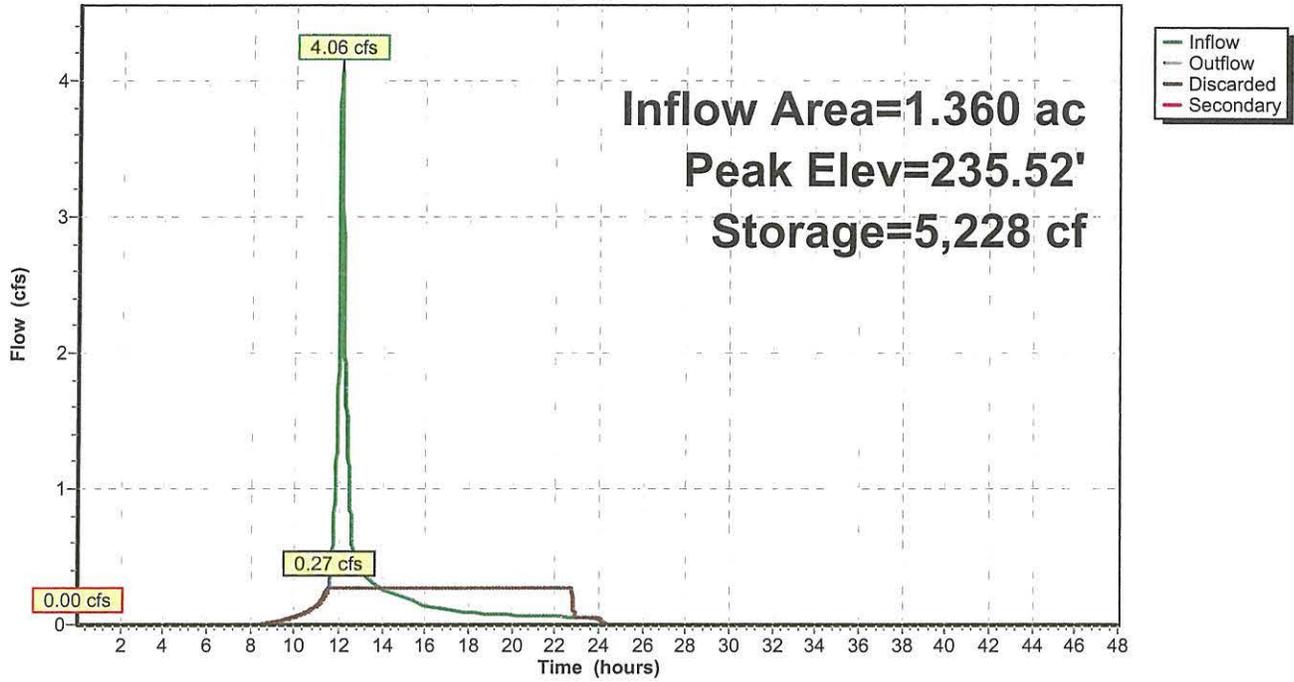
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	237.50'	237.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Discarded OutFlow Max=0.27 cfs @ 11.52 hrs HW=231.56' (Free Discharge)
 ↗1=Exfiltration (Exfiltration Controls 0.27 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=231.50' (Free Discharge)
 ↗2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-2: U.G. INFILTRATION BASIN#2

Hydrograph



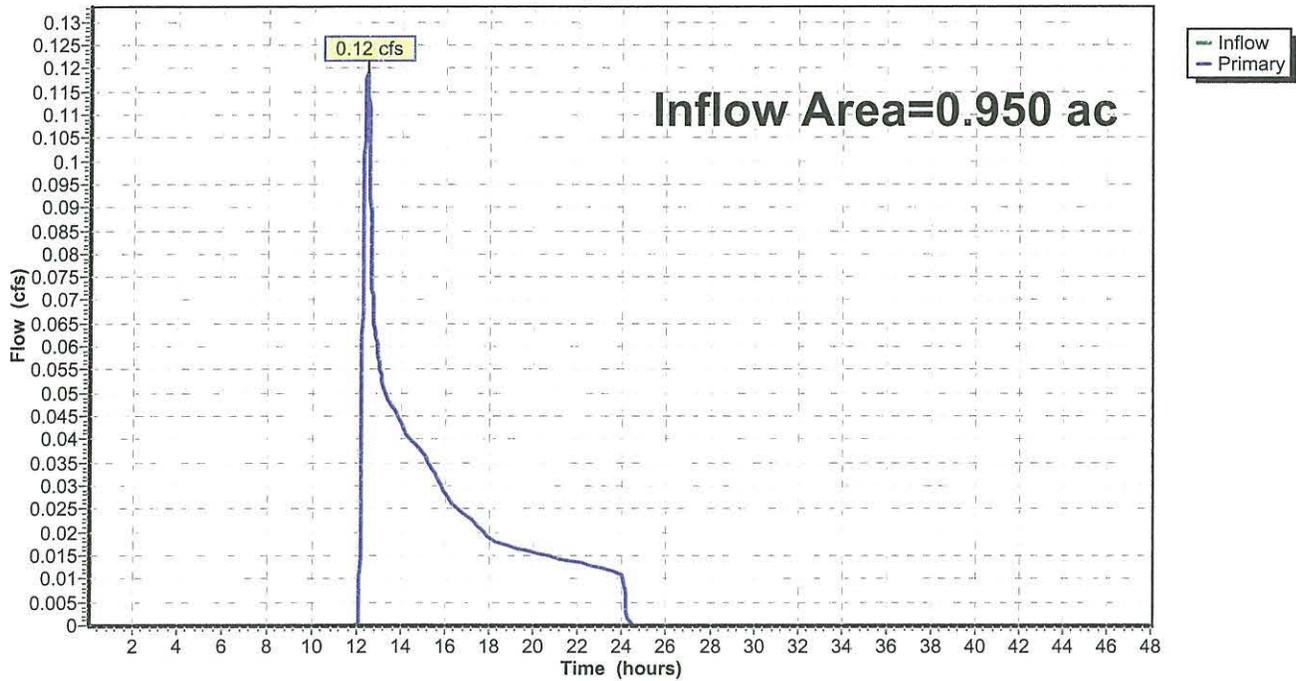
Link A: Analysis Point A

Inflow Area = 0.950 ac, Inflow Depth = 0.34" for 10 YR event
Inflow = 0.12 cfs @ 12.41 hrs, Volume= 0.027 af
Primary = 0.12 cfs @ 12.41 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A

Hydrograph



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Type III 24-hr 25 YR Rainfall=5.50"

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Time span=0.01-48.00 hrs, dt=0.01 hrs, 4800 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: Runoff Area=1.120 ac Runoff Depth=3.83"
Flow Length=106' Tc=8.9 min CN=85 Runoff=4.50 cfs 0.358 af

Subcatchment PDA-1B: Runoff Area=1.360 ac Runoff Depth=3.05"
Tc=5.0 min CN=77 Runoff=5.04 cfs 0.345 af

Subcatchment PDA-1C: Runoff Area=2.930 ac Runoff Depth=0.91"
Flow Length=228' Tc=29.4 min CN=50 Runoff=1.33 cfs 0.222 af

Subcatchment PDA-1D: Runoff Area=0.900 ac Runoff Depth=0.56"
Flow Length=40' Tc=5.7 min CN=44 Runoff=0.25 cfs 0.042 af

Subcatchment PDA-1E: Runoff Area=0.950 ac Runoff Depth=0.56"
Flow Length=107' Tc=9.7 min CN=44 Runoff=0.25 cfs 0.044 af

Pond AG-1: A.G. INFILTRATION #1 Peak Elev=247.39' Storage=196 cf Inflow=0.25 cfs 0.042 af
Discarded=0.14 cfs 0.042 af Secondary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.042 af

Pond EX-SW: EXISTING SWALE Peak Elev=233.00' Storage=2,400 cf Inflow=1.33 cfs 0.222 af
Discarded=0.33 cfs 0.222 af Secondary=0.02 cfs 0.000 af Outflow=0.36 cfs 0.222 af

Pond UG-1: U.G. INFILTRATION BASIN#1 Peak Elev=237.91' Storage=7,280 cf Inflow=4.50 cfs 0.358 af
Discarded=0.27 cfs 0.358 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.358 af

Pond UG-2: U.G. INFILTRATION BASIN#2 Peak Elev=237.14' Storage=7,094 cf Inflow=5.04 cfs 0.345 af
Discarded=0.27 cfs 0.345 af Secondary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.345 af

Link A: Analysis Point A Inflow=0.25 cfs 0.044 af
Primary=0.25 cfs 0.044 af

Total Runoff Area = 7.260 ac Runoff Volume = 1.010 af Average Runoff Depth = 1.67"

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Type III 24-hr 25 YR Rainfall=5.50"

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Subcatchment PDA-1A:

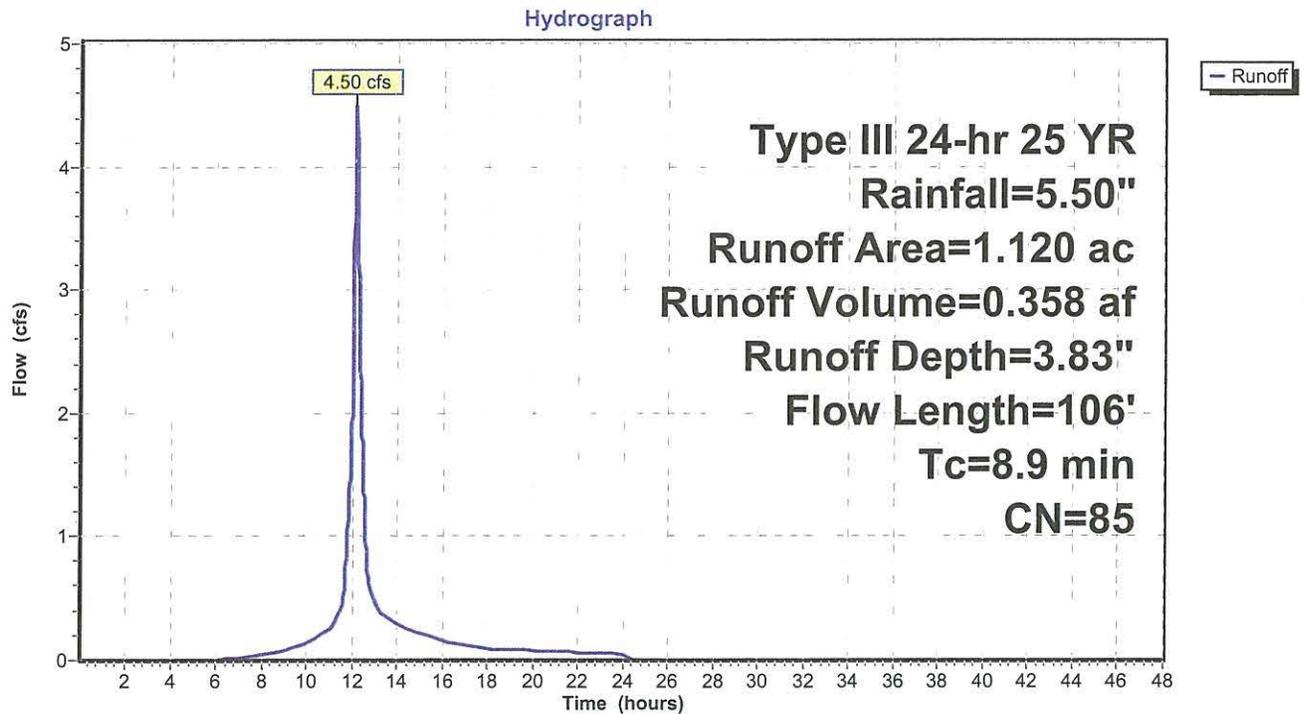
Runoff = 4.50 cfs @ 12.12 hrs, Volume= 0.358 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
0.252	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.858	98	Paved parking & roofs
1.120	85	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	106	0.0283	0.2		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1A:



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Type III 24-hr 25 YR Rainfall=5.50"

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Subcatchment PDA-1B:

Runoff = 5.04 cfs @ 12.07 hrs, Volume= 0.345 af, Depth= 3.05"

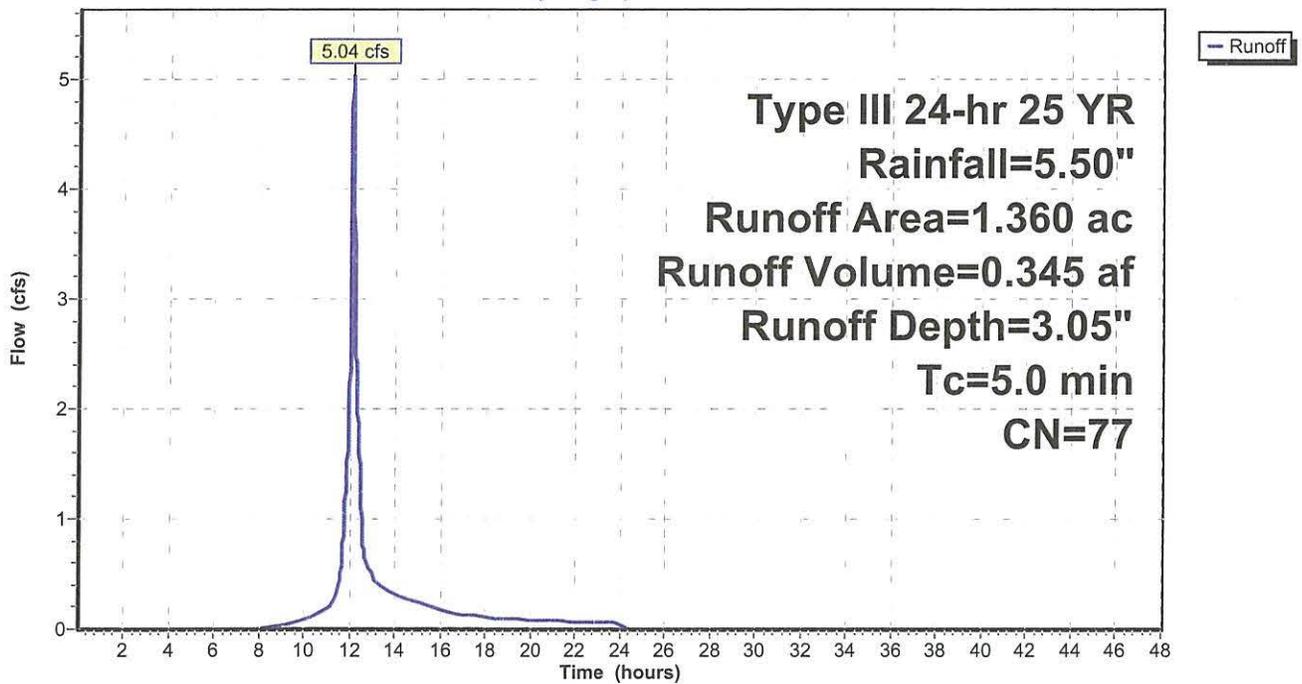
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
0.870	98	Paved parking & roofs
1.360	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, AB

Subcatchment PDA-1B:

Hydrograph



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Type III 24-hr 25 YR Rainfall=5.50"

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Subcatchment PDA-1C:

Runoff = 1.33 cfs @ 12.51 hrs, Volume= 0.222 af, Depth= 0.91"

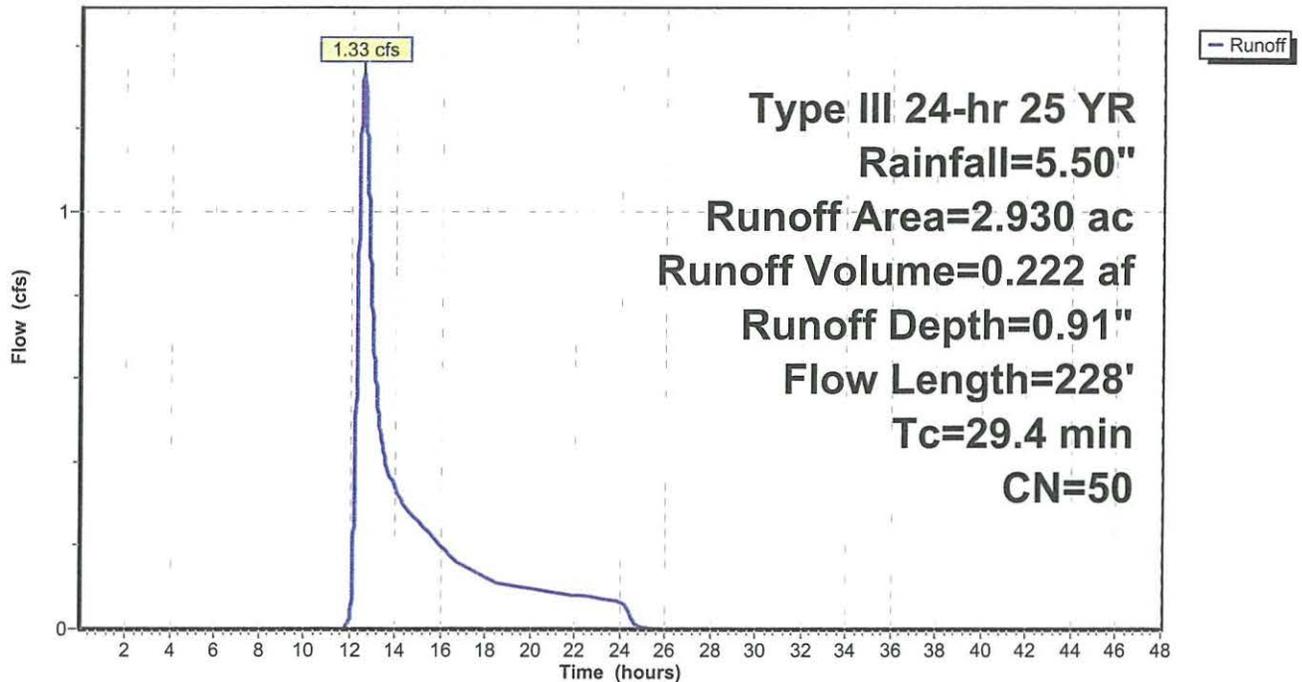
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
0.758	36	Woods, Fair, HSG A
1.230	39	>75% Grass cover, Good, HSG A
0.129	60	Woods, Fair, HSG B
0.062	61	>75% Grass cover, Good, HSG B
0.020	98	Paved parking & roofs
0.721	79	Woods, Fair, HSG D
0.010	80	>75% Grass cover, Good, HSG D
2.930	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	150	0.0333	0.1		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.2	78	0.0100	0.3		Shallow Concentrated Flow, BC Forest w/Heavy Litter Kv= 2.5 fps
29.4	228	Total			

Subcatchment PDA-1C:

Hydrograph



Subcatchment PDA-1D:

Runoff = 0.25 cfs @ 12.15 hrs, Volume= 0.042 af, Depth= 0.56"

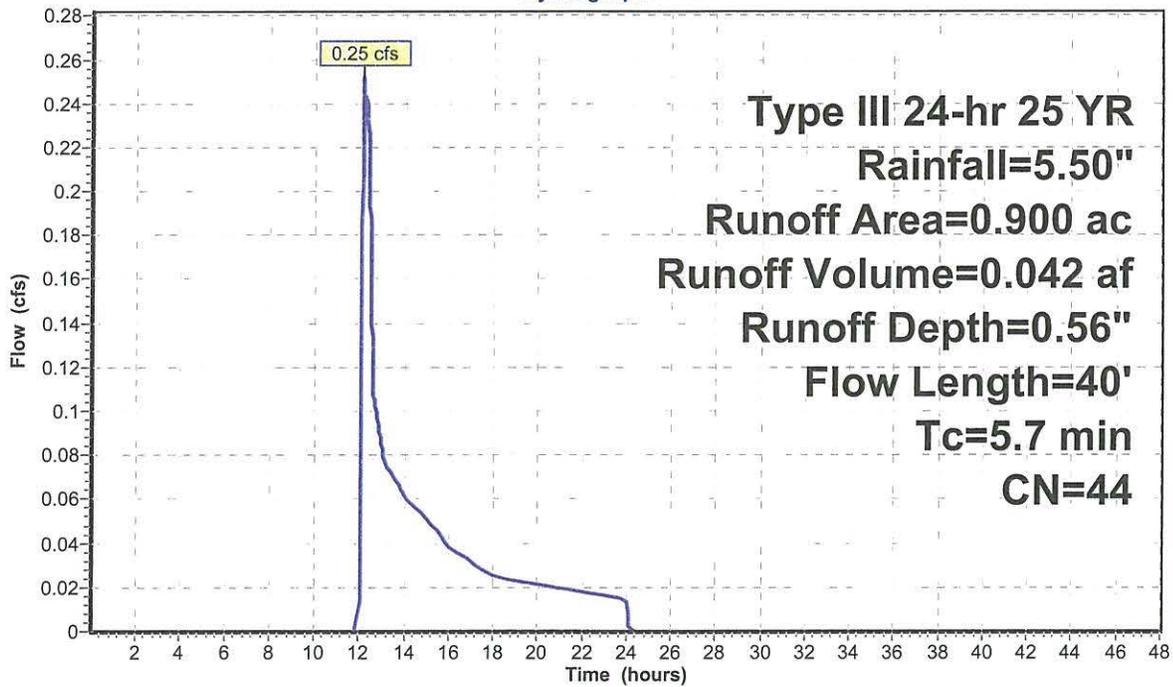
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
0.825	39	>75% Grass cover, Good, HSG A
0.075	98	Paved parking & roofs
0.900	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	40	0.0125	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"

Subcatchment PDA-1D:

Hydrograph



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Type III 24-hr 25 YR Rainfall=5.50"

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Subcatchment PDA-1E:

