

SPECIAL EXCEPTION PERMIT APPLICATION



TOWN OF MONROE
PLANNING & ZONING DEPARTMENT
7 Fan Hill Road, Monroe, CT 06468
Tel. (203) 452-2812

FOR OFFICE USE:

SEP - _____

File Number - _____

Project Name: THE RIDGE AT MONROE
Street Address: 1271 MONROE TURNPIKE
Zoning District(s): RAA
Assessor Map #: 134 Lot #: 30 Acreage: 14.9 Deed: Volume # 2164 Page # 231
Brief Description: CONSTRUCT MULTI-UNIT AGE RESTRICTED DEVELOPMENT
(Also attach Project Narrative as required in the Zoning Regulations)

- ❖ **TAKE NOTE:** *It is the applicant's responsibility to provide all the information the Commission will need in order to process the application and make a fair determination of the issues. If an applicant fails to supply timely or sufficient information, it may result in delay, denial of the application, or both. Applicants are highly recommended to be represented by qualified representatives and to consult the Town of Monroe Plan of Conservation and Development, as well as the detailed application requirements and standards set forth in the Town of Monroe Subdivision, Zoning and Inland Wetlands Regulations.*
- **Pre-Submission Conference** – Contact the Planning and Zoning Administrator (203-452-2812) to schedule one or more preliminary pre-submission conferences with staff (*this is highly recommended*).
 - **Formal Application Submission** – Provide **eleven (11) paper application sets (plans folded and materials collated into individual sets)** and **one (1) pdf CD** including the following materials: (a) signed application form; (b) supporting application narrative; (c) supporting investigative and impact analyses reports; (d) 100-foot abutters list; and (e) complete set of Site Plans. The application submission will be reviewed by the **Commission** and the Town's **Application Review Team (ART)** consisting of Department Staff from Planning and Zoning, Engineering, Wetlands, Fire Marshal, Police (traffic authority), Health and Building.
 - **Sealed and Certified Plans** – All required A-2 and T-2 Surveys, Site Plans, Architectural Plans and supporting analyses Reports as prepared by consultant engineers, surveyors, landscape architects, architects, etc. must be current and include an original seal and live signature certification.
 - **Project Timeline** – Following official receipt of an application, a **Project Timeline** listing milestone dates and actions to be followed during the review will be emailed to the applicant's Primary Project Contact.
 - **ARB** – For new or modified commercial, industrial and multifamily residential buildings and structures, a separate application to the Monroe Architecture Review Board (ARB) may also be required. **Application to ARB includes completion of an ARB specific separate application form and plan copies.**

7. **Is the property located within a floodplain?** No Yes 100-year 500-Year
Proposed structures or grading in floodplain? No Yes **Contact Flood Plain Administrator 203-452-2812.**

8. **Is the property located within 500 feet of a town boundary?**
 No Yes **Abutting town(s):** _____

9. **Is the property subject to an existing conservation or preservation deed restriction?**
 No
 Yes **Provide a notarized statement pursuant to CGS §47-42d:**

- **The proposed application involves only interior building alterations; OR**
- **Written notice of such application has been sent by certified mail, return receipt requested, not later than sixty (60) days prior to the filing of the application to the party holding the conservation or preservation restriction; OR**
- **In lieu of notice, provide a letter from the holder or holder's authorized agent, verifying that the application is in compliance with the terms of the restriction.**

10. **Is the property located within a public water supply watershed?**
 No
 Yes Name of watershed: _____

NOTE: Per CGS §8-3i, within seven (7) days of an application submission, the applicant is required to NOTIFY the Aquarion Water Company of Connecticut, 714 Black Rock Road, Easton, CT 06612, and the Connecticut Commissioner of Public Health, 410 Capitol Avenue, Hartford, CT 06106; and provide evidence documenting same to the Planning and Zoning Department. For sample notification letters see link below:

[http://www.monroect.org/filestorage/467/469/976/1027/Notification to Aquarion %26 DPH PZC.pdf](http://www.monroect.org/filestorage/467/469/976/1027/Notification%20to%20Aquarion%20DPH%20PZC.pdf)

11. **Are there inland wetlands, watercourses, lakes or ponds or other water related resources on or within 100 feet of the property; and/or is there a named watercourse within 150 feet of the property?**

Attach Soil Scientist inspection report/verification and delineation report and survey map.

No Yes Area of property regulated 8.1 (ac) 54% (% of property)
Contact the Inland Wetlands Department 203-452-2809 prior to proceeding with this application.

12. **Previous or Current Wetland Permits or Violations for Property (list Wetland File #s and dates):**
CURRENT - IWC-2021-09

13. **Is or will the property/project be a major traffic generator (>100,000 SF of building or > 200 vehicles)?**
 No Yes **Provide a copy of STC Certificate (if existing) or new Certificate of Determination.**

14. **Does the application involve a "change of use" of an existing building or facility?**
 No Yes From _____ to _____

15. **Are new or expanded septic disposal systems proposed?** No Yes **Attach plans and flow confirmation.**
 Subject to Monroe Health Department Approval Subject to State Health Department Approval

16. Is public water service available at this property?

- No Will use existing private well Will use new private well Will extend water main
 Yes Will use existing connection Will upgrade connection Not planning connection

Nearest Public Water Main: Street Location IN FRONT OF PROPERTY Distance: _____ (ft)

17. Describe topographic conditions and assess to what extent slopes 15% and greater may limit development potential or which otherwise require specialized engineering to support future development?

0.1 ac (25% and greater) 0.6 ac (15-15%) 1.1 ac (10-15%) 13.1 ac (0-10%)

Attach a separate narrative with a Slopes Map showing the location and acreage of sloped areas:

18. Will Storm Water Detention and/or Retention be needed for this proposal?

- No **Provide reasons - attach additional sheets as necessary:**

- Yes **Provide list of provisions - attach stormwater report or additional sheets as necessary:**

SEE REPORT

19. Have Storm Water Quality Control measures been included in this proposal?

- No **Provide reasons - attach additional sheets as necessary:**

- Yes **Provide list of measures - attach stormwater report or additional sheets as necessary:**

ENGINEERED STORMWATER SYSTEM DESIGNED IN ACCORDANCE CT STORM WATER QUALITY MANUAL. HYDRODYNAMIC SEPERATOR

20. Have Low Impact Development (LID) measures been considered as additional features for this proposal?

- No **Provide reasons – attach stormwater report or additional sheets as necessary:**

- Yes **Provide list of LID measures - attach stormwater report or additional sheets as necessary:**

CB SUMPS, HYDRODYNAMIC SEPERATOR

SEE ATTACHED STORMWATER REPORT

21. Have any Zoning Board of Appeals variances been granted related to the property?

- No Yes **List variances obtained with respective ZBA File # and date of approval:**

22. Are any waivers of the Zoning Regulations application requirements requested?

- No Yes **Attach a separate written request and rational in support thereto.**

I(we) hereby certify that I(we) make this application as or on behalf of and with the full authority of the owner(s) of the property or premises and am aware of and understand the Zoning, Subdivision and Inland Wetlands Regulations pertinent to the application and affirm that the statements and information provided are accurate and true. Further, all the undersigned hereby authorizes the Town of Monroe and its agents, to access the premises for the purpose of application investigation, site review, inspection of improvements or construction, and enforcement of the Town's Regulations and Ordinances, and the General Statutes of the State of Connecticut, as may be applicable.

All the undersigned warrant the truth of all statements contained herein and in all supporting documents according to the best of their knowledge and belief. Further, all the undersigned understand and agree that the Planning and Zoning Commission and/or its Staff/Consultants may request additional information and it is the applicant's/owner's responsibility to provide this information in a timely fashion and to the Commission's satisfaction. If the information provided is incomplete or inaccurate, the Commission may deny the application or request an extension to be granted by the applicant/owner in order to act within applicable legal time limits.

This agreement shall be binding on all heirs, executors, administrators, successors and assigns of all undersigned.

APPLICANT(S) – (Both Applicant and Owner Notarized Signatures are Required)

1271 MONROE TURNPIKE LLC

Applicant Name Printed

Authorized Signature

Date

Additional Applicant

Authorized Signature

Date

(Provide additional sheets as needed)

Subscribed and sworn to by _____ on this day of _____, 20____, before me:

Notary Public, Justice of the Peace, Commissioner of the Superior Court

Please note the following: This application must include the owner's signature and notarization or a written, notarized consent to submit this application, signed and dated by the owner.

OWNER(S) – (Both Applicant and Owner Notarized Signatures are Required)

1271 MONROE TURNPIKE LLC

Owner Business Name

REBECCA ELLER

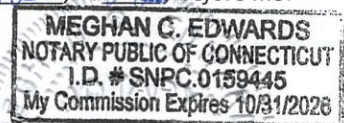
Authorized Member Name Printed

Authorized Signature

Date

Subscribed and sworn to by Rebecca Eller on this day of July 12, 2022, before me:

Notary Public, Justice of the Peace, Commissioner of the Superior Court



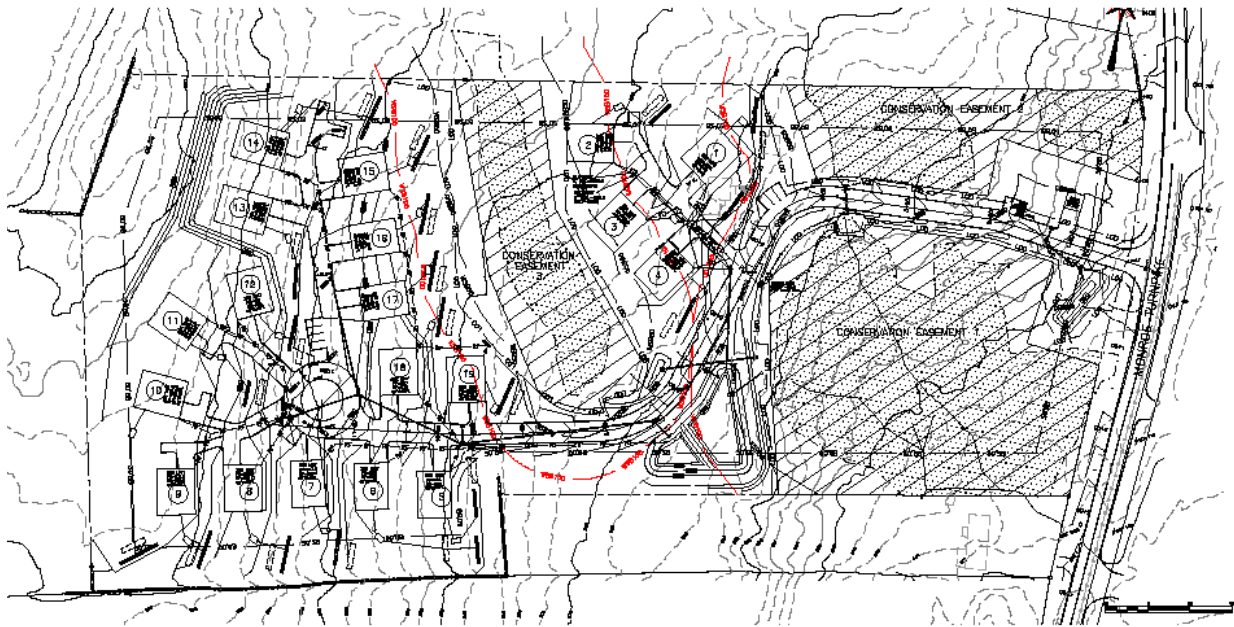


THE RIDGE AT MONROE 1271 Monroe Turnpike – Special Exception Permit

PROJECT NARRATIVE

Project description –

Construction of 19 detached, age restricted residential dwelling units with appurtenances situated within an ARR zone. The dwellings will be served by private sewage disposal systems and public water. Access will be provided by 1200 linear feet of privately owned roadway with stormwater being collected and treated within an on-site detention basin before being discharged to an existing Town owned storm drainage system.



Existing site conditions:

The parcel contains an abandoned residence. The the site is wooded with sparse undergrowth.. The existing dwelling is to be removed. Topographic conditions of the site reveal a gently sloped site with 78% of the area being at a grade of 0-10% which results in high development potential (Refer to attached slope analysis map).

Proposed site conditions:

The property is suitable to support individual sewage disposal systems for upto 27 dwelling units containing no more than 50 bedroom. Final septic system designs will be subject to local and State Health Department approval.

Consistency with the 2010 POCD

The 2010 POCD recommends that the Town create opportunities to “Encourage new housing opportunities for elderly” and “Diverse Housing Options” (refer to 6.3). This proposed Special Exception

Permit Application is consistent with these recommendations.

Architectural considerations

Typical unit elevations have been included within the plan set. They promote architectural features that are consistent with the nature of dwellings in the surrounding RF-1 zone.

Proposed use operations

The proposed use is an age restricted community that will not be objectionable by reason of noise, fumes, smoke, dust, or vibration. Intensity and glare of lights should not be a concern due to no proposed street lighting.

Parking areas

All off street parking shall be accommodated within the garages or driveways of the units. Visitor parking spaces have been provided throughout the community roadway system which exceeds the minimum number set by ARR zoning regulations.

Water Supply

Aquarion Water Company conducted a fire flow test on in 2021. It was determined at that time adequate water pressure exists to support the proposed multi-building age restricted community. The test results are on file in the Town of Monroe offices.

Town Commission approvals

Former approvals include Change of Zone ZCA-2021-09, Inland Wetlands permits IWC-2021-09.

DELVECCHIO JOSEPH + MARY
7 TRAILSIDE DR
MONROE, CT 06468

MONROE TOWN OF
7 FAN HILL RD
MONROE, CT 06468

STEVENSON VOLUNTEER FIRE CO INC
1260 MONROE TPKE
MONROE, CT 06468-1402

MONROE TOWN OF (FIRE COMPANIES)
1260 MONROE TPKE
MONROE, CT 06468-1800

ZWIERLEIN BEVERLY A
57 HIGHLAND DR
MONROE, CT 06468

FORMICHELLA JOHN TRUSTEE
147 HIGHLAND DRIVE
MONROE, CT 06468-1442

OMEARA MICHAEL J + MARY
93 HIGHLAND DR
MONROE, CT 06468

VAGLIVELO RUTH M
2 HIGHLAND DR
MONROE, CT 06468

MEDEIROS BENEDITO A +
24 HIGHLAND DR
MONROE, CT 06468

DIMARTINO LOUIS + PAULA
74 HIGHLAND DR
MONROE, CT 06468

PAVONE SHIRLEY A
138 HIGHLAND DR
MONROE, CT 06468

FERRARA DOMINICK G (LU) +
142 HIGHLAND DR
MONROE, CT 06468

FERREIRA HIGINO + MARIA TRSTEES
91 HIGHLAND DR
MONROE, CT 06468

ANTONINI ELAINE A
99 HIGHLAND DR
MONROE, CT 06468

SCHOLZ BARBARA J
109 HIGHLAND DR
MONROE, CT 06468

GELFAND MARTHA
104 HIGHLAND DR
MONROE, CT 06468

CALABRESE FRANK V JR +
1051 RT 308
RHINEBECK, NY 12572

WEINBERG BERNICE TRUST
153 HIGHLAND DR
MONROE, CT 06468

TOMATORE SAMUEL R
154 HIGHLAND DR
MONROE, CT 06468

FITCH RICHARD
14 UNDERHILL RD
MONROE, CT 06468

DEPELTEAU ROBERT + ESTHER
32 HIGHLAND DR
MONROE, CT 06468

PHILLIPS DAVID B
48 HIGHLAND DRIVE
MONROE, CT 06468

GHELARDUCCI STEVEN +
78 HIGHLAND DR
MONROE, CT 06468

SZABO KAROLINA
80 HIGHLAND DR
MONROE, CT 06468

RUSSELL SUSAN M
6 HIGHLAND DR
MONROE, CT 06468

BRADY EDWARD P + ALICE M
6 BEHRENS TER
MONROE, CT 06468-1468

REESE KATHRYN J
120 HIGHLAND DR
MONROE, CT 06468

KLESYK MARIE
9 UNDERHILL RD
MONROE, CT 06468-1469

MACAUDA ANGELO + MARY
105 HIGHLAND DR
MONROE, CT 06468

BROWN WILLIAM J
161 HIGHLAND DR
MONROE, CT 06468

BARTLETT GINGER J
22 UNDERHILL RD
MONROE, CT 06468

LAPINE LINDA +
19 CHADWICK COURT
MONROE, CT 06468

ELMENDORF DONALD
8 BEHRENS TER
MONROE, CT 06468

GIULIANI JOSEPHINE
1000 TERRAIN ST APT#1223
MALVERN, PA 19355

KARAS CATHERINE
34 HIGHLAND DR
MONROE, CT 06468

COBA LISA
22 MIMOSA LN
HUNTINGTON, CT 06484

SOCHACKI DAVID M + KATHLEEN B
1 UNDERHILL RD
MONROE, CT 06468

DEMETRI CHARLES P + ROBERT H
41 HIGHLAND DR
MONROE, CT 06468

PURCIELLO PHILIP J JR + LAURIE
45 HIGHLAND DR
MONROE, CT 06468

DEVELLIS IDILIO + MARCO
31 UNDER CLIFF RD
TRUMBULL, CT 06611

MCGRATH JAMES W + JEAN W
101 HIGHLAND DR
MONROE, CT 06468

SCHUMAKER CAROL ANN
102 HIGHLAND DR
MONROE, CT 06468-1441

MCAULEY PATRICIA + HAMMOND
ROBERT
78 HORSE TAVERN RD
TRUMBULL, CT 06611

KENYON JANET M +
3 BEHRENS TER
MONROE, CT 06468

SIVAK JOHN J + KRISTAL
7 BOOT SHOP LN
MONROE, CT 06468

GIAQUINTO EUNICE
12 UNDERHILL RD
MONROE, CT 06468

AGK2 LLC
40 WOLF HOLLOW LN
KILLINGWORTH, CT 06419

ARCO CLAIRE
8 HIGHLAND DR
MONROE, CT 06468

BUSSEY CAROL LIVING TRUST
75 HIGHLAND DR
MONROE, CT 06468

MCKAY GINA MARIE TRSTEE
5 BENANTO DR
DERBY, CT 06418

WALES DONA-LYN TRSTEE
205 OLD NEWTOWN RD
MONROE, CT 06468

DELEON ANGELA
63 HIGHLAND DR
MONROE, CT 06468

DALY WHITNEY E
124 HIGHLAND DR
MONROE, CT 06468

COLLIS MARILYN
156 HIGHLAND DR
MONROE, CT 06468

YERINA ELIZABETH A + MILLER
DOROTHY +
13 HIGHLAND DR
MONROE, CT 06468-1442

BUSSEY CAROL TRSTEE
75 HIGHLAND DR
MONROE, CT 06468

OMEARA MICHAEL + MARY
93 HIGHLAND DR
MONROE, CT 06468

LEONE RONALD A + MONICA W
81 HIGHLAND DR
MONROE, CT 06468

FARRINGTON LYNN +
115 HIGHLAND DR
MONROE, CT 06468

MORGANTEEN JAMES F
24 UNDERHILL RD
MONROE, CT 06468

SCHWARZ DORIS T TRSTEE
26 UNDERHILL RD
MONROE, CT 06468

CUNNINGHAM BRIDGET
43 HIGHLAND DR
MONROE, CT 06468

VICHIOLA ALMIRA
140 HIGHLAND DR
MONROE, CT 06468

CAPOCCITTI JAMES VINCENT +
157 HIGHLAND DR
MONROE, CT 06468

AUGUSTINSKY RICHARD A
11 BEHRENS TER
MONROE, CT 06468-1467

CIOCCA FERNANDA
23 HIGHLAND DR
MONROE, CT 06468

DOHERTY JOHN R + LOIS
23 BEHRENS TER
MONROE, CT 06468-1467

TUSCH ERICH + AMY
126 HIGHLAND DR
MONROE, CT 06468

TRANCHESE FRANK + BARBARA
149 HIGHLAND DR
MONROE, CT 06468

CAPLE WILLIAM T + PHYLLIS K
164 HIGHLAND DR
MONROE, CT 06468

BEVILACQUA MARIA C
7 HIGHLAND DR
MONROE, CT 06468

CASSIDY CARMELLA D
13 BEHRENS TER
MONROE, CT 06468

DURKO WILLIAM T
75 GREAT RING RD
MONROE, CT 06468

JONES DIANE A
50 HIGHLAND DR
MONROE, CT 06468

COELHO VALENTINE + LORRAINE
TRSTEEES
12 BEHRENS TER
MONROE, CT 06468-1468

RAFFAELE SALVATORE + CARMELLA
19 HIGHLAND DR
MONROE, CT 06468

BIRTHWRIGHT ARTHUR + DAISY
56 HIGHLAND DR
MONROE, CT 06468

BELL ELVIRA J
162 HIGHLAND DRIVE
MONROE, CT 06468-1441

PRUSACZYK MARILEE A (LU) +
5 HIGHLAND DR
MONROE, CT 06468

DZIERZBINSKI IRENA
17 BEHRENS TER
MONROE, CT 06468

BKITW LLC
22 OLD TREE FARM LN
TRUMBULL, CT 06611

ATTARD KENNETH + MICHELE
47 HIGHLAND DR
MONROE, CT 06468

RAFFERTY JOHN + MARGARET M
19 BEHRENS TER
MONROE, CT 06468-1467

NICOLETT JEANNE L
3 UNDERHILL RD
MONROE, CT 06468-1469

BABIARZ ALEXANDRA +
79 HIGHLAND DR
MONROE, CT 06468

IANNOTTA BENJAMINO (LU) +
106 HIGHLAND DR
MONROE, CT 06468

MEATH PAULINE +
159 HIGHLAND DR
MONROE, CT 06468

SMITH SHELDON T + NANCY S
16 UNDERHILL RD
MONROE, CT 06468-1466

VERDESCHI JOHN H
21 HIGHLAND DR
MONROE, CT 06468

BOWEN ALLAN F + MARIE G
85 HIGHLAND DRIVE
MONROE, CT 06468

ALTMAN IRA + DONNA A
144 HIGHLAND DR
MONROE, CT 06468-1441

TEDESCO CHERYL
83 HIGHLAND DR
MONROE, CT 06468

DOMACK JOAN
97 HIGHLAND DR
MONROE, CT 06468

OBRIEN ROSE
113 HIGHLAND DR
MONROE, CT 06468-1442

MOHR MARY KELLY
21 BEHRENS TER
MONROE, CT 06468

DELVECCHIO GEORGIA T
9 BEHRENS TER
MONROE, CT 06468-1467

BISALTI SALVATORE + MARIANNA
12 HIGHLAND DR
MONROE, CT 06468

HUNT JO ANN HAMILTON +
1 BEHRENS TER
MONROE, CT 06468

VERRILLI DAVID JR + SALLY
4 BEHRENS TER
MONROE, CT 06468

GERSHEL BENJAMIN E + SHANNON W
42 SQUIRE RD
MONROE, CT 06468

LAROSE TREVA R + CLIFFORD SENTLY
53 HIGHLAND DR
MONROE, CT 06468

DELOSRIOS BLAS J + SOFIA
32 UNDERHILL RD
MONROE, CT 06468

WALLER ALICE M
35 HIGHLAND DR
MONROE, CT 06468

96 HIGHLAND DR LLC
1100 PEQUOT AVE
SOUTHPORT, CT 06890

BASSO STEPHEN + DIANE TRSTEEES
265 DEERWOOD CIR U#2
NAPLES, FL 34113

JENSEN EDWARD + VERONICA
1 HIGHLAND DR
MONROE, CT 06468

BEZAS CONSTANTINE + MARJORIE
39 HIGHLAND DR
MONROE, CT 06468

BOSSETT HENRY + MARGARET
70 HIGHLAND DR
MONROE, CT 06468

DONO DOROTHY E
98 HIGHLAND DR
MONROE, CT 06468

GAY PETER + PATRICIA
18 UNDERHILL RD
MONROE, CT 06468-1466

TRUAX SUSANNE
5 BEHRENS TER
MONROE, CT 06468

BALLERINI DOROTHY
(LU)+DEBORAH+KOREN+
15 BEHRENS TER
MONROE, CT 06468-1467

ENGSTROM BARBARA
59 HIGHLAND DR
MONROE, CT 06468

MILONE ANTHONY J - TRSTEE
11 UNDERHILL RD
MONROE, CT 06468

PLASTINA MATTHEW JOHN + ROSE
111 HIGHLAND DR
MONROE, CT 06468

TREMBECZKI ROSE (LU) +
122 HIGHLAND DR
MONROE, CT 06468

SCOTT BARBARA J + CHMURA DONNA
S
10 BEHRENS TER
MONROE, CT 06468-1468

HEINEY ELIZABETH R
31 HIGHLAND DR
MONROE, CT 06468

GALASKE CHRISTOPHER - EXECUTOR
PO BOX 563
FRAZIER PARK, CA 06468

LUPIEN BUFFONE LAURA
29 HIGHLAND DR
MONROE, CT 06468

MCCUEN DAVID
58 HIGHLAND DR
MONROE, CT 06468

MAX STEPHEN G + JUDITH A
30 UNDERHILL RD
MONROE, CT 06468

CARRA EILEEN L
155 HIGHLAND DR
MONROE, CT 06468

MIKLOVICH CONSTANCE D
77 HIGHLAND DR
MONROE, CT 06468

GOMBAS LORRAINE P
100 HIGHLAND DR
MONROE, CT 06468

BOEHM EVELYN
163 HIGHLAND DR
MONROE, CT 06468

SILVA JACINTA M
37 HIGHLAND DR
MONROE, CT 06468

PELLETIER ROLAND
7 UNDERHILL RD
MONROE, CT 06468

CHARTIER HELMA L
51 HIGHLAND DR
MONROE, CT 06468

HOBBY LORRAINE F
4 HIGHLAND DR
MONROE, CT 06468

LAKE CANDICE
107 HIGHLAND DR
MONROE, CT 06468

CHADWICK MARYANN J
7 BEHRENS TER
MONROE, CT 06468-1467

VINER DONNA M
72 HIGHLAND DR
MONROE, CT 06468

JOY THOMAS + DENISE
76 HIGHLAND DR
MONROE, CT 06468

VIELLETTE CAROL MARIE + KISH
JOSEPH LOUI
28 HIGHLAND DR
MONROE, CT 06468

REDDY SUSAN + GLADYS
2 BEHRENS TER
MONROE, CT 06468-1468

BRACCIO MARY C + DELLOLIO
NICHOLAS JR
20 UNDERHILL RD
MONROE, CT 06468

BUCKLEY THOMAS M + MARY ANN
(LATE)
10 HIGHLAND DR
MONROE, CT 06468

HIGH MEADOW CONDO - IMAGINEERS
LLC
249 WEST ST
SEYMOUR, CT 06483

ZAVODNY JOAN A
145 HIGHLAND DR
MONROE, CT 06468

VARGA ROBERT
34 UNDERHILL RD
MONROE, CT 06468

VERRASTRO JUNE (LATE)
8 BUNGARY TERRACE
SEYMOUR, CT 06483

VISCUSO MARIA
9 HIGHLAND DR
MONROE, CT 06468

OLTRA DOROTHY
140 OLD ZOAR RD
MONROE, CT 06468-1433

GITTENS MICHAEL + KATHERINE
1261 MONROE TPKE
MONROE, CT 06468

1271 MONROE TURNPIKE LLC
38 JEREMIAH RD
SANDY HOOK, CT 06468

PAYTON THOMAS
1494 BRILEY RD
GREENVILLE, NC 27834

124 OLD ZOAR LLC
131 OLD ZOAR RD
MONROE, CT 06468

HOLDEN STEVEN
114 OLD ZOAR RD
MONROE, CT 06468

,



STEVEN DANZER, PHD & ASSOCIATES LLC

Wetlands & Environmental Consulting

WWW.CTWETLANDSCONSULTING.COM

203 451-8319

WETLAND BOUNDARIES • POND & LAKE MANAGEMENT • CONSTRUCTION FEASIBILITY CONSULTATIONS • ENVIRONMENTAL STUDIES

Environmental Report

1271 Monroe Turnpike, Monroe, CT

Date: July 12, 2021

By: Steven Danzer Ph.D.

- Soil Scientist – Certified Nationally by the Soil Science Society of America (#353463).
– Registered with the Society of Soil Scientists of Southern New England.
- Senior Professional Wetland Scientist - PWS #1321, Society of Wetland Scientists.
- Arborist - CT DEEP License S-5639; ISA Certified NE-7409A.

- Ph.D. - Renewable Natural Resource Studies.

EXECUTIVE SUMMARY

Multi-unit residential housing is proposed on a woodland property located in Monroe, Connecticut. The development proposal was reviewed by Steven Danzer PhD & Associates LLC to document existing conditions assess potential environmental impacts to wetlands/watercourses.

The site is located on the west side of Monroe Turnpike and currently contains an abandoned residence and dirt driveway. Four wetland and/or watercourse systems are located on the property. Two of the systems are interconnected and the other two are isolated systems.

Five multi-unit and seven single-unit residential buildings are proposed, along with a common driveway. Only a portion of two of the multi-unit buildings and the driveway are located within 100 foot upland review area. The rest of the proposed units are located outside of the upland review area. Development will be largely concentrated within the forested uplands located in the western region of the property.

It is my professional opinion that the proposed activities will not significantly impact, or change, diminish, or otherwise alter the ecological communities or the functions or values of the three wetland areas (Wetlands 2,3,4) located in the eastern region of the site. Development in the western region of the property will result in a notable elimination of a contiguous expanse of upland forest habitat. However this is not expected to significantly impact the central wetland corridor (Wetland 1) since a primary source of the corridor's hydrological sustenance is from the adjacent property to the north and because removal of forest in the uplands will not result in elimination of wetland habitat.

INTRODUCTION

Regulated activities are proposed adjacent to the wetlands and watercourses located at 1271 Monroe Turnpike, Monroe, Connecticut.

Activities associated with the development of the site include the clearing of vegetation, land grading, construction of driveway, construction of 5 multi-unit and 7 single-unit residential buildings, parking areas, installation of subsurface sewage treatment systems and stormwater basins, all as indicated by submitted engineering plans prepared by J. Edwards & Associates LLC.

Only a portion of the proposed construction referenced above will be located within the 100 foot upland review area, the rest will be physically located outside of the review area but potentially connected to the review area and/or wetlands via the stormwater system.

Four wetland and/or watercourse areas are located on the property. Two of these areas (Wetland 2 and 3) are interconnected. The wetland areas are:

Wetland 1 - An intermittent stream corridor located in the central region of the property.

Wetland 2 - An intermittent stream corridor located north of the existing driveway in the eastern region of the property, draining into **Wetland 3** south of the driveway.

Wetland 3 - A complex of intermittent stream corridors and sloped wetlands located south of the existing driveway in the eastern region of the property.

Wetland 4 - A sloped wetland with wetland depressions located in the northeast corner of the property.

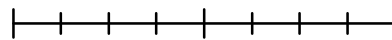
The purpose of this report is to document existing conditions and to assess impacts to the wetland resources due to the proposed activities.

Wetland Locations



Steven Danzer Ph.D. & Associates LLC
www.CTWetlandsConsulting.com

0 100 200 400 Feet



1.0 LANDSCAPE, LAND USE, AND WATERSHED CONTEXT

The roughly 14.3 acre site is bounded by Monroe Turnpike to the east, a primarily forested residential property accessed off of Monroe Turnpike to the north, several residential properties accessed off of Old Zoar Road to the west, a condominium property located off of Highland Drive to the southwest, and a residential property located off of Monroe Turnpike to the southeast.

The sizes of the adjacent single-family properties range from 1.5 acres (#1261 Monroe Turnpike, to the southeast) to 7.2 acres (#1285 Monroe Turnpike, to the north). Of note is the 38 acre condominium property to the south, of which 26 acres is developed and 12 acres are maintained as forested.

The site is currently forested with a mature tree canopy. An abandoned residence is located within the central region of the site, at the end of a dirt driveway. Vegetation within 100 feet of that residence appears to be have previously maintained as manicured landscaping. However, under existing conditions this area around the old residence is in the process of reverting back to meadow and forest.

Topography within the site generally slopes down from the west to the east, with the wetland area south of the existing driveway draining off-site, partially to the south and partially to the southeast.

The Boys Halfway River is located approximately 1000 feet from the site to the east, while the Halfway River is located approximately 1500 feet from the site to the west. According to the DEEP/USGS watershed map, most of the site is located in the Means Brook subregional watershed, a tributary to the Housatonic.

The immediate watershed which drains through the site originates from adjacent property to the north (#1285 Monroe Turnpike) and is approximately 20.4 acres in total size. Roughly 6.1 acres of that watershed is off-site and 14.3 acres is on-site.

2.0 WETLANDS/WATERCOURSES

Four wetland and/or watercourse areas are located on the property. Two of them (Wetlands 2 and 3) are interconnected. They are:

Wetland 1 - An intermittent stream corridor located in the central region of the property.

Wetland 2 - An intermittent stream corridor located north of the existing driveway in the eastern region of the property, draining into **Wetland 3** south of the driveway.

Wetland 3 - A complex of intermittent stream corridors and sloped wetlands located south of the existing driveway in the eastern region of the property.

Wetland 4 - A sloped wetland with wetland depressions located in the northeast corner of the property.

The wetlands/watercourses on the site were examined and delineated by Steven Danzer PhD & Associates LLC during the week of April 19, 2021, and documented in a soils report dated 6/7/21.

Wetland/watercourse descriptions are as follows:

2.1 WETLAND 1 – IN THE CENTRAL REGION

Physical Characteristics and Hydrology:

The intermittent watercourse located in the central region of the site is approximately 332 feet in length and drains southerly. The channel starts from the region of a stone wall located approximately 50 feet north of the site's northern property boundary. The end of the watercourse does not flow into any larger watercourse; rather the channel disappears at the wetland's southern end, and any excess flow becomes sheet flow in an area located approximately 125 feet north of the site's southern property boundary (Photo 1).

The channel is shallow and sometimes braided, and often barely defined. Poorly drained wetland soils flank the sides of the channel along much of its length.

Flow through the intermittent watercourse, when it occurs, is maintained by a combination of groundwater seepage and runoff from the adjacent upland buffer, sheet flow and channelized flow from the property to the north, and seasonal groundwater from below the ground.

The wetland is physically and hydrologically isolated from the other wetland/watercourse areas on the site.

Environmental Quality:

The wetland/ intermittent watercourse corridor is densely vegetated along its length (Photos 2,3,4). Vegetative dominants within the corridor include Red maple, Spicebush, Skunk cabbage, Cinnamon and Royal fern, Jack-in-the-pulpit, Jewelweed, and Japanese

barberry (an invasive), with Yellow birch and Black birch on the edges along slightly higher ground.

The existing functions and values of the intermittent watercourse area were evaluated using the New England Army Corp Highway Methodology Descriptive Approach, as modified for application to local conditions. This methodology has been proven useful in similar projects intended for review by municipal wetland commissions, and was chosen as the most appropriate methodology for the assessment of the area due to the assessment's descriptive emphasis.

The functions and values of the system are described below, in order of most prominent to least prominent for the watercourse system.

Wetland/watercourse functions and values performed by the system include *groundwater recharge/discharge* due to its position relative to the adjacent upland slopes, as well as *sediment/toxicant/pathogen retention* and *nutrient removal/retention/transformation* due to the system's proximity to a moderately developed neighborhood to the north, *production export* due to the plant life present within the corridor that can serve as food for wildlife, and *wildlife habitat* due to the corridor's linear length and that more than 40% of the wetland edge is bordered by forested upland wildlife habitat at least 500 feet in width.

Though no reptiles or amphibians were noted during the field investigation, it would be expected that the corridor would be host to these species. The system is too narrow and potentially dry to support a fish population or to provide any substantial degree of *floodwater alteration*.

Impact Assessment:

West of the wetlands: Four multi-unit buildings and seven single unit buildings are proposed in the upland area west of Wetland 1. The majority of this development will be outside the 100 foot regulated upland review area but connected to the regulated area via the stormwater system. Only the northeast portion of Building 3 (a multi-unit building), its subsurface sewage treatment surface, and roughly 170 feet of common driveway are proposed to be physically within the 100 foot review area. An alternative to the proposed site plan configuration would be to relocate the corner of Building 3 to outside of the review area.

