Civil Engineering Services, LLC
203 Boston Hill Rd
ANDOVER, CT 06232
(860) 742-0364

JOB 21509 - Meadowbrook
SHEET NO. _____ OF _____
CALCULATED BY CH DATE 4-26-16
CHECKED BY _____ DATE _____
SCALE _____

CB #7:

A = 18,931 SF = 0.43 AC

T_c = 5 min. (minimum)

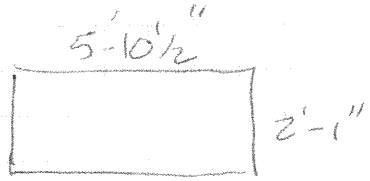
SCS → 25-yr storm = ~~2.82~~ 2.232 cfs

rational → 25-yr storm

Q = CiA = (0.9)(7.2 in/hr)(0.43 ac)

= 2.79 cfs

CT DOT TYPE C
DOUBLE GRATE TYPE II



weir: (2'-1" × 2) + 5'-10½"
= 10'

max depth of stormwater (25-yr) ~~@ 0.42'~~
@ catch basin = 0.23' = 3"
= 5"

Q_{50} = (0.9)(8.1)(0.43) = 3.13 cfs

max depth @ catch basin = 0.25' = 3"

OK

Weir Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Tuesday, Apr 26 2016

MEADOWBROOK CB#7 AS WEIR

Rectangular Weir

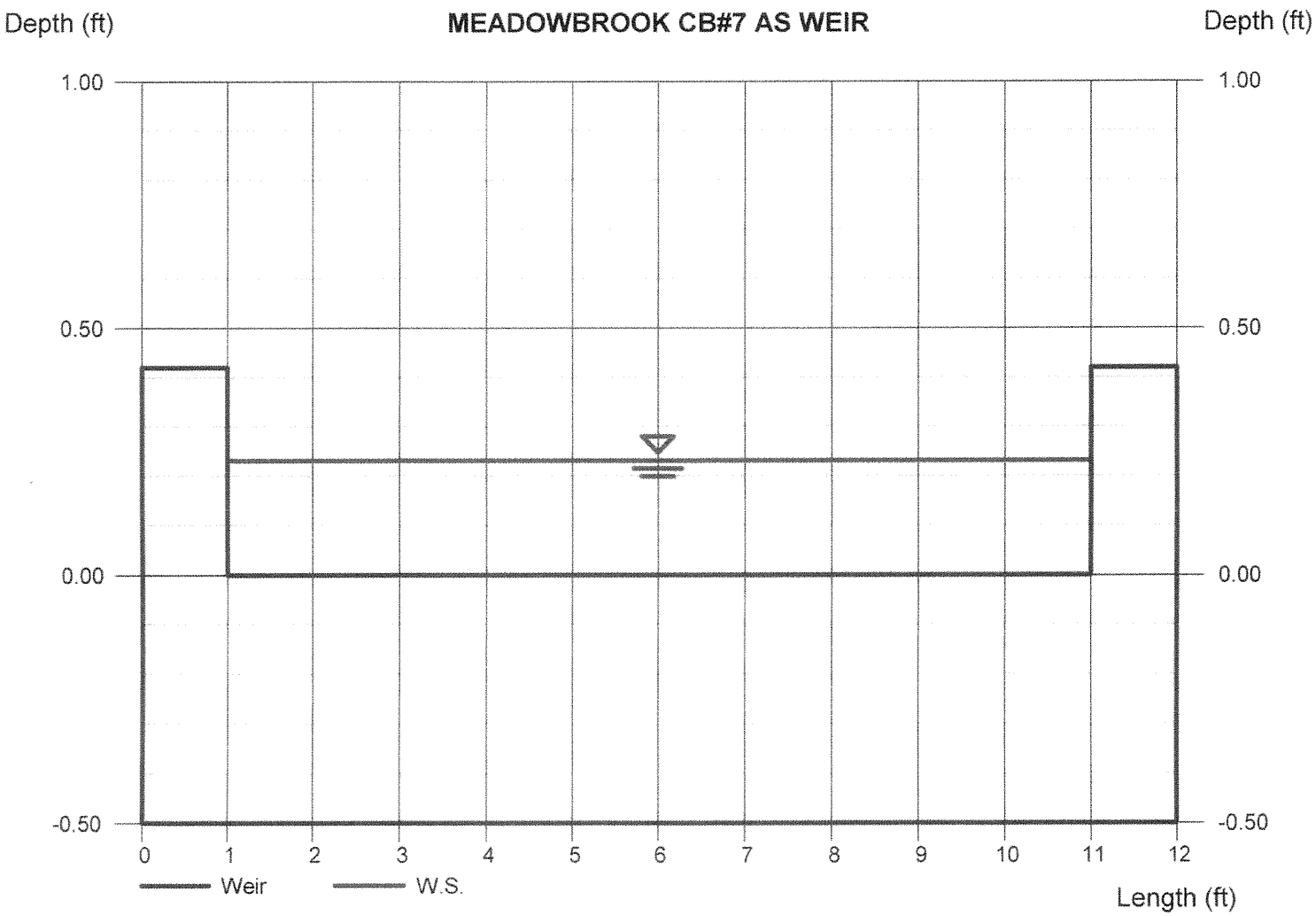
Crest	= Broad
Bottom Length (ft)	= 10.00
Total Depth (ft)	= 0.42