Runoff = 0.25 cfs @ 12.32 hrs, Volume= 0.044 af, Depth= 0.56"

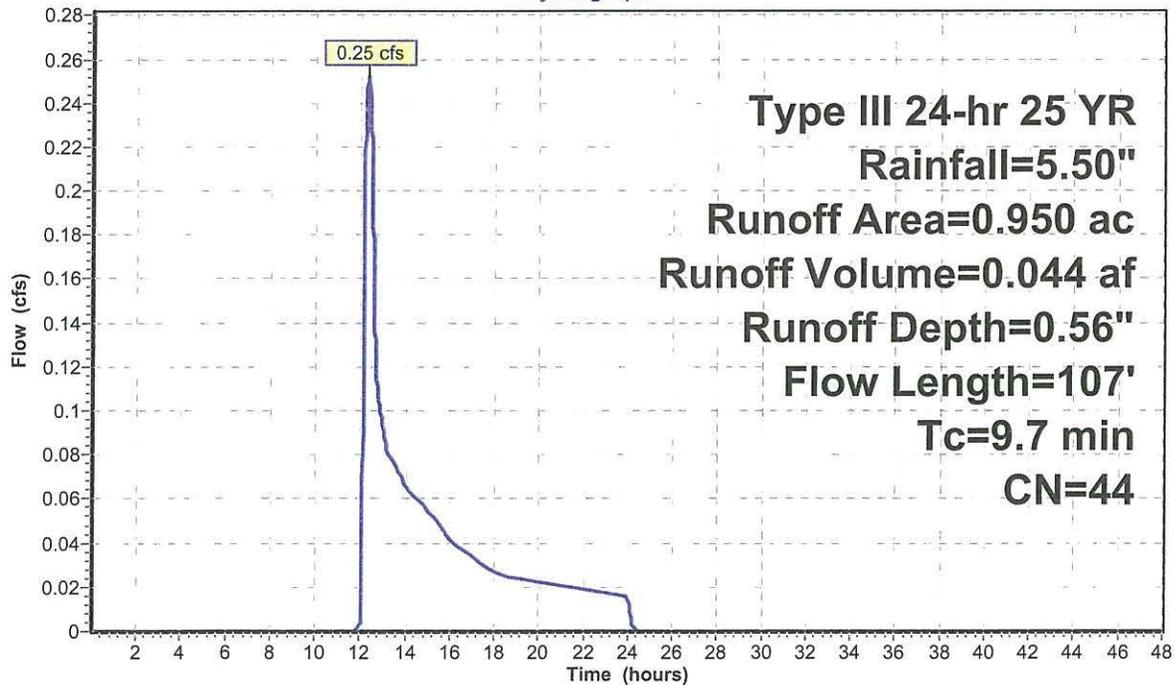
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.50"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.681	36	Woods, Fair, HSG A
0.043	84	50-75% Grass cover, Fair, HSG D
0.094	79	Woods, Fair, HSG D
0.950	44	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	107	0.1680	0.2		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"

Subcatchment PDA-1E:

Hydrograph



Pond AG-1: A.G. INFILTRATION #1

Inflow Area = 0.900 ac, Inflow Depth = 0.56" for 25 YR event
 Inflow = 0.25 cfs @ 12.15 hrs, Volume= 0.042 af
 Outflow = 0.14 cfs @ 12.54 hrs, Volume= 0.042 af, Atten= 45%, Lag= 23.7 min
 Discarded = 0.14 cfs @ 12.54 hrs, Volume= 0.042 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 247.39' @ 12.54 hrs Surf.Area= 997 sf Storage= 196 cf
 Plug-Flow detention time= 11.4 min calculated for 0.042 af (100% of inflow)
 Center-of-Mass det. time= 11.4 min (947.7 - 936.2)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	1,269 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	0	0	0
248.00	2,538	1,269	1,269

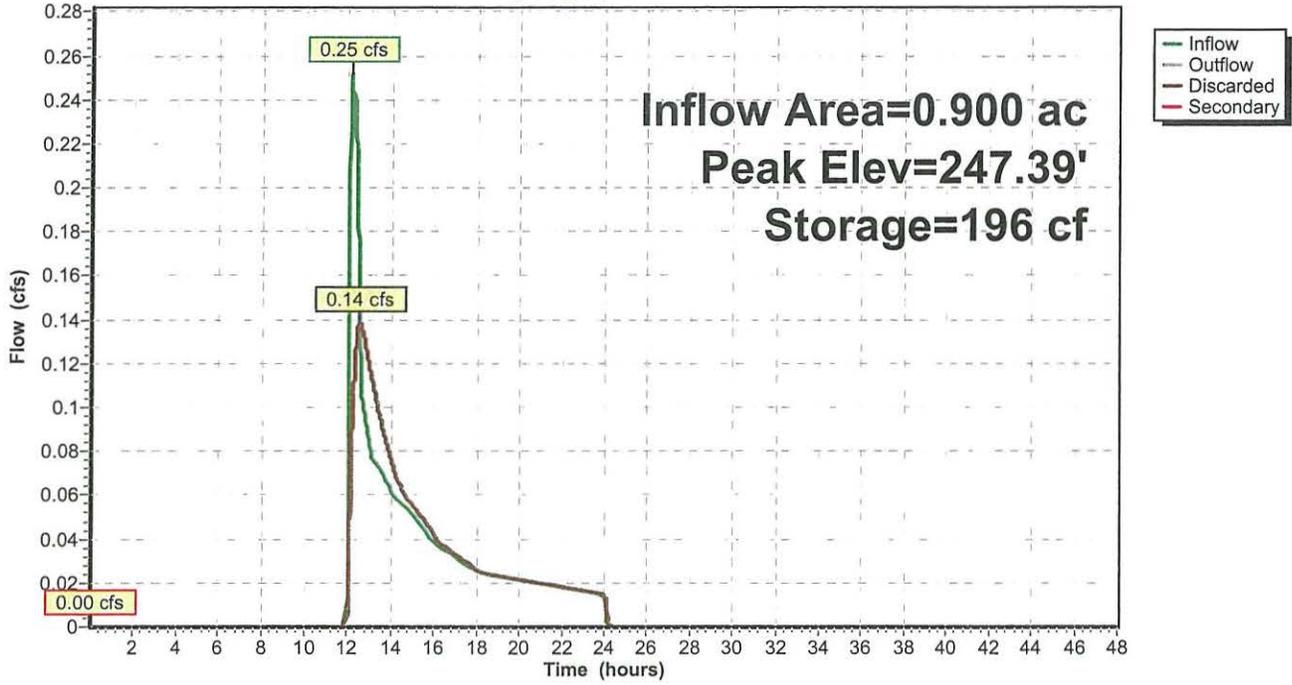
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	248.50'	90.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.14 cfs @ 12.54 hrs HW=247.39' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.14 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=247.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond AG-1: A.G. INFILTRATION #1

Hydrograph



Pond UG-2: U.G. INFILTRATION BASIN#2

Inflow Area = 1.360 ac, Inflow Depth = 3.05" for 25 YR event
 Inflow = 5.04 cfs @ 12.07 hrs, Volume= 0.345 af
 Outflow = 0.27 cfs @ 11.30 hrs, Volume= 0.345 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.27 cfs @ 11.30 hrs, Volume= 0.345 af
 Secondary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 237.14' @ 14.49 hrs Surf.Area= 1,960 sf Storage= 7,094 cf
 Plug-Flow detention time= 253.7 min calculated for 0.345 af (100% of inflow)
 Center-of-Mass det. time= 253.7 min (1,078.1 - 824.5)

Volume	Invert	Avail.Storage	Storage Description
#1	231.50'	1,497 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,760 cf Overall - 5,773 cf Embedded = 5,987 cf x 25.0% Voids
#2	232.00'	5,773 cf	60.0"D x 98.00'L Horizontal Cylinder x 3 Inside #1
		7,270 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
231.50	1,960	0	0
237.50	1,960	11,760	11,760

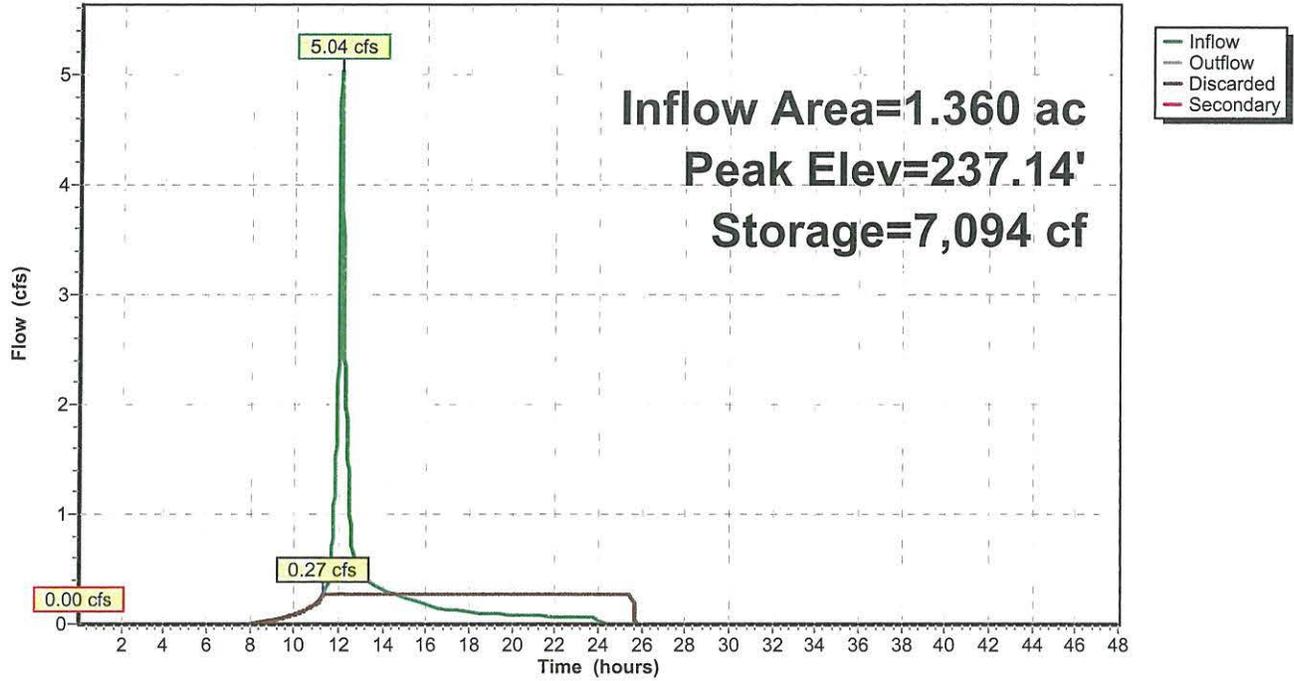
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	6.000 in/hr Exfiltration over Surface area
#2	Secondary	237.50'	237.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Discarded OutFlow Max=0.27 cfs @ 11.30 hrs HW=231.56' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.27 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.01 hrs HW=231.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-2: U.G. INFILTRATION BASIN#2

Hydrograph



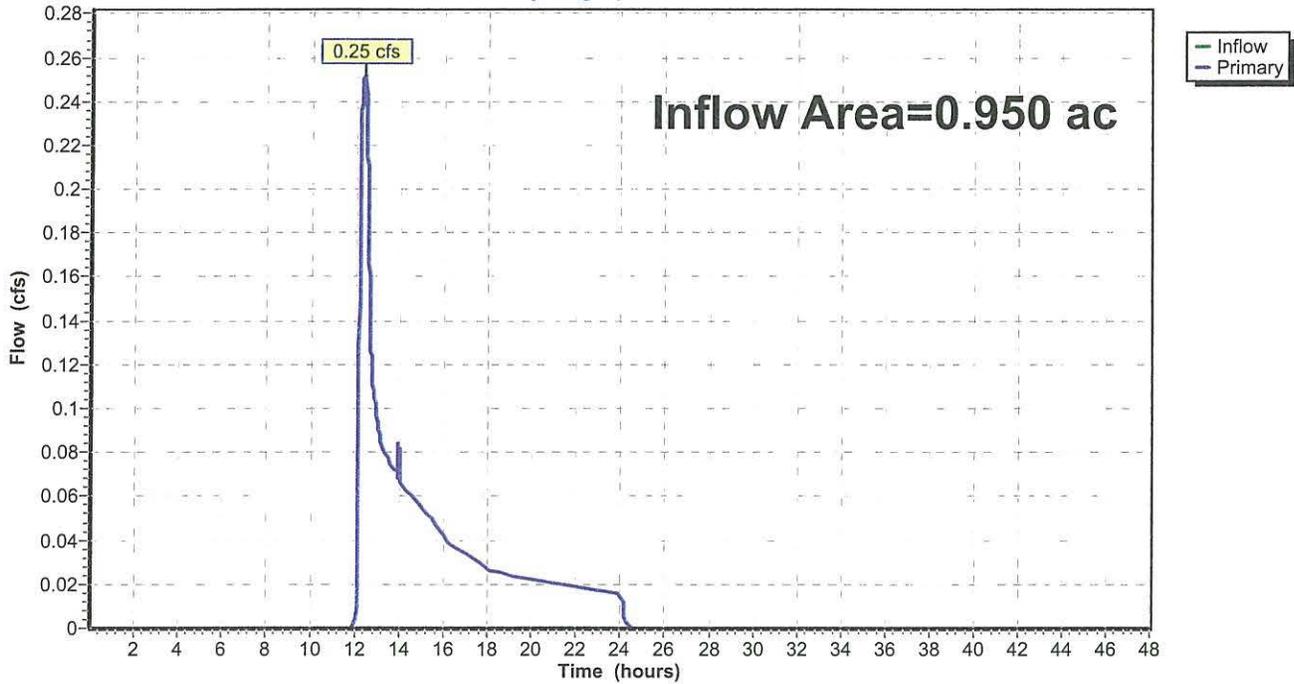
Link A: Analysis Point A

Inflow Area = 0.950 ac, Inflow Depth = 0.56" for 25 YR event
Inflow = 0.25 cfs @ 12.32 hrs, Volume= 0.044 af
Primary = 0.25 cfs @ 12.32 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.01-48.00 hrs, dt= 0.01 hrs

Link A: Analysis Point A

Hydrograph



Appendix D: Proposed Drainage Pipe Analysis

Conduit FlexTable: DOT Storm Drain Computations (11C3816-StormCAD-20110627 .stc)

Active Scenario: 25 yr Storm

Label	Start Node	Stop Node	Upstream Inlet Area (acres)	Upstream Inlet C	Upstream CA (acres)	System CA (acres)	System Flow Time (min)	System Intensity (in/h)	System Rational Flow (ft ³ /s)	Diameter (in)	Capacity (Full Flow) (ft ³ /s)	Velocity (Average) (ft/s)	Invert (Downstream) (ft)	Invert (Upstream) (ft)	Slope (ft/ft)
LINE-1	CB-1	CB-2	0.321	0.801	0.257	0.257	5.000	6.700	1.74	12.0	4.08	4.99	241.45	242.55	0.008
LINE-2	CB-2	CB-3	0.105	0.837	0.345	0.345	5.475	6.605	2.30	12.0	7.83	8.67	238.15	241.35	0.029
LINE-3	CB-3	WQU-1	0.484	0.725	0.696	0.696	5.690	6.562	4.60	12.0	8.02	10.57	236.97	238.05	0.030
LINE-4	WQU-1	UG-1A	(N/A)	(N/A)	0.696	0.696	5.747	6.551	4.60	12.0	6.31	8.76	236.25	236.64	0.019
LINE-5	RL-1	UG-1B	0.209	0.900	0.188	0.188	5.000	6.700	1.27	12.0	5.25	5.50	236.25	236.43	0.013
LINE-6	CB-4	CB-5	0.344	0.789	0.271	0.271	5.000	6.700	1.83	12.0	6.13	6.82	240.46	242.65	0.018
LINE-7	CB-5	CB-6	0.155	0.826	0.359	0.359	5.306	6.639	2.40	12.0	6.44	7.60	237.00	240.36	0.019
LINE-8	CB-6	WQU-2	0.468	0.818	0.782	0.782	5.687	6.563	5.17	15.0	14.00	10.55	236.40	236.72	0.040
LINE-9	WQU-2	UG-2A	(N/A)	(N/A)	0.782	0.782	5.700	6.560	5.17	15.0	7.00	6.24	235.75	236.07	0.010
LINE-10	CB-8	WQU-3	0.123	0.841	0.104	0.104	5.000	6.700	0.70	12.0	4.63	4.25	235.39	235.45	0.010
LINE-11	WQU-3	UG-2B	(N/A)	(N/A)	0.104	0.104	5.024	6.695	0.70	12.0	4.63	4.25	234.97	235.06	0.010
LINE-12	RL-2	CB-7	0.170	0.900	0.153	0.153	5.000	6.700	1.03	12.0	4.63	4.75	236.50	236.74	0.010
LINE-13	CB-7	UG-2C	0.098	0.300	0.182	0.182	5.084	6.683	1.23	12.0	9.33	8.23	235.75	236.40	0.041

FlexTable: Catch Basin Table (11C3816-StormCAD-20110627 .stc)

Active Scenario: 25 yr Storm

Label	Elevation (Rim) (ft)	Inlet Drainage Area (acres)	Inlet C	Local CA (acres)	Local Flow Time (min)	Inlet	Inlet Location	Elevation (Invert in 1) (ft)	Elevation (Invert in 2) (ft)	Elevation (Invert Out) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
CB-1	246.65	0.321	0.801	0.257	5.000	Grate Type C-L Single Grate - Grate Type A	In Sag	(N/A)	(N/A)	242.55	243.34	243.34
CB-2	245.45	0.105	0.837	0.088	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	In Sag	241.45	(N/A)	241.35	242.38	242.28
CB-3	242.15	0.484	0.725	0.351	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	In Sag	238.15	(N/A)	238.05	239.13	239.54
CB-4	246.75	0.344	0.789	0.271	5.000	Grate Type C-L Single Grate - Grate Type A	In Sag	(N/A)	(N/A)	242.65	243.46	243.46
CB-5	248.84	0.155	0.826	0.128	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	On Grade	240.46	(N/A)	240.36	241.75	241.32
CB-6	241.00	0.468	0.818	0.383	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	In Sag	237.00	(N/A)	236.72	238.54	238.08
CB-7	239.50	0.098	0.300	0.029	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	In Sag	236.50	(N/A)	236.40	237.19	237.05
CB-8	238.45	0.123	0.841	0.104	5.000	Combination Type C Single Grate - Grate Type A - Plain Curb	In Sag	(N/A)	(N/A)	235.45	235.93	235.93

FlexTable: Manhole Table (11C3816-StormCAD-20110627 .stc)

Active Scenario: 25 yr Storm

Label	Station (Calculated) (ft)	Elevation (Ground) (ft)	Set Rim to Ground Elevation?	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Bolted Cover?	Diameter (in)	Headloss Method	Structure Type
RL-1	0+14	239.50	True	239.50	236.25	False	36.0	Absolute	Circular Structure
RL-2	0+40	240.00	True	240.00	236.74	False	36.0	Absolute	Circular Structure
WQU-1	0+21	241.00	True	241.00	236.64	False	36.0	Absolute	Circular Structure
WQU-2	0+32	241.20	True	241.20	236.07	False	36.0	Absolute	Circular Structure
WQU-3	0+09	238.90	True	238.90	235.06	False	36.0	Absolute	Circular Structure

FlexTable: Outfall Table (11C3816-StormCAD-20110627 .stc)

Active Scenario: 25 yr Storm

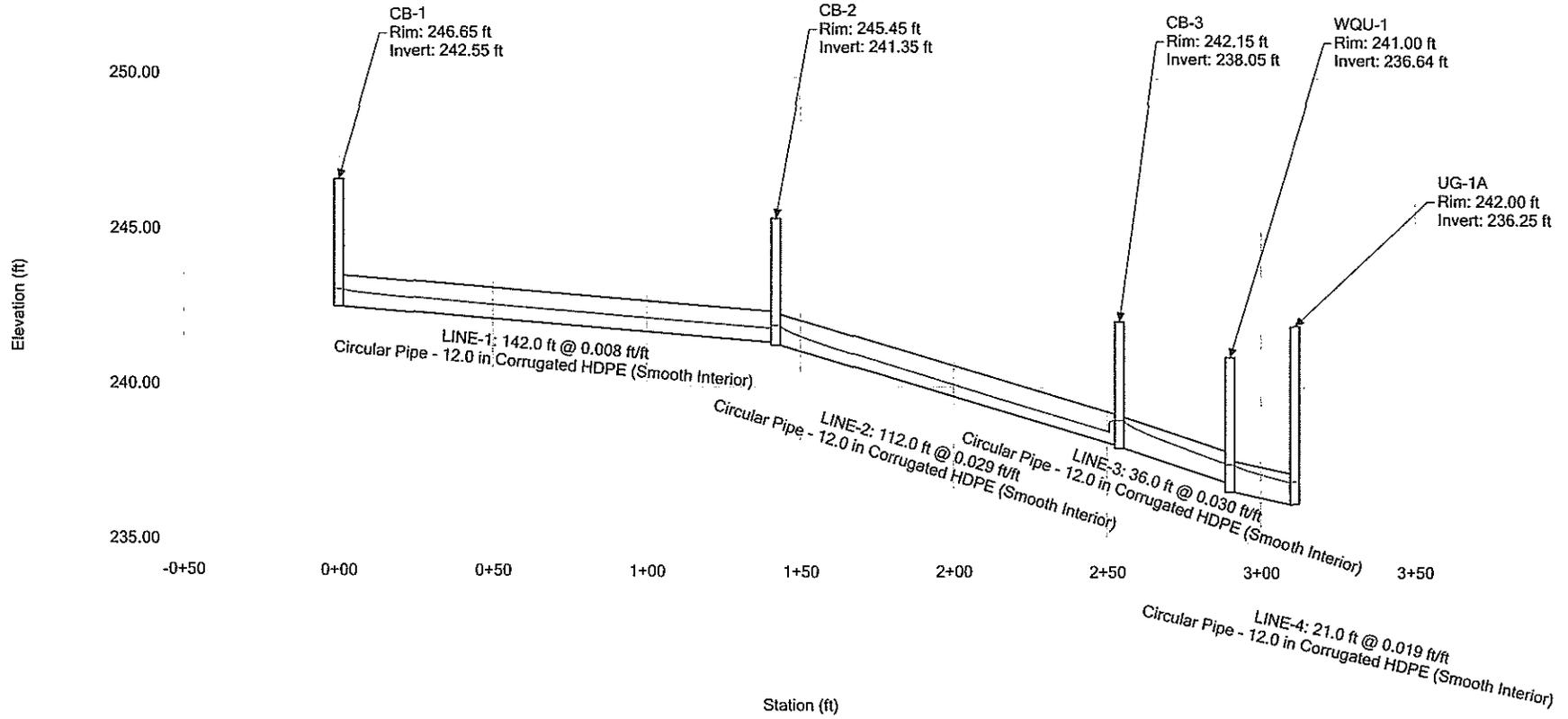
Label	Station (ft)	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Boundary Condition Type	Elevation (Tailwater) (ft)	Flow (Outfall) (ft ³ /s)
UG-1A	0+00	242.00	236.25	User Defined Tailwater	236.04	4.59
UG-1B	0+00	239.50	236.25	User Defined Tailwater	236.04	1.27
UG-2A	0+00	241.70	235.75	User Defined Tailwater	235.47	5.16
UG-2B	0+00	239.20	234.97	User Defined Tailwater	235.47	0.70
UG-2C	0+00	240.00	235.75	User Defined Tailwater	235.47	1.23