Under existing conditions, the upland review area, which is gently sloping, is forested with Tulip tree, Beech, Red maple, Sugar maple, and Black birch. Spicebush. Japanese barberry, Multiflora rose, and Mapleleaf viburnum constitute the shrubby understory. The area (and the adjacent forest outside of the review area) is notable for the abundance and mature sizes of the Tulip trees.

Most of the development within the upland review area is proposed in the zone between 50 feet and 100 feet from the wetland resources, preserving 50 feet of undisturbed

wetland buffer. The rest of the woodland habitat (> than 50 feet) will be eliminated for the development.

As documented in the earlier discussion, flow through the intermittent watercourse, when it occurs, is sustained by a variety of sources. The principal source is runoff from the adjacent property to the north that becomes channelized near the property boundary. This dynamic will not be altered by the development.

Since there is no development proposed within the wetlands, most of the major functions and values of the wetland be maintained. The only functions/values potentially altered will be *groundwater recharge/discharge* and *wildlife habitat*. There is a potential for subsurface groundwater flow patterns down the slope towards the wetlands to be disrupted because of the additional impervious surfaces to the east and the rerouting due to the stormwater drainage systems, however, despite these landscape modifications to the west, the wetland corridor will still receive hydration from the landscape to the north.

The elimination of forest habitat in the upland review area (as well the elimination of approximately 2.5 acres of forested upland outside of the review area) will result in a decrease of upland wildlife habitat. Since the habitat eliminated is not wetland habitat, the proposed activities will not be expected directly impact the ability of the wetland support wetland dependent wildlife. However, there will still be a notable decrease of contiguous upland forested habitat post-development, in proximity of the region of the wetlands.

East of the wetlands: On the east side of Wetland 1, development within the 100 foot upland review includes the western portion of Building 1 (a multi-unit building), parking, a small community building, a small stormwater basin, and approximately 160 feet of common driveway.

The portion of the building located within the upland review area is proposed in a transition zone where the forest meets the limits of the previously manicured landscaping for the abandoned residence (Photo 5). The area is level to gently sloping, with an overstory consisting of Walnut, Pine, Norway Spruce, Horsechestnut, and Sugar maple in proximity, along with a woody and herbaceous understory of Raspberry, Goldenrod, and Grape in the sunny, less wooded areas. This habitat, predominately located in the 50-100 foot zone offset to the wetlands, will be eliminated. Tree removal and grading will extend into a portion of the 50 foot zone as well, though the only hardscaping which will intrude in the 50 foot buffer zone will be the southwest corner of the parking lot to Building 1. No disturbance is proposed in the wetlands.

Similar to the development on the west side of the wetlands, the development on the east side of the wetlands is not expected to significantly interfere with the hydrological function of the wetland corridor. A major source of sustenance to the wetland system originates from the adjacent property to the north. This source will not be altered by the proposed development.

2.2 WETLANDS 2 AND 3 – IN THE EASTERN REGION

Physical Characteristics and Hydrology:

Wetlands 2 and 3 are located in the eastern region of the site. Wetland 2 is located north of the existing driveway (Photo 7), while Wetland 3 is located south of the existing driveway (Photo 9).

Wetland 2, a shallow drainage corridor with a sloped wetland on its eastern side, flows southerly into Wetland 3, via a culvert underneath the existing driveway. Together, Wetlands 2 and 3 are a single hydrologic system.

Flow through the intermittent stream corridor within the center of Wetland 2, when it occurs, is maintained by a combination of groundwater seepage and runoff from the adjacent slopes, sheet flow from the adjacent property to the north, and seasonal groundwater from below the ground. Its primary sustenance is from the property to the north.

Wetland 3, located south of the existing driveway, contains the central intermittent stream corridor from Wetland 2, along with several other intermittent tributaries that dissect the landscape, in addition to an area of sloped wetlands along its northern flank located below the abandoned residence. Included in this wetland area is a substantial island of upland located between two channels in the southeastern region, field mapped within the wetland as an upland inclusion.

Flow through the wetland system eventually drains southerly off site. The flow through the site splits into two portions at the southern property boundary.

One portion of the flow drains to the southeast property corner, northeast of the adjacent residence, where it appears the overflow leads into a catch basin located on the side of Monroe Turnpike.

The other portion flows into a culvert at the property boundary, northwest of the adjacent residence, where the flow is then piped underneath the adjacent property located at 1261 Monroe Turnpike. The channel then daylight south of that adjacent property and then parallels the frontage of Monroe Turnpike, until it crosses east underneath the Turnpike a few feet north of the intersection with Highland Drive.

It appears that in the past a trench was dug through the wetlands along the southern property boundary of the site to divert some of the flow from entering the culvert. The trench diverts some of the southern flow to the other flow path towards the southeast property corner catchbasin.

Environmental Quality:

Wetland 2, north of the existing driveway, is vegetated with vegetative dominants including Red maple, Black birch, Spicebush, Jewelweed, Skunk cabbage, Japanese stiltgrass (an invasive), and Japanese knotweed (an invasive).

Wetland 3, south of the existing driveway, contains a relatively denser array of vegetation and vegetative layers compared to the wetland area above the driveway, with wetland dominants including Red maple, Spicebush, Skunk cabbage, and Tussock sedge, with Black birch and Yellow birch on higher ground.

Together, both wetland areas (Wetland 2 and Wetland 3) constitute a wetland system that is arguably the more ecologically valuable of all of the wetland/watercourses present on the site. This is due to its larger contiguous area, its higher level of surface moisture year round, and its robust vegetation.

Wetland/watercourse functions and values performed by the system include *groundwater recharge/discharge* due to its position relative to the adjacent upland slope, as well as *sediment/toxicant/pathogen retention* and *nutrient removal/retention/transformation* due to the system's proximity to a moderately developed neighborhood to the north and the abandoned residence to the west. The system also provides *production export* due to the plant life present within the corridor that can serve as food for wildlife, and *wildlife habitat* due to the corridor's linear length, its robust vegetation, and its forested upland surroundings.

Though no reptiles or amphibians were noted during the field investigation, it would be expected that this corridor would be host to those species. The system is too narrow and potentially dry to support a fish population. The system does not provide any substantial degree of *floodwater alteration*, however it does contain some storage capacity near its bottom.

Impact Assessment:

No construction or land disturbance is proposed within the wetlands other than the replacement of the connecting culvert between Wetland 2 and Wetland 3 under the proposed improved driveway. There will be no physical alteration of these wetlands. There will be no significant impacts as defined in Section 2.1 of the Town of Monroe Regulations.

Proposed activities within the upland review area include portions of the common driveway, the edge of the subsurface waste treatment system on the east side of Building 1, and the two stormwater basins.

The smaller of the stormwater basins (Basin 1) will be located near the driveway entrance (Photo 10). Under existing conditions, the habitat in that area consists of mature Tulip Trees, Red maple, red oak, dead and decaying Ash, and Spicebush. Much of that habitat will be altered to construct the basin. The basin will be underlain with New England Wetland Seed Mix, a native plant mix designed for moist environments.

The larger of the stormwater basins (Basin 2) will be located to the east of Wetland 3, shortly up the driveway from Building 1. Under existing conditions, the habitat in that area (Photo 6) consists of intermediately sized Tulip trees and Red maple, with a heavy groundcover of Pachysandra and a shrubby understory consisting of Raspberry, Spicebush, Multiflora Rose, and Jewelweed, as well as Skunk cabbage (note - although usually thought of as a wetland plant, Skunk cabbage was also commonly found growing throughout that region on moderately sloped uplands). Much of that upland habitat will be altered to construct the basin. The basin will be underlain with New England Wetland Seed Mix, a native plant mix designed for moist environments.

Basin 1 is designed to mitigate runoff from the bulk of the development, including the buildings, associated impervious areas, and most of the common driveway, a total catchment area of roughly 5.7 acres including offsite. Basin 2 is designed to mitigate runoff from the entrance driveway, a total catchment area of roughly 1.7 acres including offsite.

As per the drainage report prepared by J. Edwards & Associates, both stormwater basins are designed equal or exceed Water Quality Volume standards. (Water Quality Volume is the amount of stormwater that should be captured and treated in order to remove majority pollutants on an average annual basis).

Both basins are also designed to equal or exceed Ground Water Recharge Volume standards. (Ground Water Recharge Volume is the amount of water needed to maintain pre-development annual groundwater recharge volume).

Furthermore, the storm management system for this project is intended to control post development peak runoff to levels less than or equal to predevelopment rates.

It should be noted that under existing conditions, off site flow from the wetland system is partitioned into two flow paths.

One portion of the flow drains to the southeast property corner, northeast of the adjacent residence, where it appears the overflow leads into a catchbasin located on the side of Monroe Turnpike.

The other portion flows into a culvert at the property boundary, northwest of the adjacent residence, where the flow is then piped underneath the adjacent property located at 1261 Monroe Turnpike.

It appears that in the past a trench was dug through the wetlands along the southern property boundary of the site to divert some of the flow from entering the culvert. The trench diverts some of the flow to the other flow path towards the southeast property corner catchbasin. The purpose of the trench appears to be to mitigate the risk of downstream flooding by partitioning the flow.

Since there will be no direct physical disturbance to these wetlands, it is anticipated that the existing wetland/watercourse functions and values: *groundwater recharge/discharge*, *sediment/toxicant/pathogen retention* and *nutrient removal/retention/transformation*, *production export* and *wildlife habitat*; will all be maintained post-development.

2.3 WETLAND 4 – IN THE NORTHEASTERN REGION

Physical Characteristics and Hydrology:

Wetland 4 is located in the northeastern corner of the property (Photo 8), in an area roughly bounded by Monroe Turnpike to the east, forested upland slope to the west, and the existing driveway of the adjacent 1285 Monroe Turnpike property to the north. It is best characterized as a forested sloped wetland with wetland depressions. The wetland drains to the east for approximately 100 feet towards the frontage of Monroe Turnpike.

The wetland area is small, roughly 0.14 acres in size. The wetland is physically and hydrologically isolated from the other wetland/watercourse areas on the site. The hydrology of the wetland is maintained by seepage and runoff from the slopes above. The wetland depressions appear to be influenced by seasonal groundwater levels as well.

Environmental Quality:

The wetlands are located within a forested slope. Vegetative dominants within the wetland area include Red maple, Spicebush, Skunk cabbage, Jack-in-the-pulpit, Jewelweed, and Sensitive fern.

Wetland/watercourse functions and values performed by the system include *groundwater recharge/discharge* due to its position relative to the slope, *sediment/toxicant/pathogen retention* and *nutrient removal/retention/transformation*, all due to the system's proximity below the adjacent driveway and the adjacent forested upland slope, *production export* due to the plant life present within the corridor that can serve as food for wildlife, and *wildlife habitat* due to its forested upland surroundings. The area appears to be too small to serve as a significant nesting ground for amphibians; however amphibians (and reptiles) could still potentially use the area for food and cover.

Impact Assessment:

No construction or land disturbance is proposed within the wetland area. There will be no physical alteration of the wetland. There will be no construction activities within the watershed that contributes to this wetland. There will be no significant impacts as defined in Section 2.1 of the Town Monroe Regulations

Since there will be no direct physical disturbance to this wetland or to the greater watershed that sustains this wetland, it is anticipated that the existing wetland/watercourse functions and values: *groundwater recharge/discharge*, *sediment/toxicant/pathogen retention* and *nutrient removal/retention/transformation*, *production export* and *wildlife habitat*; will all be maintained post-development.

3.0 NDDDB SEARCH AND SITE FAUNA

According to the CT DEEP Natural Diversity Database layer on CT ECO (cteco.uconn.edu) (webpage from 7/08/21 attached at the end of the Soil Report) there are no polygons on or directly adjacent to the site that indicate the presence of any State Endangered, Threatened, or Species of Special Concern. The nearest polygon is >0.7 miles away to the northwest, across several roads and numerous residential properties, within the Halfway River corridor environment. Nor are there any polygons on or directly adjacent to the site that indicates the presence of any Critical Habitat.

During the field visits in April and July 2021 wildlife usage was noted. This included both direct observation and signs such as scat and tracks. Wildlife noted included deer, squirrel, chipmunk, red tailed hawk, crow, cardinal, goldfinch, flicker, hairy woodpecker, mourning dove, titmouse, catbird, mockingbird, robin, blue jay. Despite lack of direct evidence, it is also reasonable to expect usage by other mammals commonly found in the region including fox, coyote, bobcat, bear, opossum, weasel, ground hog, rabbit, skunk, raccoon, mice, moles, and voles. It is also reasonable to expect usage by reptiles and amphibians including but not limited to Snapping turtle, American toad, Pickerel frog, Red-backed salamander, Black rat snake, Garter snake, Northern brown snake, and Green snake.

4.0 CONCLUSIONS

Development will be largely concentrated within the forested uplands located in the western region of the property. It is my professional opinion that the proposed activities will not significantly impact, or change, diminish, or otherwise alter the ecological communities or the functions or values of the three wetland areas (Wetlands 2,3,4)

located in the eastern region of the site. Development in the western region of the property will result in a notable elimination of an expanse of contiguous upland forest habitat. However this is not expected to significantly impact the central wetland corridor (Wetland 1) in proximity since a primary source of the corridor's hydrological sustenance is from the adjacent property to the north, and because removal of forest in the uplands will not result in elimination of wetland habitat.

Thank you for the opportunity to comment.

Respectfully submitted,

Signed,



Steven Danzer Ph.D.

Professional Wetland Scientist, Soil Scientist, Arborist,
Ph.D. in Renewable Natural Resource Studies



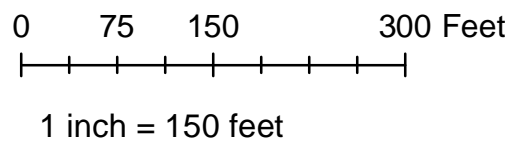
--2 attachments

Photos
NDDDB Map from CT ECO

Photo Log Key



Sketch Map - not to scale
See report for methods
Steven Danzer Ph.D., Soil Scientist
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1271 Monroe Turnpike – Photo Log



Photo 1. Wetland 1: Southern terminus of intermittent watercourse, looking north **7/7/21.**



Photo 2. Wetland 1: Intermittent stream corridor, looking north, central region. **7/7/21.**



Photo 3. Wetland 1: Intermittent stream corridor, northcentral region, looking north. **7/7/21.**



Photo 4. Wetland 1: Intermittent stream corridor, northern region, looking north **7/7/21**.

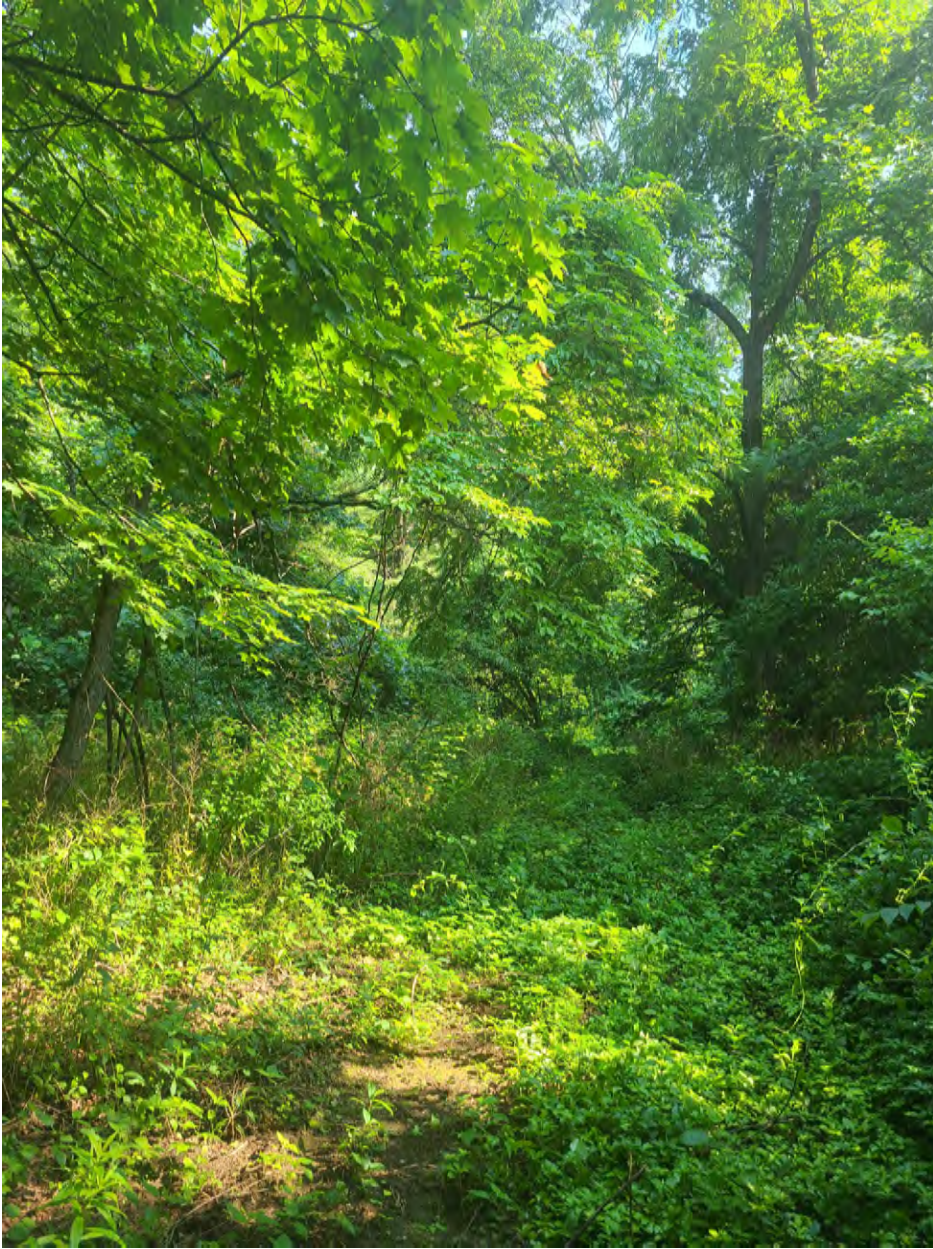


Photo 5. Upland - Wetland buffer, east of Wetland 1 in vicinity of proposed building, Looking north. **7/7/21.**



Photo 6. Upland - In vicinity of proposed stormwater basin, looking east towards Wetland 3 near flag #60. **7/7/21.**



Photo 7. Wetland 2: Intermittent stream corridor, facing south. 7/7/21.



Photo 8. Wetland 4: Sloped wetland / wetland depressions, looking north, property line and neighboring driveway in distance. **7/7/21.**



Photo 9. Wetland 3: Intermittent stream corridor flowing southeast, embedded in sloped wetlands, looking north. **7/7/21.**



Photo 10. Upland - In vicinity of proposed stormwater basin near driveway entrance, looking northeast. **7/7/21.**



STEVEN DANZER, PHD & ASSOCIATES LLC

Wetlands & Environmental Consulting

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WETLAND BOUNDARIES • POND & LAKE MANAGEMENT • CONSTRUCTION FEASIBILITY CONSULTATIONS • ENVIRONMENTAL STUDIES

Soil Report

Date: July 7, 2021

By: Steven Danzer Ph.D.

- Soil Scientist, Senior Professional Wetland Scientist, Arborist
 - Nationally certified by the Soil Science Society of America (#353463).
 - Registered with the Society of Soil Scientists of Southern New England.
 - Certified PWS #1321 by the Society of Wetland Scientists
 - Certified Arborist by the International Society of Arboriculture (ISA) NE-7409A
 - CT Licensed Arborist DEEP S-5639
- Ph.D. in Renewable Natural Resource Studies.

Project: 1271 Monroe Turnpike, Monroe, CT.

INTRODUCTION

A wetlands investigation was performed at the above-referenced property to locate and identify any inland wetland soils or watercourses.

The purpose of this report is to document that the field work for the site investigation was conducted using professionally accepted methods and procedures. This report is intended for submission by the owner(s) of the property or their designated agent to the local municipal regulatory agency.

DEFINITIONS

The Connecticut General Statutes Ch. 440 Sections 22a-36 and 22a-45 (as amended) define **inland wetlands** as land, including submerged land (except for tidal wetlands) which consist of any of the soil types designated by the National Cooperative Soil Survey as *poorly drained, very poorly drained, floodplain, or alluvial*.

Poorly drained and **very poorly drained** are soil drainage classes that are defined by specific technical criteria in the Soil Survey Manual, Ch. 3 of the USDA Natural Resources Conservation Service. Generally speaking, *poorly drained soils* are wet at shallow depths periodically during the growing season, or remain wet for long periods, while in *very poorly drained soils* water is removed from the soil so slowly that free water remains at or very near the ground surface during much of the growing season.

Floodplain refers to the land bordering a stream or river that is subject to flood stage inundation, and **alluvial** refers to soil deposited by concentrated running water (Soil Survey Manual, Part 629).

Watercourses are defined by the Connecticut General Statutes Ch. 440 Sections 22a-36 and 22a-45 (as amended) to include rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private. **Intermittent watercourses** are a type of watercourse that typically do not flow year-round, and are specifically defined within the CT statutes by the presence of a defined permanent channel and bank, and the occurrence of two or more of the following characteristics:

- a) Evidence of scour, or deposits of recent alluvium or detritus;
- b) The presence of standing or flowing water for a duration longer than a particular storm incident;
- c) The presence of hydrophytic vegetation.

Uplands are land areas that are not inland wetlands, watercourses, or subject to tides.

The **soil series** is a soil label that refers to the lowest category of the National Soil Classification System. It is used as a specification for identifying and classifying soils within a soil map unit. The descriptions are standardized by the USDA-NRCS, and contain soil properties that define and distinguish them from the other soil series.

METHODS

All soils were sampled to a depth of at least 20 inches with spade and augur unless noted otherwise during a field investigation conducted during the week of April 19, 2021. Soils were classified according to the nomenclature presented within the NRCS Web Soil Survey, with additional reference to the National Cooperative Soil Survey, and the local Soil Survey.

The wetland boundaries were marked on site with flagging tape and/or stakes (Wetland Flags 1-104) and a sketch map prepared (attached)

SITE DESCRIPTION AND DISCUSSION

The roughly 14.3 acre site is located on the west side of Monroe Turnpike, in Monroe, CT. The site is wooded, with an abandoned residence located at the end of a long driveway in the central region of the

site. The site is mainly located within the DEEP Basin 6024-01 within the Means Brook Subregional Basin.

Wetland resources located within the site include a wide, shallow, and diffuse intermittent stream corridor (Wetland 1) flowing southerly in the central region of the site, an intermittent stream corridor (Wetland 2) located north of the existing driveway in the eastern region of the site which flows southerly under the driveway, a complex of intermittent stream corridors and sloped wetlands (Wetland 3) located south of the driveway and flowing southerly and southeasterly, and a sloped wetland / wetland depression (Wetland 4) located in the northeast corner of the site.

WETLAND AND WATERCOURSE SOIL MAPPING UNITS

(3) Ridgebury, Leicester, and Whitman soils extremely stony

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in till derived mainly from granite, gneiss and schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in low areas in uplands. Slope ranges from 0 to 15 percent. Saturated hydraulic conductivity ranges from moderately low to high in the solum and very low to moderately low in the substratum. Mean annual temperature is about 49 degrees F. and the mean annual precipitation is about 45 inches.

TAXONOMIC CLASS: Loamy, mixed, active, acid, mesic, shallow Aeric Endoaquepts

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum. Mean annual temperature is about 50 degrees F., and mean annual precipitation is about 47 inches.

TAXONOMIC CLASS: Coarse-loamy, mixed, active, acid, mesic Aeric Endoaquepts

The Whitman series consists of very deep, very poorly drained soils formed in lodgement till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Saturated hydraulic conductivity is moderately high or high in the solum and very low through moderately high in the substratum. Mean annual precipitation is about 45 inches (1143 millimeters) and mean annual temperature is about 49 degrees F. (9 degrees C.).

TAXONOMIC CLASS: Loamy, mixed, superactive, acid, mesic, shallow Typic Humaquepts

(NON WETLAND) SOIL MAPPING UNITS

(84B) Paxton and Montauk fine sandy loams, 3 to 8 percent slopes – upland region in vicinity of existing residence

The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 45 percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil and low or moderately low in the substratum. Mean annual temperature is about 10 degrees C., and mean annual precipitation is about 1194 mm.

TAXONOMIC CLASS: Coarse-loamy, mixed, active, mesic Oxyaquic Dystrudepts

The Montauk series consists of well drained soils formed in lodgement or flow till derived primarily from granitic materials. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland till plains and moraines. Slope ranges from 0 through 35 percent. Saturated hydraulic conductivity is moderately high or high in the mineral solum and low through moderately high in the substratum. Mean annual temperature is about 9 degrees C, and mean annual precipitation is about 1143 mm.

TAXONOMIC CLASS: Coarse-loamy, mixed, subactive, mesic Oxyaquic Dystrudepts

(46B) Woodbridge fine sandy loam, 2 to 8 percent slopes, very stony – surrounding wetland areas

The Woodbridge series consists of moderately well drained loamy soils formed in lodgment till. They are very deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 25 percent. Saturated hydraulic conductivity ranges from moderately high to high in the surface layer and subsoil and low or moderately low in the dense substratum. Mean annual temperature is about 9 degrees C., and mean annual precipitation is about 1168 mm.

TAXONOMIC CLASS: Coarse-loamy, mixed, active, mesic Aquic Dystrudepts

LIMITATIONS

All observations and conclusions within this report are opinion and were based upon the field conditions at time of investigation and best professional judgment. Field conditions may change over time. All wetland boundary lines established by the undersigned Soil Scientist are subject to change until officially adopted by the appropriate local, state and federal regulatory agencies.

CERTIFICATION

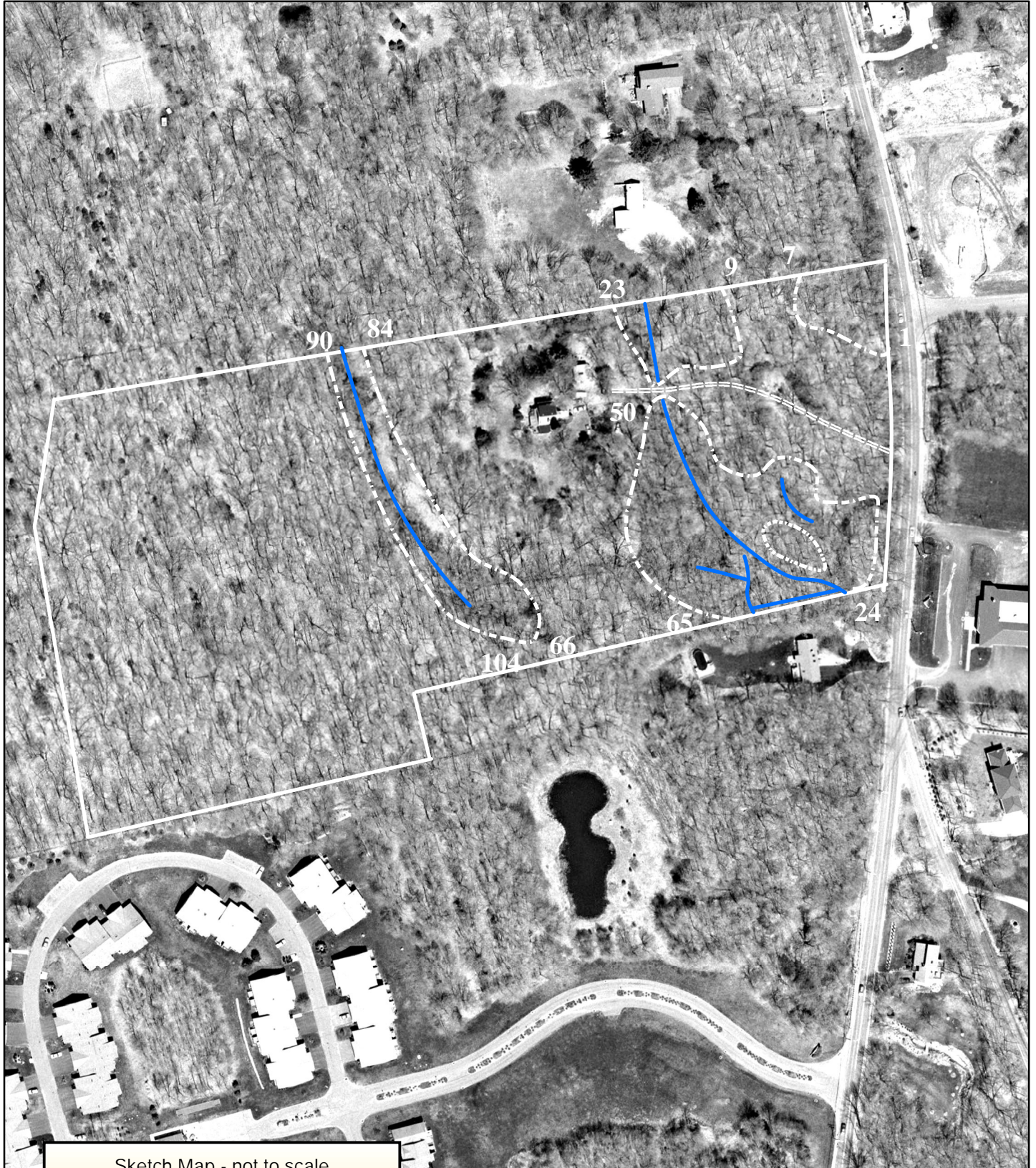
Signed,

Steven Danzer Ph.D., Certified Professional Soil Scientist (CPSS #353463)

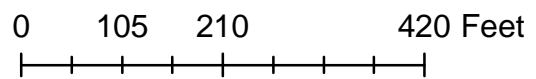


Steven Danzer PhD and Associates LLC
www.CTWetlandsConsulting.com
203-451-8319

1271 Monroe Turnpike, Monroe



Sketch Map - not to scale
See report for methods
Steven Danzer Ph.D., Soil Scientist
Steven Danzer Ph.D. & Associates LLC
203-451-8319
www.CTWetlandsConsulting.com



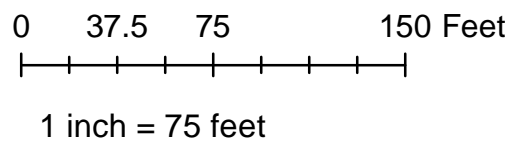
1 inch = 200 feet



Central Region



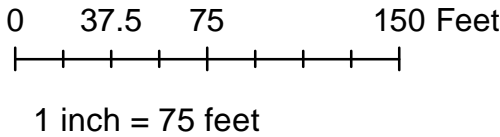
Sketch Map - not to scale
See report for methods
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Eastern Region



Sketch Map - not to scale
See report for methods
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203-451-8319
www.CTWetlandsConsulting.com



July 29, 2021

Jason Edwards
J. Edwards & Associates, LLC
227 Stepney Road
Easton, CT 06612

Re: Request for Water Service – 1271 Monroe Turnpike, Monroe, CT

Dear Mr. Edwards,

This letter confirms that Aquarion Water Company of Connecticut (Aquarion) has sufficient water supply to meet the following estimated residential water demand for the proposed development at the above referenced property.

- Average Day Demand: 17,500 gallons per day
- Maximum Day Demand: 35,000 gallons per day
- Irrigation System Demand: 1,500 gallons per day
- Hydrant Demand: 1,500 gallons per minute at 20 psi

This commitment does not include fire sprinkler demand because no pressure requirement for fire sprinklers was included in the application submitted to Aquarion. If you wish to include fire sprinkler demand in your project, you will need to update your application and resubmit your Will Serve Letter request.

The attached fire flow test report indicates an available fire flow of approximately 1,625 gallons per minute at 20 psi. It is your engineer's responsibility to design accordingly in order to achieve the required flow and pressure.

This service commitment is valid for 12 months from the date of issuance. If your proposed project is not under construction or ready for water service (intended usage) within 12 months of this letter, then Aquarion's ability to serve your project will have to be re-evaluated. If you have any questions, please feel free to contact me at 203.362.3067.

Very truly yours,
Aquarion Water Company



Hannah P. Swearsky
Planning Engineer

cc: New Services, Carlos Vizcarrondo, File
Attachment: Fire flow test at hydrant 0393 dated 5/13/2021
Will Serve Letter Application dated 4/28/2021

Aquarion Water Company Fire Flow Test

Test Location: MONROE, CT

Test Date: 05/13/2021

Test Time: 08:35 PM

Flow Hydrant: 0393 Location: Monroe Tpke #1260 @ Barn Hill Rd

Flow Hydrant Parameters:

Main Size:	12"
Pipe/Nozzle Diameter:	4.0 Diff. inches
Pito Pressure:	10 psi
PSI Before:	89 psi

Residual Hydrant: 0364 Location: Barn Hill Rd @ Monroe Tpke

Residual Hydrant Parameters:

PSI Before:	91 psi
Residual During Flow:	40 psi
PSI After:	91 psi
PSI Drop:	51 psi

Test Results:

GPM Available: 1,360

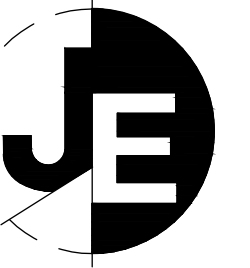
GPM @20 psi: 1,625

Test Performed By: JP&BSPERO

NOTE: Static Pressure readings are actual, and test results are not corrected for elevation differential.

Test Method: Calibrated Orifice

Disclaimer: This data represents system conditions on the date and time that the test was performed. System conditions may vary significantly throughout the year. The design of new water service installations and the identification and gathering of all necessary data is the sole responsibility of the Developer or his representative. In all instances, the water service designer should apply engineering judgment to ensure proper design. Aquarion Water Company does not guarantee the accuracy of this data.