Calculations

Weir Coeff. Cw	= 2.60
Compute by:	Q vs Depth
No. Increments	= 20

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.887
Area (sqft)	= 2.31
Velocity (ft/s)	= 1.25
Top Width (ft)	= 10.00



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Tuesday, Apr 26 2016

CULVERT FROM CB#7

Invert Elev Dn (ft)	= 233.00
Pipe Length (ft)	= 58.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 233.58
Rise (in)	= 12.0
Shape	= Cir
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.012
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment

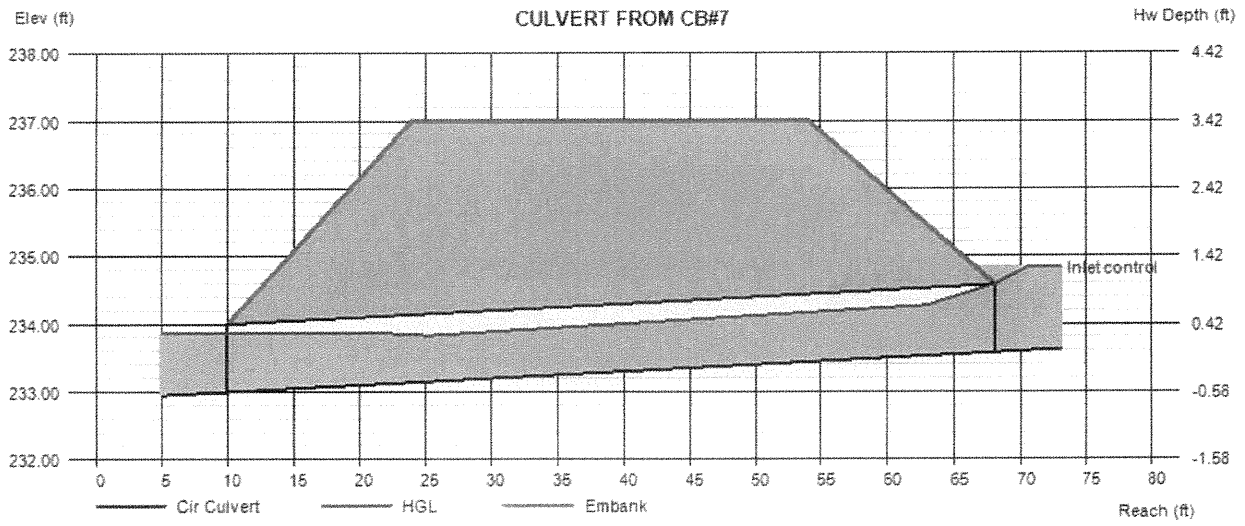
Top Elevation (ft)	= 237.00
Top Width (ft)	= 30.00
Crest Width (ft)	= 30.00