FlexTable: Catchment Table (11C3816-StormCAD-20110627 .stc)

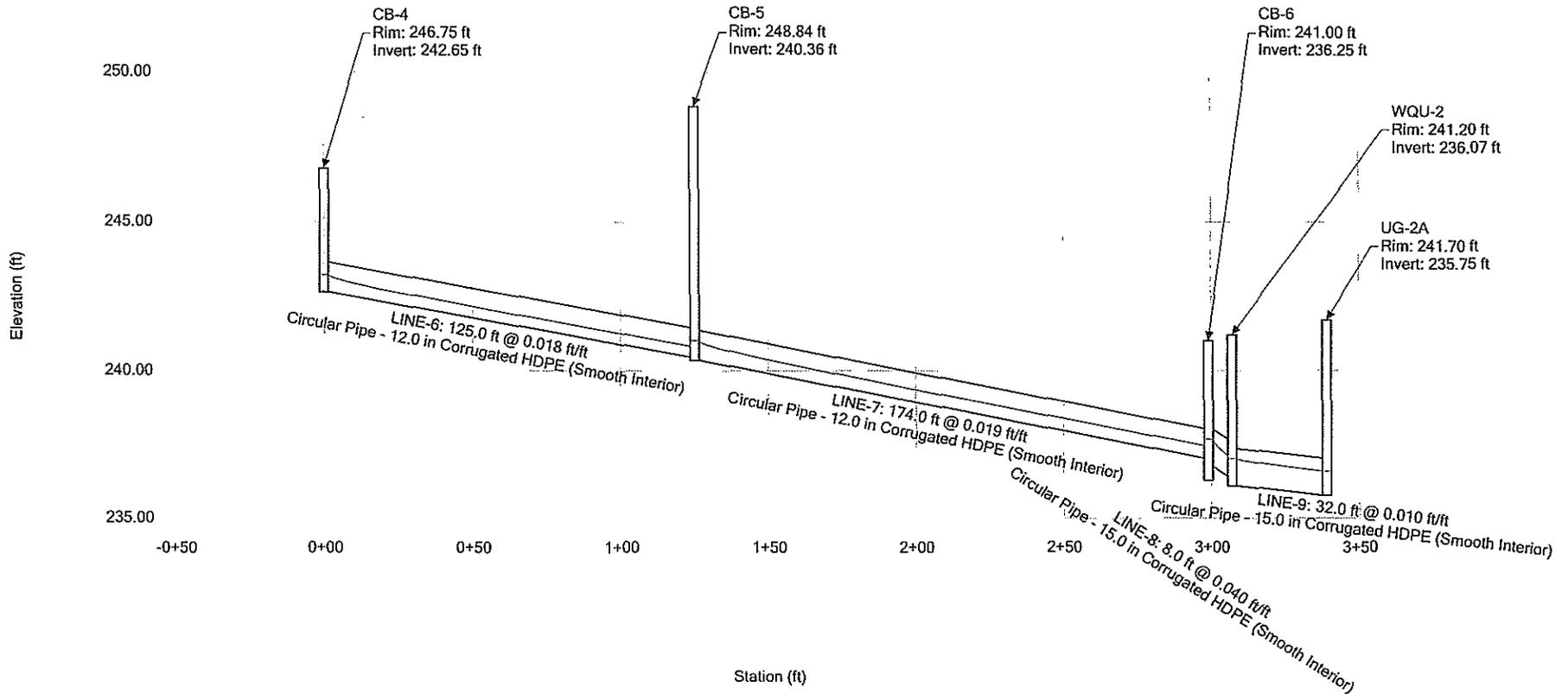
Active Scenario: 25 yr Storm

Label	Outflow Node	Area (acres)	Use Scaled Area?	Scaled Area (acres)	Area (Unified) (acres)	Rational C	Catchment CA (acres)	Time of Concentration (min)	Catchment Intensity (in/h)	Catchment Rational Flow (ft ³ /s)
CM-1	CB-1	0.321	False	0.109	0.321	0.801	0.257	5.000	6.700	1.74
CM-2	CB-2	0.105	False	0.046	0.105	0.837	0.088	5.000	6.700	0.59
CM-3	CB-3	0.484	False	0.015	0.484	0.725	0.351	5.000	6.700	2.37
CM-4	CB-4	0.344	False	0.101	0.344	0.789	0.271	5.000	6.700	1.83
CM-5	CB-5	0.155	False	0.035	0.155	0.826	0.128	5.000	6.700	0.87
CM-6	CB-6	0.468	False	0.051	0.468	0.818	0.383	5.000	6.700	2.59
CM-7	CB-7	0.098	False	0.047	0.098	0.300	0.029	5.000	6.700	0.20
CM-8	CB-8	0.123	False	0.021	0.123	0.841	0.104	5.000	6.700	0.70
CM-9	RL-1	0.209	False	0.022	0.209	0.900	0.188	5.000	6.700	1.27
CM-10	RL-2	0.170	False	0.024	0.170	0.900	0.153	5.000	6.700	1.03

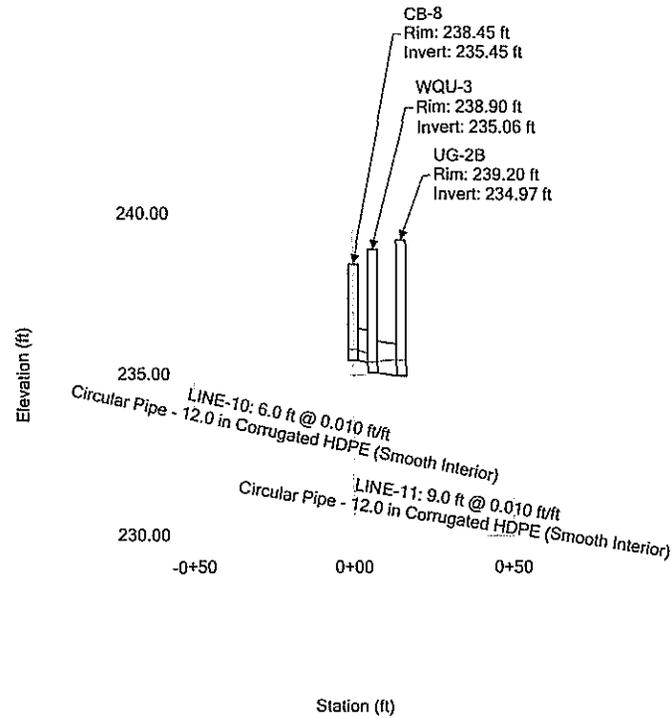
Profile Report
Engineering Profile - CB-1 TO UG-1A (11C3816-StormCAD-20110627 .stc)
Active Scenario: 25 yr Storm



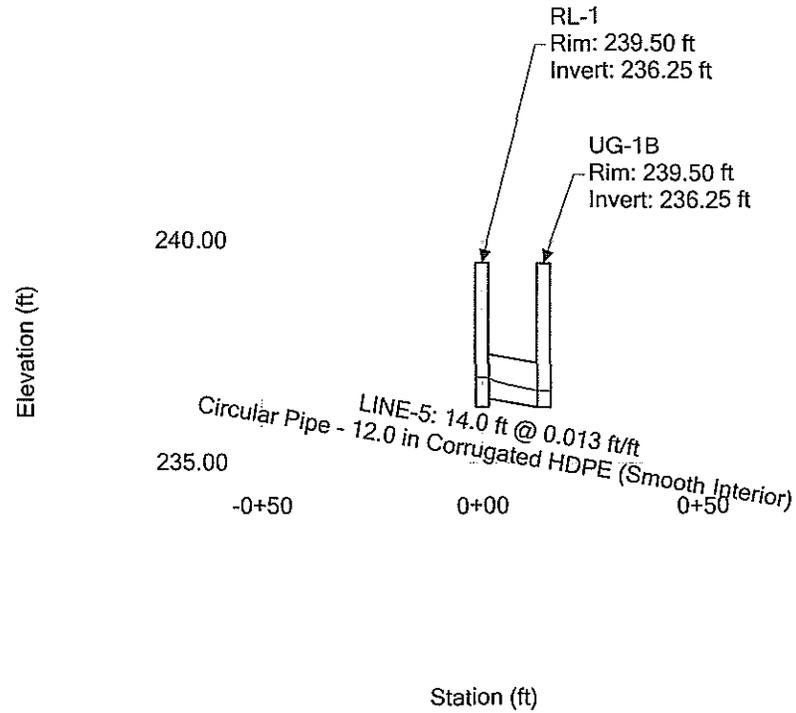
Profile Report
Engineering Profile - CB-4 TO UG-2A (11C3816-StormCAD-20110627 .stc)
Active Scenario: 25 yr Storm



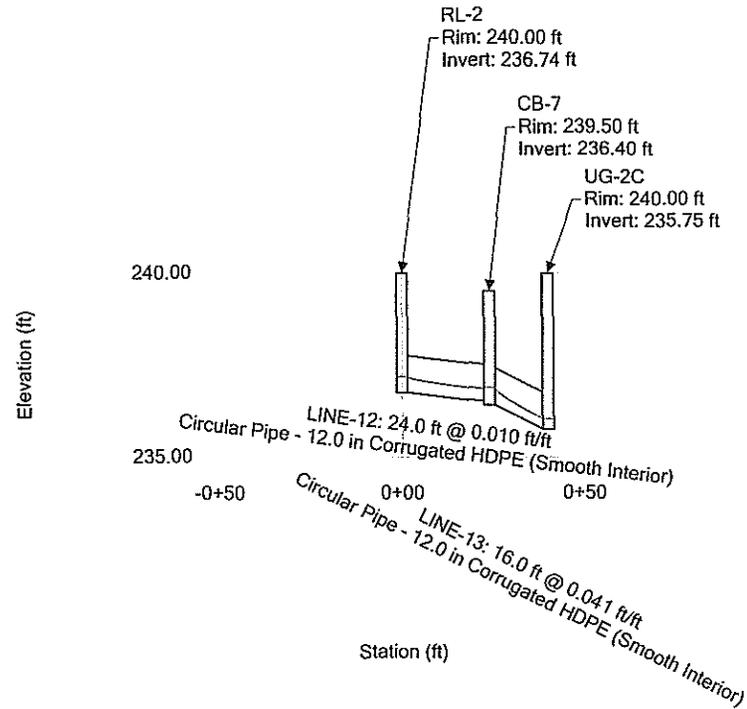
Profile Report
Engineering Profile - CB-8 TO UG-2B (11C3816-StormCAD-20110627 .stc)
Active Scenario: 25 yr Storm



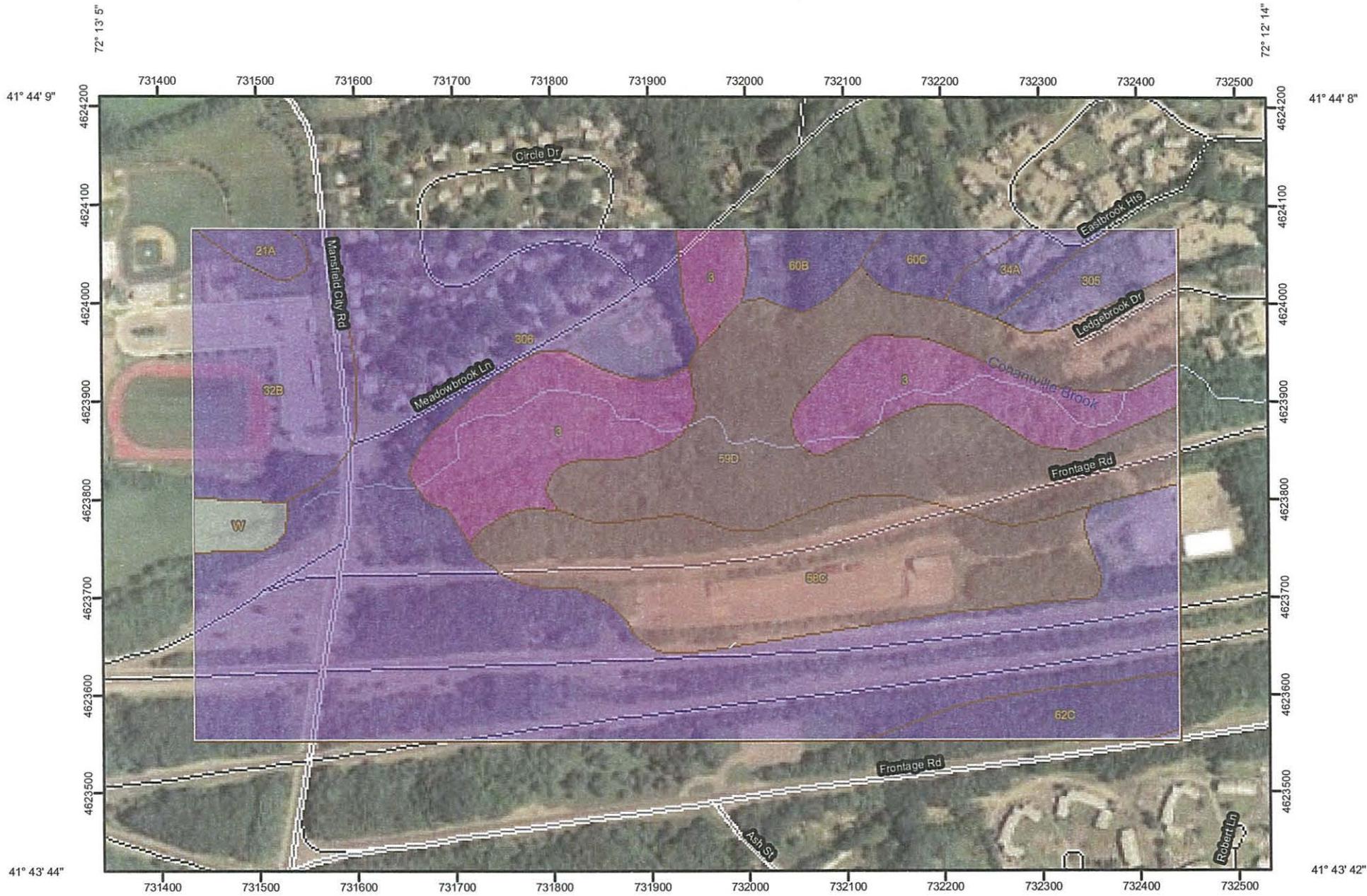
Profile Report
Engineering Profile - RL-1 TO UG-1B (11C3816-StormCAD-20110627 .stc)
Active Scenario: 25 yr Storm



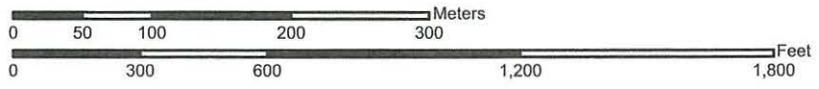
Profile Report
Engineering Profile - RL-2 TO UG-2C (11C3816-StormCAD-20110627 .stc)
Active Scenario: 25 yr Storm



Appendix E: NCRS Soil Map and Classifications



Map Scale: 1:5,650 if printed on A size (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 A

 A/D

 B

 B/D

 C

 C/D

 D

Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:5,650 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 10, Mar 31, 2011

Date(s) aerial images were photographed: 7/17/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, extremely stony	D	15.1	11.6%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	B	0.9	0.7%
32B	Haven and Enfield soils, 3 to 8 percent slopes	B	9.5	7.3%
34A	Merrimac sandy loam, 0 to 3 percent slopes	B	1.8	1.4%
58C	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony	A	16.1	12.4%
59D	Gloucester gravelly sandy loam, 15 to 35 percent slopes, extremely stony	A	21.9	16.8%
60B	Canton and Charlton soils, 3 to 8 percent slopes	B	2.2	1.7%
60C	Canton and Charlton soils, 8 to 15 percent slopes	B	1.8	1.4%
62C	Canton and Charlton soils, 3 to 15 percent slopes, extremely stony	B	3.5	2.7%
305	Udorthents-Pits complex, gravelly	B	2.5	1.9%
306	Udorthents-Urban land complex	B	53.4	41.2%
W	Water		1.1	0.9%
Totals for Area of Interest			129.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

State of Connecticut

58C—Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

Elevation: 0 to 1,200 feet

Mean annual precipitation: 43 to 54 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 140 to 185 days

Map Unit Composition

Gloucester and similar soils: 80 percent

Minor components: 20 percent

Description of Gloucester

Setting

Landform: Hills

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy and gravelly melt-out till derived from granite
and/or schist and/or gneiss

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to
very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability (nonirrigated): 6s

Typical profile

0 to 4 inches: Gravelly sandy loam

4 to 12 inches: Gravelly sandy loam

12 to 25 inches: Very gravelly loamy sand

25 to 35 inches: Very gravelly loamy coarse sand

35 to 60 inches: Very gravelly loamy coarse sand

Minor Components

Hinckley

Percent of map unit: 5 percent

Landform: Eskers, kames, outwash plains, terraces

Down-slope shape: Convex

Across-slope shape: Convex

Canton

Percent of map unit: 5 percent

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Convex

Charlton

Percent of map unit: 3 percent

Landform: Hills

Down-slope shape: Linear

Across-slope shape: Linear

Paxton

Percent of map unit: 3 percent

Landform: Drumlins, hills, till plains

Down-slope shape: Linear

Across-slope shape: Convex

Sutton

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Linear

Leicester

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Down-slope shape: Linear

Across-slope shape: Concave

Data Source Information

Soil Survey Area: State of Connecticut

Survey Area Data: Version 10, Mar 31, 2011

State of Connecticut

59D—Gloucester gravelly sandy loam, 15 to 35 percent slopes, extremely stony

Map Unit Setting

Elevation: 0 to 1,200 feet

Mean annual precipitation: 43 to 54 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 140 to 185 days

Map Unit Composition

Gloucester and similar soils: 80 percent

Minor components: 20 percent

Description of Gloucester

Setting

Landform: Hills

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy and gravelly melt-out till derived from granite
and/or schist and/or gneiss

Properties and qualities

Slope: 15 to 25 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to
very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 4 inches: Gravelly sandy loam

4 to 12 inches: Gravelly sandy loam

12 to 25 inches: Very gravelly loamy sand

25 to 35 inches: Very gravelly loamy coarse sand

35 to 60 inches: Very gravelly loamy coarse sand

Minor Components

Hinckley

Percent of map unit: 5 percent

Landform: Eskers, kames, outwash plains, terraces

Down-slope shape: Convex

Across-slope shape: Convex

Canton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Convex

Charlton

Percent of map unit: 3 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear

Paxton

Percent of map unit: 3 percent
Landform: Drumlins, hills, till plains
Down-slope shape: Linear
Across-slope shape: Convex

Sutton

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Leicester

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 10, Mar 31, 2011

State of Connecticut

3—Ridgebury, Leicester, and Whitman soils, extremely stony

Map Unit Setting

Elevation: 0 to 1,200 feet

Mean annual precipitation: 37 to 56 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 140 to 185 days

Map Unit Composition

Ridgebury and similar soils: 40 percent

Leicester and similar soils: 35 percent

Whitman and similar soils: 15 percent

Minor components: 10 percent

Description of Ridgebury

Setting

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Coarse-loamy lodgment till derived from granite and/or schist and/or gneiss

Properties and qualities

Slope: 0 to 5 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: 20 to 30 inches to dense material

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Very low (about 2.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 5 inches: Fine sandy loam

5 to 14 inches: Fine sandy loam

14 to 21 inches: Fine sandy loam

21 to 60 inches: Sandy loam

Description of Leicester

Setting

Landform: Depressions, drainageways

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Properties and qualities

Slope: 0 to 5 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 1 inches: Moderately decomposed plant material
1 to 7 inches: Fine sandy loam
7 to 10 inches: Fine sandy loam
10 to 18 inches: Fine sandy loam
18 to 24 inches: Fine sandy loam
24 to 43 inches: Gravelly fine sandy loam
43 to 65 inches: Gravelly fine sandy loam