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AN AGE RESTRICTED RESIDENTIAL COMMUNITY

1271 MONROE TURNPIKE

MONROE CONNECTICUT

THE RIDGE AT MONROE
1271 MONROE TURNPIKE
MONROE, CONNECTICUT

SHEET INDEX

T-1	TITLE SHEET
LU	LAND USE MAP
S-1	EXISTING CONDITIONS PLAN
S-2	OVERALL SITE DEVELOPMENT PLAN
S-3.1-3.2	SITE DEVELOPMENT PLAN ENLARGED
S-4.1-4.2	DRIVEWAY PLANS AND PROFILE
S-5	CONSTRUCTION DETAILS
S-6	EROSION & SEDIMENT CONTROL
S-7	EROSION & SEDIMENT DETAILS
S-8	DRAINAGE AREA MAP
S-9	PLANTING PLAN
S-10	CONCEPTUAL ALTERNATIVE 1
S-11	CONCEPTUAL ALTERNATIVE 2

REVISIONS

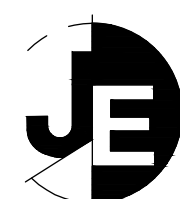
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4	05-01-22	ZONING

DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE:

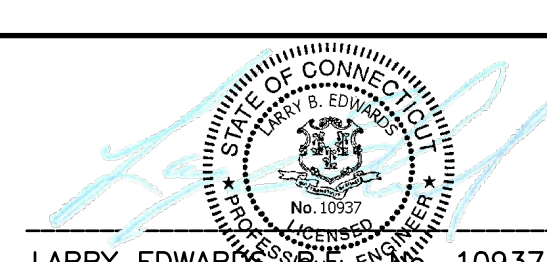
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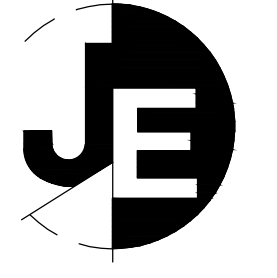
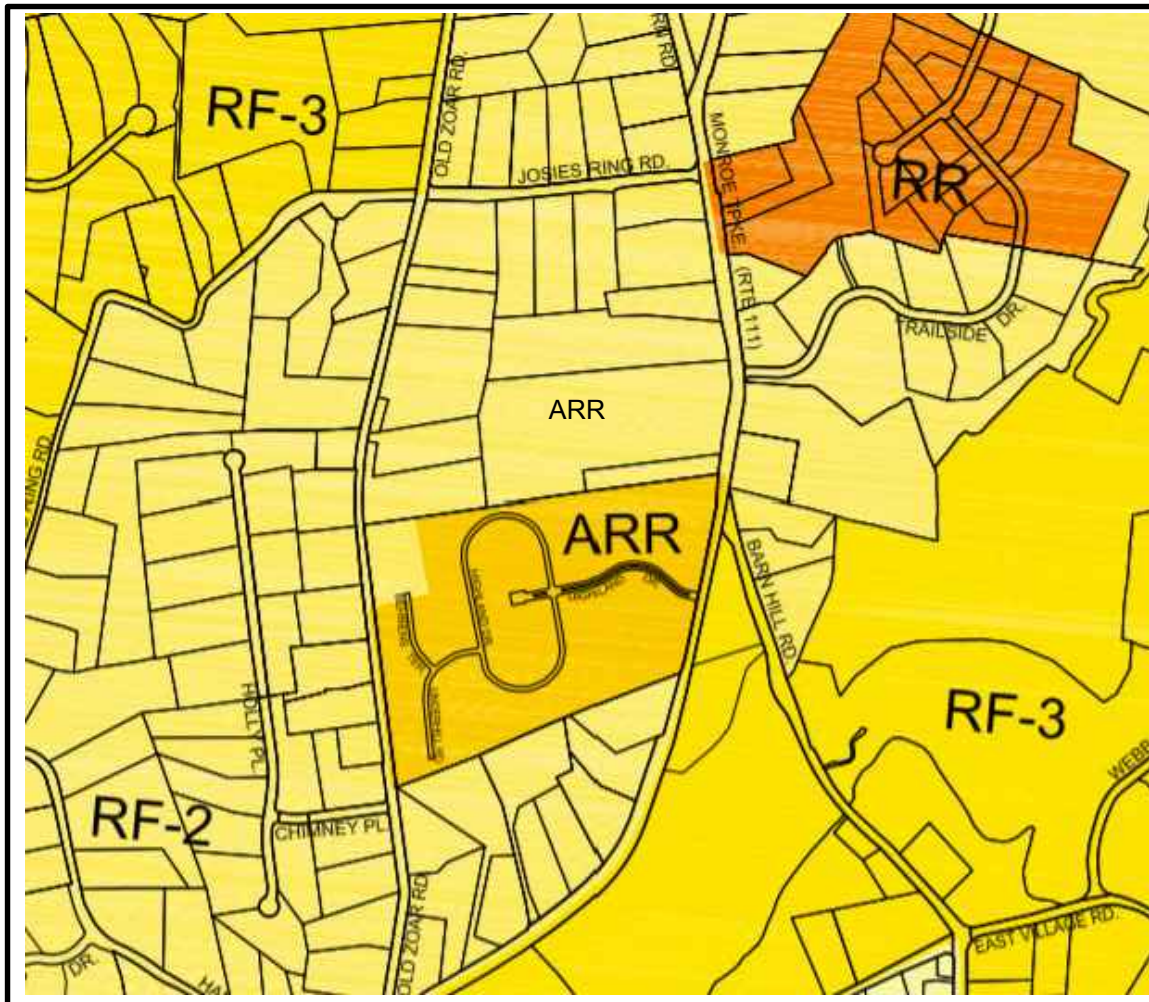
SHEET NUMBER

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.
THIS MAP IS NOT VALID UNLESS EMBOSSED WITH SEAL OR AFFIXED WITH THE LIVE STAMP OF SIGNATORY



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DATE: 07-01-21
 PROJECT #: 2278
 DRAWING FILE: SITE
 DRAWN BY: LE/JE/IE
 SCALE: 1"=100'

TITLE

LAND USE
 MAP

SHEET NUMBER

LU

N/F
THOMAS PAYTON
1285 MONROE TURNPIKE
134/031/00

N/F
DOROTHY
OLTRA
140 OLD ZOAR
ROAD
134/041/00

N/F
124 OLD ZOAR
LLC
124 OLD ZOAR ROAD
126/020/00

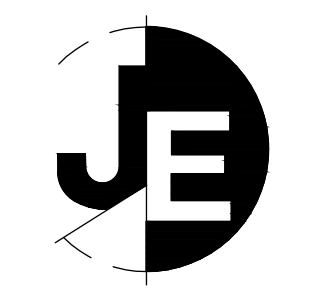
N/F
STEVEN HOLDEN
114 OLD ZOAR ROAD
126/021/00

N/F
HIGH MEADOW CONDOMINIUM
HIGHLAND DRIVE
126/25/00
(MULTI OWNERS)

N/F
MICHAEL + KATHERINE GITTENS
1261 MONROE TURNPIKE
126/026/00

NOTES:

- THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEY AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS AN IMPROVEMENT LOCATION SURVEY BASED UPON A DEPENDENT RESURVEY AND CONFORMS TO HORIZONTAL ACCURACY CLASS A-2. CONTOURS ARE CERTIFIED TO ACCURACY CLASS T-2
- REFERENCE IS MADE TO THE FOLLOWING MAPS ON FILE IN THE MONROE TOWN CLERK'S OFFICE:
 - RM #57 - "MAP OF SIGMOND M & HENRY J. LITWINKSI; MONROE, CONN." DATED AUGUST 27, 1943.
 - RM #2173 - "SITE PLAN AND SURVEY FOR HIGH MEADOW CONDOMINIUMS PHASE 1" DATED DECEMBER 22, 1989"
 - RIGHT OF WAY MAPPING PROVIDED BY CT DOT DEPARTMENT OF SURVEYS,
- THE LOCATION OF UNDERGROUND UTILITIES, IF ANY, IS UNKNOWN
- PLAN PREPARED FOR 1271 MONROE TURNPIKE, LLC.
- LOT CORNER MARKERS DEPICTED HEREON WERE FOUND AND/OR SET DURING COMPLETION OF THIS SURVEY.
- BEARING BASED ON CT STATE PLANE COORDINATES, NAD 83.
- LIMIT OF WETLAND SOILS DEPICTED PER FLAGS PLACED IN FIELD BY STEVEN DANZER, PHD.
- PROPERTY IS ZONED ARR



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MONROE, CONNECTICUT

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4	05-01-22	ZONING

DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=50'

TITLE

EXISTING
CONDITIONS
SURVEY

SHEET NUMBER

S-1

GENERAL NOTES

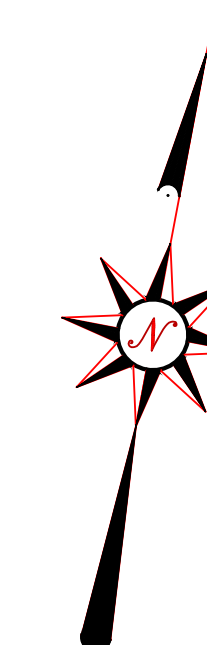
1. NORTH ARROW, BEARINGS AND COORDINATES ARE BASED UPON THE CONNECTICUT COORDINATE SYSTEM (NAD 1983). ELEVATIONS,
2. CONTOURS AND BENCH MARK ARE BASED UPON NAVD 1988..
3. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
4. J. EDWARDS & ASSOCIATES LLC., ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
5. THIS PROJECT IS NOT WITHIN COASTAL ZONE MANAGEMENT AREAS AND/OR FLOOD ZONES.
6. ALL UTILITY SERVICES ARE TO BE UNDERGROUND. THE EXACT LOCATION, MEANS OF CONSTRUCTION, AND SIZE OF ELECTRIC, TELEPHONE, AND CABLE TELEVISION ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY COMPANIES.
7. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. EXISTING UTILITY PIPE INVERTS ARE SHOWN AS APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION.
8. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE "GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, CONNECTICUT - 2002", AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
9. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 6" TOPSOIL, AND BE SEEDED WITH GRASS, AS SHOWN ON THE PLANS.
10. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
11. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE TOWN OF MONROE REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION, FORM 816 AND ADDENDUMS.
12. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
13. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS USED DURING CONSTRUCTION SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
14. COMPLIANCE WITH THE PERMIT CONDITIONS IS THE RESPONSIBILITY OF BOTH THE CONTRACTOR AND THE PERMITTEE.
15. PROJECT TO BE SERVICED BY PUBLIC WATER.

HOUSING LAYOUT OPTION 1

	UNITS	BEDROOMS
	12 3BR	36
	7 2BR	14
TOTAL	19	50

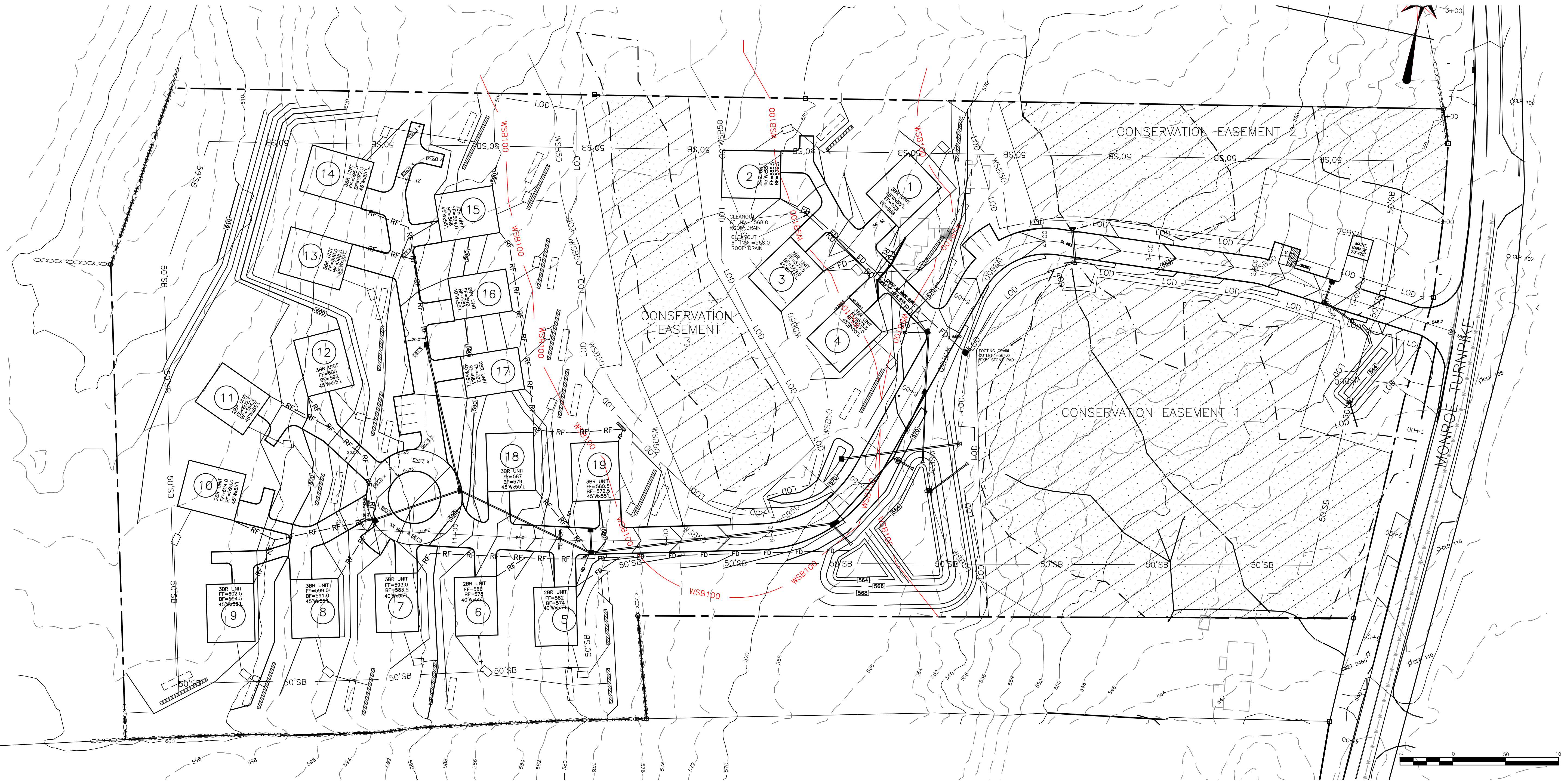
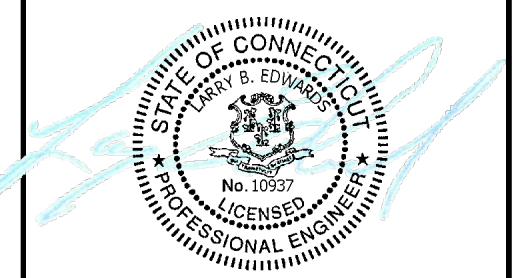
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- WETLAND AREA
- WETLAND SETBACK LINE
- TEST HOLE
- PERCOLATION TEST
- WETLAND MARKER
- EXISTING CATCH BASIN
- PROPOSED DRAINAGE
- WATERCOURSE
- PROPOSED RIP RAP
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED ELECTRIC LINE
- PROPOSED FOOTING DRAIN
- PROPOSED ROOF DRAIN
- PROPOSED FOOTING/ROOF DRAIN
- LIMIT OF DISTURBANCE
- PROPOSED WATER SERVICE
- PROPOSED SEPTIC TANK
- PROPOSED LEACHING SYSTEM



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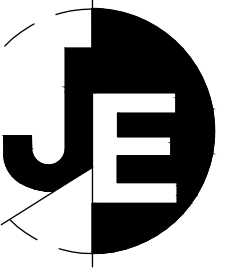
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DRAWN BY: LE/JE/IE
SCALE: 1"=50'

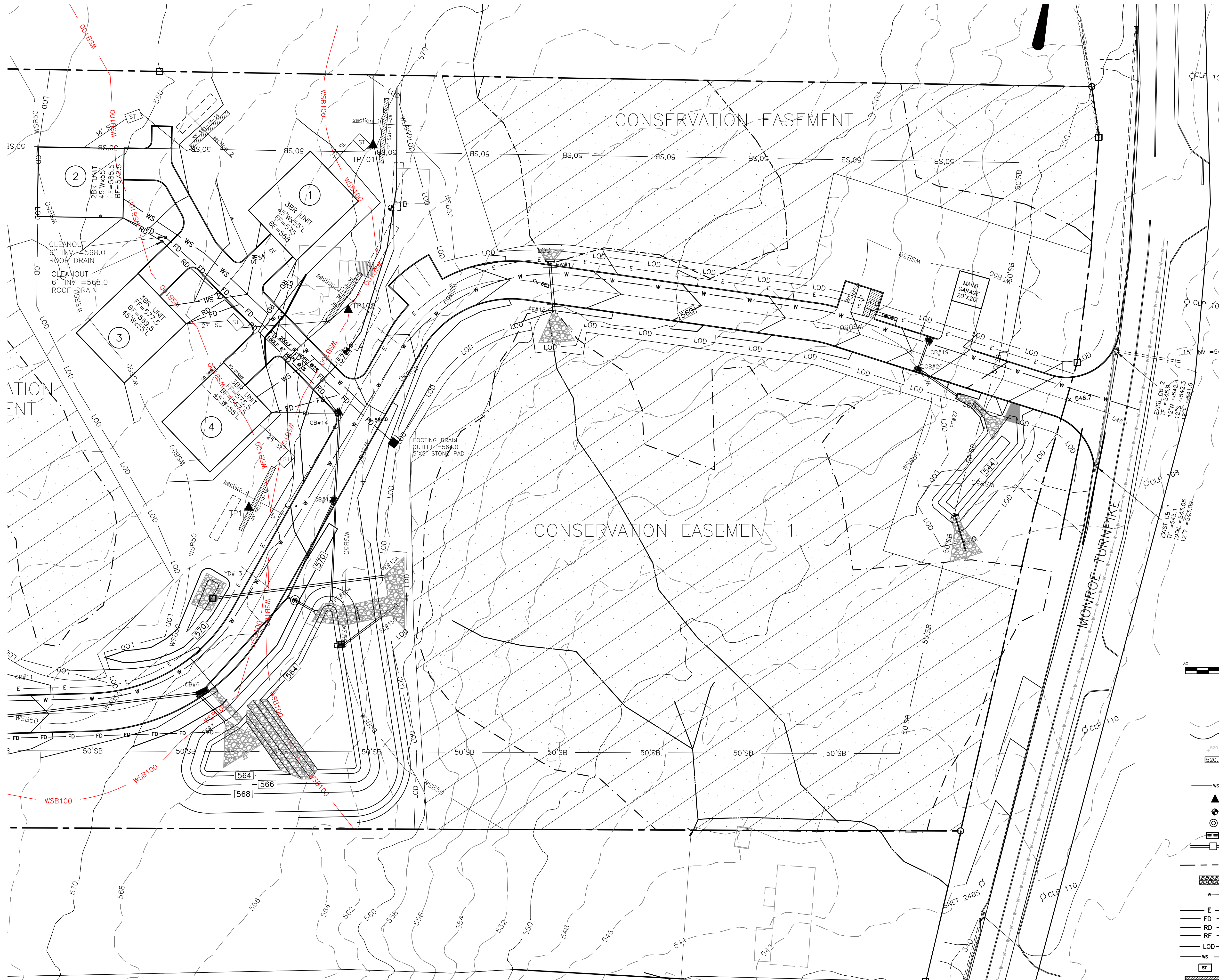
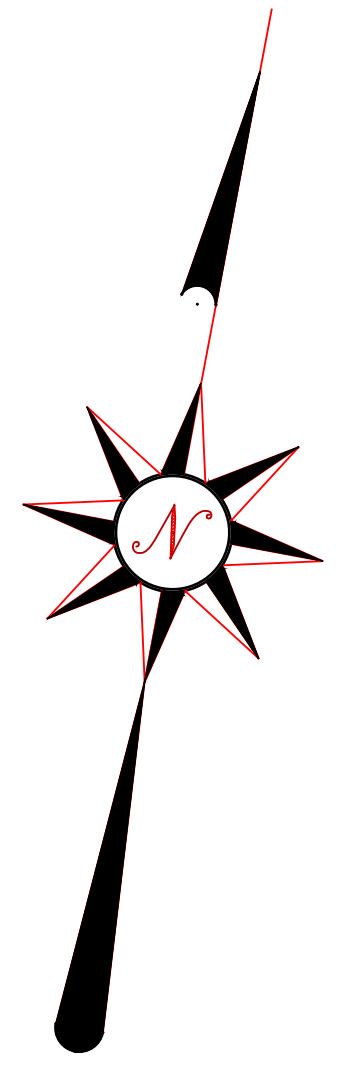
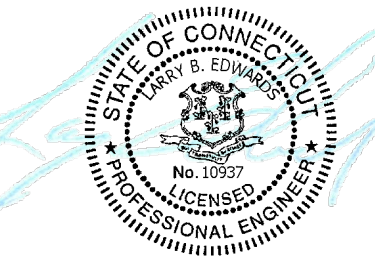
TITLE
OVERALL
SITE
DEVELOPMENT
PLAN

SHEET NUMBER
S-2



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LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- WETLAND AREA
- WETLAND SETBACK LINE
- TEST HOLE
- PERCOLATION TEST
- WETLAND MARKER
- EXISTING CATCH BASIN
- PROPOSED DRAINAGE
- WATERCOURSE
- PROPOSED RIP RAP
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED FOOTING DRAIN
- PROPOSED ROOF DRAIN
- PROPOSED FOOTING/ROOF DRAIN
- LIMIT OF DISTURBANCE
- PROPOSED WATER SERVICE
- PROPOSED SEPTIC TANK
- PROPOSED LEACHING SYSTEM
- PROPOSED SOIL LINE
- PROPOSED SEPTIC RESERVE AREA

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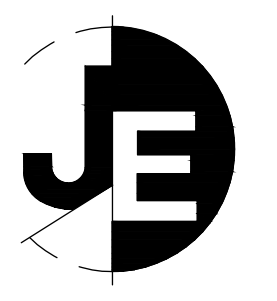
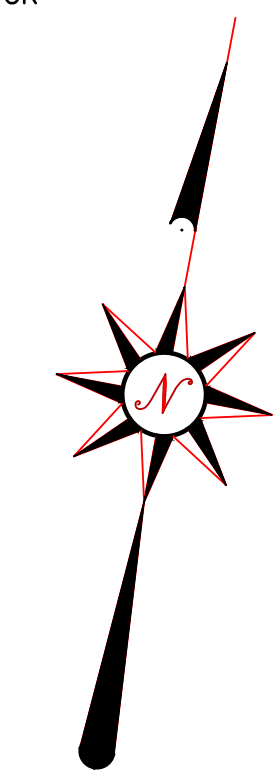
DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=30'

TITLE
SITE DEVELOPMENT PLAN (ENLARGEMENT)

SHEET NUMBER
S-3.1

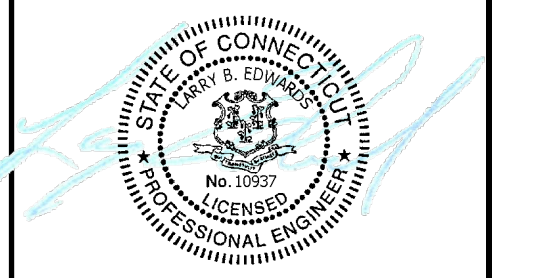
HOUSE 10 3BR
46LF GEOMATRIX SB1-72 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =600.5
SEPTIC TANK INLET =599.75
SEPTIC TANK OUTLET =598.5
BOYTON SYSTEM =597.5

40' LONG SPREADER TRENCH
ROOF RUNOFF DISCHARGE FOR
BUILDING 3 & 4



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MONROE, CONNECTICUT

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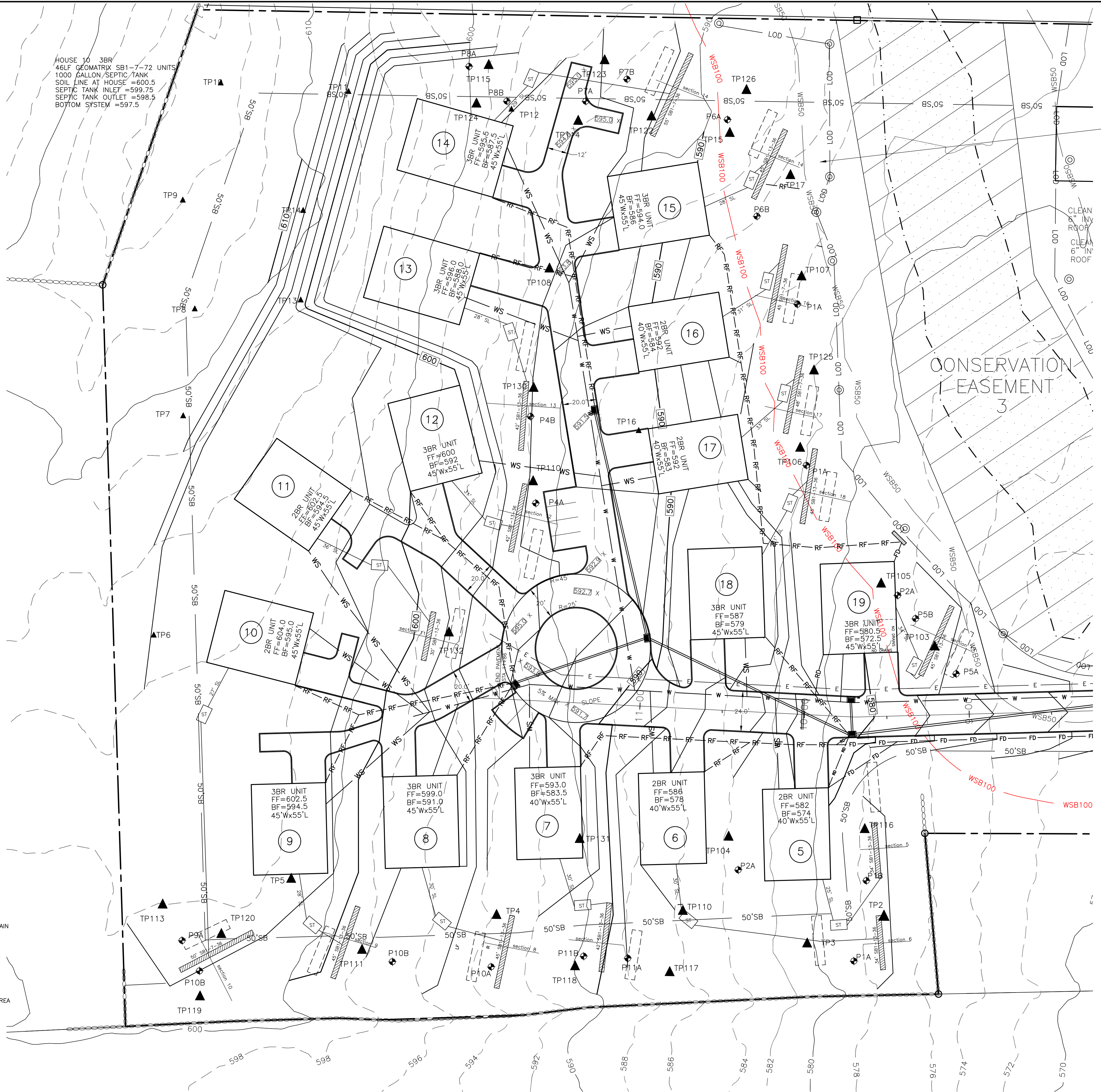
TITLE
SITE
DEVELOPMENT
PLAN
(ENLARGEMENT)

SHEET NUMBER
S-3.2

FILE NO. ----

LEGEND

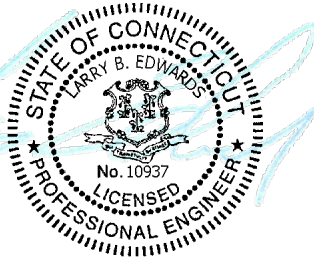
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING SPOT ELEVATION
	PROPOSED SPOT ELEVATION
	WETLAND AREA
	WETLAND SETBACK LINE
	TEST HOLE
	PERCOLATION TEST
	WETLAND MARKER
	EXISTING CATCH BASIN
	PROPOSED DRAINAGE
	WATERCOURSE
	PROPOSED RIP RAP
	EXISTING WATER LINE
	PROPOSED WATER LINE
	PROPOSED ELECTRIC LINE
	PROPOSED FOOTING DRAIN
	PROPOSED ROOF DRAIN
	PROPOSED FOOTING/ROOF DRAIN
	LIMIT OF DISTURBANCE
	PROPOSED WATER SERVICE
	PROPOSED SEPTIC TANK
	PROPOSED LEACHING SYSTEM
	PROPOSED SOIL LINE
	PROPOSED SEPTIC RESERVE AREA





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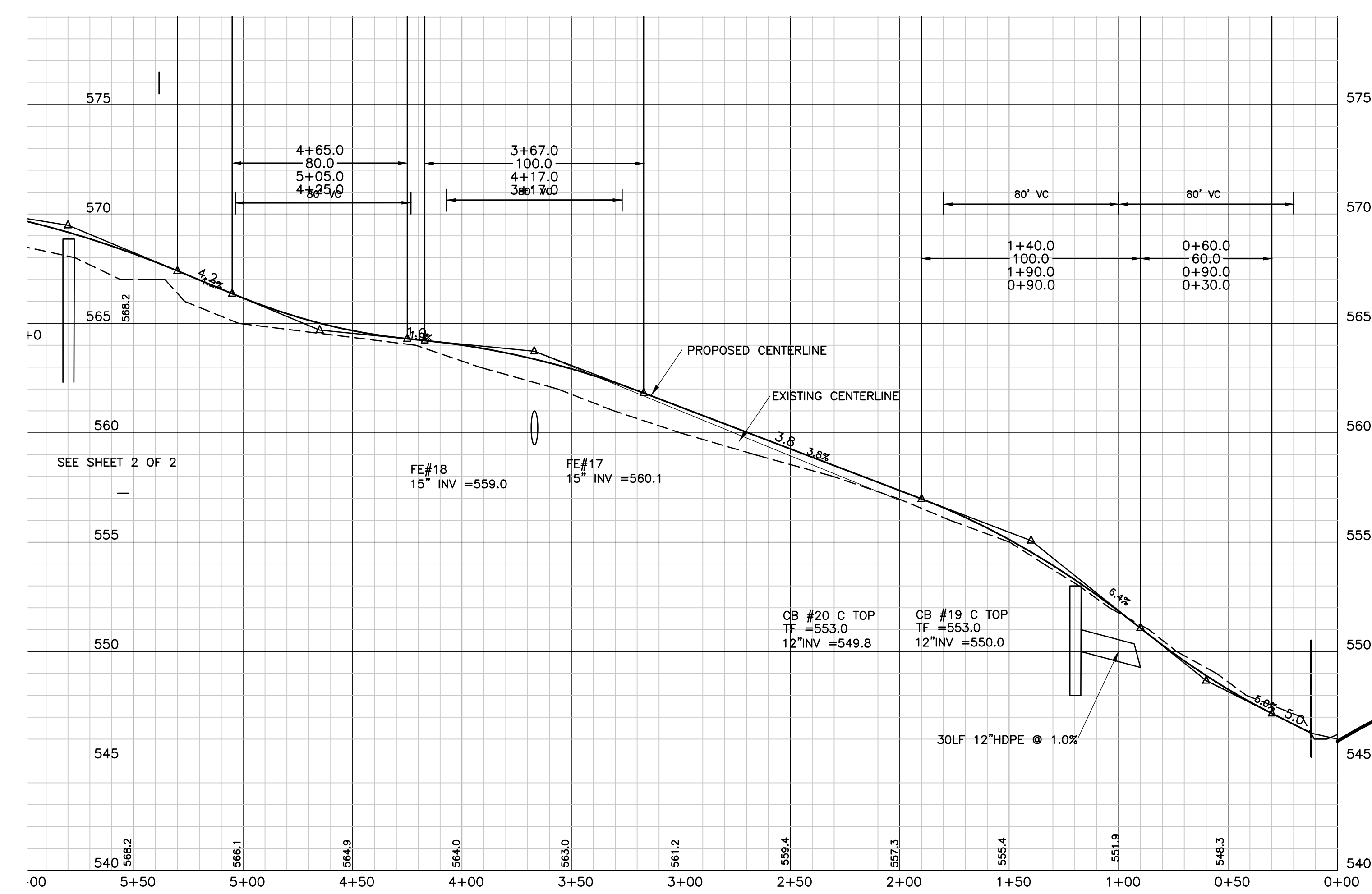
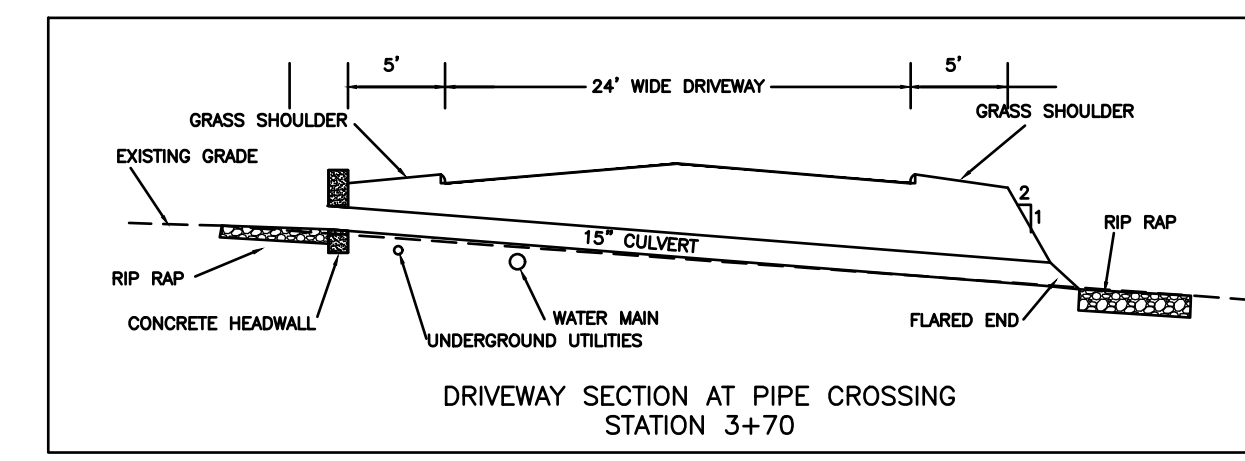
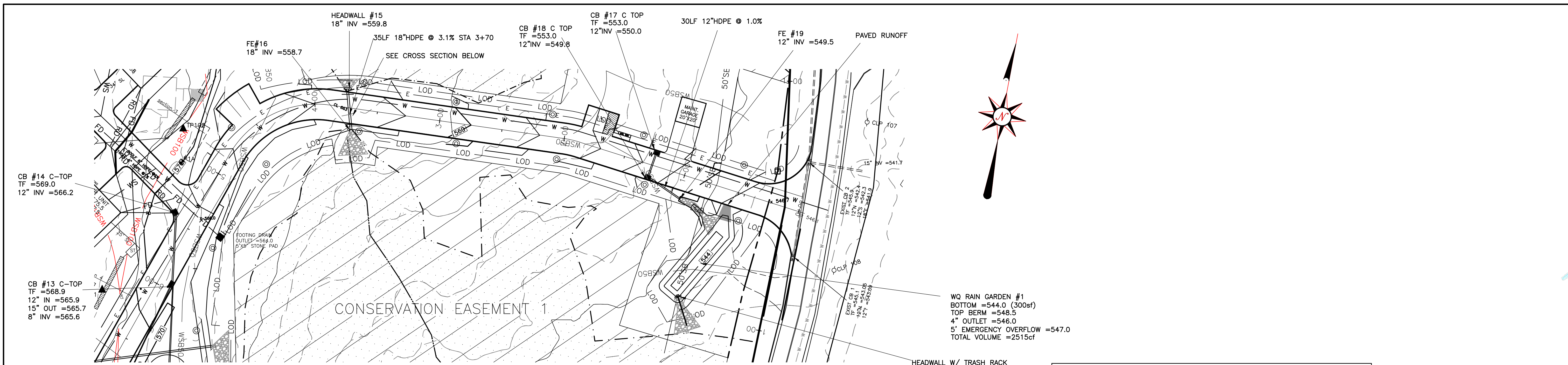
DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=50'

TITLE

ACCESS DRIVEWAY
PLAN & PROFILE

SHEET NUMBER

S-4.1



LEGEND

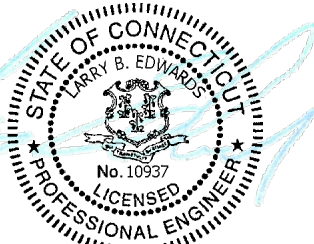
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- WETLAND AREA
- WETLAND SETBACK LINE
- TEST HOLE
- PERCOLATION TEST
- WETLAND MARKER
- EXISTING CATCH BASIN
- PROPOSED DRAINAGE
- WATERCOURSE
- PROPOSED RIP RAP
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED ELECTRIC LINE
- PROPOSED FOOTING DRAIN
- PROPOSED ROOF DRAIN
- PROPOSED FOOTING/ROOF DRAIN
- LIMIT OF DISTURBANCE
- PROPOSED WATER SERVICE
- PROPOSED SEPTIC TANK
- PROPOSED LEACHING SYSTEM
- PROPOSED SOIL LINE
- PROPOSED SEPTIC RESERVE AREA





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www.jedwardassoc.com



THE RIDGE AT MONROE
1271 MONROE TURNPIKE
MONROE, CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	09-01-21	ENG. & IWC COM.
2	09-28-21	ENG. & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