Calculations

Qmin (cfs)	= 0.00
Qmax (cfs)	= 3.25
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 3.00
Qpipe (cfs)	= 3.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 4.12
Veloc Up (ft/s)	= 4.77
HGL Dn (ft)	= 233.87
HGL Up (ft)	= 234.33
Hw Elev (ft)	= 234.83
Hw/D (ft)	= 1.25 OK
Flow Regime	= Inlet Control



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JOB 215049 - Meadowbrook
SHEET NO. 1 OF 1
CALCULATED BY GH DATE 4-26-16
CHECKED BY DATE
SCALE

Roof Leaders:

assume 7.2 in/hr rainfall (=0.6 ft/hr)
assume largest roof area (= 1500 SF)
then max rainfall = 900 ft^3/hr
900 ft^3/hr = 15 ft^3/min = 0.25 ft^3/sec (cfs)

max depth of flow in 6" leader = 4.6"

Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Tuesday, Apr 26 2016

MEADOWBROOK ROOF LEADERS

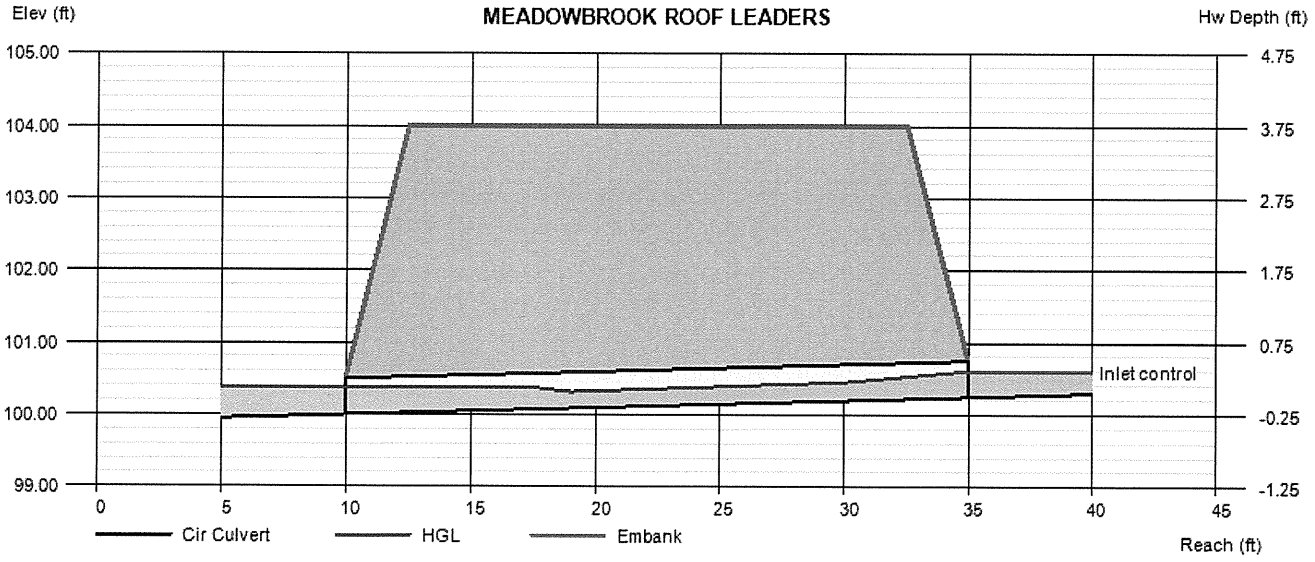
Invert Elev Dn (ft)	= 100.00
Pipe Length (ft)	= 25.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 100.25
Rise (in)	= 6.0
Shape	= Cir
Span (in)	= 6.0
No. Barrels	= 1
n-Value	= 0.012
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.0018, 2.5, 0.03, 0.74, 0.2

Embankment

Top Elevation (ft)	= 104.00
Top Width (ft)	= 20.00
Crest Width (ft)	= 20.00

Calculations

Qmin (cfs)	= 0.05
Qmax (cfs)	= 0.25
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 0.25
Qpipe (cfs)	= 0.25
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 1.57
Veloc Up (ft/s)	= 2.50
HGL Dn (ft)	= 100.38
HGL Up (ft)	= 100.50
Hw Elev (ft)	= 100.60
Hw/D (ft)	= 0.71
Flow Regime	= Inlet Control