Description of Whitman

Setting

Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from granite and/or schist and/or gneiss

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 12 to 20 inches to dense material
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 1 inches: Slightly decomposed plant material
1 to 9 inches: Fine sandy loam
9 to 16 inches: Fine sandy loam
16 to 22 inches: Fine sandy loam
22 to 60 inches: Fine sandy loam

Minor Components

Sutton

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Linear

Woodbridge

Percent of map unit: 2 percent

Landform: Drumlins, hills

Down-slope shape: Concave

Across-slope shape: Linear

Unnamed, frequently flooded

Percent of map unit: 2 percent

Landform: Drainageways

Unnamed, steep slopes

Percent of map unit: 2 percent

Unnamed, silt loam surface

Percent of map unit: 1 percent

Unnamed, nonstony

Percent of map unit: 1 percent

Data Source Information

Soil Survey Area: State of Connecticut

Survey Area Data: Version 10, Mar 31, 2011

State of Connecticut

306—Udorthents-Urban land complex

Map Unit Setting

Elevation: 0 to 2,000 feet

Mean annual precipitation: 43 to 56 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 120 to 185 days

Map Unit Composition

Udorthents and similar soils: 50 percent

Urban land: 35 percent

Minor components: 15 percent

Description of Udorthents

Setting

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Drift

Properties and qualities

Slope: 0 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low
to high (0.00 to 1.98 in/hr)

Depth to water table: About 54 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 6.8 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 5 inches: Loam

5 to 21 inches: Gravelly loam

21 to 80 inches: Very gravelly sandy loam

Description of Urban Land

Interpretive groups

Land capability (nonirrigated): 8

Typical profile

0 to 6 inches: Material

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent

Udorthents, wet substratum

Percent of map unit: 5 percent

Down-slope shape: Convex

Across-slope shape: Linear

Rock outcrop

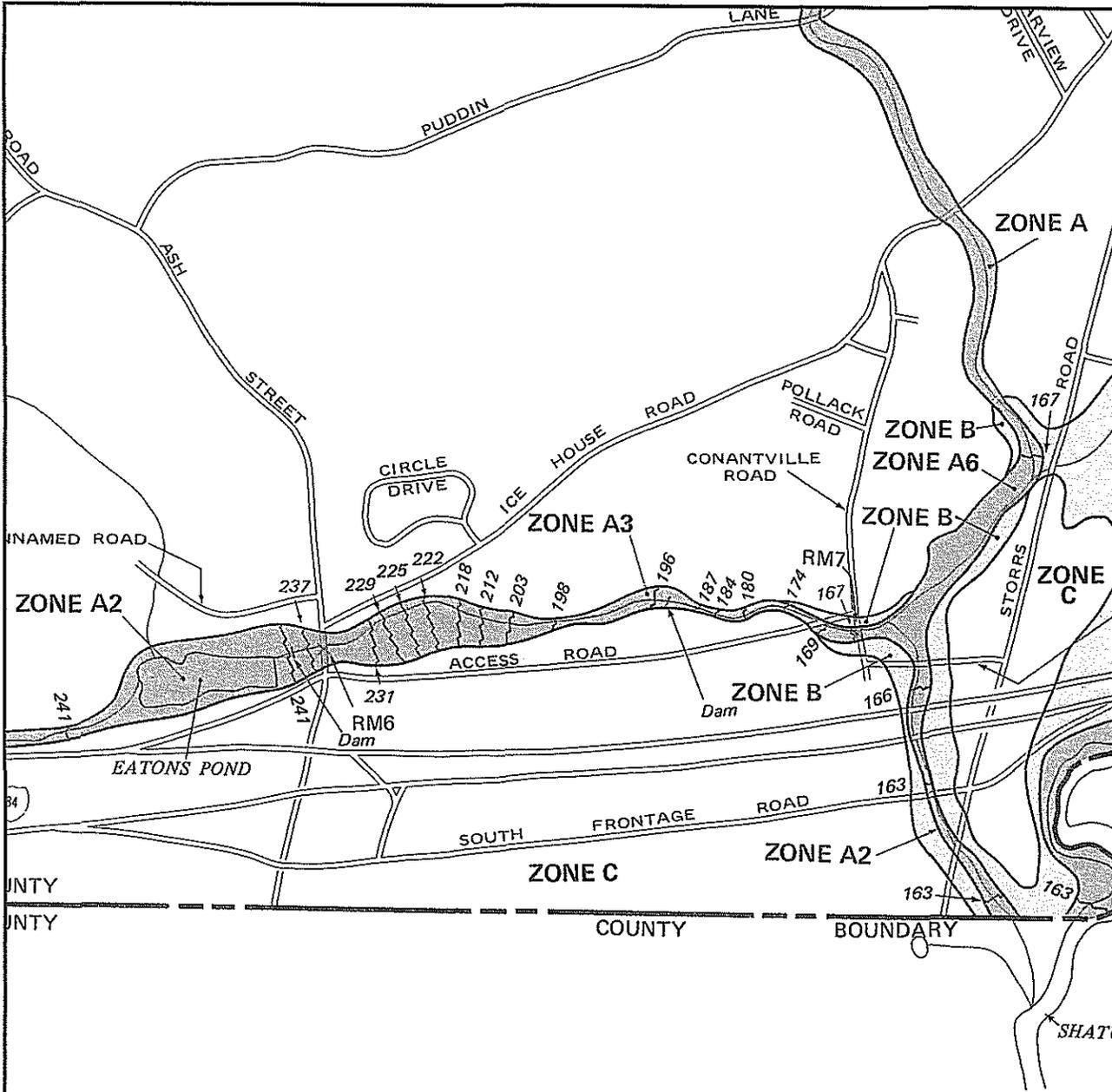
Percent of map unit: 2 percent

Data Source Information

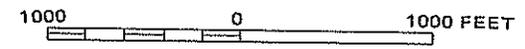
Soil Survey Area: State of Connecticut

Survey Area Data: Version 10, Mar 31, 2011

Appendix F: Flood Insurance Rate Map #090128 0020 C



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

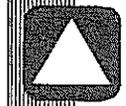
FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
MANSFIELD,
CONNECTICUT
TOLLAND COUNTY

PANEL 20 OF 20

COMMUNITY-PANEL NUMBER
090128 0020 C

EFFECTIVE DATE:
JANUARY 2, 1981



federal emergency management agency
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

KEY TO MAP

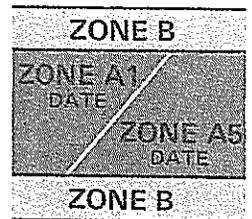
- 500-Year Flood Boundary
- 100-Year Flood Boundary
- Zone Designations* With Date of Identification
e.g., 12/2/74
- 100-Year Flood Boundary
- 500-Year Flood Boundary

- Base Flood Elevation Line With Elevation In Feet** 513

- Base Flood Elevation in Feet Where Uniform Within Zone** (EL 987)

- Elevation Reference Mark RM7_x

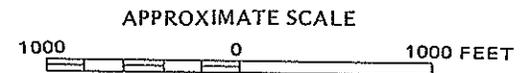
- River Mile • M1.5



**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

TOWN OF
MANSFIELD,
CONNECTICUT
TOLLAND COUNTY

PANEL 20 OF 20

COMMUNITY-PANEL NUMBER
090128 0020 C

EFFECTIVE DATE:
JANUARY 2, 1981



federal emergency management agency
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Appendix G: Operations and Maintenance Plan

**Appendix G:
Operations and Maintenance Plan**

**Proposed Office Building
Mansfield, Connecticut**

Prepared For Submission To:
Town of Mansfield

June 27, 2011

BL Project Number: 11C3816

Prepared For:
United Services, Inc.
P.O. Box 839
Dayville, CT 06241

Prepared By:
BL Companies

**355 Research Parkway
Meriden, Connecticut**
(203) 630-1406 Fax (203) 630-2615

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General Overview

The project, located on North Frontage Road in Mansfield, is a new 28,748 square foot office building and associated parking area. The site demolition that will occur includes removal of existing trees, old stone foundations, and minor curb cuts and pavement removal in North Frontage Road for proposed utility connections.

No work is proposed within the adjacent wetland areas and no new stormwater discharge locations are proposed. The disturbed site area will be treated on-site and infiltrate into the ground via underground perforated detention pipes.

The site is located in FEMA Flood Hazard Area C and A3 as shown on the FIRM Map #090128-0020 D, Panel 20 of 20.

The following Operations and Maintenance Plan was prepared specifically for this proposed office building in Mansfield, Connecticut. The Plan was developed to satisfy the Connecticut Department of Environmental Protection's requirements for the *Stormwater Management Plan for the General Permit for the Discharge of Stormwater Associated with Commercial Activity*.

Purpose & Goals

The purpose of this Manual is to ensure that the office building is operated in accordance with all approvals and permits. The primary goal is to inform all the property managers about how the system operates and what maintenance items are necessary to protect downstream wetlands and watercourses. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping to verify permit compliance.

Responsible Parties

United Services, Inc. will be responsible for implementing the Plan on the entire property. The party will retain a management company to oversee the maintenance of the entire office building.

Some utilities located on the site will be owned and maintained by the various utility companies in accordance with their standards. United Services, Inc. may maintain the service connections.

List of Permits & Special Conditions

The project will receive a number of permits, which may contain special conditions that require compliance by the owners, tenants, and maintenance contractors. These permits may include the following:

- Connecticut Department of Transportation Encroachment Permit
- Connecticut General Permit for the Discharge of Stormwater Associated with Construction Activity

Maintenance Logs and Checklists

The tenants and United Services Inc. within the office building will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of inspection reports and maintenance records shall be kept on site in the particular tenants manager's offices once they are established.

Forms

The following forms will be developed for annual maintenance. Copies of the forms will be kept on-site as part of the Storm Water Management Plan.

- Annual Checklist
- Quarterly Checklist
- Monthly Checklist

Employee Training

All tenants that occupy this office building will have an employee-training program, with annual up-dates, to ensure that the employees charged with maintaining the office building do so in accordance with the approved permit conditions. All tenants that have maintenance duties will be adequately informed of their responsibilities. All sub-contractors (Vactor, landscaping, snowplowing, etc.) will be informed of special requirements and responsibilities.

Spill Control

United Services Inc. will have a spill control program. That program will be updated annually and incorporated into the employee-training program.

Storm Water Management

System Components

The storm water management system has several components that are shown on the Grading and Drainage Plan (GD-1), and they perform various functions in treating storm water runoff:

Catch Basins are inlets, which trap road sand and floatable debris prior to draining through the storm sewer system. The catch basins (CBs) are equipped with 2' deep sumps, and hoods over the outlet pipes.

Catch Basins

United Services Inc. is responsible for cleaning the catch basins on the property. A Connecticut Licensed hauler shall clean the sumps, and dispose of removed sand legally. The road sand may be reused for winter sanding, but may not be stored on-site. As part of the hauling contract, the hauler shall notify United Services Inc. in writing where the material is being disposed.

Each catch basin shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment.

During the inspection of each of the catch basin sumps, the hoods (where provided) on each of the outlet pipes shall also be observed. In the event that a hood is damaged or off the hanger, it shall be reset or repaired.

Underground Infiltration System and Hydrodynamic Separators

The underground infiltration system pipes shall be inspected every six months in the months of April and October. Each of the inspection manholes provided shall be opened and visually checked from the surface. Observation of grit inside of the detention pipe shall be noted and any deposits found to be 2 inches or more, as measured from the invert of pipe, shall be cleaned and removed. The underground pipes qualify as a Confined Space under OSHA regulations, and any maintenance involving entry into the pipes should comply with OSHA Confined Space Entry Regulations.

After the first year of operation, each hydrodynamic separator shall be inspected as a minimum, three times yearly with one inspection occurring in the month of April in the same manner as described above for the first season of operation. Any accumulations found to be occurring within one foot of the water surface shall be removed from the separator and properly disposed of off-site. Also, any floating material discovered during inspections shall be removed from the structure.

A detailed maintenance logbook shall be kept for each structure. Information is to include, but not be limited to, the date of inspection, record of grit depth, condition of baffles, observation of any floatables, and date of cleaning performed.

Swales/Aboveground Infiltration System

Grassed drainage swales/infiltration areas shall be checked for and cleaned of trash, excessive sediment, other debris and erosion on a monthly basis. Maintain the swales/infiltration areas as meadow during growing season. A detailed maintenance logbook shall be kept with information including, but not be limited to, the date of inspection, record of grit depth, condition of vegetation, observation of any floatables, and date of cleaning performed.

Site Maintenance

Parking Lots

Parking lots and sidewalks shall be swept weekly by the management company retained by United Services Inc. to clean trash and other debris. The management company retained by United Services Inc. will sweep parking lots on its property in the spring to remove winter accumulations of road sand.

Landscaping

The management company retained by United Services Inc., or tenants, will maintain landscaped areas. Normally the landscaping maintenance will consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

Soil tests, possibly by the Connecticut Cooperative Extension Service, will be performed prior to fertilization. Trees will be fertilized no more than once in the Fall season with an organic fertilizer. Shrubs will be fertilized with an organic slow-release fertilizer each spring. Lawns shall receive a minimum of one application of fertilizer in the Fall. Liming of lawn areas to control pH will be done in the spring if testing indicates that it is necessary. The low-maintenance slopes will not be fertilized following initial planting and stabilization.

The lawn areas, once established, will be maintained at a typical height of 3 ½". This will allow the grass to be maintained with minimal impact from weeds and/or pests. The low-maintenance areas will be maintained as a meadow or allowed to revert back to natural conditions.

Pesticides will only be used as a control method when a problem has been clearly identified and other natural control methods are not successful. All pesticide applications shall be by licensed applicators, where necessary.

Topsoil, brush, leaves, clippings, woodchips, mulch, equipment, and other material shall be stored off site.

Trash Collection

All trash will be contained in litter/recyclable receptacles or dumpster enclosures. All dumpsters will be equipped with covers. All trash will be collected on a regular basis and disposed of legally off-site.

Maintaining Native Vegetation

Existing vegetation around the perimeter of the development will be maintained in its native condition. No clearing, grading, stockpiling, storage, or development will occur in these areas.

Outdoor Storage

There will be no outdoor storage of hazardous chemicals, fertilizer, pesticides, or herbicides anywhere around the office building.

Clean wooden pallets and baled cardboard may be stored outside. These items will be removed from the site on a regular schedule.

All tenants within the office building shall conform to all the storage requirements listed above.

Snow Removal & Storage

Snow shall be shoveled and plowed from sidewalk and parking areas as soon as practical during and after winter storms.

Utilities

Sanitary Sewer System

On-Site Collection Sewer: The management company retained by United Services Inc. will annually inspect the manholes within the on-site sewer system on the property, and check for debris and blockage. Any low-flow lines with accumulations will be cleaned with water-jetting.

Water System

The on-site service will be maintained by United Services Inc. United Services Inc. will be responsible for maintaining the domestic service line to the building, fire hydrant laterals, and hydrant on-site.

Electric\Telephone System

The electric system will be owned and maintained up to the transformers by Northeast Utilities Service Company. United Services Inc. will maintain the secondary lines from the transformers to the buildings. The telephone system will be owned and maintained by AT&T up to the building.

Site Lighting

United Services Inc. is responsible for maintaining the parking lot and building-mounted lights on the property.

Appendix H: Water Quality Volume Calculations

PROJECT United Services - Mansfield, CT
 DATE 6/23/2011
 SUBJECT Water Quality Flow Calculation

PREPARED BY B.S.S.
 CHECKED BY S.C.N.

WATER QUALITY UNIT #1
CATCHMENT AREAS

Inlet ID	Impervious Area	Pervious Area
CB-1	0.268	0.053
CB-2	0.094	0.011
CB-3	0.343	0.141
Total	0.705	0.205

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) = 0.910 acres
 Area (A) = 0.00142 square miles
 % Impervious Cover (I) = 77.5
 Volumetric Runoff Coefficient (R) = 0.747
WQV = 0.057 ac-ft

RUNOFF CURVE NUMBER (CN)

Design Precipitation (P) = 1 inch for water quality storm
 Runoff Depth (Q) = 0.747 inches
 CN = 98

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc = 10 min (StormCAD = 5.3 min)
 Tc = 0.17 hours

WATER QUALITY FLOW (WQF) CALCULATION

Initial Abstraction (I_a) = 0.041 Table 4-1 (CTDOT Drainage Manual)
 I_a/P Calculation = 0.041
 Unit Peak Discharge (q_u) = 660 Exhibit 4-III (CTDOT Drainage Manual)
WQF = 0.70 cfs

PROJECT United Services - Mansfield, CT
 DATE 6/23/2011
 SUBJECT Water Quality Flow Calculation

PREPARED BY B.S.S.
 CHECKED BY S.C.N.

WATER QUALITY UNIT #2
CATCHMENT AREAS

Inlet ID	Impervious Area	Pervious Area
CB-4	0.300	0.044
CB-5	0.136	0.019
CB-6	0.404	0.064
Total	0.840	0.127

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) = 0.967 acres
 Area (A) = 0.00151 square miles
 % Impervious Cover (I) = 86.9
 Volumetric Runoff Coefficient (R) = 0.832
WQV = 0.067 ac-ft

RUNOFF CURVE NUMBER (CN)

Design Precipitation (P) = 1 inch for water quality storm
 Runoff Depth (Q) = 0.832 inches
 CN = 98

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc = 10 min (StormCAD = 5.3 min)
 Tc = 0.17 hours

WATER QUALITY FLOW (WQF) CALCULATION

Initial Abstraction (I_a) = 0.041 Table 4-1 (CTDOT Drainage Manual)
 I_a/P Calculation = 0.041
 Unit Peak Discharge (q_u) = 660 Exhibit 4-III (CTDOT Drainage Manual)
WQF = 0.83 cfs

PROJECT United Services - Mansfield, CT
 DATE 6/23/2011
 SUBJECT Water Quality Flow Calculation

PREPARED BY B.S.S.
 CHECKED BY S.C.N.

WATER QUALITY UNIT #3
CATCHMENT AREAS

Inlet ID	Impervious Area	Pervious Area
CB-8	0.111	0.012
Total	0.111	0.012

WATER QUALITY VOLUME (WQV) CALCULATION

Area (A) = 0.123 acres
 Area (A) = 0.00019 square miles
 % Impervious Cover (I) = 90.2
 Volumetric Runoff Coefficient (R) = 0.862
WQV = 0.009 ac-ft

RUNOFF CURVE NUMBER (CN)

Design Precipitation (P) = 1 inch for water quality storm
 Runoff Depth (Q) = 0.862 inches
 CN = 99

TIME OF CONCENTRATION (Tc), 10 minute minimum

Tc = 10 min (StormCAD = 5.3 min)
 Tc = 0.17 hours

WATER QUALITY FLOW (WQF) CALCULATION

Initial Abstraction (I_a) = 0.041 Table 4-1 (CTDOT Drainage Manual)
 I_a/P Calculation = 0.041
 Unit Peak Discharge (q_u) = 660 Exhibit 4-III (CTDOT Drainage Manual)
WQF = 0.11 cfs

Appendix I: Wetlands Delineation Letter



HIGHLAND SOILS LLC

June 3, 2011

Ed Pelletier
Datum Engineering
132 Conantville Road
Mansfield Center, CT 06250

**RE: KEVIN TUBRIDY
NORTH FRONTAGE ROAD
MANSFIELD, CT**

Dear Ed:

The inland wetland boundaries on the above-referenced property were field delineated on May 2, 2001. The wetlands were field delineated in accordance with the standards of the National Cooperative Soil Survey and the definition of wetlands as found in the Connecticut General Statutes, Chapter 440, Section 22A-38. I have reviewed the plans prepared by your office and have found the representation of the field delineated wetlands to be substantially correct.

If you have any questions, or require additional information, please call me at (860) 742-5868.

Very truly yours,

John P. Ianni, M.S.
Professional Soil Scientist
CPESC

c:\documents and settings\highland soils\let2011\certtubridy.doc



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 11, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: 214 Wormwood Hill Road (File W1558)
K. Mehrens
Description of Work: Request for Modification
Map Date: 6/20/2016

PROJECT OVERVIEW AND ANALYSIS

On November 2, 2015, the Agency approved an Inland Wetlands License for the installation of a 12 by 16 foot shed on a gravel base, approximately 38 feet from the edge of wetlands. The applicant is currently requesting a modification to this license and proposes to construct a 24 by 32 foot 2-car garage on a concrete slab, approximately 42 feet from the edge of wetlands. As part of the project there will also be a covered porch leading from the garage to the house. Approximately 6 cubic yards of native soil will be excavated and approximately 14 cubic yards of gravel will be used 4 inches below the concrete floor.

Pursuant to section 11.8 of the Regulations:

If the Agency grants a permit, the applicant may submit to the Agency a proposed modification of the application or of any permit terms, conditions, limitations or modifications. After evaluating the potential for impact on wetlands or watercourses and the approval standards of Section 10.2, the Agency shall determine whether the proposed modification is a significant or substantial alteration of the application as approved.

While the structure is larger than the one originally proposed, the topography is level and, as proposed, will not have significant impact on wetlands. Therefore, I recommend that the agency approve a modification of the existing license granted on November 2, 2016.

The applicant is strongly encouraged to properly manage and dispose of any household hazardous waste that may be stored in the garage. More information can be found about what is considered household hazardous waste and how to properly dispose of it at www.mansfieldct.gov/hazardous-waste.

APPLICATION FEES AND NOTIFICATIONS

- The applicant has paid the required application fee.
- The applicant has submitted certified mail receipts for notices mailed to abutters-NA modification

SUGGESTED MOTION

_____ MOVE to grant a modification to the Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to K. Mehrens (File W1558) to construct a 24 by 32 foot 2 car garage on property owned by the applicants and located at 214 Wormwood Hill Road as shown on plans dated 6/20/2016 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized; and
2. All excess soil shall be either removed from the site or spread at least 50 feet from the edge of wetlands.