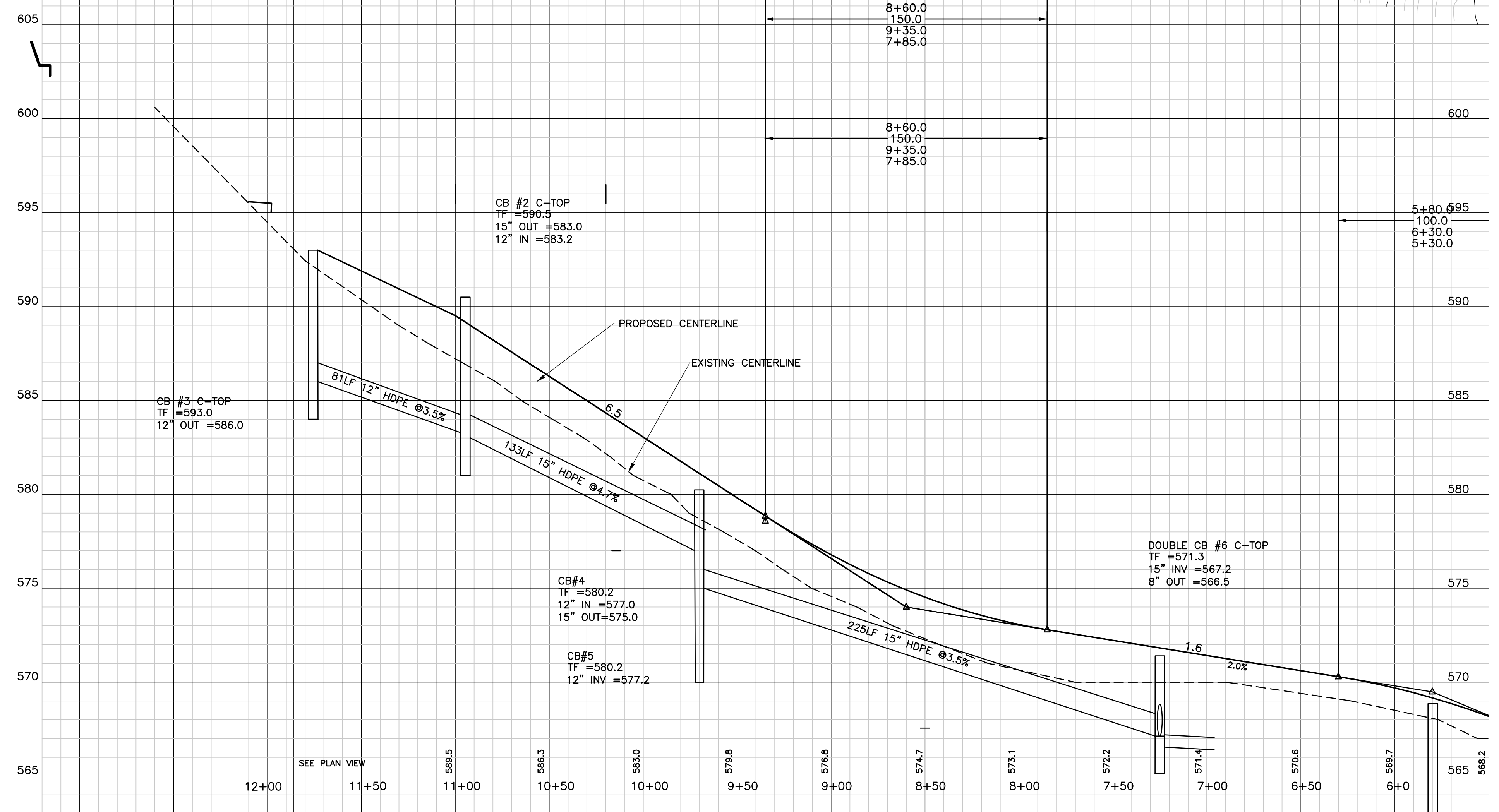
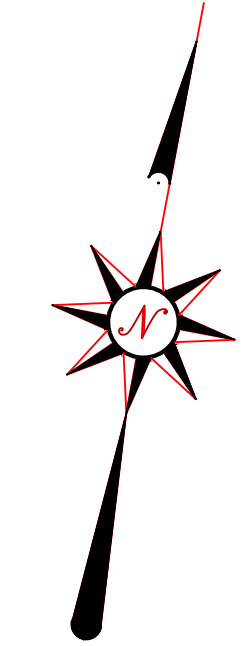
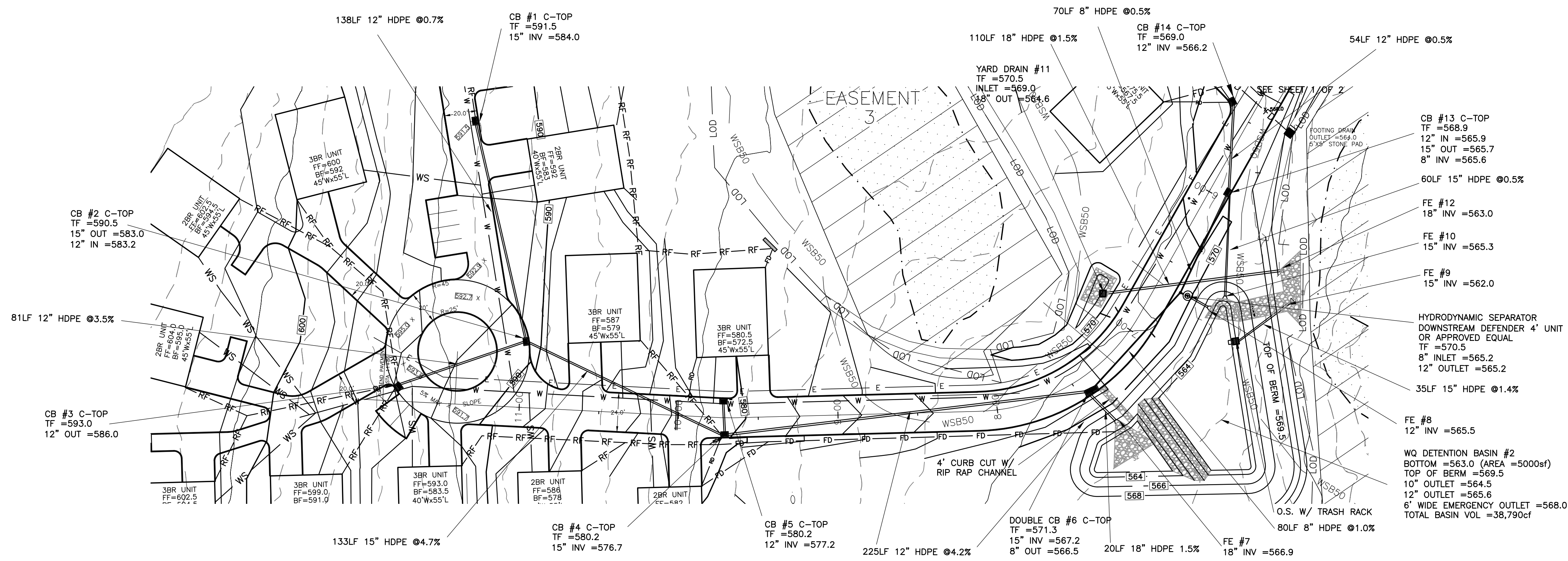
DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=50'

TITLE

ACCESS
DRIVEWAY
PLAN & PROFILE

SHEET NUMBER

S-4.2

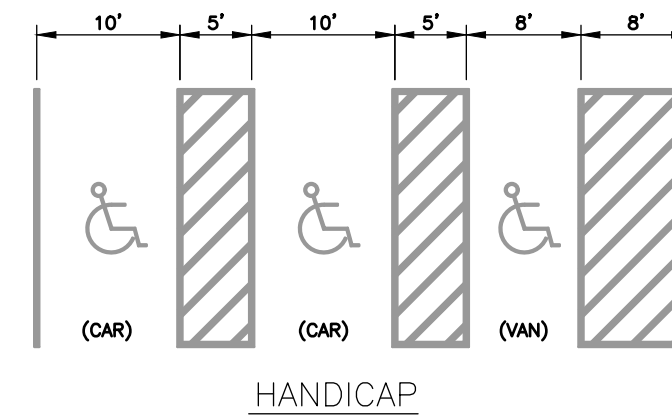
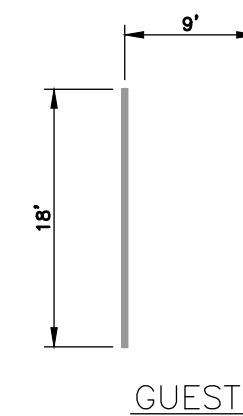
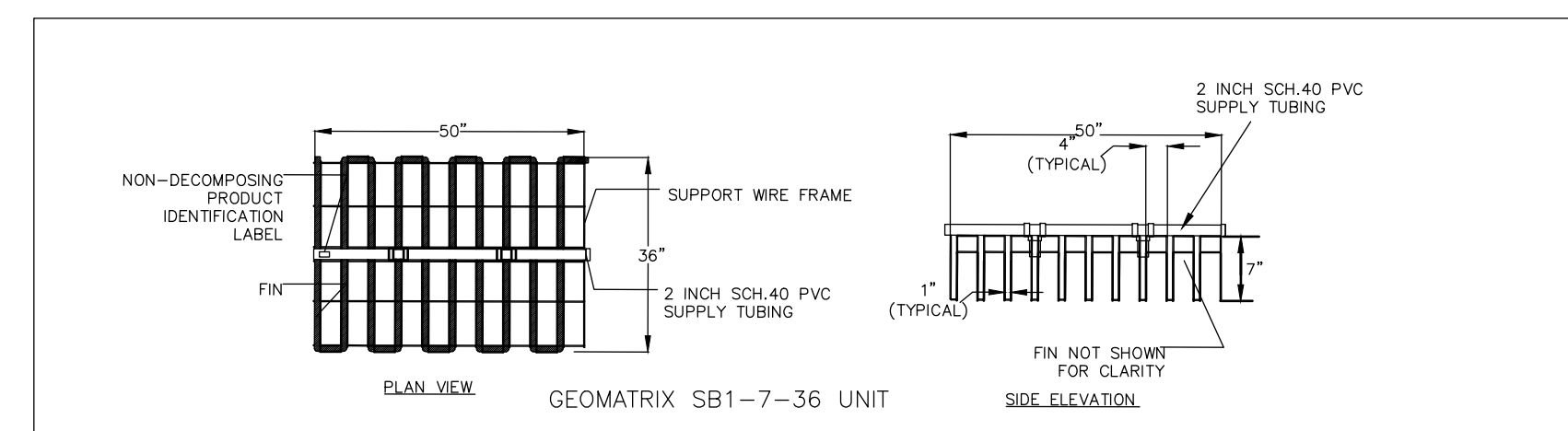
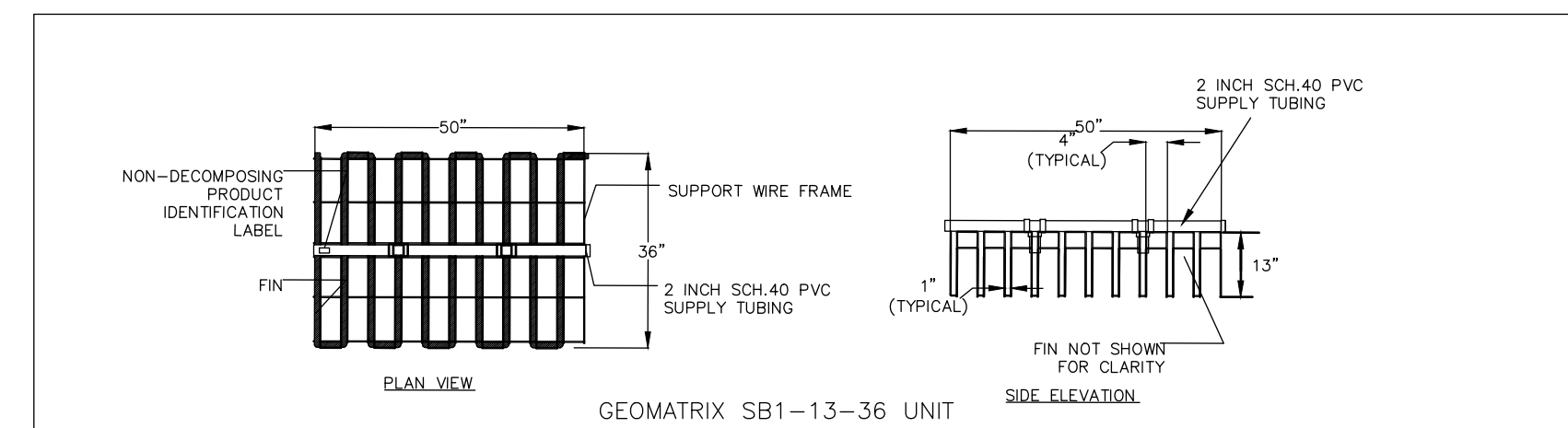
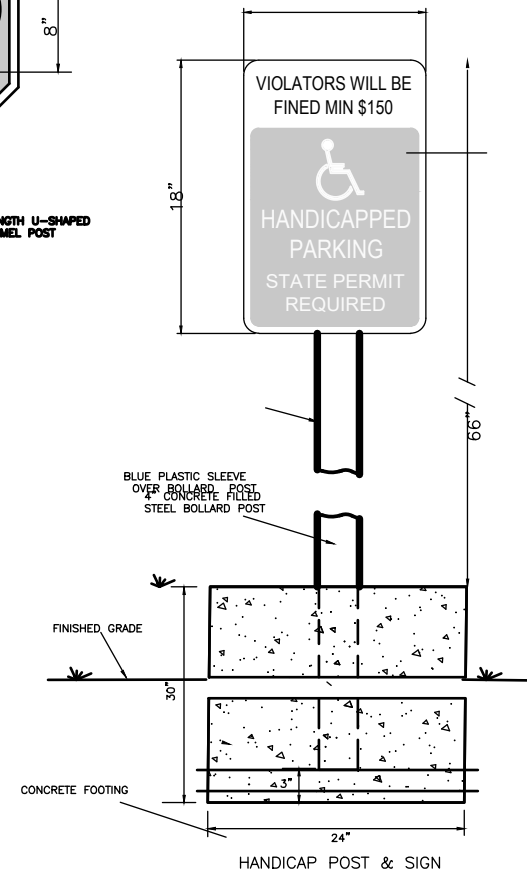
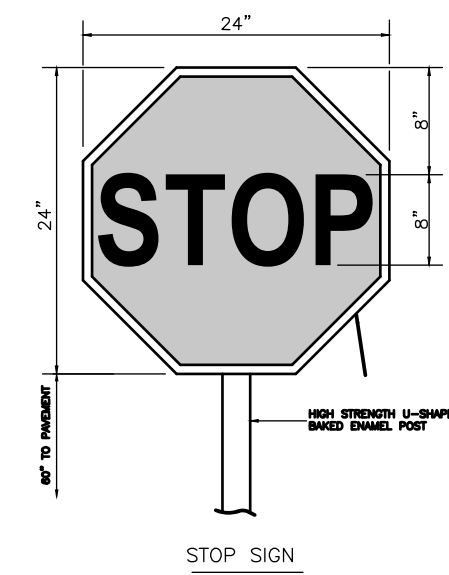
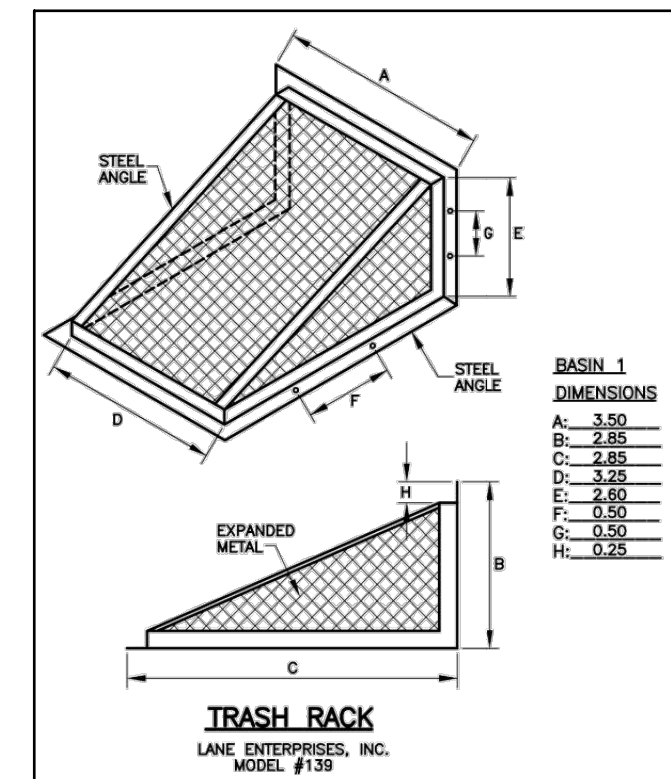
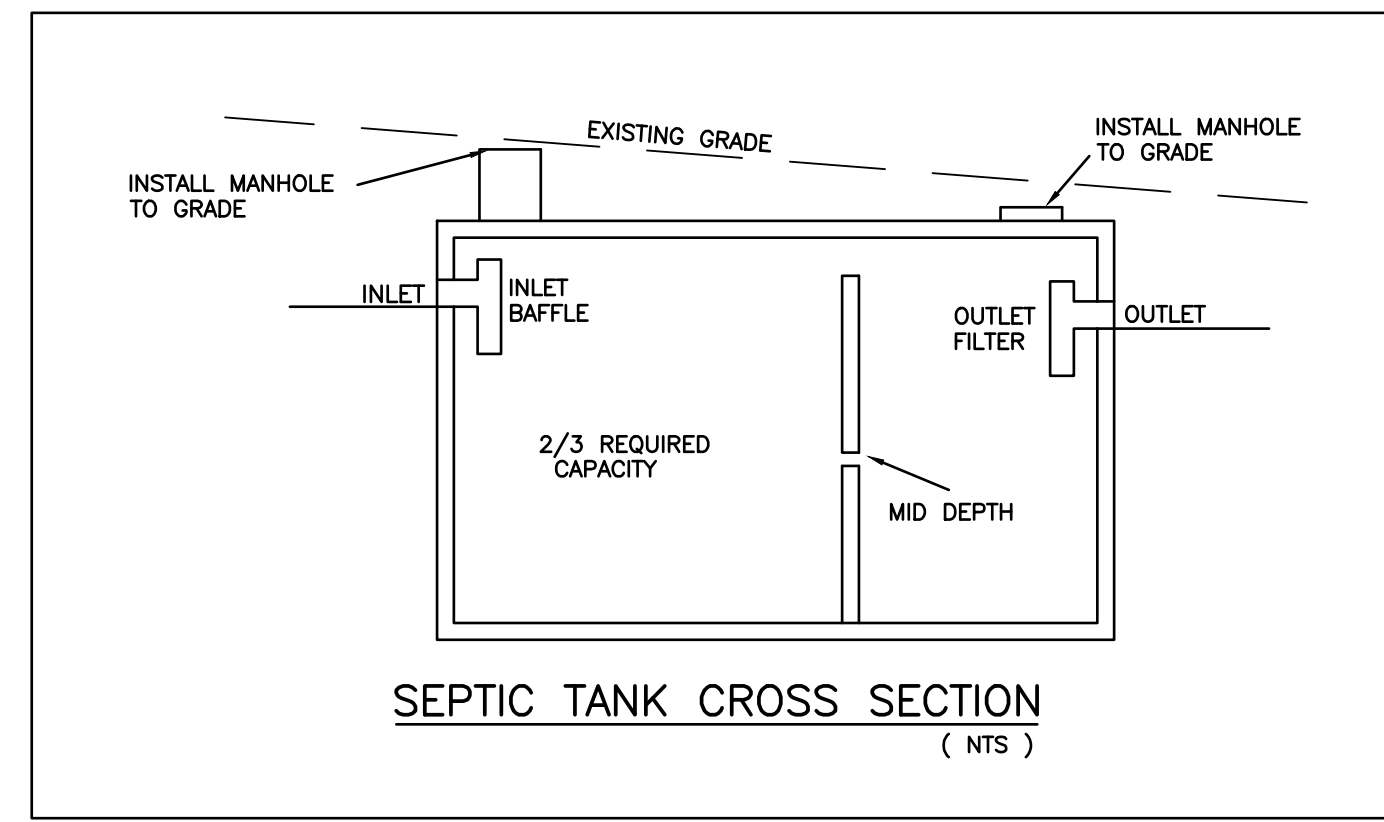
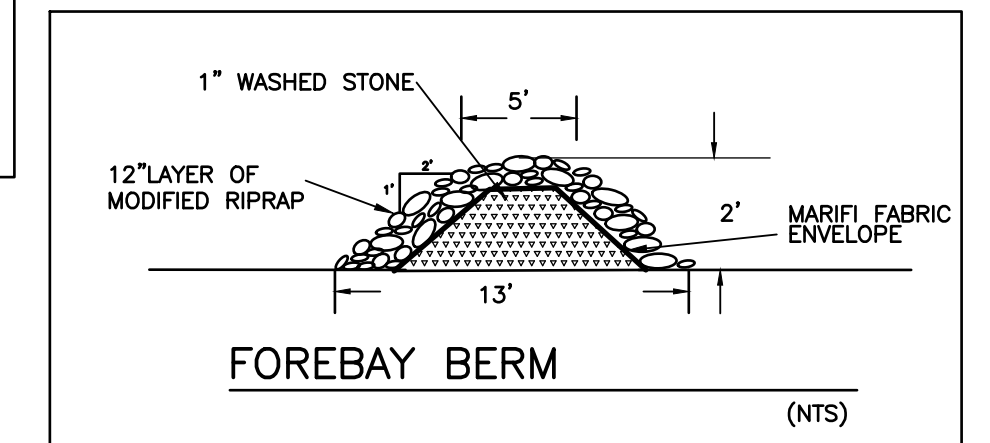
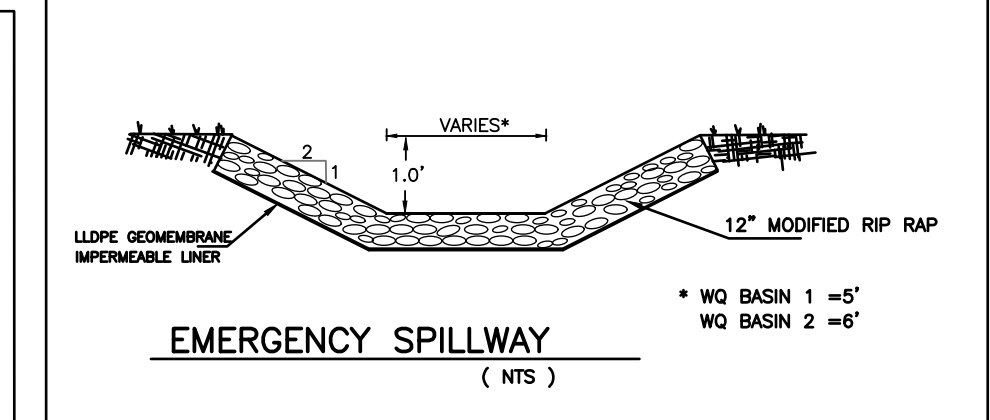
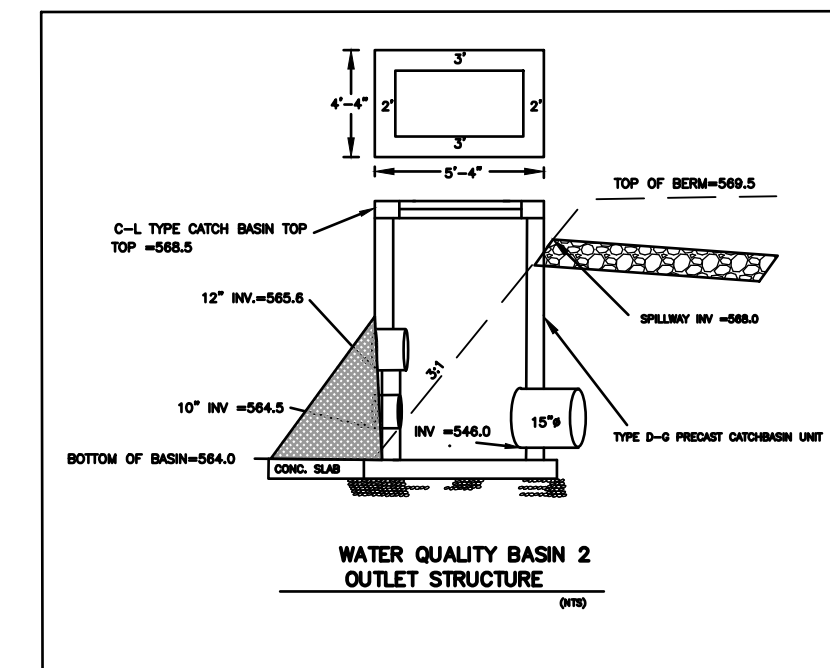
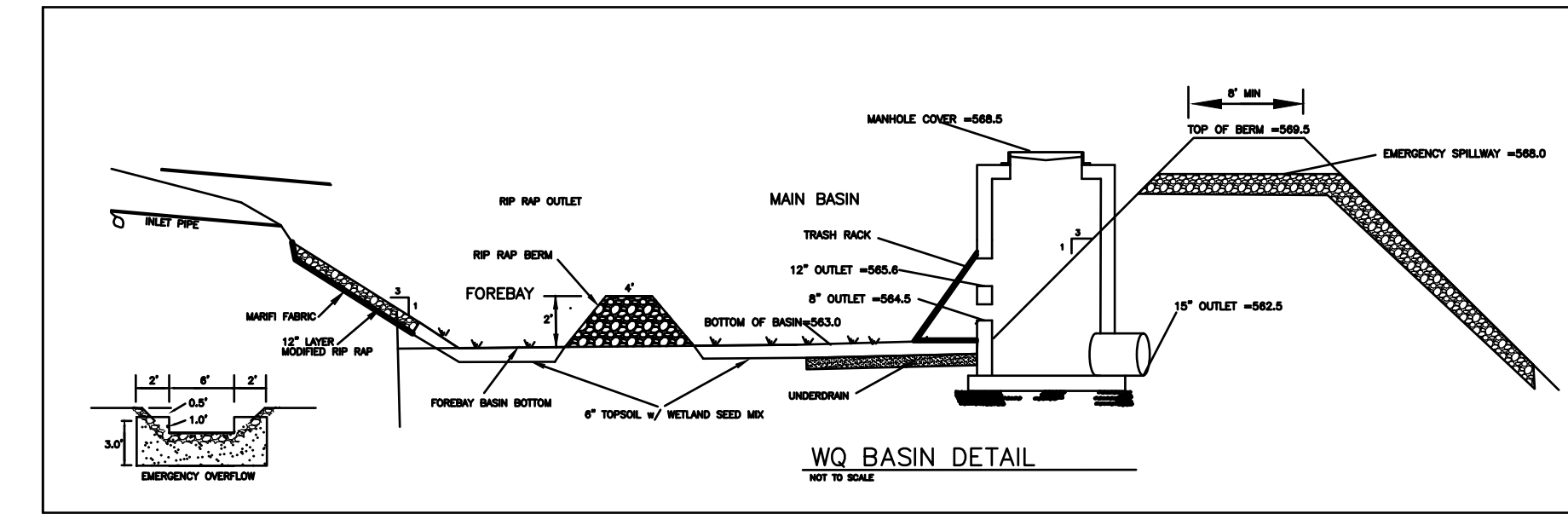
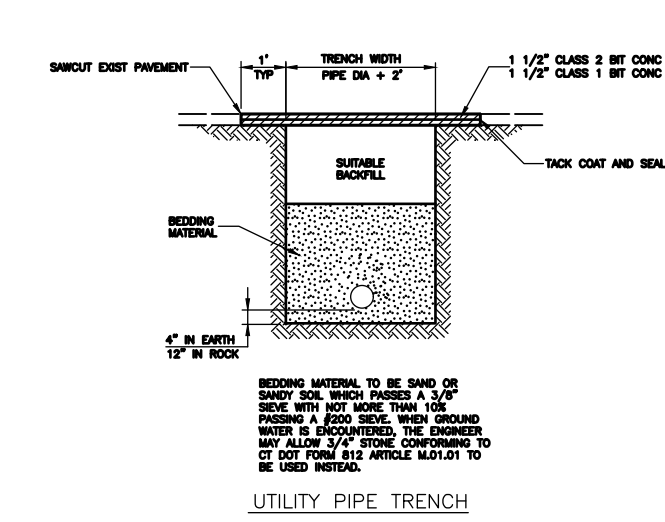
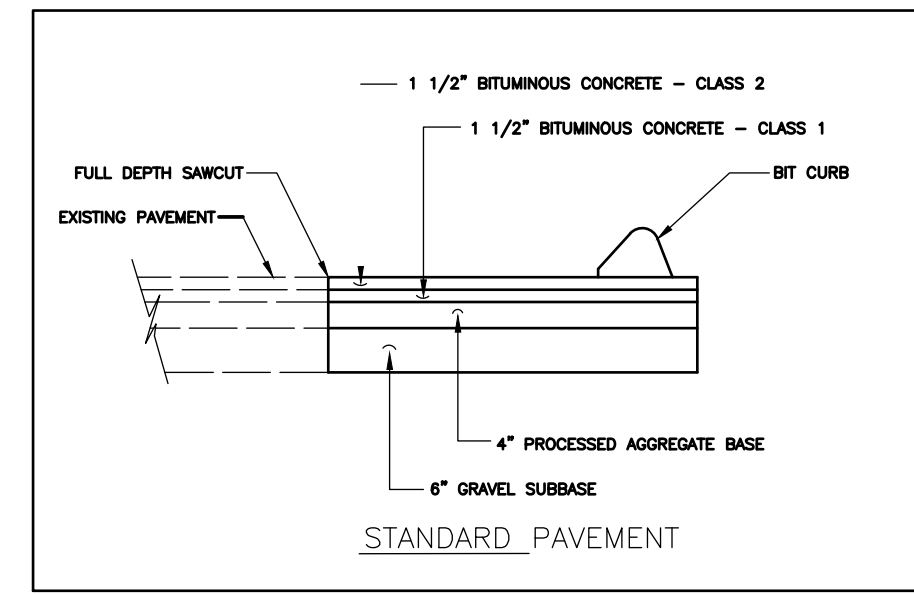


- LEGEND**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - WETLAND AREA
 - WETLAND SETBACK LINE
 - TEST HOLE
 - PERCOLATION TEST
 - WETLAND MARKER
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 - WATERCOURSE
 - PROPOSED RIP RAP
 - EXISTING WATER LINE
 - PROPOSED WATER LINE
 - PROPOSED ELECTRIC LINE
 - PROPOSED FOOTING DRAIN
 - PROPOSED ROOF DRAIN
 - PROPOSED FOOTING/ROOF DRAIN
 - LOD
 - PROPOSED WATER SERVICE
 - PROPOSED SEPTIC TANK
 - PROPOSED LEACHING SYSTEM
 - PROPOSED SOIL LINE
 - PROPOSED SEPTIC RESERVE AREA

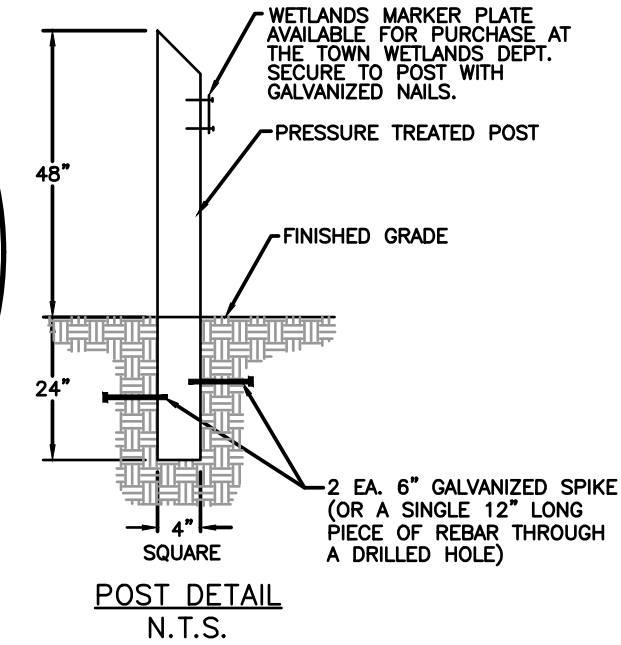
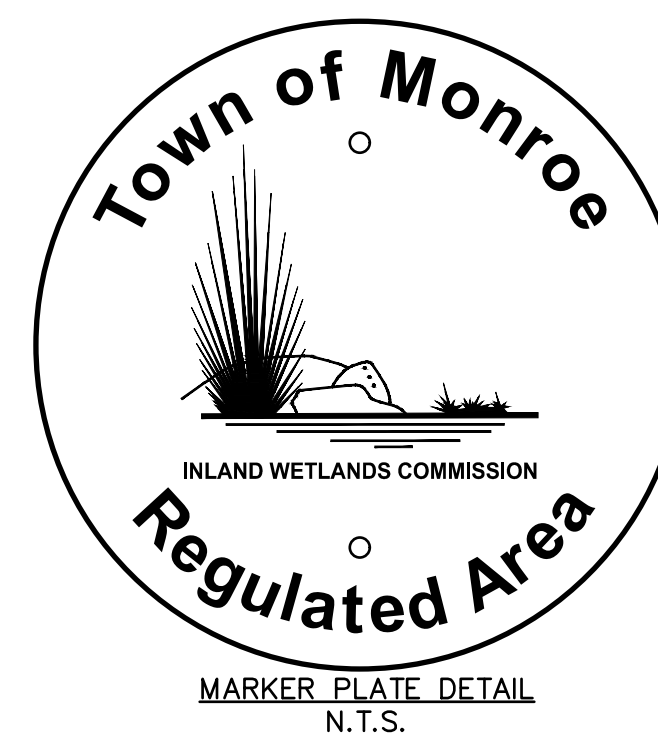
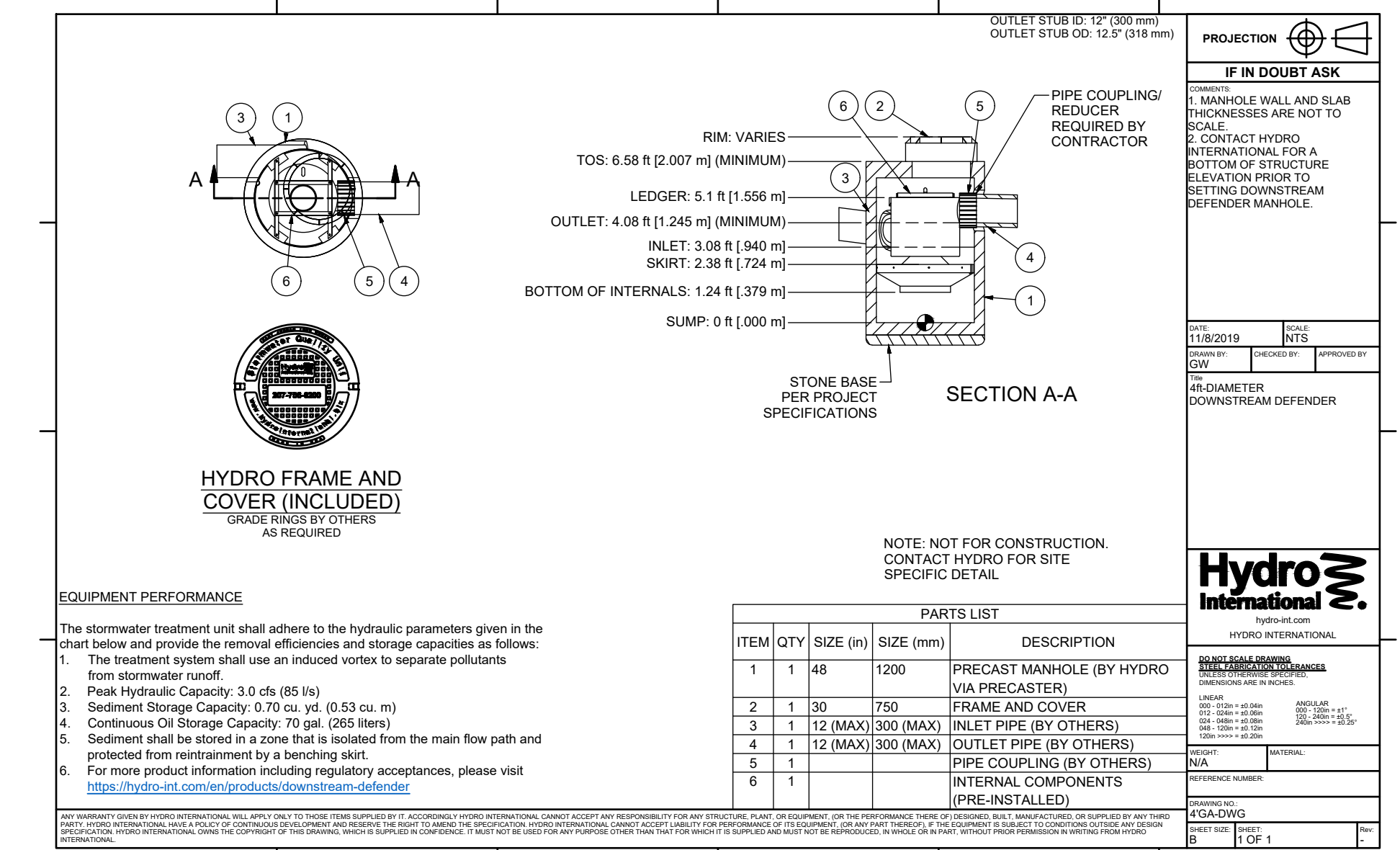
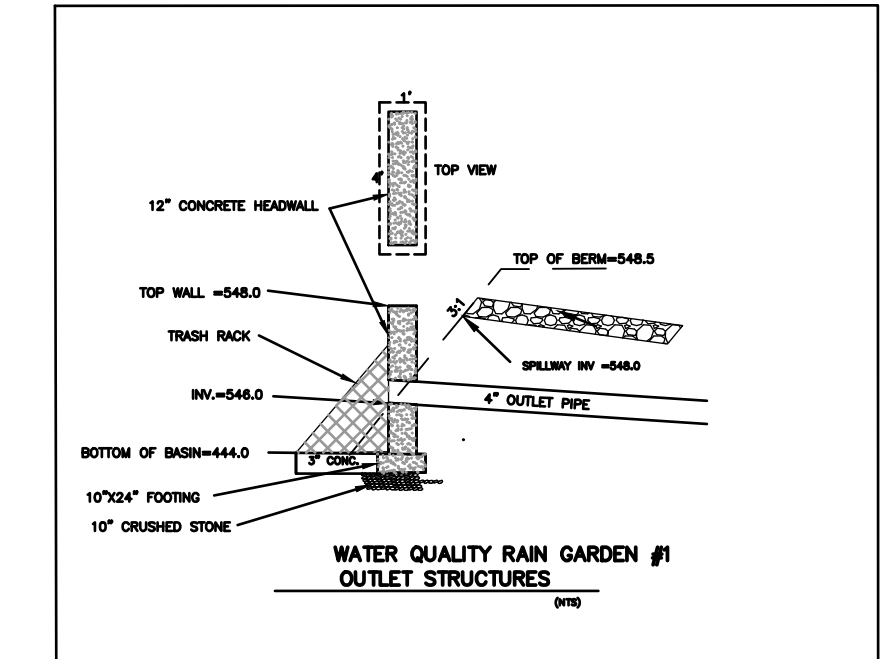
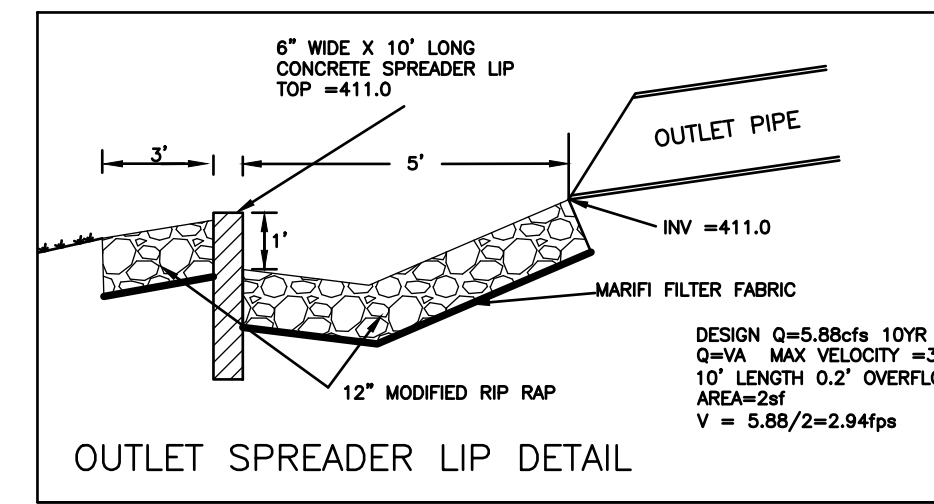


STANDARD NOTES

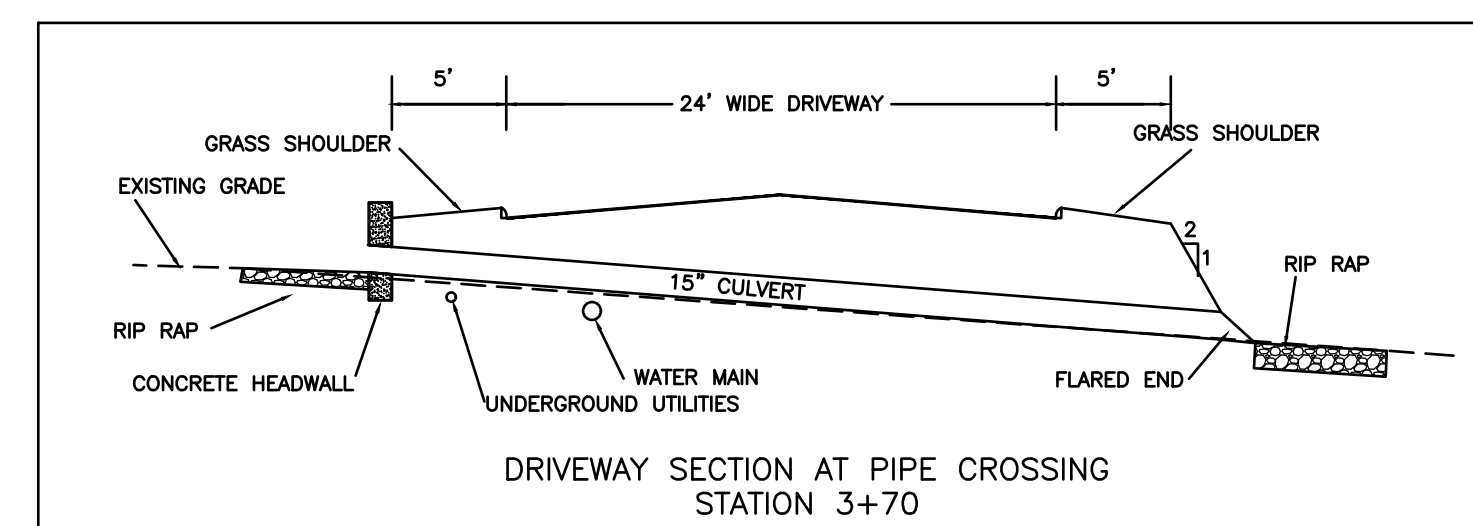
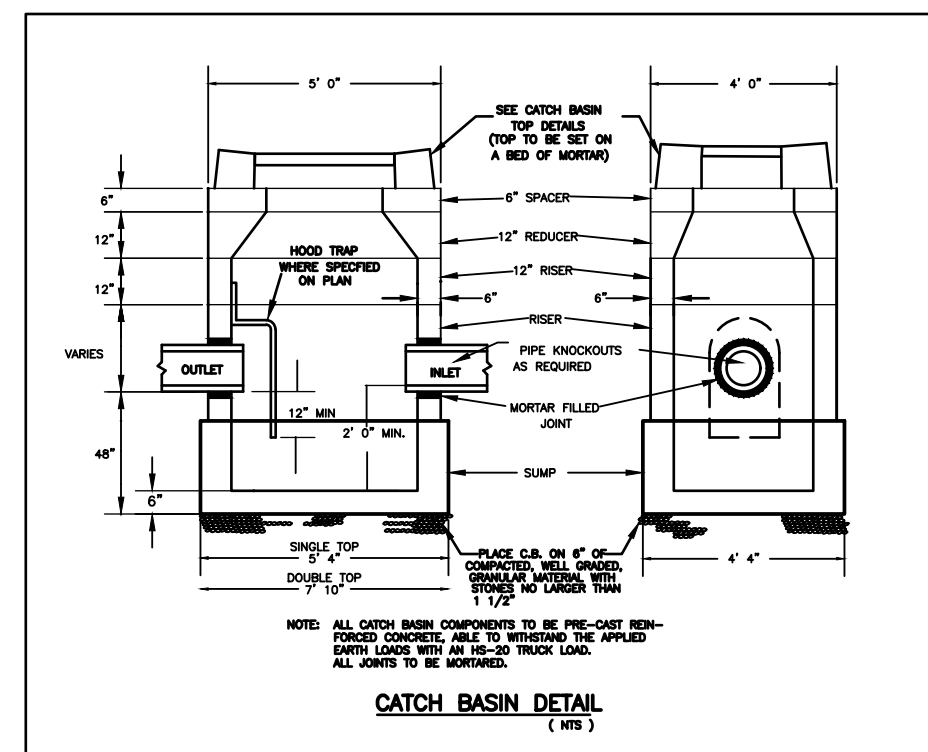
- All construction methods, materials and installation of the system to be in accordance with all applicable local and state regulations.
- Topographic and property data shown are only approximate.
Topographic data based on subdivision site plan, property lines based on subdivision map.
- The test results and soil types shown apply only to the test holes shown and may vary throughout the site. Soil type and grade should be verified by the owner over the entire leaching area prior to construction.
- Select fill, if required, to be placed in maximum of 12" lifts and to be compacted to a minimum of 90% compaction. Material to have a maximum of 5% passing the #200 sieve. Prior to the delivery of select fill to the site, the contractor at his expense, shall furnish a certified gradation analysis to the local Health Department and to the Design Engineer. Final approval of septic fill will be conditional on the completion of a percolation test on the in-place material. This test is to be witnessed by the Design Engineer and/or local Health Department official. The maximum allowable percolation rate will be 1" in 10 minutes, unless otherwise noted.
- Unless otherwise directed hereon, the site requiring placement of select fill shall be prepared by removing all topsoil in the system area and 5 ft on all sides. No heavy equipment shall be used in the prepared area. Fill shall be placed on the perimeter of the trench area and spread with a small crawler, tractor or other approved machinery. Upon placement of the first lift of select fill, material shall be thoroughly harrowed into the existing subsoil layer.
- Call "Call Before You Dig" 1-800-922-4455 to locate underground utilities on property and show service lines to building from public utilities shown on plan.
- Contractor shall contact the certifying engineer and Health department at least 24 hours prior to starting construction, or the system installation will not be certified.
- The licensed installer shall cover the septic system with clean soil as prescribed by the latest revision of Technical Standards. Clean soil is native soil, free of contaminants such as boulders, building debris, stumps, etc.
- Septic system to be staked by Engineer/Surveyor and benchmark set prior to starting construction.
- A sieve analysis of the septic fill is to be provided to the health district and design engineer verifying compliance to Health Code requirements prior to placement on site.
- Prior to backfilling septic system Engineer/Surveyor to asbuilt completed septic system and provide plan to health department.
- Trees and stumps in septic area to be removed.



PARKING SPACES
NOTE: HANDICAP PARKING SPACES SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION

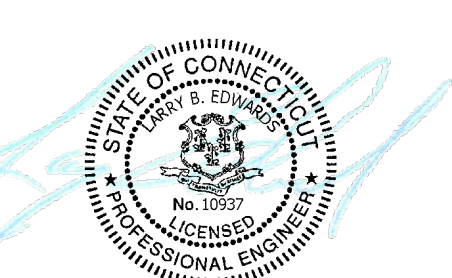


NOTE: THIS MARKER POST SHOULD BE INSTALLED ALONG THE WETLAND UPLAND REVIEW LINE (100 FT. OUTSIDE THE ACTUAL WETLANDS) AT A DISTANCE AS DETERMINED BY THE INLAND WETLANDS COMMISSION, WITH A MAX. DISTANCE OF 75 FT. APART, AND/OR AT POINTS OF CURVATURE, CHANGES IN ALIGNMENT OR ANGLE POINTS.
INLAND WETLANDS MARKER AND POST DETAILS



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THE RIDGE AT MONROE
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MONROE, CONNECTICUT

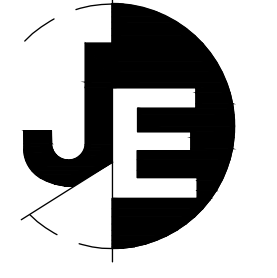
REVISIONS

#	DATE	DESCRIPTION
1	09-01-21	ENG.&IWC COM.
2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=50'

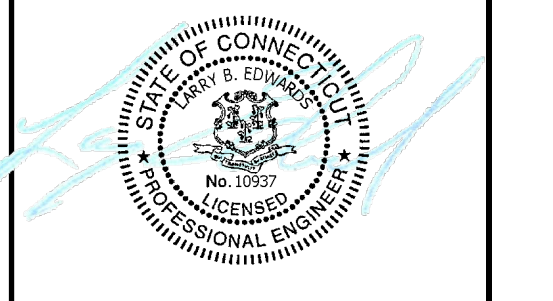
CONSTRUCTION DETAILS

SHEET NUMBER
S-5



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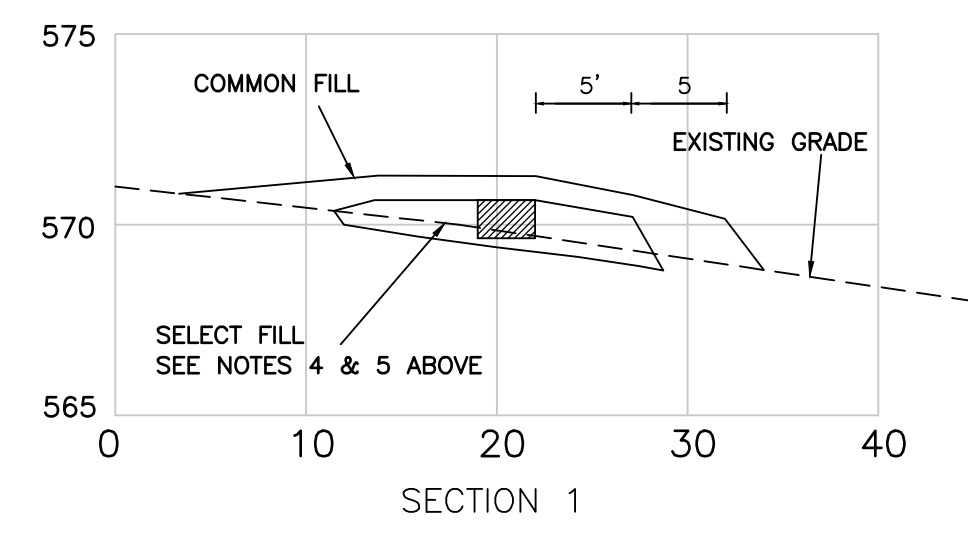
227 Stepany Road Easton, CT 06612
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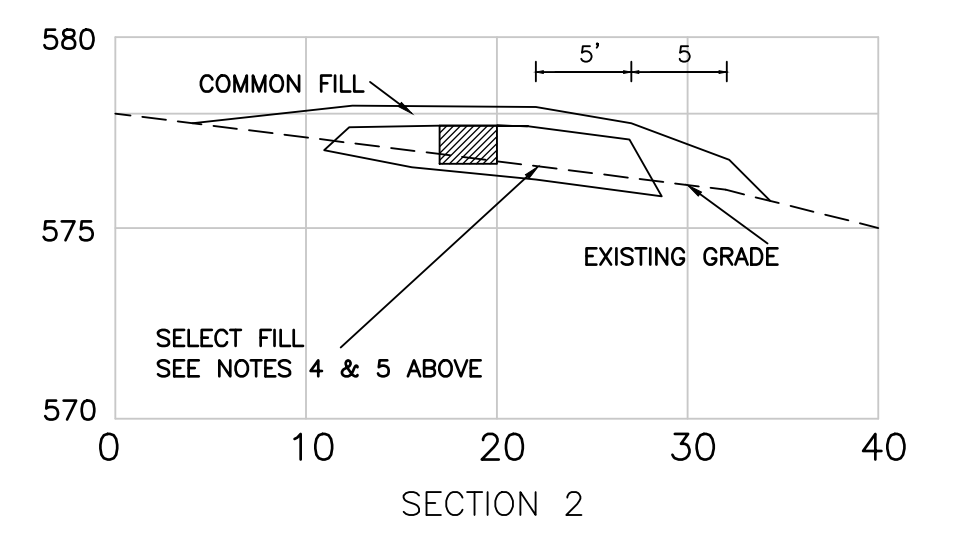
HOUSE 1 3BR
42LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =571.6
SEPTIC TANK INLET =570.85
SEPTIC TANK OUTLET =570.6
BOTTOM SYSTEM =569.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @26" SLOPE=7.0%
MLSS =39'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =617sf



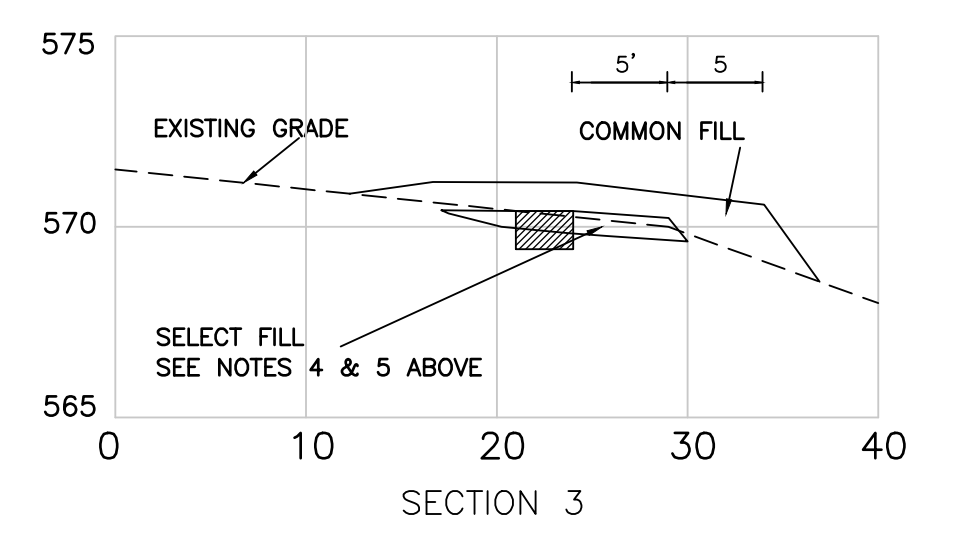
HOUSE 2 2BR
33LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =579.25
SEPTIC TANK INLET =578.5
SEPTIC TANK OUTLET =578.25
BOTTOM SYSTEM =576.75

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=8.0%
MLSS =30'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =485sf



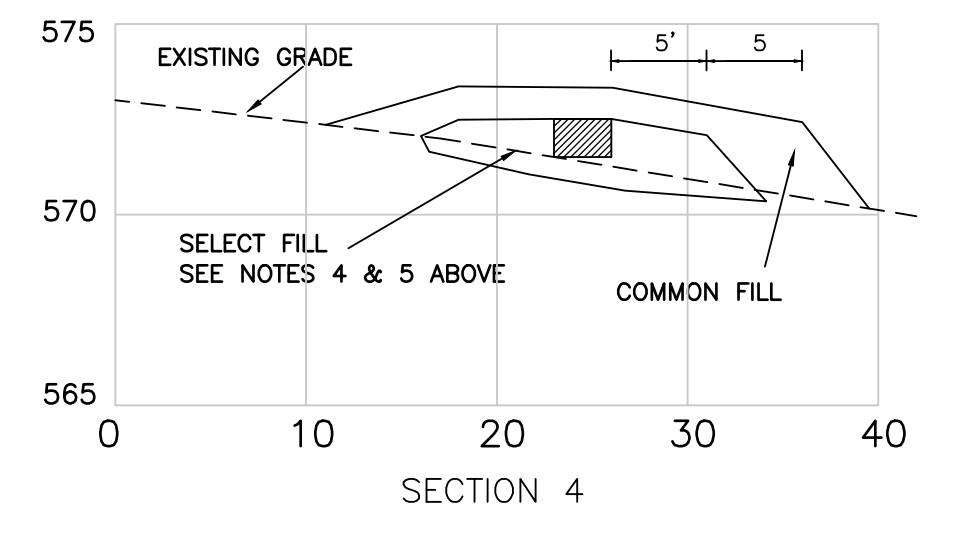
HOUSE 3 3BR
38LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =573.0
SEPTIC TANK INLET =570.85
SEPTIC TANK OUTLET =570.6
BOTTOM SYSTEM =569.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @30" SLOPE=12.0%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =558sf



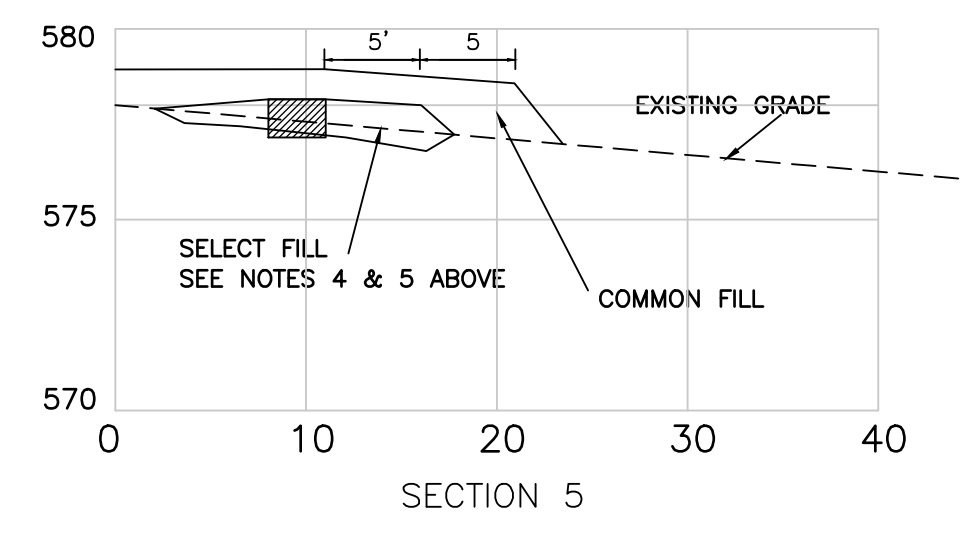
HOUSE 4 3BR
45LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =574.0
SEPTIC TANK INLET =573.35
SEPTIC TANK OUTLET =573.1
BOTTOM SYSTEM =572.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @18" SLOPE=8.6%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =661sf



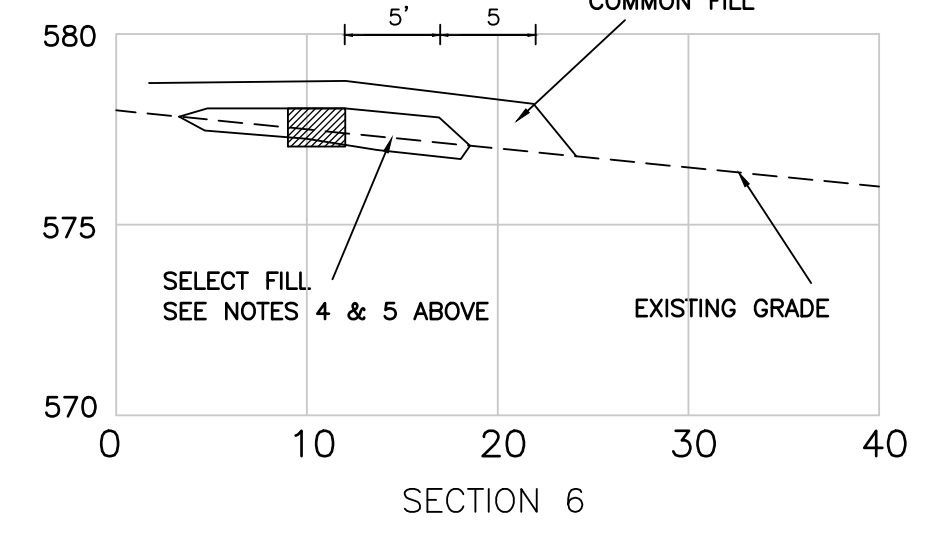
HOUSE 5 2BR
34LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =579.0
SEPTIC TANK INLET =578.35
SEPTIC TANK OUTLET =578.1
BOTTOM SYSTEM =577.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @27" SLOPE=4.3%
MLSS =30'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =499sf



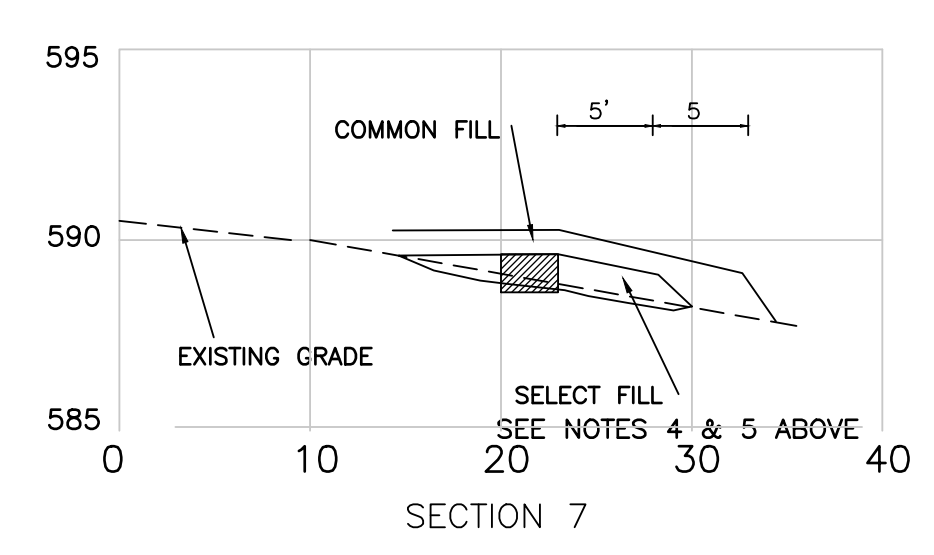
HOUSE 6 2BR
34LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =584.0
SEPTIC TANK INLET =583.25
SEPTIC TANK OUTLET =583.0
BOTTOM SYSTEM =577.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @27" SLOPE=5.0%
MLSS =30'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =441sf



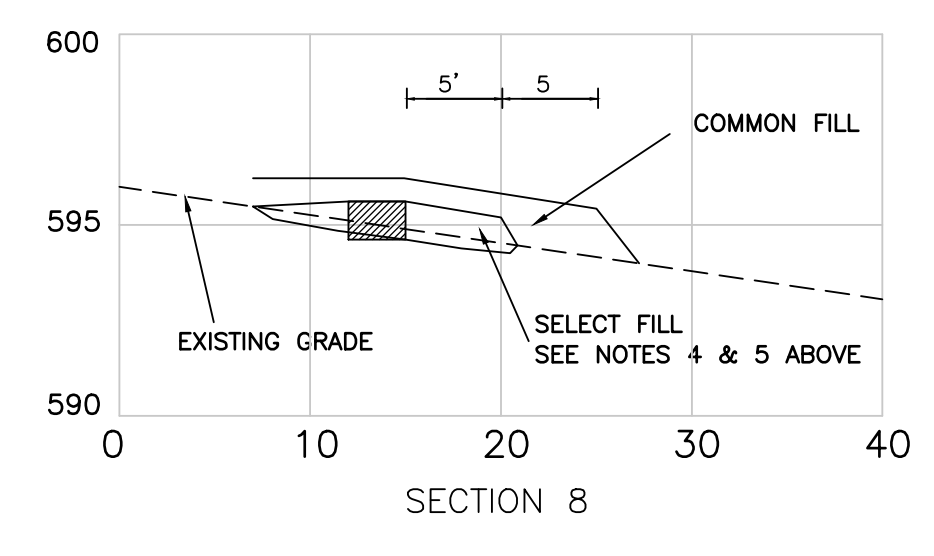
HOUSE 7 3BR
42LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =591.0
SEPTIC TANK INLET =590.25
SEPTIC TANK OUTLET =590.0
BOTTOM SYSTEM =588.75

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=8.7%
MLSS =42'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =617sf



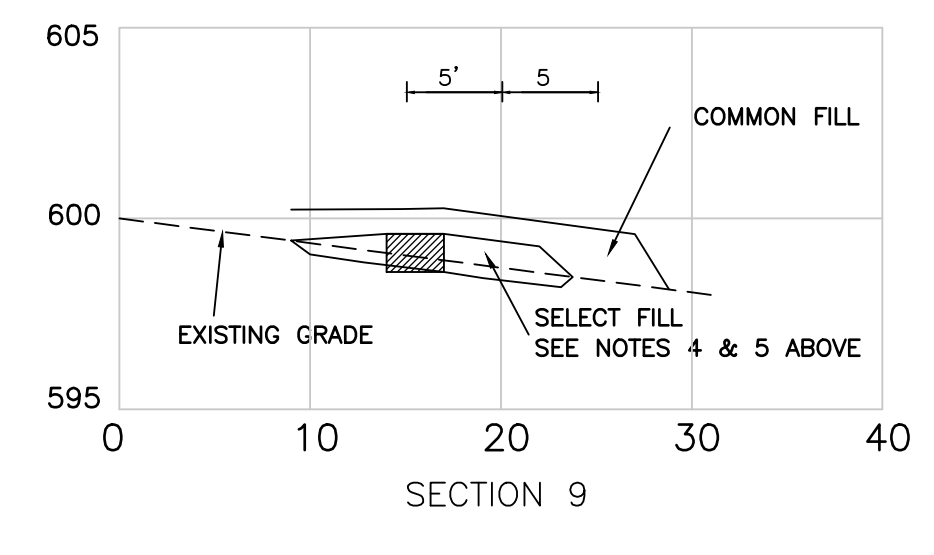
HOUSE 8 3BR
45LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =597.0
SEPTIC TANK INLET =596.25
SEPTIC TANK OUTLET =596.0
BOTTOM SYSTEM =594.75

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=7.4%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =661sf



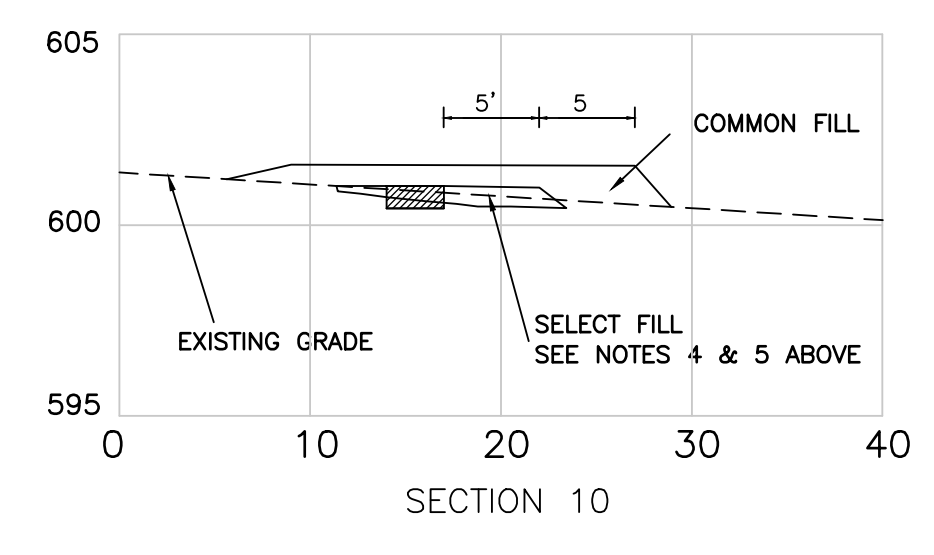
HOUSE 9 3BR
45LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =600.5
SEPTIC TANK INLET =599.85
SEPTIC TANK OUTLET =599.6
BOTTOM SYSTEM =598.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=6.2%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =661sf



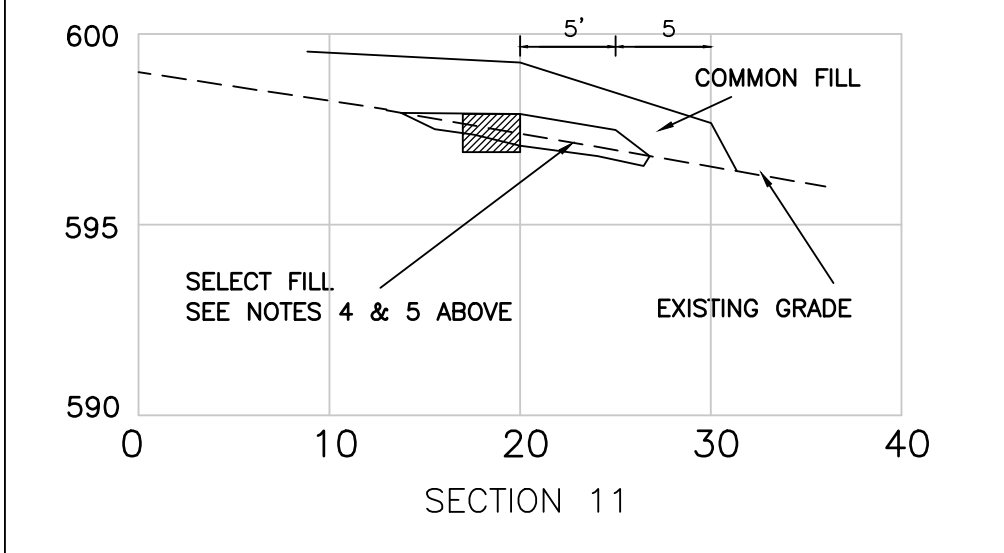
HOUSE 10 2BR
50LF GEOMATRIX SB1-7-36 UNITS
1000 GALLON SEPTIC TANK
6" SOIL LINE AT HOUSE =602.2
SEPTIC TANK INLET =601.9
SEPTIC TANK OUTLET =601.65
BOTTOM SYSTEM =600.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @26" SLOPE=2.6%
MLSS =49'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =410sf



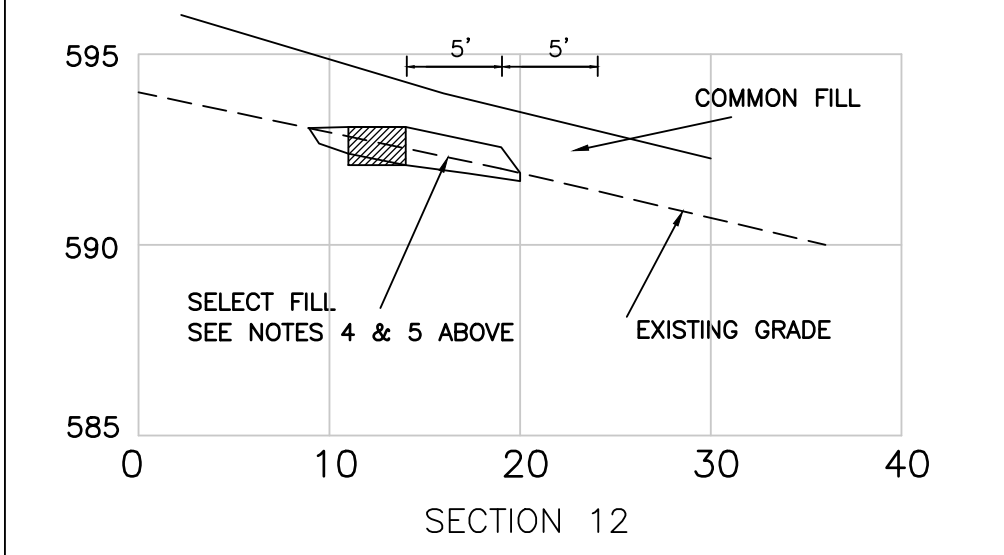
HOUSE 11 2BR
30LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =600.5
SEPTIC TANK INLET =599.75
SEPTIC TANK OUTLET =598.5
BOTTOM SYSTEM =597.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @27" SLOPE=8.6%
MLSS =26'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =441sf