This approval is valid for five years (until July 18, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.

REQUEST FOR MODIFICATION

**APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863**

FOR OFFICE USE ONLY

File # W 1558
Fee Paid \$50 - CNX 48804
Official Date of Receipt _____

Applicants are referred to the Mansfield
Inland Wetlands and Watercourses

Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name KIM MEHRENS

Mailing Address 214 WORMWOOD HILL RD

MANSFIELD CT Zip 06250

Phone 203 641 3850 Email KBMEHRENS@GMAIL.COM

Title and Brief Description of Project GARAGE - 24x32

2 CAR, SLAB ON GRADE WOOD CONSTRUCTION

Location of Project _____

Intended Start Date AUGUST 2016

Part B - Property Owner (if applicant is the owner, just write "same")

Name SAME

Mailing Address _____

_____ Zip _____

Phone _____ Email _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature [Signature] date 6-22-16

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

24x32 2 CAR GARAGE WITH STORAGE SPACE
& COVERED WALK WAY 6' BETWEEN EXISTING HOUSE
4" SLAB ON GRADE WITH FOUNDATION WALLS
REVISE OF SHED APPLICATION (APPROVED)
SEPT/OCT 2015

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

(A) ~~MINIMAL~~
(B) MINIMAL SLAB ON GRADE - SOME EXCAVATION FOR FOUNDATION WALLS

3) Describe the type of materials you are using for the project: CONCRETE 4" SLAB & FOUNDATION WALLS - WOOD STUDS, PLYWOOD & CLAPBOARD SIDING - ARCHITECTURAL SHINGLES

- a) include **type** of material used as fill or to be excavated BANK RUN GRAVEL
- b) include **volume** of material to be filled or excavated

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

EAST WALL SILT FENCE & HAY BALES

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

FLAT & CURRENTLY GRAVEL PAD

Jessie Richard

Subject: FW: Wetlands Application

From: Jennifer S. Kaufman
Sent: Wednesday, July 13, 2016 10:25 AM
To: Jessie Richard <RichardJL@mansfieldct.org>
Subject: Fwd: Wetlands Application

Begin forwarded message:

From: Mehrens Kim <kbmehrens@gmail.com>
Date: July 6, 2016 at 1:58:27 PM EDT
To: "Jennifer S. Kaufman" <KaufmanJS@MANSFIELDCT.ORG>
Subject: Re: Wetlands Application

Hi Jennifer

Here are the details you requested via phone call, for excavation for the footing walls, and the amount of gravel fill for the garage area to be brought in.

1. Excavated:

Footing walls:

56' x 42" x 10" = 6 cu yds approx. - which will be used to backfill after footing are poured and balance distributed in garage pad area.

2. Brought in:

Compacted bank run gravel for below 4" concrete floor:

32 x 24 x 6" = 14 cu yds. approx.

If this information needs to be communicated in different manner please advise.

Thanks for your help

Kim Mehrens
214 Wormwood Hill Rd.

On Jun 21, 2016, at 1:38 PM, Jennifer S. Kaufman <KaufmanJS@MANSFIELDCT.ORG> wrote:

Hi Kim-



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 11, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: 30 Centre Street (File W1570)
M. Hamill/Funk and Little
Description of Work: Drilling and connecting geothermal wells and reinstalling a new well line.
Map Date: 6/30/2015, revised through 6/7/2016

PROJECT OVERVIEW

The applicant is requesting and after the fact permit to install 3 geothermal wells and to replace the well line between the house and the well house. On May 13, 2016, in response to a complaint, I inspected 30 Centre Street. The property owners are in the process of renovating the existing home on the property. I had signed off on a zoning permit this past fall and no work was proposed within 150 feet of the edge of wetlands. However, as part of the renovation, the owners installed geothermal wells and a new water line from the well to the home, both in the upland review area and both regulated activities by the Inland Wetlands Agency. During inspection, approximately 15 cubic yards of soil was stockpiled approximately 40 feet from the edge of Echo Lake and disturbed soil approximately 20 feet from the edge of the lake. Per my request the owners installed silt fence down gradient of the stock pile and the disturbed area. The area was secured and stabilized and the wetlands were not impacted.

Because these activities are regulated by the Inland Wetlands Agency, the applicants were required to submit an after the fact wetlands permit.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply watershed.

APPLICATION FEES AND NOTIFICATIONS

- The applicant has paid the required application fee.
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.
- The applicant has submitted copies of notices provided to the Connecticut DPH and Windham Water Works. Certified mail receipts must be submitted prior to action on the application.

RECEIPT MOTION

_____ MOVE to receive the application submitted by Funk and Little (IWA File 1570) under the Wetlands and Watercourses Regulations of the Town of Mansfield for replacement of a well line and installation of 3 geothermal wells on property located at 30 Centre Street as shown on a map dated 6/30/2015, revised through 6/7/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863

FOR OFFICE USE ONLY

File # W 1570
Fee Paid \$185 CHK # 6069
Official Date of Receipt 6-22-16

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Funk and Little Inc.

Mailing Address 381 Browns Rd

Mansfield CT zip 06268

Phone 860-305-2245 Email dave@funkandlitt.com

Title and Brief Description of Project

Drilling and connecting three geothermal wells. Replacing well line between the house and the well house

Location of Project 70 Centre St., Mansfield

Intended Start Date January 20 2016

Part B - Property Owner (if applicant is the owner, just write "same")

Name Matthew Merrill

Mailing Address 6909 Tilden Ln

Rockville, MD zip 20852

Phone 202-329-2617 Email Matt.Merrill@Mc.com

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature Matthew Merrill date 6/17/2016

Applicant's interest in the land: (if other than owner) Project contractor

Part C - Project Description (attach extra pages, if necessary)

Part C - Project Description (attach extra pages, if necessary)

- 1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

We have drilled three geothermal wells. We have dug a trench to connect these wells to the house. We also dug a trench 4' deep to connect the trench at the geothermal wells with the well house. The trench was about 300' long. We installed pipes and backfilled the trench with material from the site except for a 6" layer of sand installed at the bottom of the trench. ~~We backfilled the trench~~ The volume of soil disturbed adjacent to the watercourse was about 15 yards. We removed about 6 yards. We installed two sets of silt fences and hayed and seeded the area adjacent to the watercourse. Part of the well line goes down toward the watercourse. All disturbance was adjacent to the watercourse, not in it.

- 2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

About 15 yards of soil was disturbed adjacent to the watercourse

- 3) Describe the type of materials you are using for the project: We placed 6" of sand at the bottom of the trench. We installed a plastic well line filled with water and a battery for geothermal. We also installed a electrical conduit

- a) include type of material used as fill or to be excavated all gravel from the site
b) include volume of material to be filled or excavated about 15 yards

- 4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

We installed silt fence, hayed, and seeded

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

The site is generally flat but has a slope down to the lake in the area about 100' feet away from the lake.

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

There are no other alternatives that will meet other
code requirements

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application)**

- 2) Applicant's map date and date of last revision June 30, 2015 / June 07 2016
- 3) Zone Classification RAR-90
- 4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) Attach list of abutters, name, and address

12) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

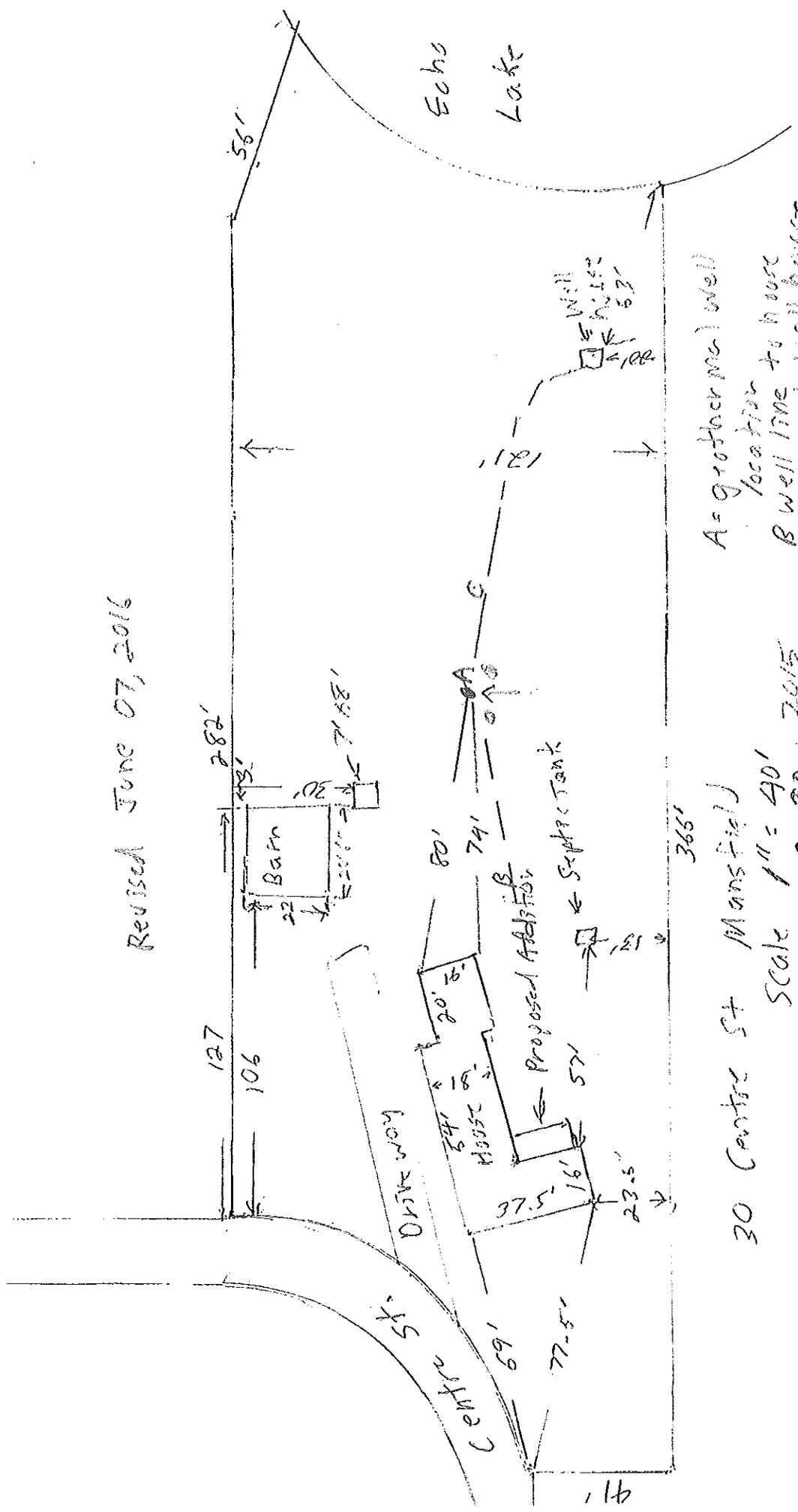
Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

Revised June 07, 2016



A = Greater (no.) well location to house
 B = well line to well house
 C = well line to well house

30 Centre St Mansfield
 Scale 1" = 40'
 JUNE 30 2015



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 11, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: 46 Jonathan Lane (File W1571)
C. Loukas
Description of Work: installation of an in-ground pool
Map Date: 2/22/2016

PROJECT OVERVIEW

The applicants propose to install an 18 by 36 foot in-ground pool surrounded by a 6 foot deck. Approximately 80 cubic yards of native material will be excavated as part of the installation. At its closest point, activity will take place 83 feet from the edge of wetlands. The applicant proposes to install silt fence to prevent erosion and sedimentation of the wetlands and to stabilize the site after construction.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply watershed.

APPLICATION FEES AND NOTIFICATIONS

- The applicant has paid the required application fee.
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.

RECEIPT MOTION

_____ MOVE to receive the application submitted by Christopher Loukas (IWA File 1571) under the Wetlands and Watercourses Regulations of the Town of Mansfield for the installation of an in-ground pool on property located at 46 Jonathan Lane as shown on a map dated 6/22/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863

FOR OFFICE USE ONLY
File # W1571
W W1571
Fee Paid \$185-
Official Date of Receipt 6-28-16

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Christos Loukas
Mailing Address 46 Jonathan Lane
Mansfield ct 06268 Zip 06268
Phone 860 Email OLAMESA1@hotmail.com

Title and Brief Description of Project

install 18' x 36' pool with 6' concrete deck
in ground swimming pool

Location of Project 46 Jonathan Lane

Intended Start Date _____

Part B - Property Owner (if applicant is the owner, just write "same")

Name SAME
Mailing Address _____
Zip _____

Phone 860 933 3832 Email OLAMESA1@hotmail.com

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature [Signature] date 8-25-15

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

A) NONE

B) see attached

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area adjacent to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is off your property

A) no disturbance in wetland/watercourse area

B) see attached

3) Describe the type of materials you are using for the project: sand sock pipe, solid pipe, silt fence, steel post walks, geom, concrete, ~~rebar, concrete pavers~~, processed, stone dust

a) include type of material used as fill or to be excavated sand for fill

b) include volume of material to be filled or excavated top soil, sand, gravel, and boulders

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

a silt fence to be installed around area also around stock pile of material excavated excess material to be hauled off site area to be seeded

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

hilly well drained

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

yes any other option would cause more of an impact due to grade changes

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing existing conditions and the proposed project in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. (See guidelines at end of application)

- 2) Applicant's map date and date of last revision 8-25-15
- 3) Zone Classification RAR 90
- 4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

- 1) Attach list of abutters, name, and address
- 2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. Postal receipts of your notice to abutters must accompany your application. To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes ___ No Don't Know

- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes ___ No Don't Know

- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes ___ No Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

- I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.
- I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.



Signature

8-25-15

Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.



Signature

8-25-15

Date

Jocelyn & Christopher Loukas
48 Jonathan Lane
Mansfield, CT 06268

Dear Members of Upland Review,

The purpose of this application is to install a 18x 36 in ground swimming pool at the bottom of 46 Jonathan Lane for JOCELYN & Christopher Loukas. The pool has steel walls with a verm bottom & a liner. It has a concrete collar around the base of the steel walls. On top of the collar will be a curtain drain which is 5" pipe with a sock to receive water from flow of the land not to disturb pool. Pool will be backfilled with sand & have a ~~concrete~~ pavers deck around it.

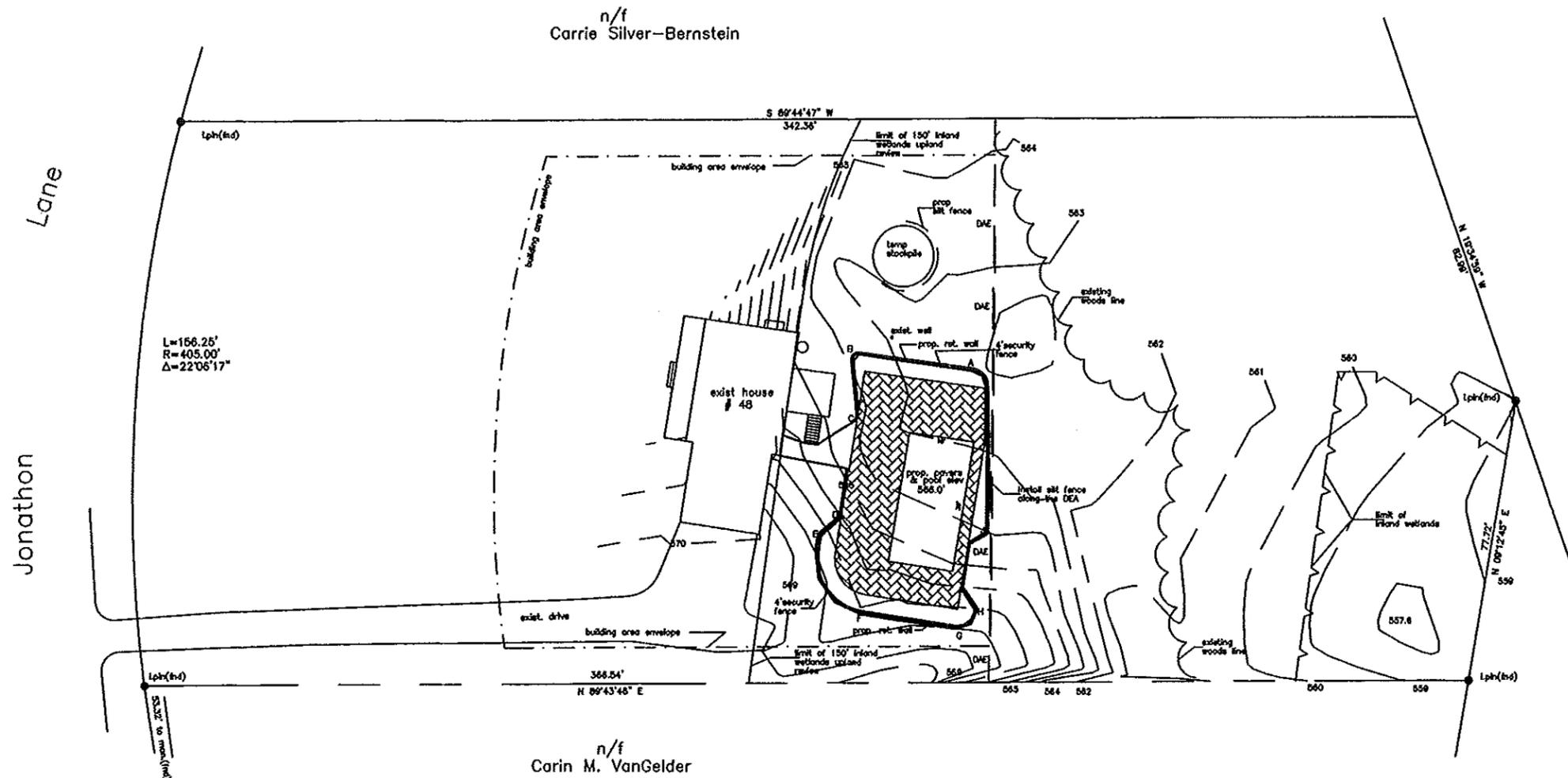
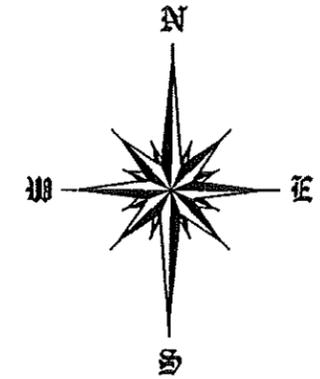
The existing area has boulders, top soil & firm sand, gravel & tree stumps. The tree stumps are going to be removed off site. The location of the pool area is hilly we pushed back pool as far as" possible to stay away from building line. This is the best location for pool as other location would cause more excavation & a bigger disturbance in the upland review area.

The machinery to be used is a excavator & bobcat to move material. Cement truck to stay on driveway & we will wheel barrel around pool. Sand is to be dumped on driveway & bought around pool by bobcat. The pool is 86' from wet lands. The pool deck is 83' from wet lands. The sill fence is 21' from pool & 65' from wet lands. The pool is 648 square ft. the paver deck is 1480 ft. for a total of 2528 squareft. This area will be seeded with grass. The total of area impacted will be 3120 square ft. the 10' around the pool will be 3120 square ft. the. The 10' around the pool will be only used by machinery. Minimal to no impact with proper installation of soil erosion sediment control measures long term effectno long term adverse effect.

Control measures will be installation of sill fence. Top soil to be brought in for disturbed area & reseeded.

Total excavated material will be 80 cubic yards. Unusable material will be hauled off site. Temporary stockpile shown on plan.

wall section	A	B	C	D	E	F	G	H	J
top/wall	564.5'	564.5'	564.5'	566.0'	567.5'	567.3'	568.0'	567.0'	566.0'
btm/wall	583.0'	564.0'	564.5'	566.0'	566.0'	566.0'	566.0'	566.0'	564.0'



n/f
Carin M. VanGelder

SEDIMENTATION AND EROSION CONTROL NOTES

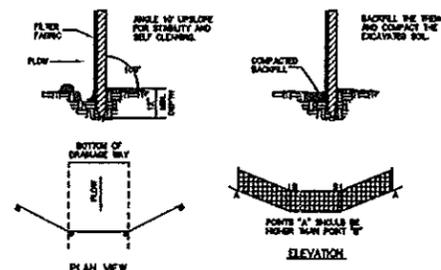
1. ALL EROSION CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE "GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL FOR SOIL AND WATER CONSERVATION.
2. HAYBALES, IF USED, ARE TO BE BUTTED TIGHTLY END TO END AND STAKED IN PLACE USING TWO 2" X 2" X 36" WOODEN STAKES PER BALE.
3. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED, OR REPLACED, DURING CONSTRUCTION AS NECESSARY.
4. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHOWN ON THESE PLANS. THIS RESPONSIBILITY INCLUDES IMPLEMENTATION AS WELL AS MAINTENANCE. ANY PROPOSED CHANGES TO THIS PLAN MUST BE APPROVED BY THE ENGINEER AND/OR THE PROPER TOWN AGENCY.
5. HAYBALES TO BE PLACED SO THAT STRINGS DOES NOT COME IN CONTACT WITH THE GROUND.
6. EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED PRIOR TO CONSTRUCTION, WHEREVER POSSIBLE.
7. AREAS TO BE LEFT BARE FOR MORE THAN 15 DAYS SHALL BE TREATED WITH AIR DRIED WOOD CHIP MULCH OR SEEDED WITH PERENNIAL RYE-GRASS UNTIL FINAL GRADING AND STABILIZATION IS TO TAKE PLACE.
8. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CONSTRUCTION IF DEEMED NECESSARY OR ORDERED BY THE PROJECT ENGINEER OR THE PROPER TOWN AGENCY.