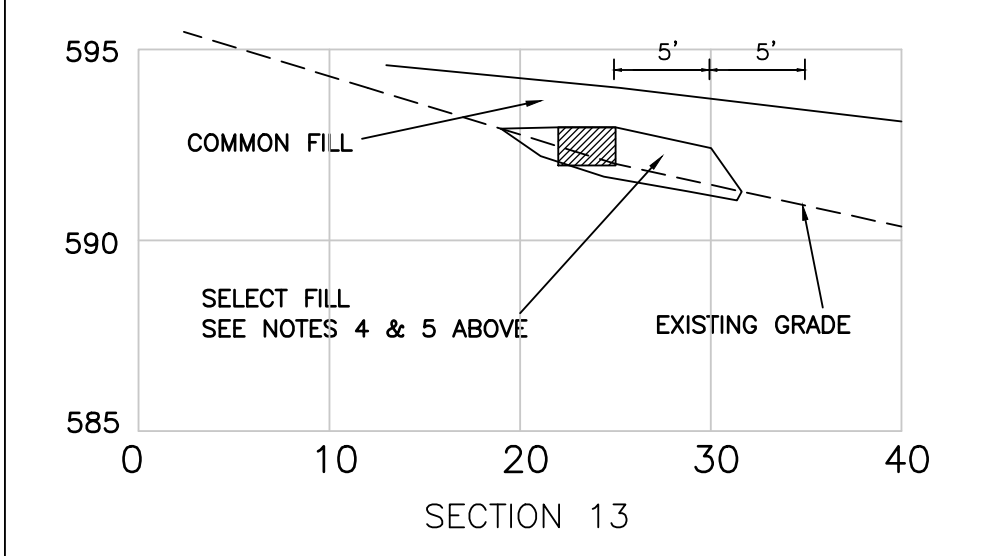
HOUSE 12 3BR
42LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =598.0
SEPTIC TANK INLET =595.25
SEPTIC TANK OUTLET =595.0
BOTTOM SYSTEM =592.25

PERCOLATION RATE: 1"/10
RESTRICTIVE 27" SLOPE=11%
MLSS =36'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =617sf



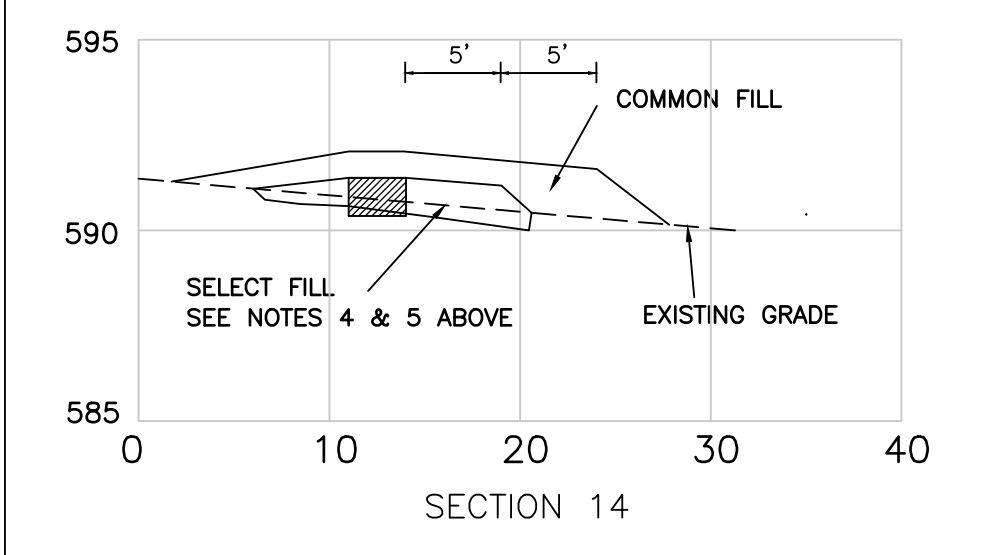
HOUSE 13 3BR
42LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =594.0
SEPTIC TANK INLET =593.35
SEPTIC TANK OUTLET =593.1
BOTTOM SYSTEM =592.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=10.0%
MLSS =39'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =617sf



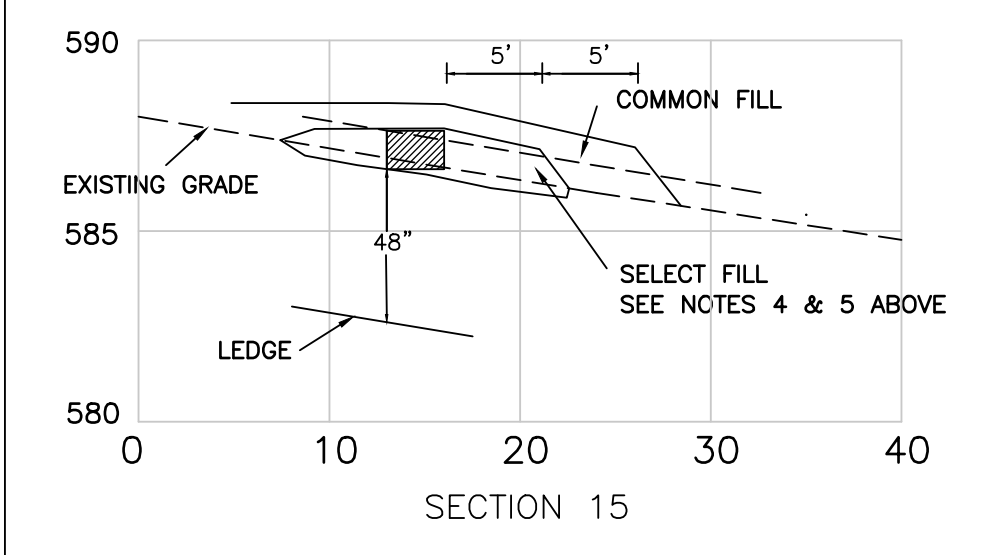
HOUSE 14 3BR
55LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =593.5
SEPTIC TANK INLET =591.75
SEPTIC TANK OUTLET =591.5
BOTTOM SYSTEM =590.25

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=4.3%
MLSS =51'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =808sf



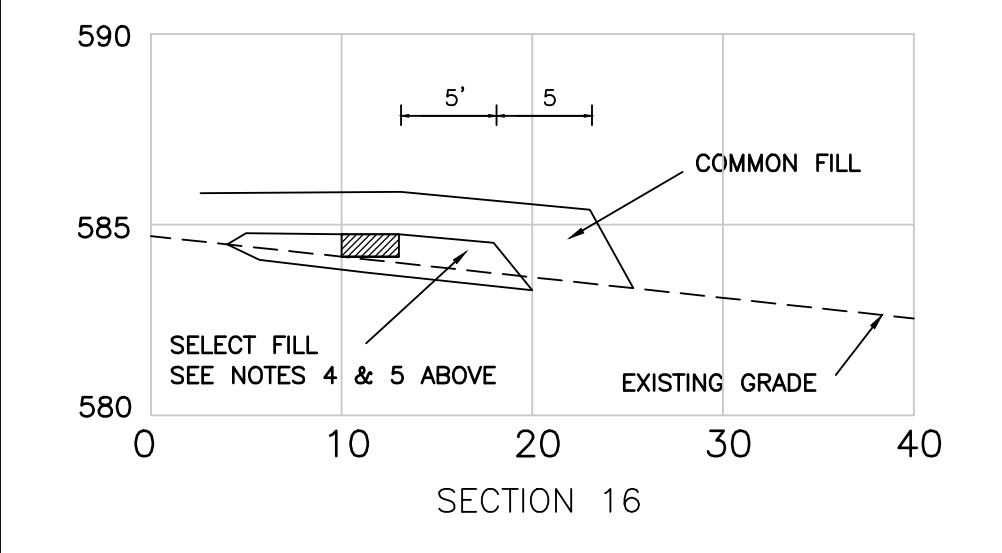
HOUSE 15 3BR
48LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =588.5
SEPTIC TANK INLET =587.85
SEPTIC TANK OUTLET =587.6
BOTTOM SYSTEM =586.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @30" SLOPE=8.0%
MLSS =42'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =617sf



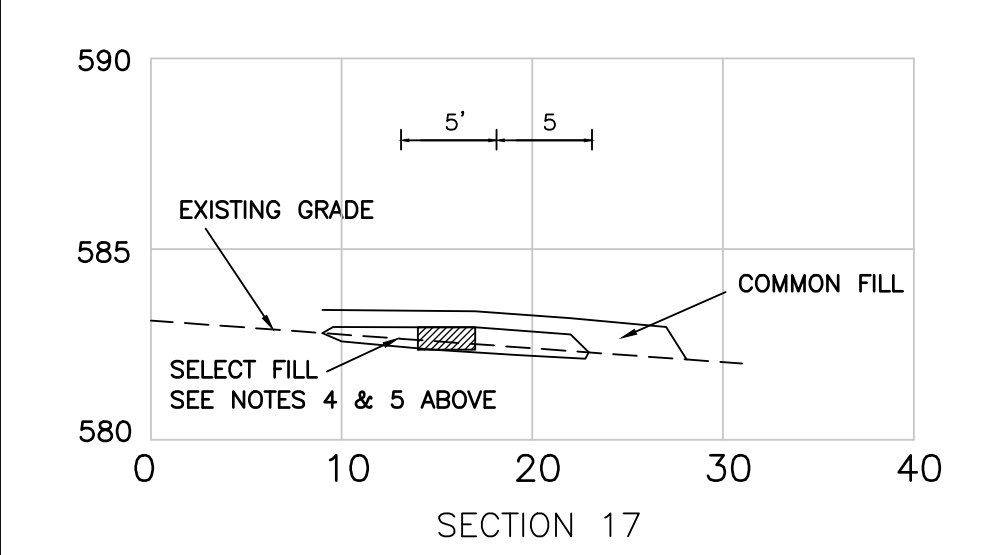
HOUSE 16 2BR
46LF GEOMATRIX SB1-7-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =586.0
SEPTIC TANK INLET =585.25
SEPTIC TANK OUTLET =585.0
BOTTOM SYSTEM =584.0

PERCOLATION RATE: 1"/10
RESTRICTIVE @18" SLOPE=4.7%
MLSS =42'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =377sf



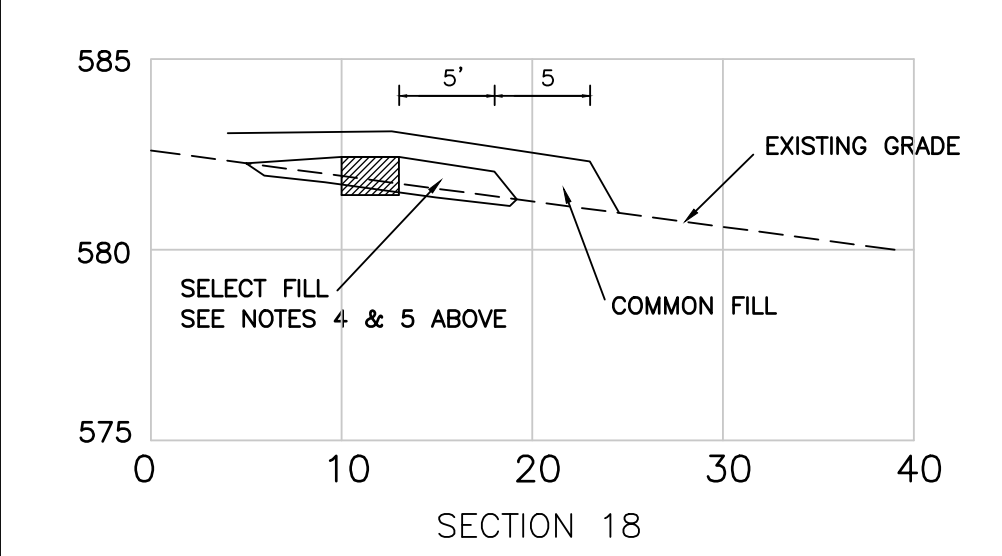
HOUSE 17 2BR
46LF GEOMATRIX SB1-7-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =584.5
SEPTIC TANK INLET =583.75
SEPTIC TANK OUTLET =583.5
BOTTOM SYSTEM =582.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @23" SLOPE=3.6%
MLSS =42'
EFFECTIVE AREA REQUIRED =375sf
EFFECTIVE AREA PROVIDED =377sf



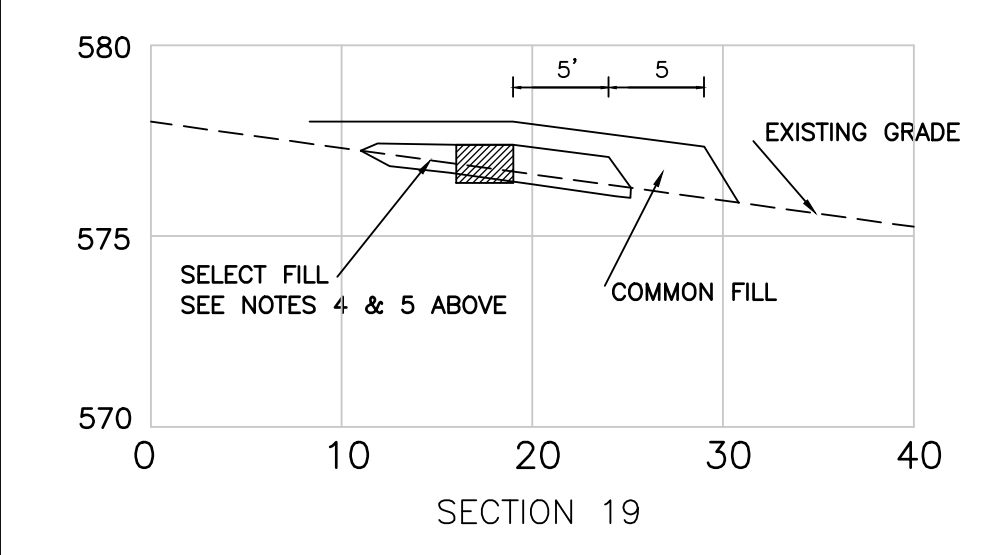
HOUSE 18 3BR
45LF GEOMATRIX SB1-13-72 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =583.5
SEPTIC TANK INLET =582.85
SEPTIC TANK OUTLET =582.6
BOTTOM SYSTEM =581.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @24" SLOPE=6.7%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =661sf



HOUSE 19 3BR
45LF GEOMATRIX SB1-13-36 UNITS
1000 GALLON SEPTIC TANK
SOIL LINE AT HOUSE =578.5
SEPTIC TANK INLET =577.85
SEPTIC TANK OUTLET =577.6
BOTTOM SYSTEM =576.5

PERCOLATION RATE: 1"/10
RESTRICTIVE @23" SLOPE=6.8%
MLSS =45'
EFFECTIVE AREA REQUIRED =495sf
EFFECTIVE AREA PROVIDED =661sf

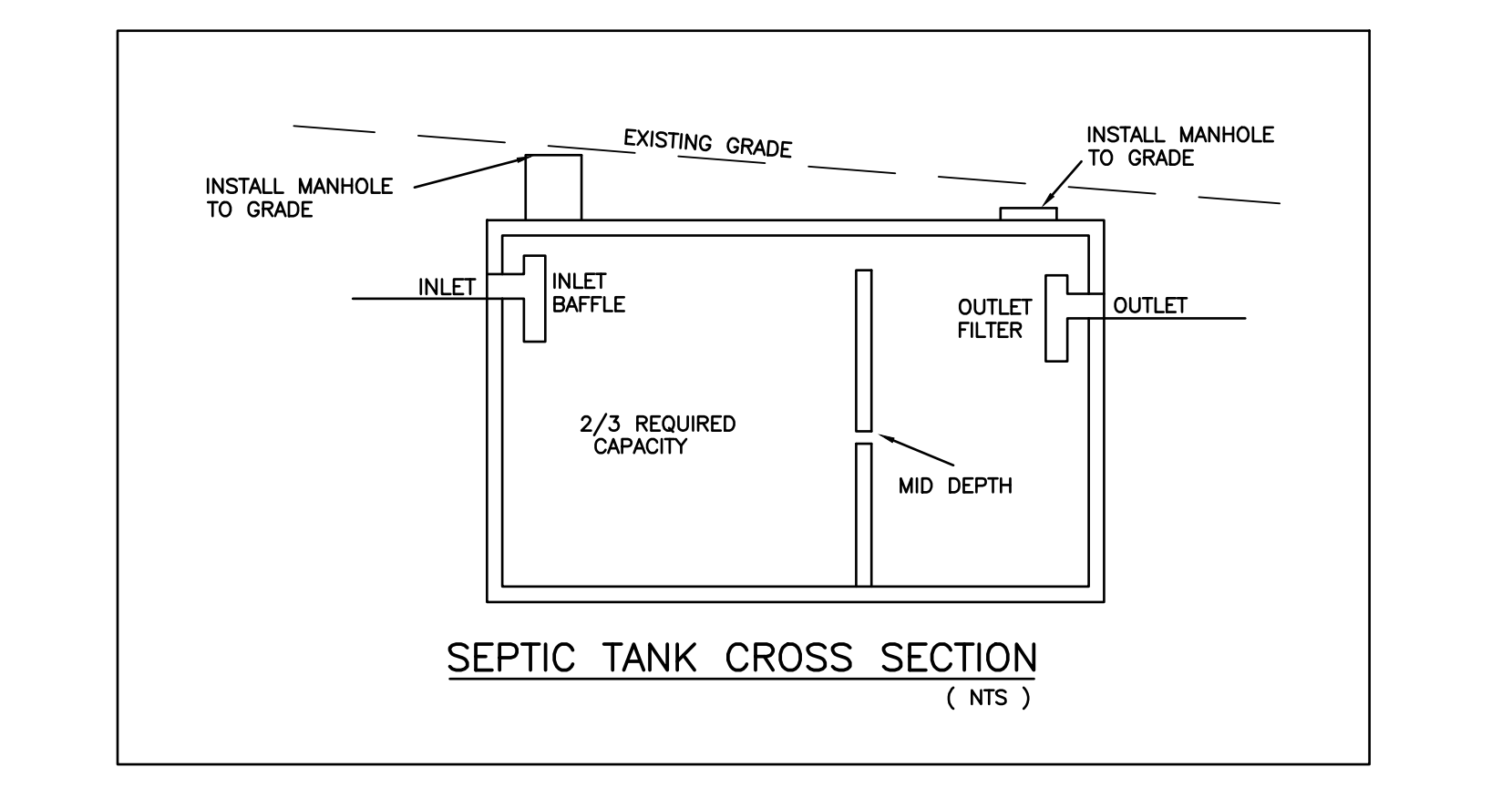
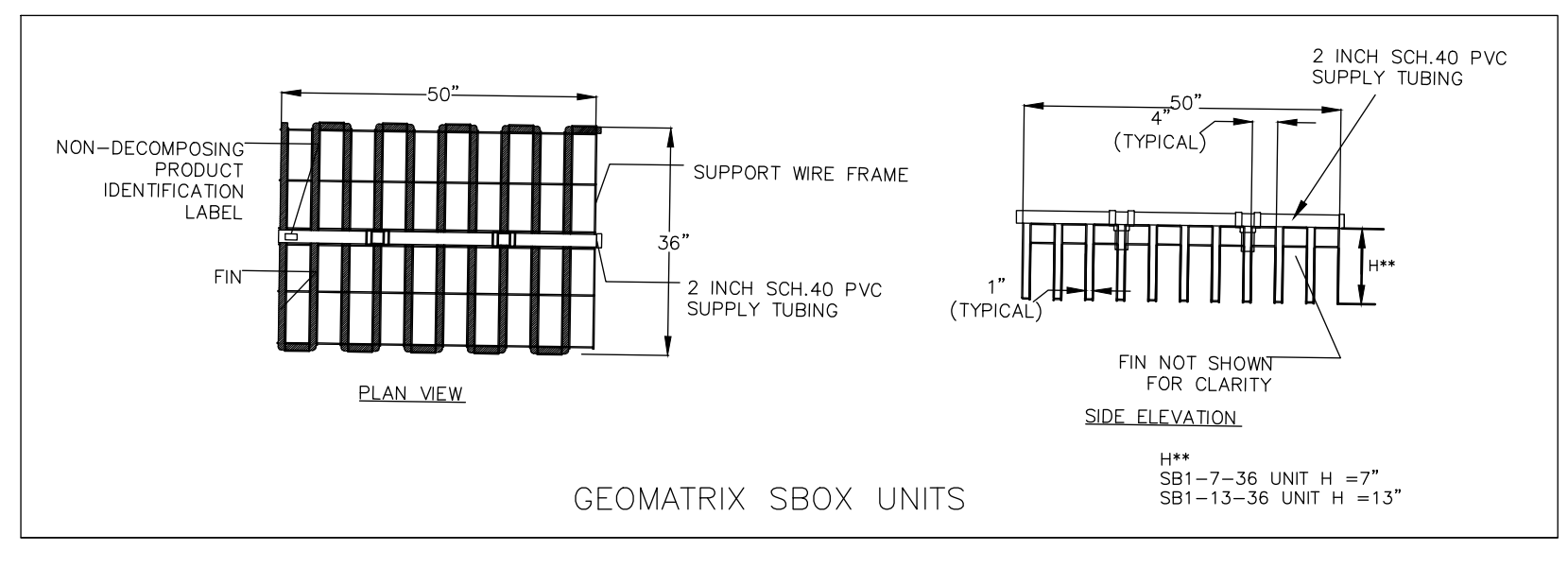


STANDARD NOTES

- All construction methods, materials and installation of the system to be in accordance with all applicable local and state regulations.
- Topographic and property data shown are only approximate.
- Topographic data based on subdivision site plan, property lines based on subdivision map.
- The test results and soil types shown apply only to the test holes shown and may vary throughout the site. Soil type and grade should be verified by the owner over the entire leaching area prior to construction.
- Select fill, if required, to be placed in maximum of 12" lifts and to be compacted to a minimum of 90% compaction. Material to have a maximum of 5% passing the #200 sieve. Prior to the delivery of select fill to the site, the contractor at his expense, shall furnish a certified gradation analysis to the local Health Department and to the Design Engineer. Final approval of septic fill will be conditional on the completion of a percolation test on the in-place material. This test is to be witnessed by the Design Engineer and/or local Health Department official. The maximum allowable percolation rate will be 1" in 10 minutes, unless otherwise noted.
- Unless otherwise directed hereon, the site requiring placement of select fill shall be prepared by removing all topsoil in the system area and 5 ft on all sides. No heavy equipment shall be used in the prepared area. Fill shall be placed on the perimeter of the trench area and spread with a small crawler, tractor or other approved machinery. Upon placement of the first lift of select fill, material shall be thoroughly harrowed into the existing subsurface layer.
- Call "Call Before You Dig" 1-800-922-4455 to locate underground utilities on property and show service lines to building from public utilities shown on plan.
- Contractor shall contact the certifying engineer and Health department at least 24 hours prior to starting construction, or the system installation will not be certified.
- Oil tank is to be installed inside proposed building.
- The licensed installer shall cover the septic system with clean soil as prescribed by the latest revision of Technical Standards. Clean soil is native soil, free of contaminants such as boulders, building debris, stumps, etc.
- Septic system to be staked by Engineer/Surveyor and benchmark set prior to starting construction.
- A sieve analysis of the septic fill is to be provided to the health district and design engineer verifying compliance to Health Code requirements prior to placement on site.
- Prior to backfilling septic system Engineer/Surveyor to asbuilt completed septic system and provide plan to health department.

GENERAL CONSTRUCTION NOTES

- WATER SUPPLY
- All houses to be serviced by public water supply
- SOIL LINES (SL)
- soil lines to be 4" PVC ASTM D1785/ASTM D2665 SCH 40 pipe
 - soil lines to be sloped at 1"/foot
- SEPTIC TANKS (ST)
- shall have 1000gal capacity
 - shall be located at least 25' from all drains
 - shall have 2 compartments and shall be water tight
 - shall have effluent filters at outlet and meet ASTM C1227.
 - shall have inspection manholes located at a depth no greater than 12" below finished grade
- LEACHING UNITS
- All leaching units shall be Geomatrix SBOX unit with the size and length specified for each house
 - All sand backfill material shall meet the requirements of the manufacturer.
 - All distribution pipes to be 2" diameter schedule 40 pvc.
 - All reserve areas are shown as Geomatrix SB1-7-72 units



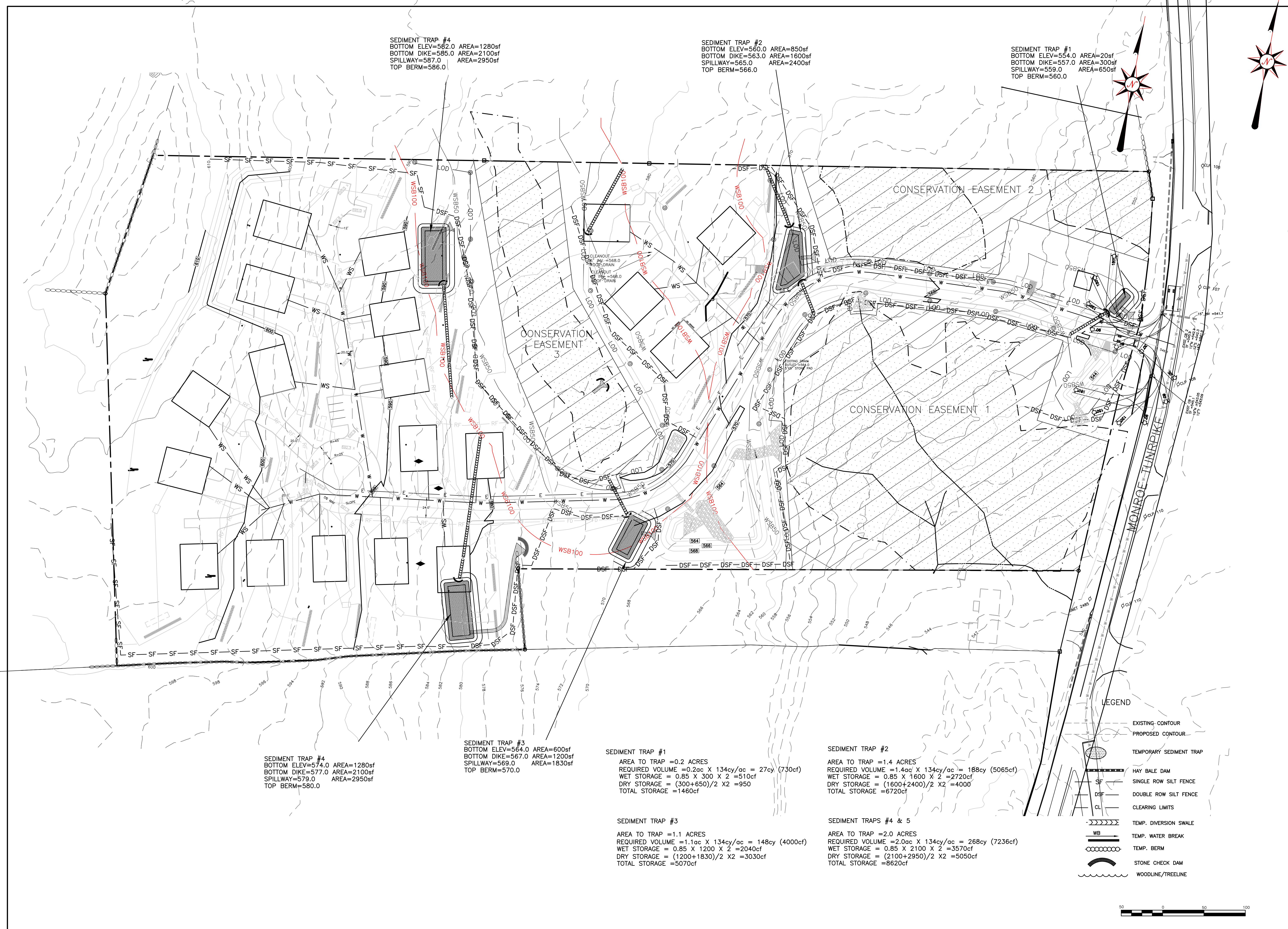
REVISIONS

#	DATE	DESCRIPTION
1	09-01-21	ENG.&IWC COM.
2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/JE
SCALE: 1"=50'

TITLE
SEPTIC DETAILS

SHEET NUMBER
S-5.1



SEDIMENT TRAP #4
 BOTTOM ELEV=582.0 AREA=1280sf
 BOTTOM DIKE=585.0 AREA=2100sf
 SPILLWAY=587.0 AREA=2950sf
 TOP BERM=586.0

SEDIMENT TRAP #2
 BOTTOM ELEV=560.0 AREA=850sf
 BOTTOM DIKE=563.0 AREA=1600sf
 SPILLWAY=565.0 AREA=2400sf
 TOP BERM=566.0

SEDIMENT TRAP #1
 BOTTOM ELEV=554.0 AREA=20sf
 BOTTOM DIKE=557.0 AREA=300sf
 SPILLWAY=559.0 AREA=650sf
 TOP BERM=560.0

SEDIMENT TRAP #4
 BOTTOM ELEV=574.0 AREA=1280sf
 BOTTOM DIKE=577.0 AREA=2100sf
 SPILLWAY=579.0 AREA=2950sf
 TOP BERM=580.0

SEDIMENT TRAP #3
 BOTTOM ELEV=564.0 AREA=600sf
 BOTTOM DIKE=567.0 AREA=1200sf
 SPILLWAY=569.0 AREA=1830sf
 TOP BERM=570.0

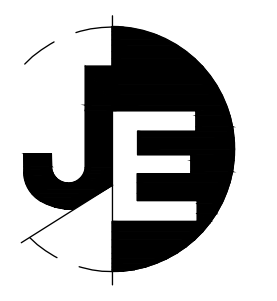
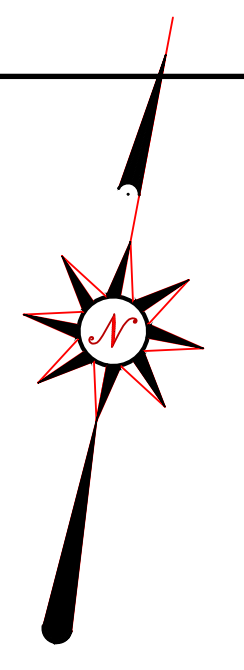
SEDIMENT TRAP #1
 AREA TO TRAP =0.2 ACRES
 REQUIRED VOLUME =0.2ac X 134cy/ac = 27cy (730cf)
 WET STORAGE = 0.85 X 300 X 2 =510cf
 DRY STORAGE = (300+650)/2 X 2 =950
 TOTAL STORAGE =1460cf

SEDIMENT TRAP #3
 AREA TO TRAP =1.1 ACRES
 REQUIRED VOLUME =1.1ac X 134cy/ac = 148cy (4000cf)
 WET STORAGE = 0.85 X 1200 X 2 =2040cf
 DRY STORAGE = (1200+1830)/2 X 2 =3030cf
 TOTAL STORAGE =5070cf

SEDIMENT TRAP #2
 AREA TO TRAP =1.4 ACRES
 REQUIRED VOLUME =1.4ac X 134cy/ac = 188cy (5065cf)
 WET STORAGE = 0.85 X 1600 X 2 =2720cf
 DRY STORAGE = (1600+2400)/2 X 2 =4000
 TOTAL STORAGE =6720cf

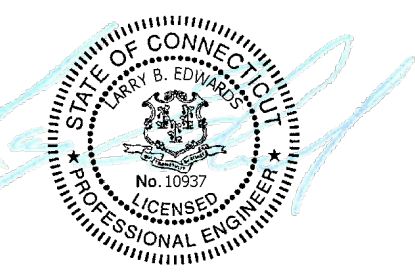
SEDIMENT TRAPS #4 & 5
 AREA TO TRAP =2.0 ACRES
 REQUIRED VOLUME =2.0ac X 134cy/ac = 268cy (7236cf)
 WET STORAGE = 0.85 X 2100 X 2 =3570cf
 DRY STORAGE = (2100+2950)/2 X 2 =5050cf
 TOTAL STORAGE =8620cf

- LEGEND
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - TEMPORARY SEDIMENT TRAP
 - HAY BALE DAM
 - SF SINGLE ROW SILT FENCE
 - DSF DOUBLE ROW SILT FENCE
 - CL CLEARING LIMITS
 - TEMP. DIVERSION SWALE
 - WB TEMP. WATER BREAK
 - TEMP. BERM
 - STONE CHECK DAM
 - WOODLINE/TREELINE



J. EDWARDS & ASSOCIATES LLC
 ENGINEERING • SURVEYING • SITE PLANNING

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 Phone: 203.268.4205 Fax: 203.268.5604
 www.jedwardsassoc.com



THE RIDGE AT MONROE
 1271 MONROE TURNPIKE
 MONROE, CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	09-01-21	ENG.&IWC COM.
2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

DATE: 07-01-21
 PROJECT #: 2278
 DRAWING FILE: SITE
 DRAWN BY: LE/JE/JE
 SCALE: 1"=50'

TITLE
EROSION CONTROL PLAN

SHEET NUMBER

S-6

A. GENERAL STATEMENT

- The project consists of a 15-acre parcel which is proposed to be developed as a 27-unit age-restricted housing complex.
- Work on this project is expected to commence upon approval by the Town of Monroe. Final stabilization shall be completed as soon as possible after completion of work. In all cases disturbed areas shall be stabilized by the end of the growing season so that grass cover can be established. Construction shall be completed in accordance with the attached schedule.
 - The Storm Pollution Control Program for this site shall include the following as shown on the approved map:
 - Installation of a filter fence as shown on the plan.
 - Installation of anti-tracking apron on the driveways and at entrance to the roads.
 - Installation of detention/development basins and traps.
 - Prior to any construction on the site, a pre-construction meeting shall be held with the owner, contractor, design engineer, and the authorized town official to review the site and the required erosion sedimentation and storm pollution control program.
 - The approved site plans, erosion control plan, engineering report and land use applications are considered part of this plan.

B. SCHEDULING OF GRADING AND CONSTRUCTION ACTIVITIES

Prior to starting construction on the site, all erosion and sediment control measures shall be installed as directed by the design engineer, permittee and/or authorized town agent. Detailed plans have been provided. Detailed construction sequencing has been included on the sheet for each phase.

Construction sequence:
A detailed construction sequence has been included on the Erosion Control Plan.

C. MEASURES TO BE USED DURING CONSTRUCTION

- SILT FENCE**
Silt fence consists of wooden post and filter fabric. Fences will be secured in place by wood posts set a maximum of five feet on-center. The filter fabric will be three feet in height. Fabric at the base of the fence will be buried at least six inches into the ground. Ties will be used to secure the fence on the uphill side to prevent overturning. The purpose of silt fences is to intercept and detain sediment contained in overland runoff from disturbed areas of limited extent. (Erosion/Seal by Muhl Inc. is an acceptable alternative to the system described above.)
Installation and Maintenance shall conform to the following:
Sediment will be removed from behind silt fences when sediment has accumulated to 50% of original height of the fence.
- ANTI-TRACKING APRON**
A ramp of crushed stone extending a minimum distance of 50 feet will be installed at the point of ingress and egress to the site. The purpose of the device is to minimize the potential of tracking mud from the site onto public right-of-way.
Installation and Maintenance shall conform to the following:
Minimum length will be 50 feet.
Stone size will meet CT DOT standards for two inch crushed gravel.
Stone will be placed upon the full width of the entrance roads.
Thickness of stone will be four inches or greater.
All sediment spilled, dropped, washed, or tracked onto public right-of-way will be removed immediately.
- TEMPORARY WATER BARRIERS**
This temporary device consists of a wall constructed across proposed roadways. The purpose of this device is to direct runoff away from the road surface and minimize sediment from entering the drainage system. This shortens the length of disturbed slope by intercepting runoff and diverting it away from the roadway catch basins.
Installation and Maintenance shall conform to the following:
Barricades will be placed across roads, which are to be constructed in fill.
Every 200 feet on slopes of 5-10%.
Every 300 feet on slopes less than 5%.
Contributory drainage areas, which are less than five acres.
Swales drain to hay bale check dams.
- HAY BALE CHECK DAMS**
Hay bale check dams of tightly bound, steel pin anchored, hay bales embedded four inches below grade in drainage swales adjacent to roadways or at the toe of an exposed slope. The purpose of a hay bale check dam is to reduce runoff velocity, and promote deposition and filtering of sediment from runoff. Hay bale check dams will be used where the runoff velocities will be less than three feet per second.
Installation and Maintenance shall conform to the following:
Compacted backfill will be placed against the up slope side of the Hay bales to a height of 4" above the ground.
Check dams will be placed in drainage swales.
Every 100 feet on slopes greater than 10%.
Every 200 feet on slopes less than 10%.
Every 300 feet on slopes less than 5%.
Sediment shall be removed from hay bale check dams when sediment has accumulated to 50% of the original height.
- TEMPORARY SEDIMENT TRAPS**
Runoff collected in roadway interceptor swales or other swales will be directed to a sediment trap. The trap consists of a small excavation and/or embankment. The purpose of the trap is to collect runoff, promote settling of sediment, and de-concentrate and distribute clean runoff overland through natural vegetation before it enters existing watercourses and wetlands.
Installation and Maintenance shall conform to the following:
Contributory drainage areas that are less than or equal to five acres.
Utilized as part of swales prior to discharge to natural slopes.
Traps will be placed with that runoff discharging from the trap will flow at least 30 feet overland through natural vegetation before entering stream channels or wetlands.
Trap sides shall be compacted during construction.
The trap outlet shall have crushed stone rip-rap hand placed for erosion dispersion.
Traps will be cleaned when sediment has accumulated to 50% of design volume.
Remove sediment deposited upland and treat to reduce potential erosion.
- CATCH BASIN FILTERS**
Temporary catch basin filters will be utilized to prevent the deposition of sediment into the storm sewer system prior to the stabilization of exposed areas with vegetation and/or pavement. These filters will consist of tightly bound, pin-anchored hay bales embedded four inches below grade, surrounding each catch basin inlet.
Installation and Maintenance shall conform to the following:
Placed around each catch basin inlet prior to paving or stabilization with vegetation.
Sediment shall be removed from the filters when sediment has accumulated to 50% of the filter's original height.
- TEMPORARY GRADE TO DRAINS**
This is a temporary raised berm of compacted soil, placed across a disturbed slope that intercepts runoff from disturbed areas and directs it to an appropriate outlet. This device will be used mostly on steep slopes above steep construction.
Installation and Maintenance shall conform to the following:
Temporary grade to drains may be placed on cut and fill slopes exceeding 10 feet in height.
Contributory drainage area should not be greater than one acre.
Runoff will be directed overland by the berms to sediment traps, sedimentation basins, swales, or check dams.
On slopes over 5%, additional stabilization is required in the form of stone rip-rap eight inches vertically up the upslope side of the berm and seven feet upslope from the upslope toe of the berm.
Top width of berms will be two feet. Side slopes will be 2:1 or flatter.
All berms shall be machine compacted.
- RIP-RAP OUTFALL PROTECTION**
As a permanent erosion control measure to protect the soil surface from the erosive forces and to slow the velocity of concentrated runoff while enhancing the potential for infiltration, velocity reducers in the form of crushed stone rip-rap will be used at the outlets of all drainage structures that discharge to wetlands or other sensitive areas. The minimum thickness of the rip-rap layer will be 1.5 times the maximum stone diameter but not less than six inches. Spacing the stone and determining the dimensions of the rip-rap pads will be completed upon further design of the project using the methods described in the Connecticut Guidelines for Soil Erosion and Sediment Control.
- Names, addresses and phone numbers of all persons and organizations that will be responsible for the installation and maintenance of the erosion and sedimentation devices will be provided prior to any earth moving or any other construction activity.
- Construction areas to be kept clean from all litter, debris and other building materials collected and disposed of offsite in approved manner. All fuels, oils and other controlled chemicals to be stored in approved areas. Such areas to be bermed as necessary to prevent spills from entering open watercourses. Fueling of equipment shall not be allowed in other than approved areas. In the event of a fuel or chemical spill, immediate measures to be taken to control damage and local and state officials are to be notified immediately.
- Where construction activities have permanently ceased or have temporarily been suspended for more than seven days, or when final grades are reached in any portion of the site, stabilization practices shall be implemented within three days. Areas that remain disturbed but inactive for at least thirty days shall receive temporary seeding in accordance with the guidelines.

D. MAINTENANCE PROGRAM DURING CONSTRUCTION

- The designated site monitor will inspect disturbed areas of the construction activity that have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 1/4 inch or greater. Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.
- Additional control measures will be installed and the plan revised as appropriate as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the plan within 5 calendar days following the inspection. The plan shall be revised and the site controls updated in accordance with sound engineering practices, and applicable state and local regulations.
- All control measures shall be maintained in effective working condition throughout the construction period.
- Control measures found to be in disrepair shall be repaired or replaced immediately.
- Sediment removed from control structures will be disposed of in a neat manner and disposed of in areas designated by the authorized town official or design engineer.
- A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Stormwater Pollution Control Plan, and actions taken shall be made and retained as part of the Plan for at least three years after the date of inspection. The permittee, or his authorized representative shall sign the report.
- The Owner, or his designated agent is assigned the responsibility for implementing this erosion and storm pollution control plan. This responsibility includes site inspections, preparation of reports, the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan, notifying the Planning and Zoning Commission of any transfer of this responsibility, and for conveying a copy of the Erosion and Sediment Control Plan and the Implementation Schedule for Erosion and Sediment Control if the title to the land is transferred.

E. POST-CONSTRUCTION STORM MANAGEMENT

- After completion of site disturbance and satisfactory stabilization, all permanent control structures including detention basins, storm water ditches, and catch basins to be cleaned of all sediment and debris. At time of transfer of ownership and/or responsibility for controls, the new owner or designated agent shall be advised of the sedimentation maintenance requirements for the project.

MAINTENANCE PROGRAM

- Seasonal Site Inspection/Maintenance
- In the spring season and deposits from the driveway areas and deposit at approved site. Inspect the water quality areas for excessive sediment buildup and remove as required.
 - In the fall, remove leaf debris from the site to avoid excessive loading of the water quality area and rain gardens. Mow area, as required eliminating unwanted plant species.
 - All catchbasins to be inspected and cleaned yearly.
 - The infiltration system to be inspected yearly. If there is significant sediment accumulation in the systems, the cleaning schedule for the catchbasins shall be increased to 2 times per year.

F. REPORTING AND RECORD KEEPING REQUIREMENTS

- The permittee shall retain copies of Stormwater Pollution Control Plans and all reports required by this general permit, and records of all data used to complete the registration to be authorized by this general permit, for a period of at least three years from the date that construction at the site is completed unless the commissioner specifies another time period in writing.
- The permittee shall retain an updated copy of the Stormwater Pollution Control Plan required by this general permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.
- Upon completion of construction, for sites authorized by the General Permit for the Discharge of Stormwater Associated with Commercial Activity or the General Permit for the Discharge of Stormwater Associated with Industrial Activity, the Stormwater Pollution Control Plan shall be kept as an appendix to the Stormwater Management Plan or Stormwater Pollution Prevention Plan (as applicable) for a period of at least three years from the date of completion of construction. A notice of termination form shall be completed by the permittee and forwarded to DEP upon completion of all site construction.

CONSTRUCTION SEQUENCE
THIS PROJECT SHALL BE COMPLETED IN 2 PHASES.

PHASE 1:
THIS PHASE SHALL INCLUDE COMPLETION OF THE ACCESS ROAD TO STATION 7+0, COMPLETION OF BUILDING 1 AND THE COMMUNITY BUILDING, WQ RAIN GARDEN 1 AND WQ BASIN 2

- PRIOR TO STARTING ANY CONSTRUCTION ON THE SITE, ASSURE THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND ARE CURRENT.
- CONTACT SITE LAND SURVEYOR AND HAVE ALL LIMITS OF CONSTRUCTION CLEARLY MARKED FOR CLEARING. CLEARLY MARK ANY TREES WHICH ARE TO BE PROTECTED.
- CONTACT CALL BEFORE YOU DIG AT 800-922-4455 TO MARK ALL EXISTING UTILITIES ON THE SITE.
- PRIOR TO STARTING ANY CONSTRUCTION ON THE SITE HOLD A PRE-CONSTRUCTION MEETING AT THE SITE. MEETING TO INCLUDE ALL CONTRACTORS, SITE ENGINEER, TOWN WETLANDS AND EROSION CONTROL OFFICER AND ANY DESIGNATED SITE MONITOR.
- CLEAR SITE TO LIMITS MARKED BY THE SURVEYOR. REMOVE ALL CUT MATERIALS FROM SITE BEFORE STARTING ANY OTHER SITE CONSTRUCTION.
- INSTALL ANTI TRACKING APRON.
- INSTALL SILT FENCE ALONG LIMITS OF CONSTRUCTION.
- STUMP SITE AND REMOVE STUMPS TO APPROVED DISPOSAL OR RECYCLING SITE.
- STRIP USABLE TOPSOIL FROM CONSTRUCTION AREA AND STOCKPILE IN DESIGNATED AREA. STABILIZE PILES AND INSTALL PERIMETER SILT FENCES.
- CONSTRUCT TEMPORARY SEDIMENT TRAPS AND DIVERSION SWALES AS REQUIRED.
- ROUGH ACCESS DRIVEWAY UP TO STATION 3+50. INSTALL CROSS CURBING.
- COMPLETE ROUGH GRADING OF DRIVEWAY UP TO STATION 7+0.
- ROUGH GRADE BUILDING SITES FOR BUILDING 1 AND COMMUNITY BUILDING. FENCE OFF SEPTIC AREAS TO ASSURE AREAS ARE NOT DISTURBED.
- INSTALL DRIVEWAY DRAINAGE AND CONSTRUCT WATER QUALITY BASINS. INSTALL SILT SACKS IN CATCHBASINS.
- LOAM, SEED AND MULCH ALL DISTURBED AREAS AS SOON AS POSSIBLE.
- INSTALL SITE UTILITIES.
- INSTALL PAVEMENT SUBBASE UP TO PHASE LIMITS.
- LOAM, SEED AND MULCH ALL REMAINING DISTURBED AREA.
- COMPLETE BUILDING CONSTRUCTION.
- PLACE FIRST COURSE OF PAVEMENT AND CURBING.
- REMOVE SEDIMENT TRAPS.
- LOAM, SEED AND MULCH ALL REMAINING AREAS.
- WHEN PHASE 1 IS TOTALLY STABILIZED, REMOVE REMAINING EROSION CONTROLS.

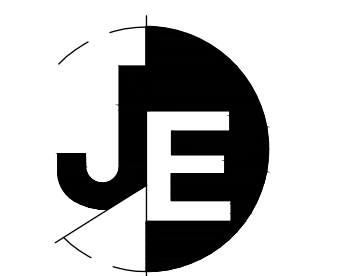
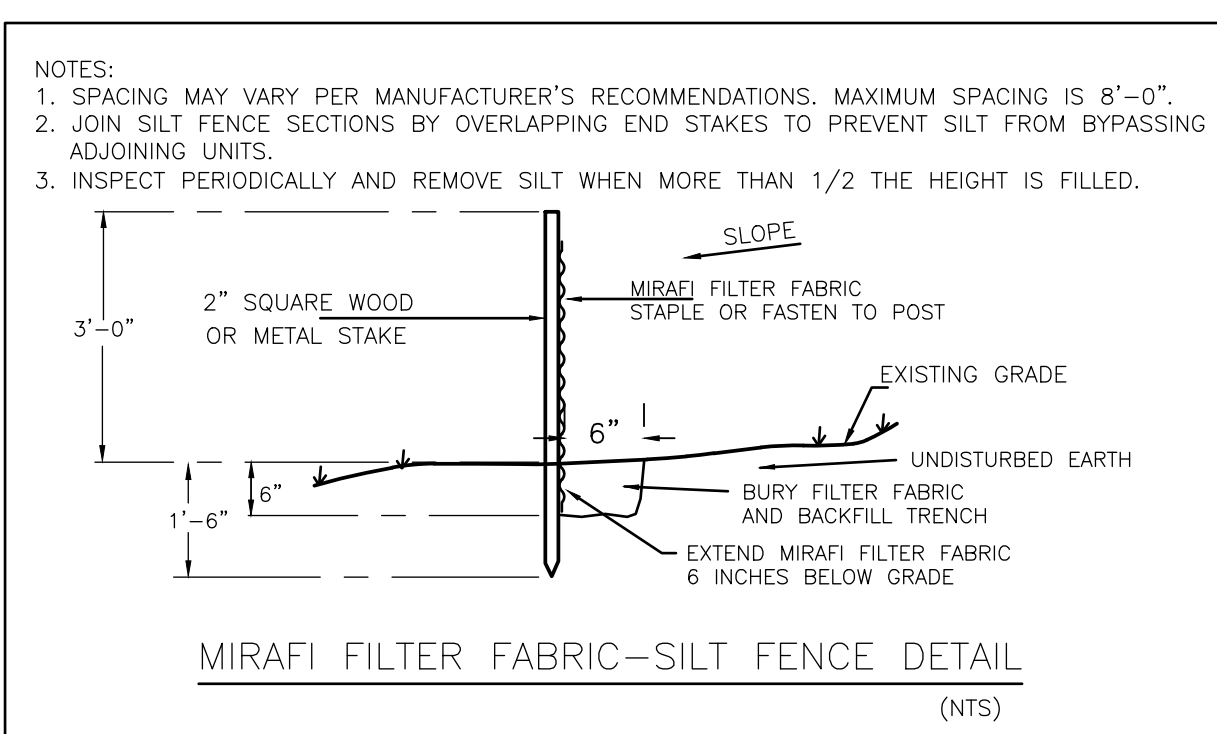
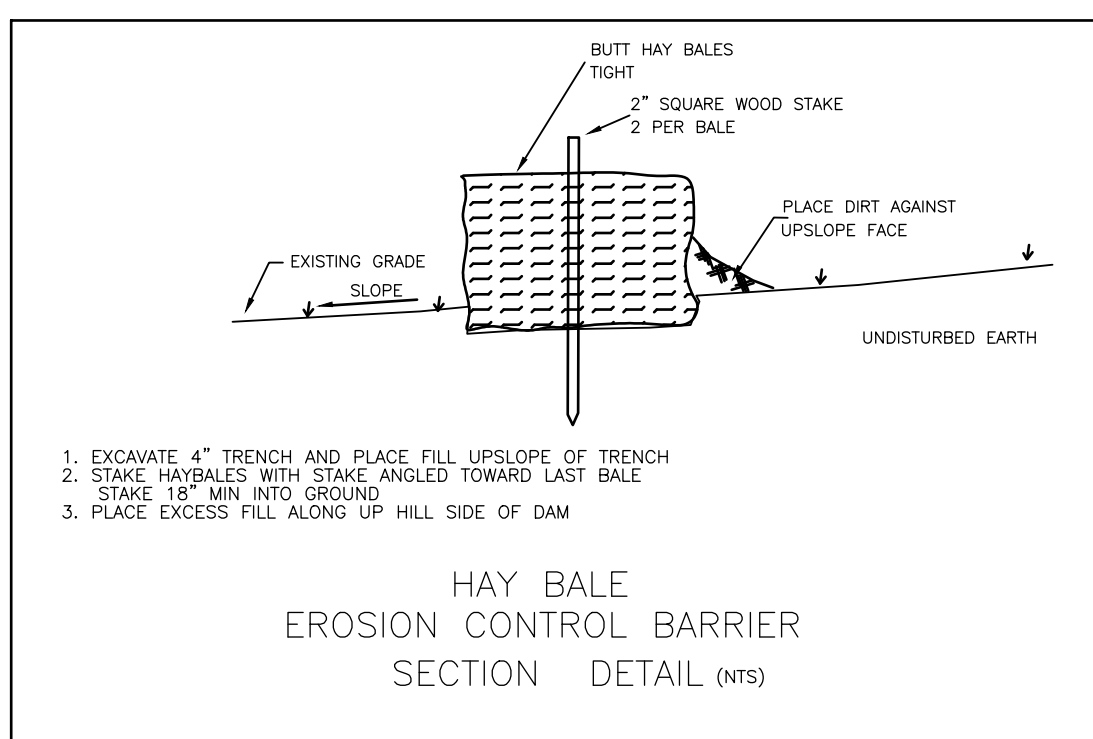
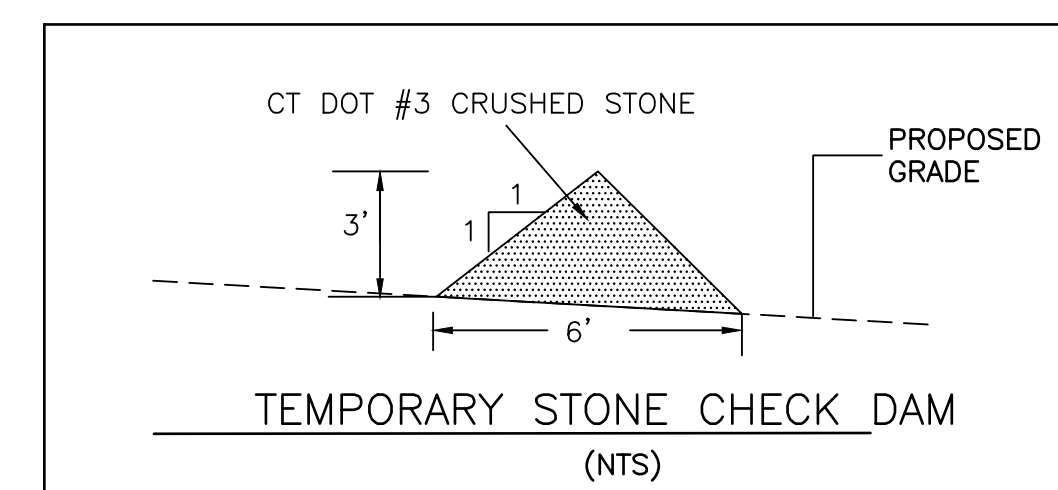
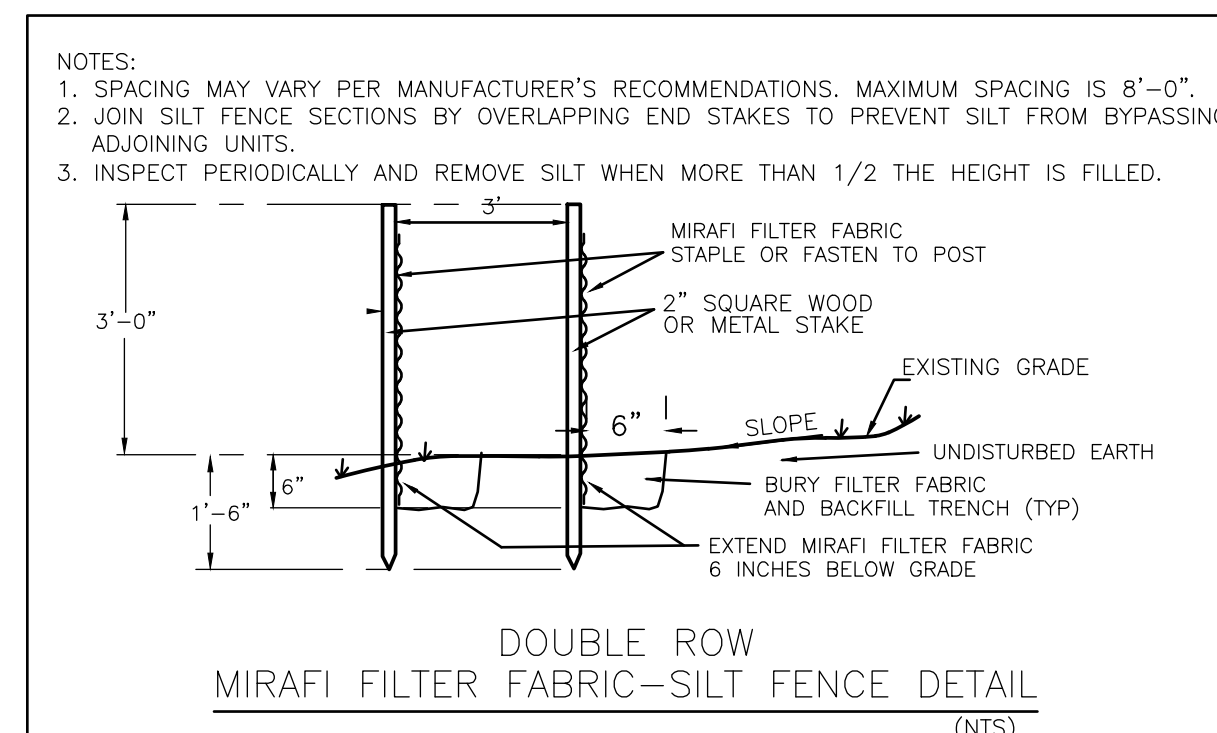
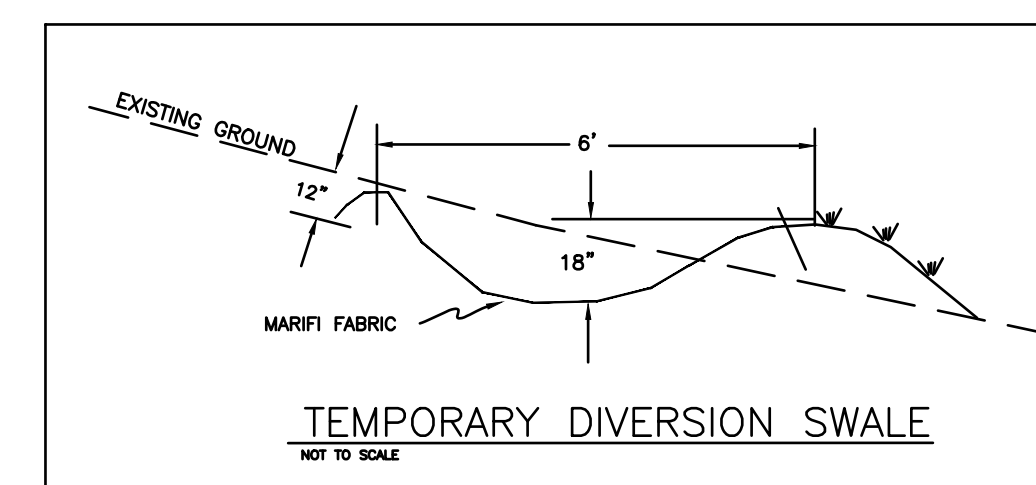
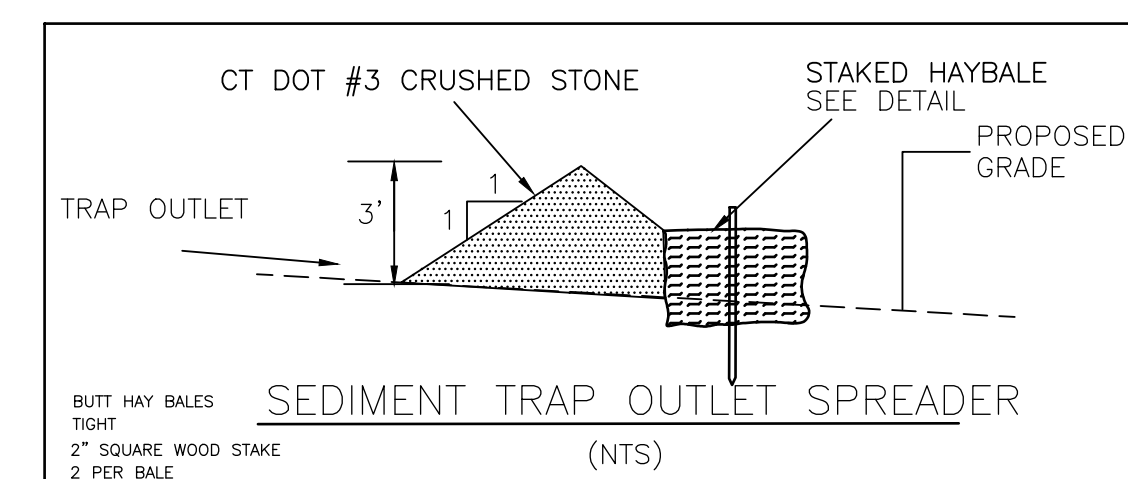
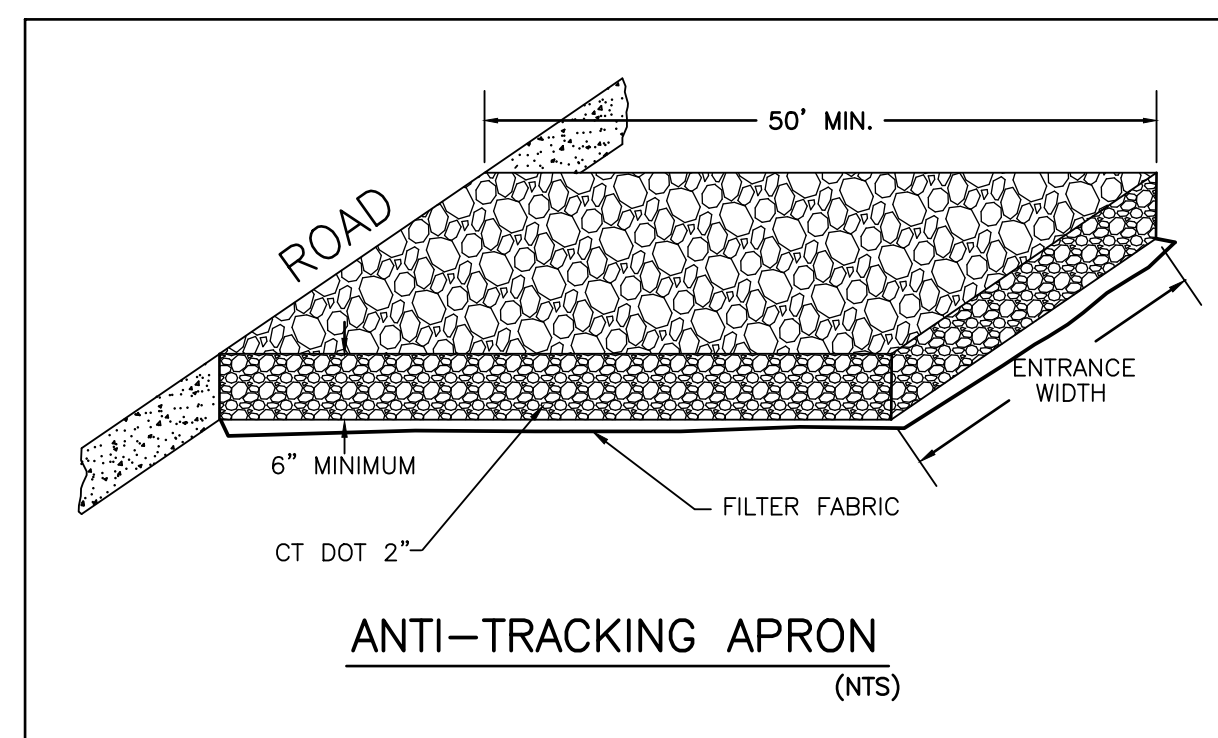
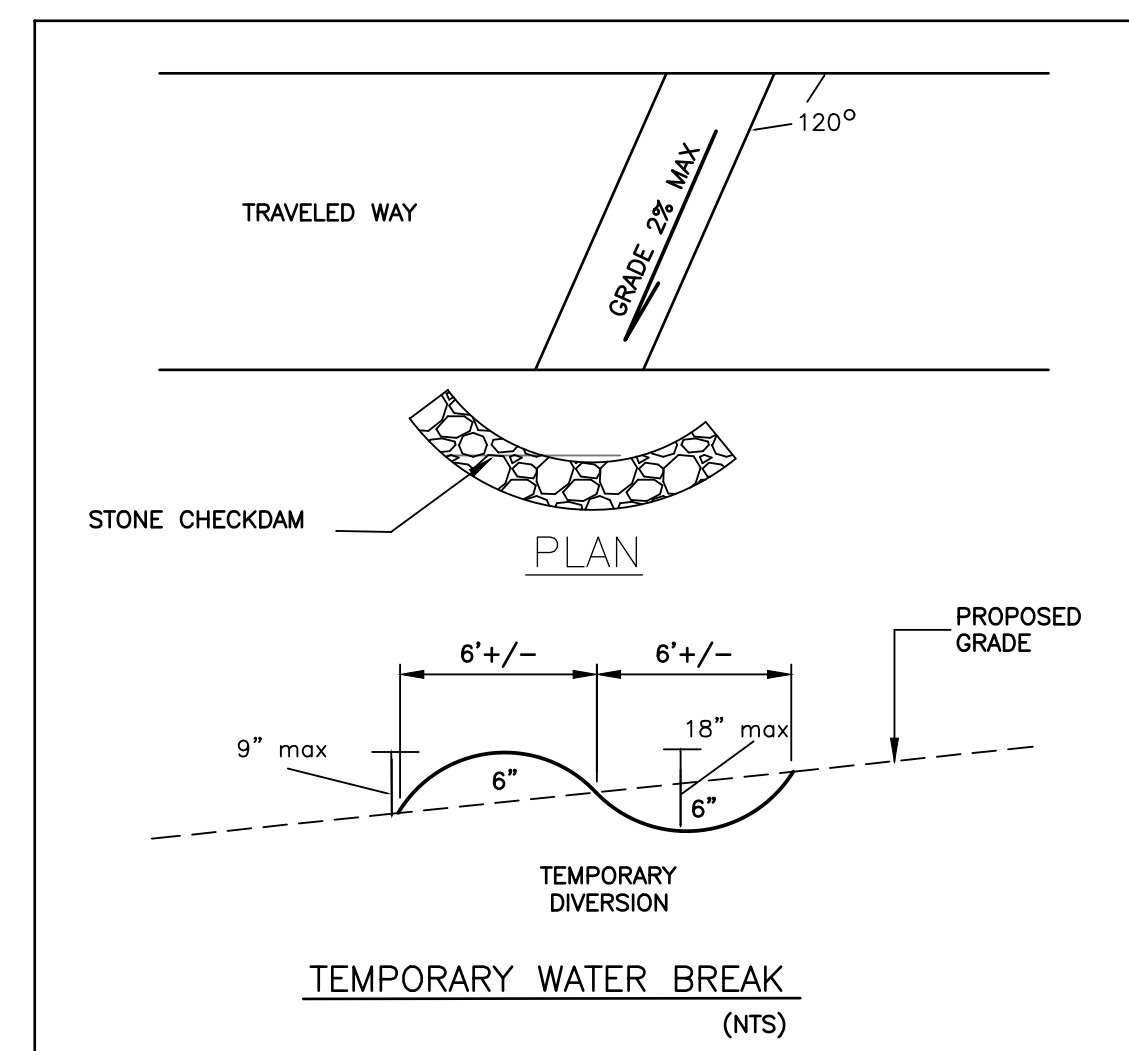
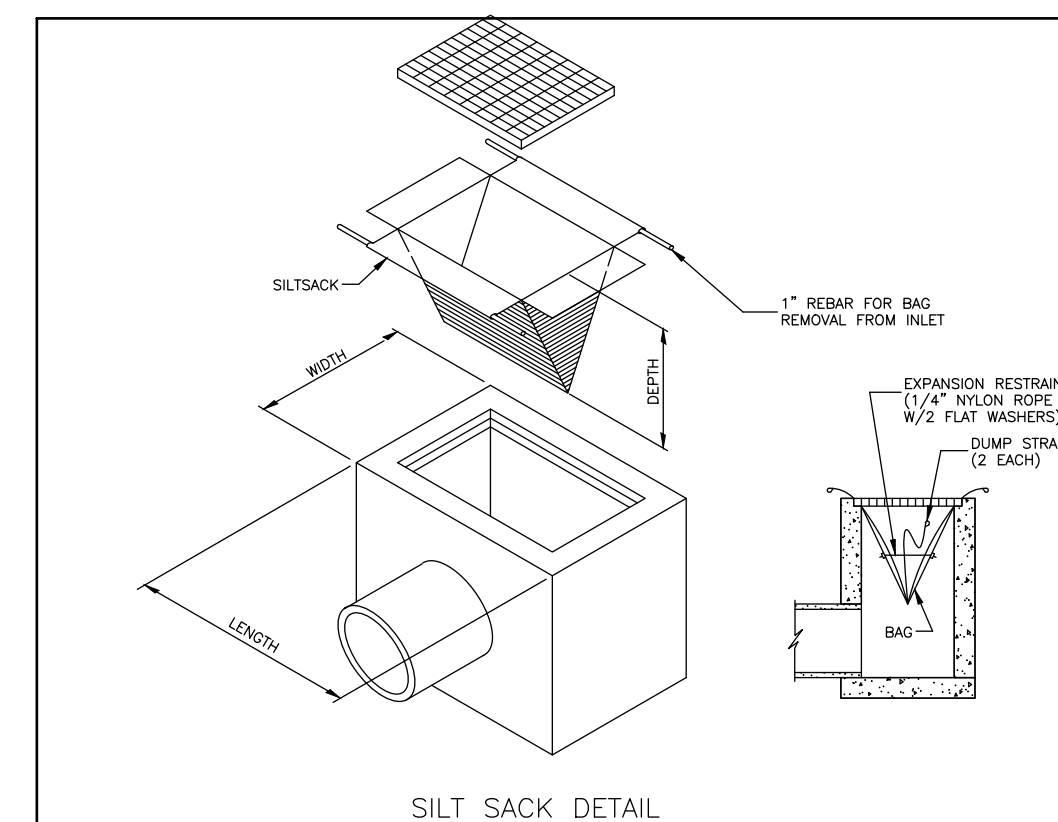
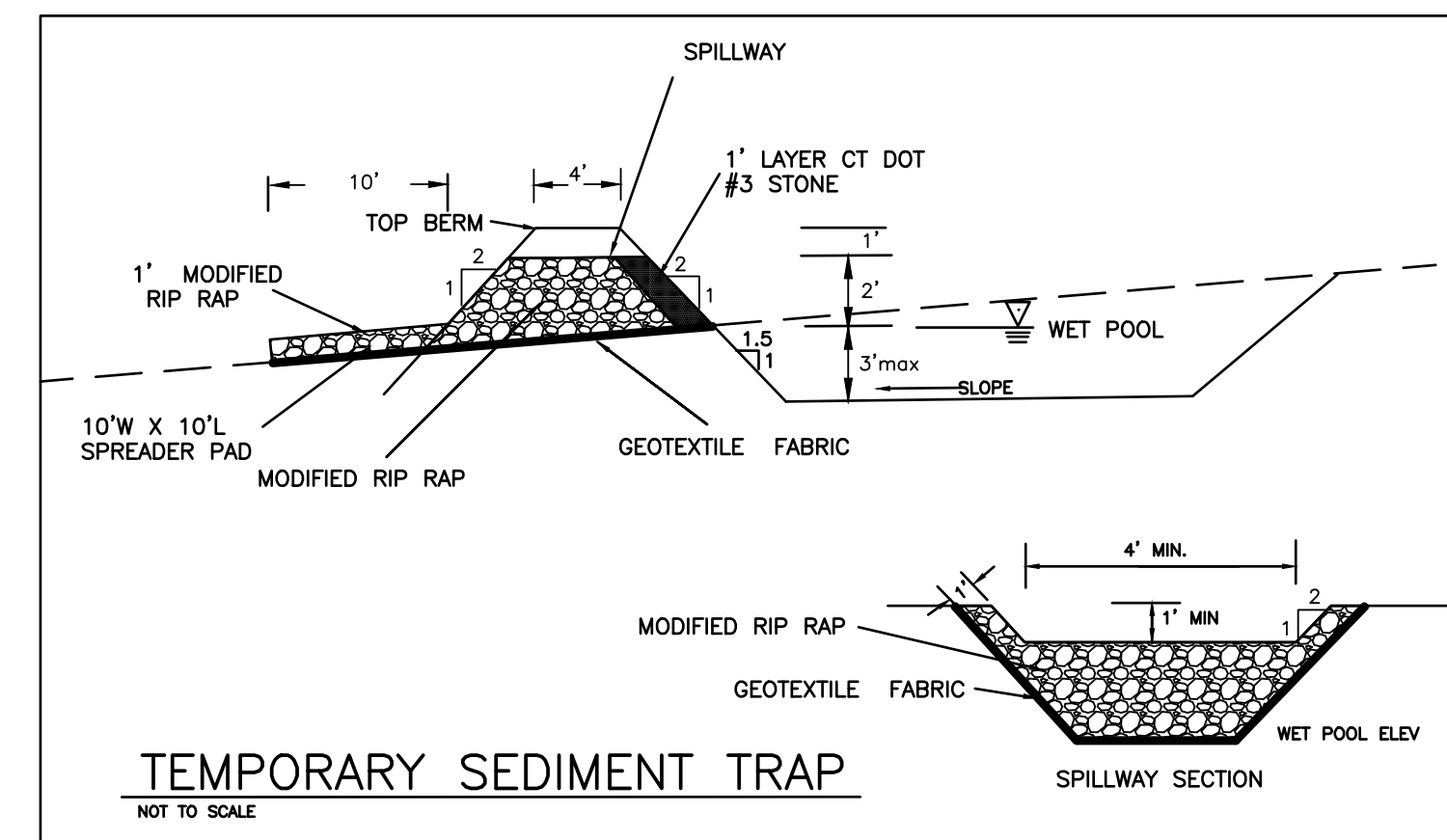
PHASE 2:
THIS PHASE SHALL INCLUDE COMPLETION OF ALL REMAINING SITE IMPROVEMENTS.