Notes:

1. The Survey Type is a Limited Property/Boundary and the boundary determination category is Dependent Resurvey.
2. The Survey is dependent on the referenced maps and the monumentation found in the field and depicted hereon.
3. The wetland location was taken from the first referenced map.
4. The DAE boundary was revised to accommodate an 18 x 36 Inground swimming pool.
5. The topography was field determined and base on the elevation given for the top to foundation wall on the second referenced map.
6. Septic System is located on the street side of the house.
7. The retaining wall for the proposed pool is of natural field stone.

Map References:

1. Re-Subdivision Map, Wild Rose Estates Re-Subdivision, property of Byron L. Thompson, 706 Mansfield City Road, Mansfield, Connecticut, February 11, 2004, rev. to July 22, 2004, scale: 1"=40' by Moore & MacBroom, map Vol. 36 Pg 36 of the Mansfield Land Records.
2. Foundation As-Built Plan, Lot 8 - Wild Rose Estates, Jonathan Lane Mansfield, Connecticut, scale: 1"=20', 04/02/05, by CH2 Solutions, Inc.



SOURCE: U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, STORMS, CONNECTICUT

Placement & Construction Of
A Synthetic Filler Barrier
N.T.S.

Zoning Location Survey/Dependent Resurvey
prepared for:
Christos N. Loukas
Showing Proposed Pool
48 Jonathan Lane
Mansfield, Connecticut



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. 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, 1998 AND CONFORMS TO HORIZONTAL ACCURACY CLASSIFICATION OF A-2 AND VERTICAL CLASSIFICATION OF T-2.

RICHARD P. MARTEL
12882
LIC. No.

North Star Surveying & Engineering LLC 998 Farmington Avenue West Hartford, CT 06107 860-233-6312		
DRAWN RPM	DATE 02/22/18	
APPROVED	DATE	
SCALE 1" = 20'	SHBT	PROJECT NO. 925



TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 12, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: 840 Wormwood Hill Rd (File W1572)
R. Bobb
Description of Work: Water Chestnut Removal
Map Date: 7/7/2016

PROJECT OVERVIEW

The applicants are seeking approval to mechanically remove approximately 12 acres of the non-native invasive aquatic plant, water chestnut (*Trapa natans*) in Leander Pond, which is located both in Ashford and in Mansfield. A specialized harvester will be used to cut, collect, and transport the water chestnut to specified off-load areas at the southern end of the pond. Hay or straw bales will be staked at the designated off-loading sites to prevent harvested spoils from reentering the pond while these spoils are being dewatered. A 12-foot permeable turbidity/sequestering curtain will also be installed to prevent sedimentation and plant fragments from moving downstream. After dewatering, the spoils will be moved to a composting area and covered with a black canvas material to promote plant decay. The project will take place annually in late July-early August, until the water chestnut is under control.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply watershed.

APPLICATION FEES AND NOTIFICATIONS

- The applicant has paid the required application fee.
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.
- The applicant has submitted copies of notices provided to the Connecticut DPH and Windham Water Works. Certified mail receipts must be submitted prior to action on the application.

RECEIPT MOTION

_____ MOVE to receive the application submitted by R. Bobb (IWA File 1572) under the Wetlands and Watercourses Regulations of the Town of Mansfield for mechanical removal of the non-native aquatic invasive plant, water chestnut on property located at 840 Wormwood Hill Rd as shown on a map dated 7/7/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863

FOR OFFICE USE ONLY

File #
W 1572
Fee Paid \$185-
Official Date of Receipt 7-7-16

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name RAWALL B. BOBB
Mailing Address 840 WORMWOOD HILL RD
STORRS, CT Zip 06268
Phone 860 836 5308 Email RBOBBCT@GMAIL.COM

Title and Brief Description of Project

PROPOSED WATER CHEATNOT CONTROL PROJECT
FOR LEANDER POND

Location of Project 840 WORMWOOD HILL RD. STORRS
Intended Start Date 1ST WEEK IN AUGUST 2016

Part B - Property Owner (if applicant is the owner, just write "same")

Name ARLIS S. BOBB
Mailing Address 840 WORMWOOD HILL RD
STORRS, CT Zip 06268
Phone 860 646 6490 Email ARLISBOBB@GMAIL.COM

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature Arli S. Bobb date 7/7/16

Applicant's interest in the land: (if other than owner) HOSPITAL

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

SEE ENCLOSED SHEETS

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

See attached

3) Describe the type of materials you are using for the project: _____

- a) include **type** of material used as fill or to be excavated _____
- b) include **volume** of material to be filled or excavated _____

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

See attached

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application)**

2) Applicant's map date and date of last revision _____

3) Zone Classification *RAR 90*

4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) Attach list of abutters, name, and address

2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes ___ No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes ___ No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes ___ No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

. I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.

. I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Randall B Bost
Signature

7/16/2016
Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.

Randael B Bost
Signature

7/16/2016
Date



Google earth



7/9/2016

- X - OFF LOAD SITES
- XX - COMPOST SITE

7/7/2016

Leander Pond – Proposed Water Chestnut Control Project

Project Description

The Applicants, Randall B. Bobb and Dennis R. Heffley, are seeking approval to conduct a management program to control the invasive aquatic vegetation species, water chestnut (*Trapa natans*) in Leander Pond located in Ashford and Mansfield, CT. The water chestnut infestation is currently covering approximately 12 acres of the 35-acre waterbody, with continual coverage expected. The primary objective of this management program is to mechanically remove the water chestnut rosettes that produce nutlets (seeds) before maturity and release contributing to the seed bed.

This private water body serves as an important resource to the local environment, in that, it provides fish and wildlife habitat, flood retention, bio-filtration for storm water, and aesthetic and recreational value to the landscape. Therefore, management is proposed to preserve this resource's ability to provide the abovementioned necessary functions.

Water chestnut impacts water bodies in several ways including increasing sedimentation, and reducing available oxygen during decomposition. Water Chestnuts can also form dense mats, outcompeting native fauna growth and limiting the vegetation assemblage for aquatic fauna.

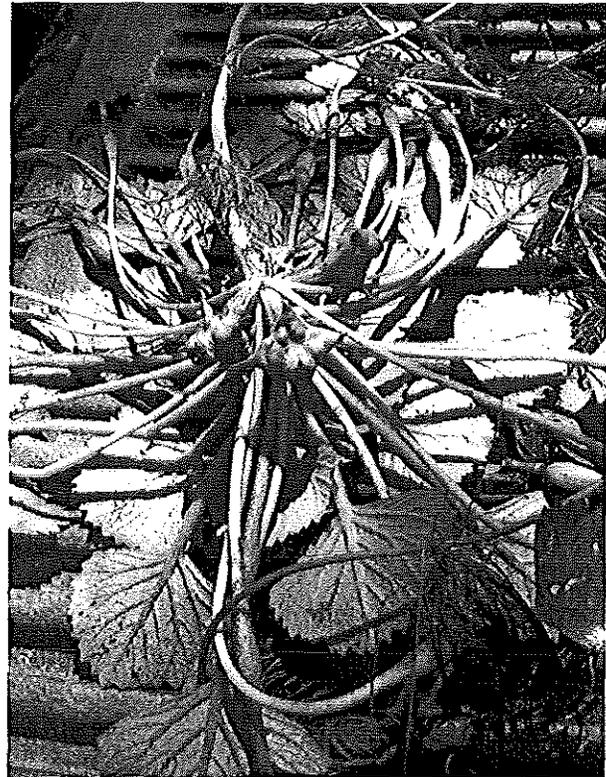


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Water Chestnut (*Trapa natans*) Factoids:

- Native to Eurasia, it was introduced intentionally to the U.S. in the late 1800's by a gardener at the Cambridge botanical garden, in Fresh Pond in Cambridge, MA.
- True aquatic annual that grows as a rooted floating plant.
- Each water chestnut seed can produce up to 15 floating rosettes of leaves.
- Each rosette can generate up to 20 thorny nutlets (seeds).
- The fruits, which will always land spike-up, are viable for up to 12 years, although most germinate within two years.
- One acre of water chestnut can produce enough seeds to cover 100 acres the following year.



MANAGEMENT OBJECTIVES

BENEFIT DESCRIPTION

Improve Aquatic Plant Bio-Diversity

- Removal of the invasive water chestnut, will restore the littoral zone for fish habitat and improve Dissolved Oxygen levels through the increased water flow and native plant photosynthesis.

Maintain Open Water Resource

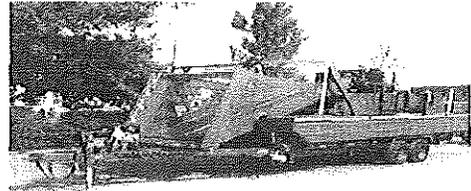
- Removal of the water chestnut plant material will prevent filling in of the waterbody, recover open water space, and maintain pond depth.

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A SOLitude harvester will be used to cut, collect and transport the water chestnut to the designated off-load area. Water chestnut will be removed at a minimum rate of 1-acre per operating day. The density of the water chestnut infestation in the management areas and the distance to the designated off-load area will affect the daily removal rate. Over the period of mechanical removal, the harvester could cover daily between 1 to 2 acres.

The harvester (see inset picture to the right) is essentially a floating lawn mower powered by two hydraulic paddle wheels. SOLitude's H5-130 machine provides a variety of characteristics that make it well suited for this project. These characteristics are outlined below.



- The H5-130 only draws 12 inches of water when loaded to capacity and just 9 inches when empty. The shallow draft of this unit will help with access to the proposed shoreline materials off-loading site which has a relatively shallow depth contour.
- This harvester has a 5.0 ft. wide cutting head, which is comparable to many larger machine and helps maximize productivity.
- The unit has a faster rate of travel speed than larger capacity harvesters, which typically off-sets the production advantages of larger harvesters when traveling a significant distance to the shore-based off-loading area.
- The machine's smaller size and limited weight reduces the complexity and limitations of hauling, transporting, and launching the unit compared to larger machines.

Hay or straw bales would be staked by the onshore material handling contractor along the designated offload shoreline location(s), to prohibit harvested spoils from reentering the pond while dewatering. Solitude Lake Management would also insert 12 feet of permeable turbidity/sequestering curtain around the outlet, to prevent sedimentation and plant fragments from going downstream.

This project would take place annually, late July – early August of 2016, over the life of the permit. The harvester would be launched from the south eastern access point adjacent to Ms. Bobb's home, address, 840 Wormwood Hill Road, Mansfield, CT 06268. The collected material would be stockpiled in two designated areas, one located on the eastern side of the pond abutting his property and one on the western side; the material will then be moved to a compost area and sheeted over winter with black canvas material to promote plant decay. Upon completion of the project, all equipment will be removed from the management area.

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This project is expected to take 6 days, with additional days added upon request. A summary of the possible 2016 harvesting project sequence is provided as follows:

Proposed Work	Proposed Removal Area Description	Size of Proposed Disturbance Area (acres)	Estimate Harvester Time
Year 1	Water Chestnut	6	6 days

Ongoing Watershed Management is recommended for future years in conjunction with the Year 1 Proposed Management Plan. Instituting Best Management Practices (BMPs) should be considered in the watershed. Watershed management alone will not remove the excessive water chestnut buildup in the pond; however, practicing BMPs will limit the amount of nutrients entering the lake, which will in turn reduce vegetation growth that contributes to biomass buildup and subsequent eutrophication (i.e., filling-in).

Alternatives Analysis

Do Nothing: Not Recommended

If excessive vegetation growth and detritus accumulation is allowed to continue unabated, eutrophication (i.e., filling-in of the pond) will continue to occur at an accelerated rate due to the annual decomposition of excessive plant material, leaf litter, and nutrient loading. Dense contiguous layers of vegetative litter can promote anoxic (lack of oxygen) conditions, which would degrade water quality and potentially impact fish and other aquatic organisms.

Protection of Public and Private Water Supply

To the best of our knowledge there are no direct water supply intakes from the pond or any "dug" wells used for drawing water within 50 ft. of the water's edge or the pond outlet. Nor would the proposed management activities negatively impact wells.

Protection of Groundwater Supply

The groundwater supply will not be impacted by the proposed harvesting program.

Flood Control and Storm Damage Prevention

Excessive vegetation/detritus buildup can contribute to high water volume and flooding by limiting flood water retention. Most commonly this occurs in the vicinity of waterbody outlets or water conveyance channels or structures. Therefore, the removal of excessive

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vegetation growth will maintain depth and volume capacity, which may improve the ability of the resource area over the long-term, to provide flood protection.

Prevention of Pollution

No long-term degradation of water quality or increased pollution is expected by the proposed program. The machinery utilized for this project would be power-washed, decontaminated, and inspected prior to the mobilization on the pond. The harvester hydraulics are also run using a biodegradable vegetable based hydraulic fluid to guard against potential resource area contamination. In addition, the machine operators are experienced and well equipped with absorbent pads and containment booms in the event there is spill or fluid leakage. Some temporary, localized turbidity is expected during this project, however, turbidity levels typically return to normal within 24-hours of harvesting.

Protection of Fisheries and Wildlife Habitat

Mechanical removal efforts present some risk to fish and other aquatic wildlife via direct removal of the organisms. Experience shows that the small number of organisms captured in the harvested material escape during transport. As proposed the harvesting operations is staged in the water body; thereby, providing escape for organisms within the management area.

The quality of habitat in the pond is expected to improve from this management program. Excessive vegetation presently impacts the littoral areas; therefore, management of these areas will improve hydrologic and habitat connectivity for fisheries. Water quality may improve by removing vegetation from the pond, which can exacerbate vegetation/algae growth in a water body. Furthermore, reducing water chestnut coverage, will enhance open water habitat in managed areas, and may improve edge habitat by allowing the establishment of a diverse plant assemblage which offers foraging opportunities and escape from predators.

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TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 13, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: 37 Hickory Lane and 247 Hanks Hill Road (File J5)
Town of Mansfield

Description of Work: Dry Hydrant Installation on
Map Date: 6/28/2016

PROJECT OVERVIEW

The Town of Mansfield, proposes to install two non-pressurized pipe systems (dry hydrants): one at 37 Hickory Lane and the other at 247 Hanks Hill Road. Installation includes excavating a trench to a level below the low water mark. The length of the trench will vary from 10 and 50 feet, depending on the site. Excavated material will be temporarily stored to the sides of the trench and surrounded by hay bales to prevent sedimentation. A pipe and screen will be installed in the trench and backfilled with existing material or suitable clean fill. To stabilize the site, all disturbed areas will be seeded and mulched upon completion and during the same workday.

Pursuant to Section 4.0 of the Regulations the following operations and uses shall be permitted, as non-regulated uses in wetlands and watercourses, provided they do not disturb the natural and indigenous character of the wetland or watercourse by removal or deposition of material, alteration or obstruction of water flow or pollution of the wetland or watercourse:

The installation of a dry hydrant by or under the authority of a municipal fire department, provided such dry hydrant is only used for firefighting purposes and there is no alternative access to a public water supply. For purposes of this section, "dry hydrant" means a non-pressurized pipe system that: (A) is readily accessible to fire department apparatus from a proximate public road, (B) provides for the withdrawal of water by suction to such fire department apparatus, and (C) is permanently installed into an existing lake, pond or stream that is a dependable source of water.

In my opinion, the activity as proposed qualifies as a non-regulated use pursuant to the regulations. However I am seeking a jurisdictional ruling from the agency that you concur.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.

The project is located in a Public Water Supply watershed.

APPLICATION FEES AND NOTIFICATIONS

Request for a jurisdictional ruling-None Required

RECEIPT MOTION

If the IWA concurs with my conclusion that this is a permitted, non-regulated activity under the Regulations, the following motion for a jurisdictional ruling would be in order:

_____ MOVES, _____ seconds to approve a Jurisdictional Ruling finding that the installation of two dry hydrants (IWA File # J-5) by the Town of Mansfield, Division of Fire and Emergency Services, on property located at 37 Hickory Lane and 247 Hanks Hill Rd, as shown on a map dated 6/28/2016 and as described in the associated attachments, is permitted as a non-regulated activity pursuant to Section 4.0 of the Inland Watercourses and Wetlands Regulations of the Town of Mansfield.

Receipt Motion

Alternatively, if the IWA believes that the proposed activity is a regulated activity, the following motion to receive an Inland Wetlands application would be in order:

_____ MOVES, _____ seconds to receive the application submitted by the Town of Mansfield, Division of Fire and Emergency Services (IWA File #1573) for the installation of two dry hydrants under the Inland Wetlands and Watercourses Regulations of the Town of Mansfield, as shown on a map dated 6/28/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

**APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863**

FOR OFFICE USE ONLY

File #

W _____

Fee Paid _____

Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Town of Mansfield, Division of Fire and Emergency Services

Mailing Address 4 South Eagleville Road

Storrs-Mansfield Zip 06268

Phone 860-429-3323 Email DagonDJ@Mansfieldct.org

Title and Brief Description of Project

Dry hydrant installation into two (2) different fire pond locations for fire department purposes.

Location of Project Location #1: Opposite 247 Hanks Hill Road, Location #2: 37 Hickory Lane

Intended Start Date August 1, 2016 (estimated date)

Part B - Property Owner (if applicant is the owner, just write "same")

Name _____

Mailing Address _____

_____ Zip _____

Phone _____ Email _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature _____ date _____

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

The activity will consist of the installation of a non-pressurized pipe system (dry hydrant).

If possible, the dry hydrant trench will be excavated to a level below the low water mark. Excavated materials will be temporarily stored to the sides of the trench. A 6" pipe and screen will be installed in the trench. The trench will be backfilled with existing material or suitable clean fill. During excavation, all disturbed areas shall have erosion control measures in place and will be returned to existing conditions during the same work day.

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

Trench distances vary from 10' - 50' and approximately 60 - 300 cubic yards of material will be disturbed. Most disturbance will occur outside the watercourse.

3) Describe the type of materials you are using for the project: 6" Schedule 40 Pipe

a) include **type** of material used as fill or to be excavated Clean as needed

b) include **volume** of material to be filled or excavated _____

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

Temporary hay bales during excavation. Seed and hay upon completion.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Mildly sloped and well-drained.

Dry Hydrant Design Notes

Location #1

Parcel Information

LOCATION STREET: 37 Hickory Lane

COMMERCIAL TYPE: N/A

ZONING: RAR90

NEIGHBORHOOD: 23500

MAP NUMBER: 025

ELEVATION: STREET LEVEL

OWNER: TOLIS PAUL A and SUSAN D

Distance to Street



Good location

Good water depth

Provide 42" of

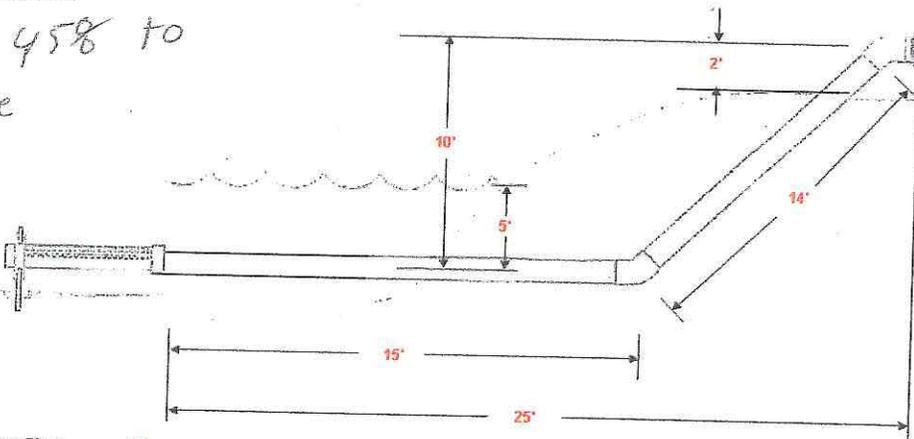
Frost protection

Not to Scale

FROM 458 to
surface

Profile Sketch

45° CONFIGURATION



Pipe Size: 8"
Pipe Grade: Schedule 40
Transition(s): 45 Degrees
Truck Connection: 6" NST Reducer with Cap

Design changes are subject to the following: Flow \geq 1500 GPM, Static Lift \leq 12FT, Total Head Loss \leq 20'

Location #2

Parcel Information

LOCATION ID NUMBER: 17.62.3
 LOCATION STREET: 247 Hanks Hill RD
 COMMERCIAL TYPE: N/A
 ZONING: RAR90
 NEIGHBORHOOD: 23345
 MAP NUMBER: 017
 ELEVATION: STREET LEVEL
 OWNER: Campell Andrew and Susan

Distance to Street



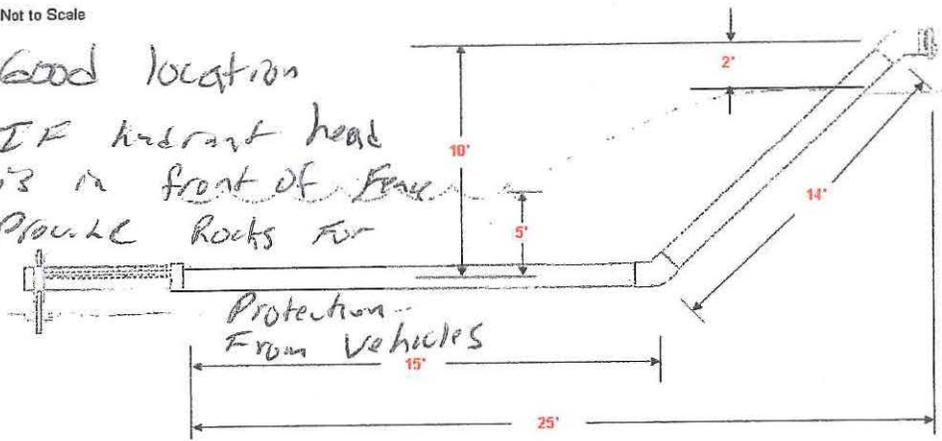
ANT #1
)
 _ane

Profile Sketch

45° CONFIGURATION

Not to Scale

*Good location
 IF hydrant head
 is in front of fence
 Pile rocks for*



*Protection
 From Vehicles*

Pipe Size: 8"
 Pipe Grade: Schedule 40
 Transition(s): 45 Degrees
 Truck Connection: 6" NST Reducer with Cap
 Design changes are subject to the following: Flow >= 1500 GPM, Static Lift <= 12FT, Total Head Loss <= 20'





TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 13, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: Bicentennial Pond (Parcel ID 23.60.7) (File W1563)
Town of Mansfield
Description of Work: aquatic weed management and sediment removal
Map Date: 10/27/2015

PROJECT OVERVIEW AND ANALYSIS

At your April 4, 2016 meeting you issued an Inland Wetlands License to the Town of Mansfield for aquatic weed management and sediment removal. The contractor began sediment removal in early June. After removing some of the sediment and organic matter, the contractor completing the work, in consultation with Parks and Recreation staff, determined that the pond would benefit from an application of MD pellets (information is attached) instead of continuing with the removal of the organic matter/sediment. MD Pellets are slow-release pellets that sink down into the sediment to deliver esse bio-stimulants and indigenous bacteria. They penetrate and degrade pond muck by stimulating naturally occurring bacteria and adding sludge-eating cultures. MD Pellets will not harm aquatic species, fish, waterfowl, or people and are not regulated by CT DEEP. A safety data sheet is attached.

One application was applied prior to the opening of the pond on June 17. It is expected that 4 additional treatments will be needed over the course of the summer. In reviewing the initial license, it was determined that this is a minor change to the initial license so the applicant is requesting a modification to their license (File #W1563).

Pursuant to section 11.8 of the Regulations:

If the Agency grants a permit, the applicant may submit to the Agency a proposed modification of the application or of any permit terms, conditions, limitations or modifications. After evaluating the potential for impact on wetlands or watercourses and the approval standards of Section 10.2, the Agency shall determine whether the proposed modification is a significant or substantial alteration of the application as approved.

The addition of the MD pellets will reduce the amount of sediment/organic matter that needs to be removed from the pond. The product is safe and not regulated by CT DEEP. In my opinion, approval of this modification will cause less disturbance to the pond and should be approved by the agency.

RECOMMENDATION/SUGGESTED MOTION

_____ MOVE to modify an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to the Town of Mansfield (File W1563) for aquatic weed management and sediment/organic matter removal to include the application of MD pellets on property owned by the applicants and located at Bicentennial Pond (Parcel ID 23.60.7) as shown on plans dated 10/27/2015 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to the activity, maintained during the activity and removed when disturbed areas are completely stabilized;
2. Herbicide treatments shall be conducted in accordance with a CT DEEP Aquatics Pesticide Use Permit and shall be coordinated with the Town of Mansfield's Parks and Recreation Department to ensure that no treatments occur during the swim/camp season; and
3. Material removed from the pond will be immediately removed from the site for dewatering.

This approval is valid for five years (until July 18, 2016) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.

**APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863**

FOR OFFICE USE ONLY

File #

W _____

Fee Paid _____

Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name _____ Town of Mansfield, Parks and Recreation _____

Mailing Address _____ 10 South Eagleville Road, Storrs-Mansfield, CT _____

_____ Zip _____ 06268 _____

Phone _____ 860-429-3015x6109 _____ Email _____ VincenteCA@MansfieldCT.org _____

Title and Brief Description of Project

Aquatic Weed Management and Sediment Removal

Location of Project _____ Bicentennial Pond _____

Intended Start Date _____ Late April/Early May 2016 _____

Part B - Property Owner (if applicant is the owner, just write "same")

Name _____ Same _____

Mailing Address _____

_____ Zip _____

Phone _____ Email _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature _____ date _____

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (**See guidelines at end of application**)

Please include a description of all activity or construction or disturbance:

- a) **in** the wetland/watercourse
- b) **in** the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property
see attached

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) **in** the wetland/watercourse
- b) **in** the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property
 - a.) 15,000 ft²
 - b.) none

3) Describe the type of materials you are using for the project: For Aquatic Weed Management: selective applications of the herbicides Rodeo, Clipper, Platoon, and Nautique. For sediment removal: Hydraulic sediment removal system, geotechnical fabric membrane for sediment dewatering, and Biopolymer conditioning agents for coagulation and flocculation

- a) include **type** of material used as fill or to be excavated Soft Organic Sediment
- b) include **volume** of material to be filled or excavated 30 cubic yards

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).
The sediment is contained in a geotechnical fabric membrane. Dewatering leachate discharge will be returned to the pond via a suitably protected outlet. Discharge water quality subject to construction discharge BMP's. CT 2002 Erosion Control Guidelines and BMP's are incorporated into operational work plan.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

The hydraulic dredger will cause the least disturbance. Other options would include using an excavator but this would cause more disturbance. Weeds could be hand pulled but this is only a temporary solution, would be very labor intensive and costly. Also, often times all of the root is not removed using this method causing the weeds to spread further.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application)**

2) Applicant's map date and date of last revision 10/27/2015

3) Zone Classification RAR 90

4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) Attach list of abutters, name, and address

2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes X No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes X No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes X No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

- I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.
- I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Signature

Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.

Signature

Date

Project Description

In the Wetlands

To improve the recreational use and overall ecological health of Bicentennial Pond, the Town of Mansfield proposes to manage approximately 2.6 acres of nuisance aquatic weeds and remove accumulated organic matter and sediment from the swimming area at Bicentennial Pond. A detailed pond assessment and project description is attached.

Organic Matter/Sediment Removal

Natural eutrophication and sedimentation deposited from surface runoff along with organic material buildup has accumulated in the beach area at Bicentennial Pond, requiring remediation to restore natural bottom depth and quality of the pond's recreational function.

The work will be accomplished by using a compact, hydraulic sediment removal system (the "dredge"). The dredge is equipped with a trash pump that will extract the accumulated sediment from the pond bottom and pump it to a nearby dewatering area. The spoils will be dewatered using geotextile fabric tubes, which retain spoils material while filtering the water before it is returned to the pond in a clarified state. Once the spoils are completely dewatered they can be extracted from the containment membrane and hauled off-site for disposal.

Nuisance Aquatic Weed Management

To improve the recreational experience and overall health of the pond, the Town of Mansfield proposes to work with a licensed contractor (All Habitat Services, Inc.) to complete an herbicide treatment to manage a population and of non-native, invasive Water Chestnut and other native nuisance aquatic weed species. This work will be conducted in accordance with a CT DEEP Aquatic Pesticide Use permit and state, and federal regulations.

In October 2015, Parks and Recreation Staff identified a small population of the non-native, aquatic invasive, Water Chestnut. Water Chestnut is a highly competitive plant that is capable of rapid growth and spread. Water Chestnut displaces native species, reduces biodiversity, hampers recreational uses, reduces real estate value and diminishes aesthetic values. It is especially hazardous in swimming areas because the sharp ½" barbs can penetrate shoes with leather soles and pose a hazard to swimmers and beach visitors.

In addition to this, species 13 other aquatic plant species were identified in the swimming area. While these species are native, several of them can become a nuisance, negatively impacting recreational use and the overall pond ecosystem.

In the Upland Review Area

While the project will be staged in the upland review area but there will be no site disturbance. All sediment will be placed in a "roll off" dumpster and will be removed from the site. The sediment will be brought to a location determined by Mansfield Department of Public works, dried out, and reused.



Safety Data Sheet

MD Pellets

Revision Date 7/9/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name : MD Pellets
Synonyms : None
Product Form : Pellet

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Treatment and reduction of muck

1.3 Details of the supplier of the safety data sheet

Company : Aquafix Inc.
2310 Daniels St.
Madison WI 53718
USA
Telephone: : +1 888-757-9577
Monday-Friday
7:30am-4:00pm CST

1.4 Emergency telephone number

Emergency Phone# : Chemtrec +1 800-424-9300

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

This material is not considered hazardous in accordance with OSHA 29 CFR 1910.1200

2.2 GHS Label elements, including precautionary statements

Pictogram : N/A
Signal Word : N/A
Hazard Statement(s) : N/A
Precautionary Statement(s) : N/A

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Hazardous Components

Component	Cas-No.	Concentration %	OSHA PEL	ACGIH TLV
None Known	N/A	N/A	N/A	N/A

Ingredients not precisely identified are proprietary or non-hazardous. Product formulation consists of a range of naturally occurring microorganisms.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

This product is considered non-toxic, if concerned consult a physician.

In case of skin contact

Wash exposed area with soap and water.

In case of eye contact

Immediately rinse eyes with plenty of water.

If Inhaled

Remove to fresh air.

If Ingested

May cause nausea or diarrhea, drink plenty of water.

4.2 Most important symptoms and effects both acute and delayed

Possible irritation upon contact.

4.3 Indication of any immediate medical attention and special treatment needed

None. If any symptoms persist, seek medical attention.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water, water spray, foam, carbon dioxide (CO₂), or dry powder.

Unsuitable extinguishing media

None

5.2 Special hazards arising from the substance or mixture

None

5.3 Special protective equipment for firefighters

No special protective equipment required.

5.4 Further Information

Flash Point (°C) No information available

Autoignition temperature (°C) No information available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

No special precautions required. Wear adequate personal protective equipment.

None

6.3 Method and materials for clean up

Maintain good housekeeping practices. Can be washed away with water. No special disposal method required, except that it be in accordance with current local, state/provincial and federal regulations.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear personal protection equipment.

7.2 Conditions for safe storage

Risks

Not at risk for corrosion, fire, explosion, or chemical reaction.

Place of storage

Store in a cool, dry space between 50-80°F.

Fire/explosion protection

None needed

7.3 Specific end use

None

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components with work place parameters

None

8.2 Exposure controls

Engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye/face protection	:	Protective glasses are recommended
Skin	:	Hand: Gloves are recommended
	:	Other: Wear appropriate clothing for work.
Respiratory protection	:	Protective mask is recommended
Thermal protection	:	None
Environmental exposure	:	None

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Dry pellet, brown in color
Odor	:	Earthy smell
Solubility	:	Highly soluble
Boiling point	:	N/A
pH	:	N/A
Vapor density	:	N/A
Melting point	:	130°F
Vapor pressure	:	N/A
Specific Gravity	:	1.0 gr/cc

9.2 Other information

None

10. STABILITY AND REACTIVITY

- | | | | |
|------|------------------------------------|---|---|
| 10.1 | Reactivity | : | None |
| 10.2 | Chemical Stability | : | Stable |
| 10.3 | Possibility of hazardous reactions | : | None |
| 10.4 | Conditions to avoid | : | Strong acids or bases |
| 10.5 | Incompatible materials | : | Strong acids or bases. Acids or alkalis may break down enzymes and inactivate bacterial cultures. |
| 10.6 | Hazardous decomposition products | : | None |

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	:	No known effects
Skin corrosion/irritation	:	No known effects
Eye damage/irritation	:	No known effects
Respiratory/skin sensitization	:	No known effects, possible allergic sensitization
CMR(Carcinogenity, Mutagenicity, Reproductive toxicity)	:	No known effects

12. ECOLOGICAL INFORMATION

- 12.1 Toxicity : No known information is available
- 12.2 Persistence and degradability : No known information is available
- 12.3 Bioaccumulative potential : No known information is available
- 12.4 Mobility in soil : No known information is available
- 12.5 Results of PBT and vPvB assessment: No known ecological information is available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product and packaging can be disposed of in regular trash. No special disposal method required. Follow all applicable local laws for recycling, bagging, and disposal of trash.

14. TRANSPORTATION INFORMATION

- 14.1 UN NUMBER : Not relevant
- 14.2 UN proper shipping name : Not relevant
- 14.3 Transportation hazard class : Not classified as dangerous
- 14.4 Packing group : Not relevant
- 14.5 Environmental hazards : None
- 14.6 Special precautions : None
- 14.7 Further Information : None

15. REGULATORY INFORMATION

Sara/Title III – CERCLA LIST of Hazardous Substances and Reportable Quantities (40CFR304.4): This product **does not** contain an ingredient(s) listed as a hazardous ingredient for Emergency Release Notification under section 304

Sara/Title III – List of Extremely Hazardous Substances for Emergency Planning and Notification (40 CFR 300 & 305): This product **does not** contain an ingredient(s) listed as an extremely hazardous substances (EHS) for Emergency Planning under sections 301-303 and for Emergency Release Notification under section 304.

Sara/Title III – List of Toxic Chemicals subject to Release Reporting (Community Right to Know) (40 CFR 372): This product **does not** contain an ingredient(s) listed as a toxic chemical for Annual Release Reporting Requirements under section 313.

16. OTHER INFORMATION

The information in this SDS was obtained from sources which we believe to be reliable. However, the information is provided without any warranty expressed or implied regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself.

This SDS was prepared and is to be used only for this product. No representation, warranty, or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness. We assume no responsibility for any loss, damage or expense direct or consequential arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

☎ 888-757-9577 (7:30 AM - 4:00 PM CST, M-F)

AQUAFIX NATURALAKE

Pond & Lagoon Solutions

Select Page



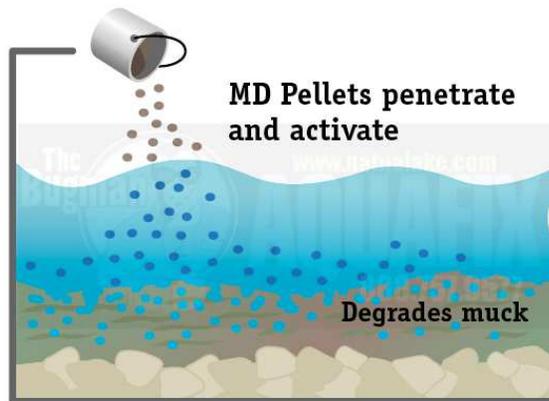
Home / MD Pellets



MD Pellets

En
esp
añol

MD
Pellets
are
slow-



release pellets that sink down into the muck to deliver essential bio-stimulants and indigenous bacteria. They penetrate and degrade pond muck by stimulating naturally occurring bacteria and adding sludge-eating cultures.

The pellets are a dense product designed to be “tossed in” and sink to the bottom. When they sink into the muck, the bacteria produce enzymes that speed up the breakdown of organic waste. Some customers have expressed success breaking down sycamore leaf debris in their lakes and ponds using our MD Pellets. They contain safe and beneficial bacteria, and will not harm aquatic species, fish,

Share this product!



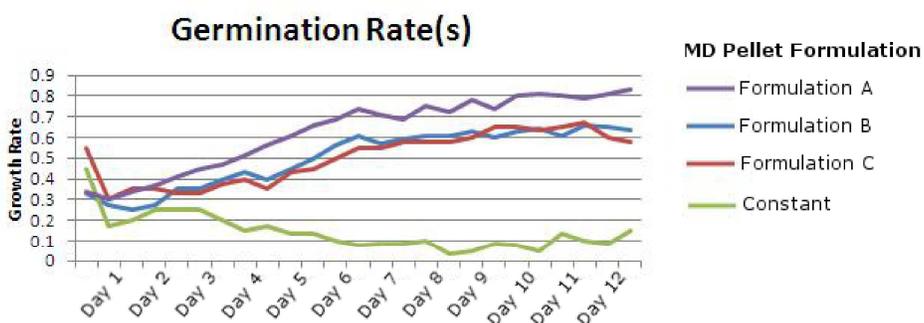
waterfowl, or people. This product will also reduce sulfide and mercaptan odors found in muck.

NOTE: MD Pellets DO NOT kill aquatic plants or algae

Description

Reviews (0)

Product Description



Part of the process of creating the MD Pellets bacterial formula was looking for the strains that grew the fastest and had the best synergy while degrading the dead leaves and weeds, grass, fish and duck waste, and other detritus that makes up pond muck. This graph depicts a study we completed of the germination rates of different bacteria in pond muck. We use data for like this in the constant process of improving our products.

[Download the MD Pellets SDS](#)

Share this product!



Ingredients

Description

Specifications



Bio-vitamins, probiotics, and select bacterial cultures

Dry brown pellet



Odor	Earthy odor
pH	7.0
Stability – Activity loss	At 75 degrees F for 12 months*: 10% or less; At 100 degrees F for 6 months*: 10% or less; *When stored as directed in a sealed container out of direct sunlight.
Storage and Handling	Store in a cool, dry space between 50-80 degrees F. Keep out of direct sunlight and do not store with strong oxidizing agents.

Testimonials

“At the bottom of a ravine, surrounded by oak, maple, and other trees is Dead Lake. It was given this name because it looked dead. It was covered with floating organic matter and decaying leaves. Through adding PondZilla and MD Pellets, it cleared up in a year. Now they are thinking of changing the lake to Live Lake! We have never been so ecstatic, it’s wonderful!” – Lake Manager, Elmer

“The hydrilla is about 80% gone and the standpipe unplugged itself since I applied a granular herbicide followed by MD pellets. The rest of the hydrilla is brown and looks like it is on the way out. Meanwhile the smell in the pond is slightly altered, not quite so anaerobic, and the water is a little more acidic. The fish are still healthy and shiny and fight like demons. Anyway, I want to thank you so very much for how you have helped me and my pond.” – Greenville, SC

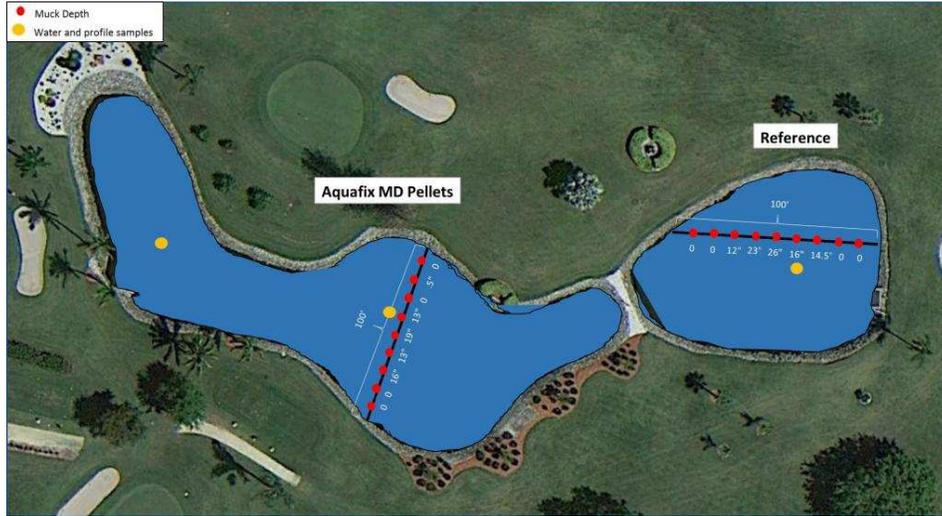
Share this product!



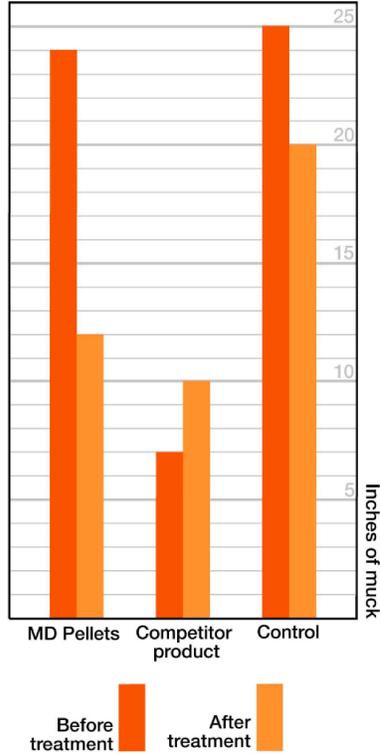
Case Studies



Case 1: Muck Reduction in the field



Muck Reduction in field study



A lake management company in the Ft Meyers, Florida area tested the muck-removing abilities of our MD Pellets against another treatment in golf course ponds over two months. In the 60 day period, the muck levels in the pond treated with the competitor’s product increased by 3 inches. A nearby pond was left untreated as a control and lost 5 inches of muck during the study. In the same time, MD Pellets

removed a full foot of bottom sludge, or half of the muck in its pond.

Share this product!

To learn more, [read here](#).



Case 2: Wouldn't it be nice to see the bottom of your lake and eliminate dredging projects?



A fish farmer in Eastern Texas grows

ws his fish stock the natural way, as he prefers to stay away from chemicals and he does not keep extremely high population densities. The biggest concern he has is the amount of muck fish generate and how much room it takes up which is where MD Pellets come in for Bob. MD Pellets are all natural and reduce muck through high concentrations of helpful bacteria and biostimulants, reducing the need to dredge the ponds. It saves thousands of dollars annually and doesn't have an adverse effect on the fish. Sticking to his methods he is rarely required to feed his fish, and with the lack of a chemical presence he can keep the price of his fish low while they are among the healthiest and fastest growing fish on the market, with trophy largemouth bass being caught seven years after stock date. The fish farm's inventory consists of channel catfish, blue gills, sunfish, largemouth bass, threadfin shad, fathead minnows and season stock of triploid grass carp, black crappies, and striped bass.

Dosage Rates

Share this product!

Traditional Dose: Feed 10-lb to 25-lb per surface-acre once per month depending on depth of muck or extent of surface debris.

- **Super Dose:** For ponds or lakes where they would like to degrade up to 1 foot per month. Feed 50# per acre once per month.



- **Temperature Range:** Works best when water temperature is 60° F (17°C) to 130°F (54°C). The warmer it is the faster they reproduce and digest sludge.

Applications

Lakes: MD Pellets can be distributed into a lake by a fertilizer spreader attached to the back of the boat. MD Pellets are typically 1/10th to 1/20th of the cost of dredging.

Decorative Ponds: MD Pellets are a nice way to keep the pond in check and keep muck to a minimum.

Retention Ponds: Retention ponds start out nice and beautiful and after a few years they become loaded with floating organic matter and muck. MD Pellets are an easy way to help balance them out and reduce muck. These pellets will also work well in retention ponds that may have a lot of road salt. A biologically cleaned pond is a happy pond. A mechanically cleaned pond can often be unhappy for some time as it tries to find biological balance.

Golf Courses: Golf courses can get a lot of muck due to runoff, high nutrient loadings, and leaf and grass waste. MD Pellets are an easy and affordable way to keep golf course ponds free of muck and more importantly to help keep them biologically balanced.

Shorelines: Used by homeowners to reduce muck around the shoreline. Just sprinkle some pellets around a dock once a month and let them sink into the muck. Month by month the lake bottom will clean up. Many customers have called them little vacuum cleaners as they see the muck reduce.

Aquaculture: Used to degrade fish^x poop that accumulates in the bottom of a pond. MD Pellets have proven to be economical and efficient for fish farmers who want to minimize muck accumulation as an alternative to dredging.

Share this product!



Benefits

- Consumes nutrients
- Reduce up to 70% of sludge and muck
- Lowers ammonia
- Clarifies water
- Balances ponds
- Reduces dredging

Before/After



With four feet of muck, widgeon grass, alligator weed, and torpedo grass, this Florida pond was the neighborhood eyesore. The applicator used a diquat based aquatic herbicide to kill the aquatic plants and leave the remaining debris. Following herbicide application, PondZilla and MD Pellets were used to degrade one foot of muck and recycle dead organics. The applicator was amazed and the residents were ecstatic.



This Ohio pond had a hydrodictyon problem and had not looked good in years. With aeration and ~~X~~ PondZilla blended with an algaeicide/herbicide, along with our Summer Slam and MD Pellets, the applicator cleaned up this pond like never before.

Share this product!



FAQ





TOWN OF MANSFIELD

DEPARTMENT OF PLANNING AND DEVELOPMENT

Date: July 15, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: 144 Hillyndale Road (File W1573)
G. Sotzing
Description of Work: installation of a hot tub
Map Date: 7/14/16

PROJECT OVERVIEW

The applicants propose to install a hot tub on top of an 11' x 11' wooden deck platform. They don't anticipate any fill to be excavated as part of the installation. At its closest point, activity will take place 110 feet from the edge of wetlands. The applicant proposes to install hay bales and silt fence to prevent erosion and sedimentation of the wetlands and to stabilize the site after construction.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply watershed.

APPLICATION FEES AND NOTIFICATIONS

- The applicant has paid the required application fee.
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.

RECEIPT MOTION

_____ MOVE to receive the application submitted by Gregory Sotzing (IWA File 1573) under the Wetlands and Watercourses Regulations of the Town of Mansfield for the installation of a hot tub on an 11' x 11' wooden deck platform on property located at 144 Hillyndale Road as shown on a map dated 7/14/16 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863

FOR OFFICE USE ONLY

File #
W 1573
Fee Paid 90
Official Date of Receipt 7-14-16

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Gregory A. Sotzing
Mailing Address 144 Hillendale Rd.
Storrs, CT Zip 06268
Phone 860-634-1498 Email gphotos@gmail.com

Title and Brief Description of Project

Installation of spa/jacuzzi
Location of Project West side of house
Intended Start Date Approx. mid August

Part B - Property Owner (if applicant is the owner, just write "same")

Name same
Mailing Address _____
Zip _____
Phone _____ Email _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature _____ date 7-13-16

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

Installation of jacuzzi / spa approx 110' from wetland
As this is an above ground installation, little ground
should be regraded. There is a slope, so the area
of activity will drain toward the wetlands. Installation
of erosion controls to be done.

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

11' x 11'

3) Describe the type of materials you are using for the project: _____

concrete jacuzzi

a) include **type** of material used as fill or to be excavated TBD if needed

b) include **volume** of material to be filled or excavated TBD if needed

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

staked hay bales or silt fence if necessary

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

hilly

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. (See guidelines at end of application)

- 2) Applicant's map date and date of last revision _____
- 3) Zone Classification RAR-90
- 4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

- 1) Attach list of abutters, name, and address
- 2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? Yes No Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? Yes No Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? Yes No Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

- I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.
- I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Signature

7-13-16

Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.

Signature

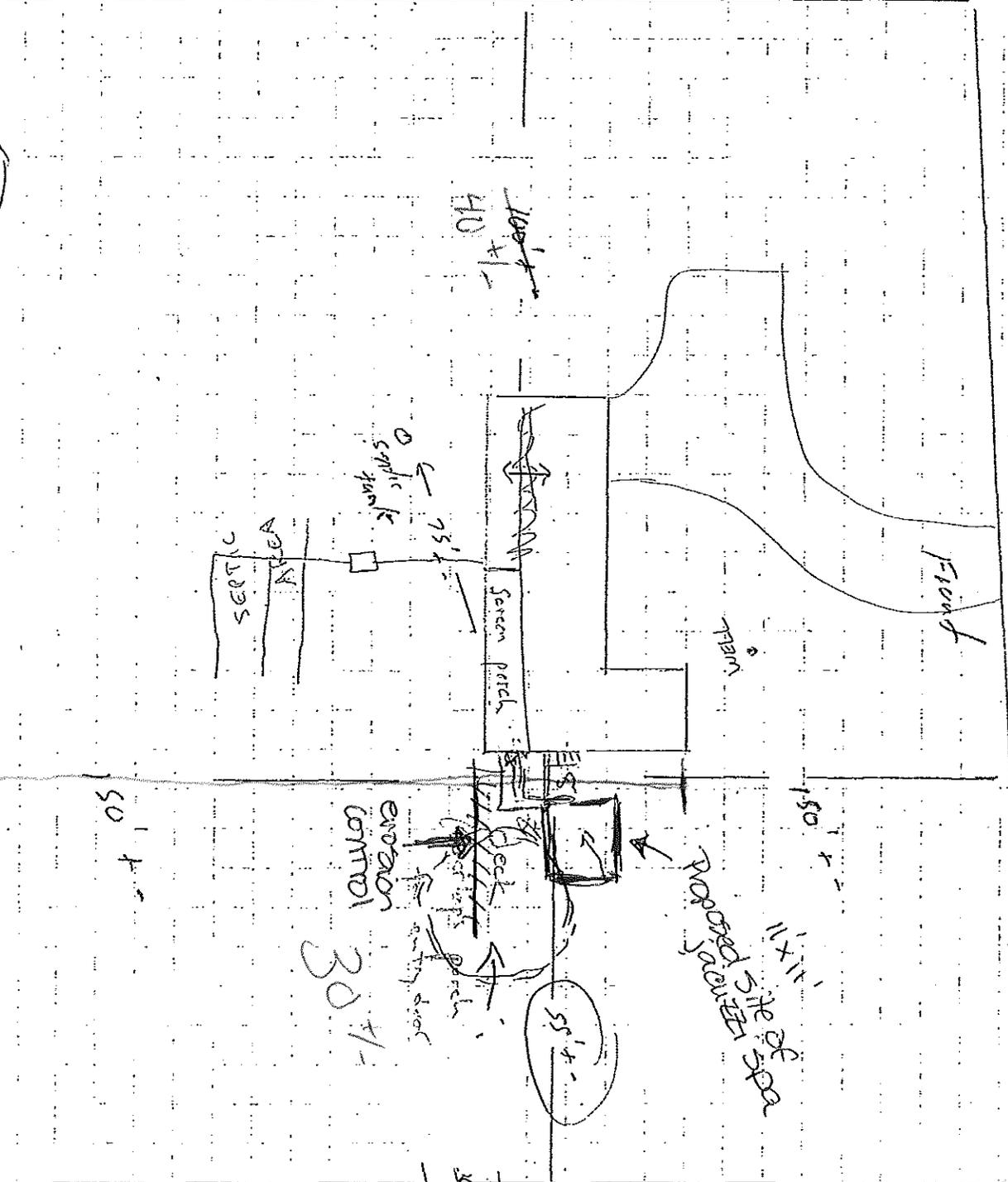
7-13-16

Date

Plot plan
house site

191st Hillside Road

Eastville Brook



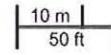
Map
Reused
to 7/14/16



Town of Mansfield, Connecticut

Selected Parcel: 144 HILLYNDALE RD ID: 15.29.33

Printed on 7/14/2016 from <http://www.mainstreetmaps2.com/c/mansfield/public.asp>



This map is for informational purposes only. It is not for appraisal of, description of, or conveyance of land. The Town of Mansfield, Connecticut and MainStreetGIS, LLC assume no legal responsibility for the information contained herein.

Barbados

91 x 91 x 36 in
231 x 231 x 91 cm



61 Dual Footblaster | Acrylic: White Pearl



Specifications

Seating Capacity	5	
Dry Weight	908 lbs	412 kg
Filled Weight	4508 lbs	2045 kg
Water Capacity	450 gl	1703 lt

Jets	Pumps : 1-Speed
------	-----------------

63	Two 6.0 BHP
----	-------------

61 Dual Footblaster	Two 6.0 BHP One 3.0 BHP
---------------------	----------------------------

The Double Lounger

The Barbados gives you plenty of reasons to relax alone or with friends and family. With multiple jet arrangements, two loungers and open barrier seating, this spa is designed for you and your guest to lounge back and enjoy a soothing yet powerful hydrotherapy experience.



COMMUNICATIONS



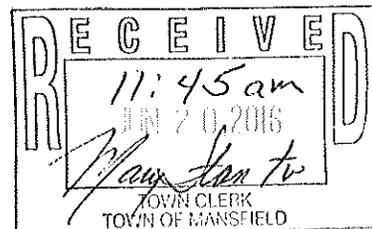
L. Painter

Dear Town Clerk:

Attached you will find a Notice of Tentative Determination Statewide General Permit that has been issued by the Department of Energy and Environmental Protection, Inland Water Resource Division. Please distribute these documents to your staff (Mayor, Inland Wetland Commission, Conservation Commission, Planning & Zoning Commission, Harbor Management Commission, Shellfish Commission and the Harbormaster). The Notice of Tentative Determination and draft permit documents are available for viewing at <http://www.ct.gov/deep/>, at the top of the web page click on Publications, then Public Notices.

If you have any questions on this matter, please contact Carol Ladue 860-424-3828.

Thank you





**NOTICE OF TENTATIVE DETERMINATION
SECTION 401 WATER QUALITY CERTIFICATION
NOTICE OF FEDERAL COASTAL CONSISTENCY REVIEW**
Application #WQC-201607149, Application #FCC-201603722
Department of the Army General Permits for the State of Connecticut
Municipalities: State-wide
Waters: All Waters

The Department of Energy & Environmental Protection ("DEEP") hereby gives notice it has made a tentative determination for applications submitted by United States Army Corps of Engineers, New England District ("Corps") pursuant to Section 401(a)(1) of the Federal Clean Water Act ("CWA") for the Water Quality Certification ("WQC") of state-wide general permits ("GP"). The applicant has also requested a determination pursuant to section 307(c)(1) of the Coastal Zone Management Act to review the proposed GP for consistency with the enforceable policies of Connecticut's federally-approved Coastal Management Program contained in sections 22a-90 to 22a-112 of the Connecticut General Statutes ("CGS").

Specifically, the Corps proposes to issue a new Department of the Army General Permits for the State of Connecticut pursuant to 33 CFR part 325.5(c)(3) for minimal impact activities within the State of Connecticut. The new GP consists of 23 individual general permits, GP 1. through GP 23., with a streamlined review process for activities within Corps jurisdiction under Section 404 of the CWA and Section 10 of the federal Rivers and Harbors Act of 1899 and for activities within the jurisdiction of the State of Connecticut under Section 401 of the CWA. The proposed activities will affect inland and coastal waters and wetlands, and coastal and aquatic resources of the State of Connecticut.

ACTIVITIES IN INLAND WATERS: A tentative determination has been made to grant WQC with conditions and limitations for some activities, deny WQC for some activities, and waive WQC for some activities. WQC for applications filed with DEEP for activities proposed for authorization under the Preconstruction Notification (PCN) process is not valid until the commissioner issues a written eligibility determination for that activity. Upon written determination that an activity proposed by an applicant is eligible, WQC under PCN would be deemed approved.

ACTIVITIES IN TIDAL, COASTAL and NAVIGABLE WATERS: A tentative determination has been made to grant a WQC with conditions for activities that meet the requirements for Self-Verification (SF) and Preconstruction Notification (PN) under the GP. The GP will not authorize activities in these waters unless state authorization is granted. Under the proposed GP, applicants will first apply to the DEEP for Structures, Dredging & Fill or Tidal Wetlands permits or certificates, Water Quality Certification, and Coastal Consistency Concurrence, as appropriate. Substantive evaluations of activities for consistency with state water quality standards and coastal management policies will be conducted at the time these activities are evaluated in applications filed with the DEEP for authorization under the authorities identified in Section 2, paragraph II.1. of the GP. Once the DEEP has made a determination to authorize or certify such activities or found such activities to be consistent with the State's Coastal Management Act, any applicable provisions of the GP become valid upon written notification by the Corps pursuant to the provisions of the GP.

Interested persons may obtain copies of the application from the Corps at: United States Army Corps of Engineers, New England Division, 696 Virginia Road, Concord, MA 01742-2751, Attn: Diane M. Ray, phone: (978) 318-8831 or (800) 343-4789.

All interested parties are invited to comment on the tentative determination concerning the application for a WQC or the Coastal Consistency Review. Comments regarding the provisions of the WQC for activities in inland waters should be forwarded to Robert Gilmore, DEBP/Inland Water Resources Division, 79 Elm Street, Hartford, CT 06106-5127; email: Robert.Gilmore@ct.gov. Comments regarding the provisions of the WQC for activities in tidal, coastal or navigable waters or the Coastal Consistency Review should be directed to Brian Golembiewski, DEBP/Office of Long Island Sound Programs, 79 Elm Street, Hartford, CT 06106-5127; email: Brian.Golembiewski@ct.gov. The application and a draft copy of the proposed WQC are available for inspection on the DEEP website (www.ct.gov/deep) or at the office of the Inland Water Resources Division at the above address from 8:30AM to 4:30PM Monday through Friday by contacting Carol Ladue at (860) 424-3828. Written comments on the WQC application and federal Coastal Consistency Review must be submitted to the Department no later than July 14, 2016.

ADA PUBLICATION STATEMENT

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action and Equal Opportunity Employer that is committed to complying with the Americans with Disabilities Act. To request an accommodation contact us at (860) 418-5910 or deep.accommodations@ct.gov.

Publishing Date: June 14, 2016

DATE: _____

6/10/16

J. Wingfield

Betsey C. Wingfield, Chief
Bureau of Water Protection & Land Reuse

Mayor Paul Shapiro
Mansfield Town Hall
Mansfield, CT 06268

July 5, 2016

Dear Mayor Shapiro,

Several residents of Mansfield have asked questions about the planned two house development on Dog Lane and have been quite distressed by the lack of public discussion of important environmental issues. We have testified twice at the Conservation Commission (March and April 2016) and once at the IWA (May 2, 2016). Our May 2 testimony was not discussed by the IWA at that May meeting and voting was postponed until the June meeting. Given the lack of discussion in May, fifteen neighbors tried to submit the attached letter asking the IWA *to publically discuss the issues at the June meeting before voting*. We were told that the public hearing was closed and our letter would not be part of the packet for the June meeting, giving us no way to ask for a discussion.

At the June meeting of the IWA there was “word-smithing” of a motion to approve the development, but no discussion of issues—not of the issues we had raised, nor of the recommendations of either the Conservation Commission or the Inland Wetland Agent. Important topics for discussion included the Conservation Commission statement that it “remains concerned about the potential for nutrient loading from the engineered septic systems, and suggests moving these systems farther from wetlands or reducing the number of houses from two to one” (Minutes of April 20). And, secondly, an important topic for discussion would have been our Inland Wetlands Agent’s written comment: “I strongly recommend that all recommendations detailed in the March 28, 2016 DT DEEP memo from Dawn McKay to Edward Pelletier should be incorporated into the site plan” (Underlined in Jennifer Kaufman’s May 26, 2016 letter to the IWA, available on page 52 of IWA June packet). These issues were *not discussed* by the IWA in June, but they voted nonetheless to approve the project.

I and my fourteen neighbors who signed the attached letter of May 27, 2016 are simply astounded that the democratic process in town would be so devoid of public discussion of such important issues as the protection of wetlands and species of concern. Merely voting does not constitute a healthy democracy.

Sincerely,



Kathryn Strother Ratcliff
60 Bundy Lane
Mansfield, CT 06268

To: The Inland Wetlands Agency,

RE: The Raphaelson property on Dog Lane

Date: May 27, 2016

The evaluation to date of the Raphaelson proposal seems to indicate that threats to *human* health are minimal, but the written record shows that *environmental* health issues remain unaddressed. The Conservation Commission thinks so and suggests *one lot* as a way to limit damage to the fragile wetlands. Furthermore, public testimony at both the Conservation Commission and Inland Wetlands Agency meetings raised issues about nitrogen loading and impacts on species of concern.

Unfortunately, environmental impact was not discussed in any detail at the last Inland Wetlands Agency meeting following the public testimony. It seems important for your committee to vote only *after* IWA has the chance to review reports or other information that adequately address potential environmental impact.

If no real discussion of the concerns that have been raised happens, what is the point of Conservation Commission input and public testimony?

Four points yet to be addressed:

1. How does the Inland Wetlands Agency respond to the Conservation Commission comments on the Raphaelson proposal as recorded in the minutes of 20 April 2016, namely:

“(T)he Commission:

Remains concerned about the potential for nutrient loading from the engineered septic systems, and suggest **moving these systems farther from wetlands or reducing the number of houses from two to one**; and

Suggests that the parcel’s owner consider conservation easements to enhance wetlands protection...”

[bold added]

2. Are our wetlands to be protected by having up-to-date assessments of impact or are we satisfied with 25 year-old models? (Concern about the 1992 model used was a concern of Conservation Commission members and public testimony. Testimony provides reference to recent models from 2010 and 2013.)

3. Will the requirements for the build include the DEEP-recommended protections of the known populations of wood turtles and crayfish? These include the statement that “work should occur when these turtles are active” and says in full:

Recommended Protection Strategies for turtles:

Work should occur when these turtles are active (April 1st to September 30th) and I recommend the additional strategies in order to protect these turtles:

- Silt fencing should be installed around the work area prior to construction, please avoid erosion control products that are embedded with plastic netting as these can be fatal to wildlife;
- Where possible, AVOID installing sediment and erosion control materials from late August through September and from March through mid-May. These two time periods are when amphibians and reptiles are most active, moving to and from wetlands to breed;
- After silt fencing is installed and prior to construction, a sweep of the work area should be conducted to look for turtles;

79 Elm Street, Hartford, CT 06106-5127
www.ct.gov/deep
Affirmative Action/Equal Opportunity Employer

-
- Workers should be apprised of the possible presence of turtles, and provided a description of the species (http://www.ct.gov/deep/cwp/view.asp?a=2723&q=473472&depNav_GID=1655);
 - Any turtles that are discovered should be moved, unharmed, to an area immediately outside of the fenced area, and position in the same direction that it was walking;
 - No vehicles or heavy machinery should be parked in any turtle habitat;
 - Work conducted during early morning and evening hours should occur with special care not to harm basking or foraging individuals; and
 - All silt fencing should be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.
 - Stockpiles of soil should be cordoned off with silt fencing so turtles do not attempt to try and nest in them.
 - Use native plantings if possible. Any plantings should be composed of species native to northeastern United States and appropriate for use in riparian habitat.

Recommended Protection Strategies for the Crayfish

- This project should provide an large buffer around any riparian areas
 - Avoid removing trees or other vegetation from riparian areas but especially stream banks, if possible leave a wide buffer to prevent temperature fluctuations to any flowing water that may occur on this property
 - Ensure that soil erosion and sedimentation controls are in place to prevent the streams or flowing water to be impacted during storm events while construction is taking place
 - Ensure that no additional nutrient loading (fertilizers) or chemicals are used in this area to prevent degradation to the crayfish habitat
-

4. And finally, who will oversee and enforce compliance by the builder?

Respectfully submitted,

Kathryn S Ratcliff

KATHRYN S RATCLIFF 60 BUNDY LANE STORRS CT

Deborah Dancy 56 Farrell Rd Storrs, CT

Deborah Dancy

Doreen Audrey Barberet 45 Farrell Rd Storrs, CT

William T Mayrman 37 Farrell Rd Storrs, CT

Ruth B Mayrman 37 Farrell Rd, Storrs, CT

M. Joan Newirth 54 BUNDY LANE

M. JOAN NEUWIRTH

Jerome W Newirth 54 BUNDY LANE

JEROME NEUWIRTH

Richard E Ratcliff 60 Bundy Lane

RICHARD E. RATCLIFF

Lorene R Steinway

Lorene R. Steinway

78 Bundy Lane

Wade A. Gibbs

78 Bundy Ln

WADE A. GIBBS

There were four additional signatures on the original letter submitted to the Inland Wetland Agent, for a total of fifteen.

The four additional signatures were:

Mark Kohan 127 Dog Lane

Ali Kohan 127 Dog Lane

Jim Wohl 128 Dog Lane

Janet Wohl 128 Dog Lane