- CONTACT SITE LAND SURVEYOR AND HAVE ALL LIMITS OF CONSTRUCTION CLEARLY MARKED FOR CLEARING. CLEARLY MARK ANY TREES WHICH ARE TO BE PROTECTED.
- CLEAR THE REMAINDER OF THE SITE TO LIMITS MARKED BY THE SURVEYOR. REMOVE ALL CUT MATERIALS FROM SITE BEFORE STARTING ANY OTHER SITE CONSTRUCTION.
- INSTALL ANTI TRACKING APRON.
- INSTALL SILT FENCE ALONG LIMITS OF CONSTRUCTION.
- STUMP SITE AND REMOVE STUMPS TO APPROVED DISPOSAL OR RECYCLING SITE.
- STRIP USABLE TOPSOIL FROM CONSTRUCTION AREA AND STOCKPILE IN DESIGNATED AREA. STABILIZE PILES AND INSTALL PERIMETER SILT FENCES.
- CONSTRUCT TEMPORARY SEDIMENT TRAPS AND DIVERSION SWALES AS REQUIRED.
- ROUGH GRADE REMAINDER OF SITE.
- FENCE OFF SEPTIC AREAS TO ASSURE AREAS ARE NOT DISTURBED.
- INSTALL REMAINDER OF SITE DRAINAGE. INSTALL SILT SACKS IN CATCHBASINS.
- LOAM, SEED AND MULCH ALL DISTURBED AREAS AS SOON AS POSSIBLE.
- INSTALL SITE UTILITIES.
- INSTALL PAVEMENT SUBBASE, FIRST COURSE OF PAVEMENT AND CURBING ON REMAINDER OF ACCESS DRIVEWAY.
- LOAM, SEED AND MULCH ALL REMAINING DISTURBED AREA INCLUDING DRIVEWAY SHOULDERS.
- COMPLETE BUILDING CONSTRUCTION. AS EACH BUILDING IS COMPLETED INDIVIDUAL DRIVEWAYS SHALL BE PAVED AND AREAS LANDSCAPED.
- REMOVE SEDIMENT TRAPS.
- LOAM, SEED AND MULCH ALL REMAINING AREAS.
- WHEN PHASE 2 IS TOTALLY STABILIZED, REMOVE REMAINING EROSION CONTROLS.
- WHEN ALL SITE CONSTRUCTION IS COMPLETED PLACE FINAL PAVEMENT COURSE ON ACCESS DRIVEWAY.

GENERAL EROSION CONTROL NOTES:

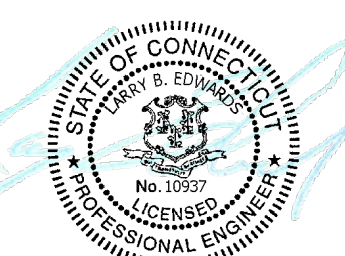
- A MINIMUM OF 4" OF TOPSOIL MUST BE PLACED ON ALL DISTURBED AREAS.
- ALL WASTE MATERIAL INCLUDING WASTEWATER, SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL LAW. LITTER SHALL BE PICKED UP AT THE END OF EACH WORKING DAY.
- EAS CONTROLS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF GREATER THAN 1 INCH.
- ACCUMULATED SEDIMENT SHALL BE REMOVED AS REQUIRED TO KEEP SILT FENCES FUNCTIONAL. IN ALL CASES, DEPOSITS SHALL BE REMOVED WHEN ACCUMULATED SEDIMENT HAS REACHED ONE-HALF ABOVE THE GROUND HEIGHT OF THE FENCE.
- ALL SOIL STABILIZATION SHALL BE COMPLETED WITHIN FIVE (5) DAYS OF CLEARING OR INACTIVITY IN CONSTRUCTION.
- THE DEVELOPER SHALL PRACTICE EFFECTIVE DUST CONTROL PER SOIL CONSERVATION HANDBOOK DURING CONSTRUCTION AND UNTIL ALL AREAS ARE STABILIZED OR SURFACE TREATED. THE DEVELOPER SHALL BE RESPONSIBLE FOR CLEANING OF NEARBY STREETS, AS ORDERED BY THE TOWN, OF ANY DEBRIS FROM THESE CONSTRUCTION ACTIVITIES.
- IF SEEDING OR OTHER VEGETATIVE EROSION CONTROL METHOD IS USED, IT SHALL BECOME ESTABLISHED WITHIN TWO WEEKS OR THE TOWN MAY REQUIRE THE SITE TO BE RESEDED OR A NONVEGETATIVE OPTION TO BE EMPLOYED.
- SOIL STOCKPILES MUST BE STABILIZED AS PER THE LATEST EDITION OF THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
- ALL DISTURBED AREAS TO BE SEEDED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX (SEE CONSTRUCTION DETAIL SHEET) UNLESS OTHERWISE SPECIFIED ON PLANS.

EROSION CONTROL BLANKETS SHALL BE USED TO STABILIZE ALL SLOPE AREAS GREATER THAN 3 TO 1



J. EDWARDS & ASSOCIATES LLC
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227 Stepany Road Easton, CT 06612
Phone: 203.268.4205 Fax: 203.268.5604
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THE RIDGE AT MONROE
1271 MONROE TURNPIKE
MONROE, CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	09-01-21	ENG.&IWC COM.
2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

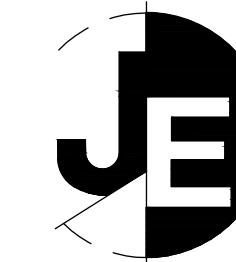
DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=50'

TITLE

EROSION CONTROL DETAILS

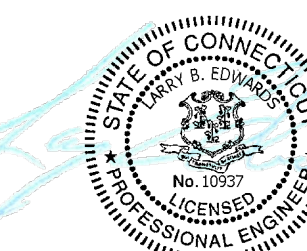
SHEET NUMBER

S-7



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2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

DATE: 07-01-21
PROJECT #: 2278
DRAWING FILE: SITE
DRAWN BY: LE/JE/IE
SCALE: 1"=100'

TITLE

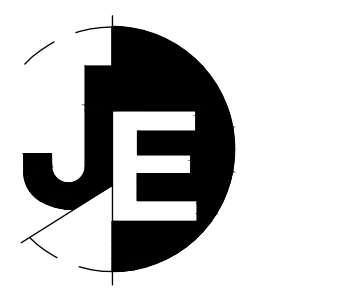
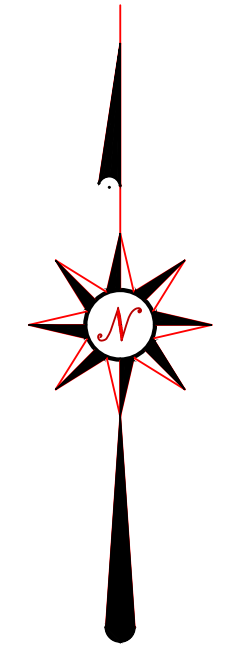
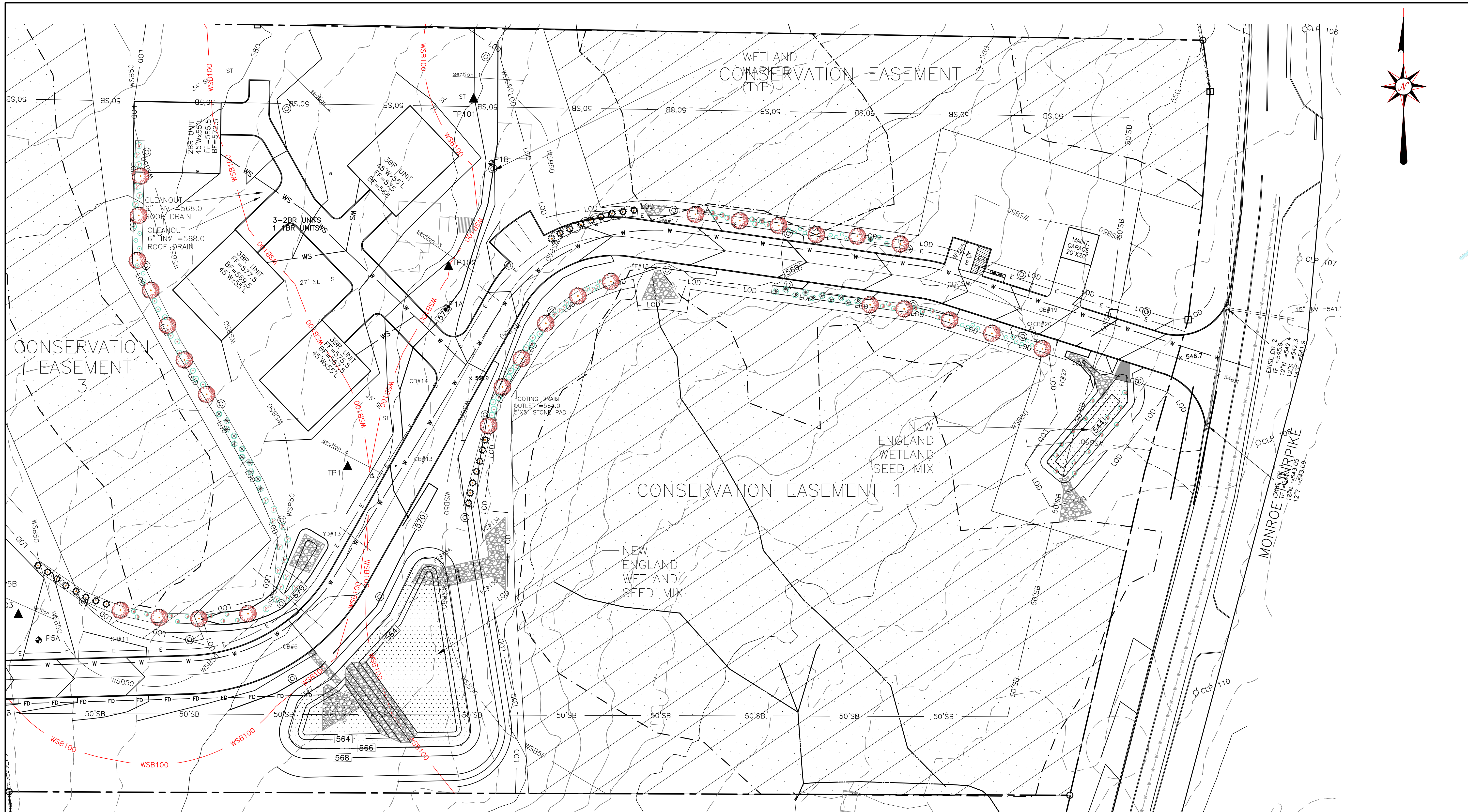
DRAINAGE
AREA MAP

SHEET NUMBER

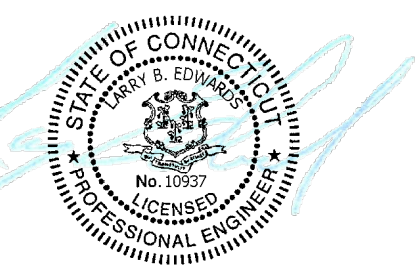
S-8

FILE NO. ----





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REVISIONS

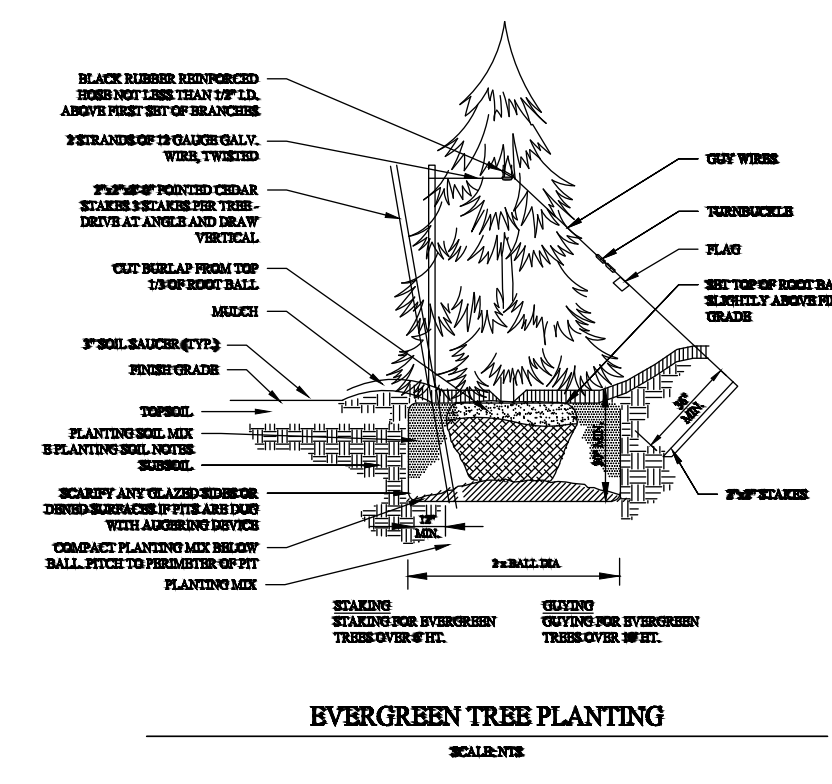
#	DATE	DESCRIPTION
1	09-01-21	ENG. & IWC COM.
2	09-28-21	ENG & IWC COM.
3	01-08-22	IWC. APPROVAL.
4	05-01-22	ZONING

ALL PROPOSED PLANTS AR LISTED AS NATIVE SPECIES PER CT DEEP WILDLIFE DIVISION

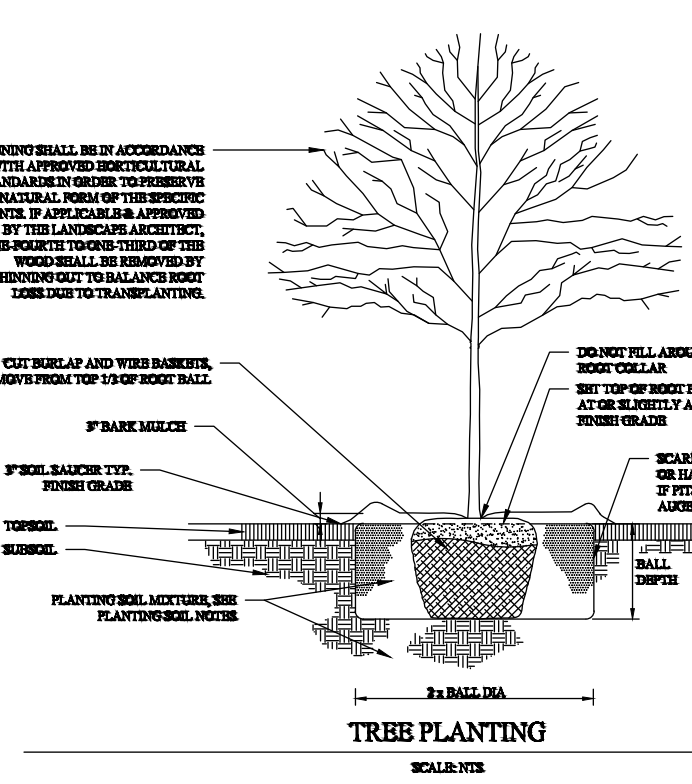
PLANT_SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	DETAIL	REMARKS
	PIC MA	Picea mariana	Black Spruce	2' Ht.	24		
	THU ACC	Thuja occidentalis	Northern White Cedar	4' Ht.	27		

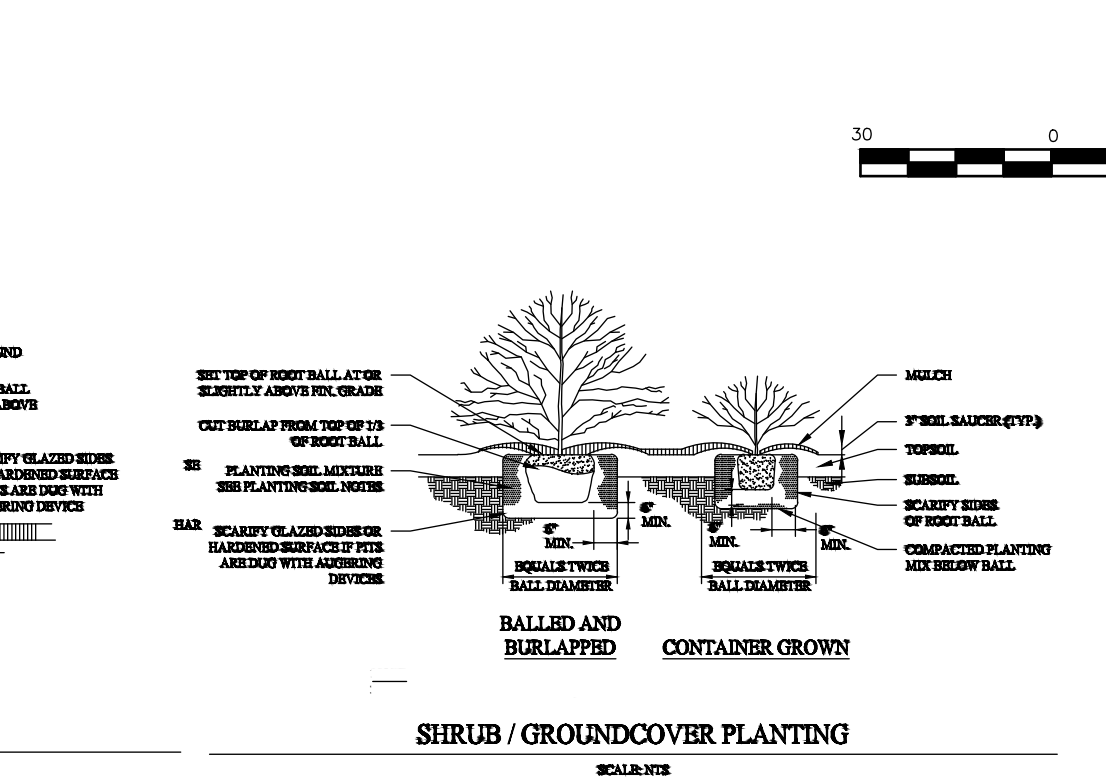
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	DETAIL	REMARKS
	MT LA	Kalmia latifolia	Mountain Laurel	2.5' Ht.	18		
	RHO AZA	Rhododendron viscosum	Swamp Azalea	2.5' Ht.	21		
	ILE	Ilex verticillata	Winterberry	2.5' Ht.	39		
	LO OB	Lonicera oblongifolia	Swamp Fly Honeyuckle	2.5' Ht.	21		
	VAC HI2	Vaccinium corymbosum	Highbush Blueberry	2.5' Ht.	25		



LANDSCAPE NOTES
 1. CONTRACTOR SHALL VERIFY ALL TREE SPECIES LISTED ON THIS PLAN ARE NATIVE TO CONNECTICUT.
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DATE: 07-01-21
 PROJECT #: 2278
 DRAWING FILE: SITE
 DRAWN BY: LE/JE/IE
 SCALE: 1"=30'

TITLE
 PLANTING PLAN
 SHEET NUMBER
 S-9

STORMWATER MANAGEMENT PLAN

FOR

“THE RIDGE AT MONROE”

1271 MONROE TURNPIKE

MONROE, CONNECTICUT

June 1, 2021

(Revised 09/14/21)

(Revised 09/21/21)

(Revised 07/11/22)



Prepared by
J. Edwards & Associates, LLC
227 Stepney Road, Easton, CT 06612

Larry Edwards P.E. #10937

PROJECT NARRATIVE

This project consists of a 14.9-acre parcel located at 1271 Monroe Turnpike in Monroe Ct... The site presently has a small home which is unoccupied. It is proposed to develop the site as a 19 unit age restricted residential community

Upland soils in the proposed development area consist of Paxton and Woodbridge soil types (soil group c). The wetland soils consist primarily of Ridgebury soils. The proposed development of the site will create a total of 1.9 acres of impervious area.

The drainage study area consists of 20.42 acres. This includes the majority of the development site in addition to 7.2 acres of off-site watershed. The study area flows into a large wetland at the southeast corner of the site. This wetland drains in two directions. The first is to the south through a pipe and stone trench under the adjoining properties back yard. The second is to the east, through and intermittent watercourse and into the Monroe Turnpike drainage system.

The storm water management system will consist of a 2 stormwater systems. System 1 consists of a rain garden which will collect and treat the runoff from the first 500 feet of the access driveway. System 2 will collect the runoff from the majority of the development area. This system will include a Hydodynamic separator unit for primary treatment and a water quality detention basin. Each catchbasin will have a 2' minimum sump with the last basin in the system equipped with a hooded trap.

The drainage analysis for the project was performed using the SCS TR55 computer model using NOAA IDF data. Storm frequencies of 2, 10, 25 and 100 years have been evaluated. The basin outlet has been sized to handle a 100 year storm.

STORM WATER QUALITY CALCULATIONS

Water Quality Volume

This volume represents the amount of storm water runoff that should be captured and treated in order to remove the majority pollutants on an average annual basis. The study area includes the total project site along with any offsite area passing through. The building runoff will be collected separately and discharged to an infiltration system.

$$WQV = (1")(R)(A)/12$$
$$R = (0.05) + (0.009)(\% \text{ impervious})$$

WQ Basin	Area	Imperv. Area	% Imperv.	R	WQV Required (cf)	WQV Proposed (cf)
1	1.5	0.3	20.0	0.23	1251	1329
2	5.6	1.6	28.6	0.31	6302	8648 *

*A hydrodynamic separator unit will provide secondary water quality treatment

A Downstream Defender Model 4, hydrodynamic separator unit. This model will handle a peak treatment flow of up to 3cfs.

The required Water Quality flow rate is:

$$WQF = WQV(\text{ac-ft}) \times (12\text{inc/ft}) / (\text{drainage area (acre)}) = (0.145) \times 12 / 5.6 = 0.31\text{cfs}$$

2-8" pipes @0.5% to separator, Q=0.75 each or 1.5cfs total

Ground Water Recharge Volume

This requirement is intended to maintain pre-development annual groundwater recharge volume by capturing and infiltrating the storm water runoff.

Ground water recharge will be provided through the water quality basin

$$GWV = D \times A \times I / 12$$

Soil recharge depth calculation:

Soil group C D =0.10

Site	Area	% Imperv.	GWV Required (cf)	GWV Proposed (cf)
1	1.5	17.6%	96	1329
2	5.6	41.1%	835	3142

Stream Channel Protection

The design criteria will be to limit the 2 year 24 hour post development flow rate to 50% of the pre development 2 year 24 hour flow rate.

WQ Basin	2yr Exist	2yr Prop
1	1.07	0.51
2	3.98	1.73

Outlet Protection

The water quality basin outlet will be protected with a rip rap pad sized in accordance with the Connecticut Erosion Control guidelines

Outlet basin #1

1- 4" pipes and 6' overflow 18" pipe equivalent at 10yr storm

Q 10yr =3.17cfs

Pad length (La) = $(1.7)(Q)/Do^{2/3} + 8Do = (1.7)(3.7)/(1.33) + 8(1.5) = 16.7'$

Pad width = $3D + La = 4.5 + 16.7 = 21.2''$

Outlet Basin #2

1-12" pipe and 1-8" pipe equivalent to 15" pipe

Q 10yr =5.88cfs

Pad length (La) = $(1.7)(Q)/Do^{2/3} + 8Do = (1.7)(5.88)/(1.16) + 8(1.25) = 18.5'$

Pad width = $3 \times 1.25 + La = 3.75 + 18.5 = 22.25$

Outlet FE#13A

15" pipe

Q 10yr =7.1cfs

Pad length (La) = $(1.7)(Q)/Do^{2/3} + 8Do = (1.7)(7.1)/(1.16) + 8(1.25) = 20.4'$

Pad width = $3D + La = 3.75 + 20.4 = 24.1'$

Outlet fe#12A

18" pipe

Q 10yr =11.2cfs

Pad length (La) $= (1.7)(Q)/Do^{2/3} + 8Do = (1.7)(11.2)/(1.3) + 8(1.5) = 26.7'$
 Pad width $= 3D + La = 4.5 + 26.7 = 31.2'$

Outlet FE #18

15" pipe

Q 10yr = 7.1cfs

Pad length (La) $= (1.7)(Q)/Do^{2/3} + 8Do = (1.7)(7.1)/(1.16) + 8(1.25) = 20.4'$

Pad width $= 3D + La = 3.75 + 20.4 = 24.1'$

Conveyance Protection

In accordance with the Monroe land use regulations, all project drainage improvements have been designed to handle a minimum 25 year storm event with outlet overflow from the basin designed to handle a 100 year storm. Reference is made to complete drainage report for supporting documentation. An overflow from the parking area to the WQ basins has been provided to assure that the 100 year storm event will flow through the basin.

Peak Runoff Attenuation

The storm management system for this project will control post development peak runoff for the 2, 10, 25 and 100 year storm events to levels less than or equal to the pre development rates...

Emergency Outlet Protection

The emergency outlet control have been designed to handle a 100 year storm event. See Drainage Summary Addendum attached to this report as well as the complete Drainage Report for supporting documentation.

Downstream Analysis

The drainage study for this project has also looked at the overall project impact to downstream off site water courses. Peak runoff from the total site will not exceed pre development levels. See Drainage Summary Addendum attached to this report as well as the complete Drainage Report for supporting documentation.

SUMMARY TOTAL STUDY AREA

	2 YR EXIST	2 YR PROP	10 YR EXIST	10 YR PROP	25 YR EXIST	25 YR PROP	100 YR EXIST	100 YR PROP
BASIN 1	1.58	0.75	3.29	3.23	4.40	4.36	6.75	6.10
BASIN 2	7.48	2.27	14.49	7.19	18.94	9.14	25.85	16.94
TOTAL	14.25	11.90	32.80	30.69	45.33	41.66	65.42	63.42

ADDENDUM #1
EROSION AND SEDIMENT CONTROL PLAN

A. GENERAL STATEMENT

1. Work on this project is expected to commence upon approval by the Planning and Zoning Commission. Final stabilization shall be completed as soon as possible after completion of work. In all cases disturbed areas shall be stabilized by the end of the growing season so that grass cover can be established. Construction shall be completed in accordance with the attached schedule.
2. The Storm Pollution control program for this site shall include the following as shown on the approved map:
 - a. Installation of a filter fence as shown on the plan.
 - b. Installation of anti-tracking apron on the driveways and at entrance to the roads.
 - c. Installation of detention/sediment basins and traps
3. Prior to any construction on the site, a pre-construction meeting shall be held with the owner, contractor, design engineer, and the authorized town official to review the site and the required erosion/ sedimentation and storm pollution control program.
4. The approved site plans, erosion control plan, engineering report and land use applications are considered part of this plan.

B. SCHEDULING OF GRADING AND CONSTRUCTION ACTIVITIES

Prior to starting construction on the site, all erosion and sediment control measures shall be installed as directed by the design engineer, permittee and/or authorized town agent. Detailed plans have been provided. Detailed construction sequencing has been included on the sheet for each phase.

Construction sequence:

A detailed construction sequence has been included on the Erosion Control Plan.

C. MEASURES TO BE USED DURING CONSTRUCTION

1. SILT FENCE

Silt fence consists of wooden post and filter fabric. Fences will be secured in place by wood posts set a maximum of five feet on-center. The filter fabric will be three feet in height. Fabric at the base of the fence will be buried at least six inches into the ground. Twine will be used to secure the fence on the uphill side to prevent overturning. The purpose of silt fences is to intercept and detain sediment contained in overland runoff from disturbed areas of limited extent. (Envirofence by Mirafi Inc. is an acceptable alternative to the system described above.)

Installation and Maintenance shall conform to the following:

Sediment will be removed from behind silt fences when sediment has accumulated to 50% of original height of the fence.

2. ANTI-TRACKING APRON

A ramp of crushed stone extending a minimum distance of 50 feet will be installed at the point of ingress and egress to the site. The purpose of the device is to minimize the potential of tracking mud from the site onto public right-of-way.

Installation and Maintenance shall conform to the following:

Minimum length will be 50 feet.

Stone size will meet CT DOT standards for two inch crushed gravel.

Stone will be placed upon the full width of the entrance roads.

Thickness of stone will be four inches or greater.

All sediment spilled, dropped, washed, or tracked onto public right-of-way will be removed immediately.

3. TEMPORARY WATER BREAKS

This temporary device consists of a swale constructed across proposed roadways. The purpose of this device is to direct runoff away from the road surface and minimize sediment from entering the drainage system. This shortens the length of disturbed slope by intercepting runoff and diverting it away from the roadway catch basins.

Installation and Maintenance shall conform to the following:

Swales will be placed across roads, which are to be constructed in fill:

Every 200 feet on slopes of 5-10%

Every 300 feet on slopes less than 5%

Contributory drainage areas, which are less than five acres.

Swales drain to hay bale check dams.

4. HAY BALE CHECK DAMS

Hay bale check dams of tightly bound, steel pin anchored, hay bales embedded four inches below grade in drainage swales adjacent to roadways or at the toe of an exposed slope. The purpose of a hay bale check dam is to reduce runoff velocity, and promote deposition and filtering of sediment from runoff. Hay bale check dams will be used where the runoff velocities will be less than three feet per second.

Installation and Maintenance shall conform to the following:

Compacted backfill will be placed against the up slope side of the Hay bales to a height of 4" above the ground.

Check dams will be placed in drainage swales:

Every 100 feet on slopes greater than 10%

Every 200 feet on slopes 5-10%

Every 300 feet on slopes less than 5%

Sediment shall be removed from hay bale check dams when sediment has accumulated to 50% of the original height.

5. TEMPORARY SEDIMENT TRAPS

Runoff collected in roadway interceptor swales or other swales will be directed to a sediment trap. The trap consists of a small excavation and/or embankment. The purpose of the trap is to collect runoff, promote settling of sediment, and de-concentrate and distribute clean runoff overland through natural vegetation before it enters existing watercourses and wetlands.

Installation and Maintenance shall conform to the following:

Contributory drainage areas that are less than or equal to five acres.

Utilized as part of swales prior to discharge to natural slopes.

Traps will be placed such that runoff discharging from the trap will flow at least 30 feet overland through natural vegetation before entering stream channels or wetlands.

Traps will be designed before construction.

Trap sides shall be compacted during construction.

The trap outlet shall have crushed stone rip-rap hand placed for energy dissipation.

Traps will be cleaned when sediment has accumulated to 50% of design volume.

Remove sediment deposited upland and treat to reduce potential erosion.

6. CATCH BASIN FILTERS

Temporary catch basin filters will be utilized to prevent the deposition of sediment into the storm sewer system prior to the stabilization of exposed areas with vegetation and/or pavement. These filters will consist of tightly bound, pin-anchored hay bales embedded four inches below grade, surrounding each catch basin inlet.

Installation and Maintenance shall conform to the following:

Placed around each catch basin inlet prior to paving or stabilization with vegetation.

Sediment shall be removed from the filters when sediment has accumulated to 50% of the filter's original height.

7. TEMPORARY GRADE TO DRAINS

This is a temporary raised berm of compacted soil, placed across a disturbed slope that intercepts runoff from disturbed areas and directs it to an appropriate outlet. This device will be used mostly on steep slopes above deep excavations.

Installation and Maintenance shall conform to the following:

Temporary grade to drains may be placed on cut and fill slopes exceeding 10 feet in height.

Contributory drainage area should not be greater than one acre.

Runoff will be diverted overland by the berms to sediment traps, sedimentation basins, swales, or check dams.

On slopes over 5%, additional stabilization is required in the form of stone rip-rap eight inches vertically up the upslope side of the berm and seven feet upslope from the upslope toe of the berm.

Top width of berm will be two feet. Side slopes will be 2:1 or flatter.

All berms shall be machine compacted.

8. RIP-RAP OUTFALL PROTECTION

As a permanent erosion control measure to protect the soil surface from the erosive forces and to slow the velocity of concentrated runoff while enhancing the potential for infiltration, velocity reducers in the form of crushed stone rip-rap will be used at the outfalls of all drainage structures that discharge to wetlands or other sensitive areas. The minimum thickness of the rip-rap layer will be 1.5 times the maximum stone diameter but not less than six inches. Sizing the stone and determining the dimensions of the rip-rap pads will be completed upon further design of the project using the methods described in the Connecticut Guidelines for Soil Erosion and Sediment Control.

9. Names, addresses and phone numbers of all persons and organizations that will be responsible for the installation and maintenance of the erosion and sedimentation devices will be provided prior to any earth moving or any other construction activity.
10. Construction area to be kept clean from all litter, debris and other building materials collected and disposed of offsite in approved manner. All fuels, oils and other controlled chemicals to be stored in approved areas. Such areas to be bermed as necessary to prevent spills from entering open watercourses. Fueling of equipment shall not be allowed in other than approved areas. In the event of a fuel or chemical spill, immediate measures to be taken to control damage and local and state officials are to be notified immediately.
11. Where construction activities have permanently ceased or have temporarily been suspended for more than seven days, or when final grades are reached in any portion of the site, stabilization practices shall be implemented within three days. Areas that remain disturbed but inactive for at least thirty days shall receive temporary seeding in accordance with the guidelines.

D. MAINTENANCE PROGRAM DURING CONSTRUCTION

1. The designated site monitor will inspect disturbed areas of the construction activity that have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 0.1 inches or greater. Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.

2. Additional control measures will be installed and the plan revised as appropriate as soon as practicable after such inspection. Such modifications shall provide for timely implementation of any changes to the site within 24 hours and implementation of any changes to the plan with 3 calendar days following the inspection. The plan shall be revised and the site controls updated in accordance with sound engineering practices, and applicable state and local regulations.
3. All control measures shall be maintained in effective working condition throughout the construction period.
4. Control measures found to be in disrepair shall be repaired or replaced immediately.
5. Sediment removed from control structures will be disposed of in a neat manner and disposed of in areas designated by the authorized town official or design engineer.
6. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Stormwater Pollution Control Plan, and actions taken shall be made and retained as part of the Plan for at least three years after the date of inspection. The permittee, or his authorized representative shall sign the report.
7. 472 Peeper Street LLC, Owner, or his designated agent is assigned the responsibility for implementing this erosion and storm pollution control plan. This responsibility includes site inspections, preparation of reports, the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan, notifying the Planning and Zoning Commission of any transfer of this responsibility, and for conveying a copy of the Erosion and Sediment Control Plan and the Implementation Schedule for Erosion and Sedimentation Control if the title to the land is transferred.

E. POST-CONSTRUCTION STORM MANAGEMENT

1. After completion of site disturbance and satisfactory stabilization, all permanent control structures including detention basins, storm water ditches, and catch basins to be cleaned of all sediment and debris. At time of transfer of ownership and/or responsibility for controls, the new owner or designated agent shall be advised of the sedimentation control maintenance requirements for the project.

MAINTENANCE PROGRAM

Seasonal Site Inspection/Maintenance

1. In the spring sweep sand deposits from the driveway areas and deposit at approved site. Inspect the water quality areas for excessive sediment buildup and

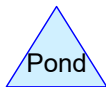
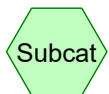
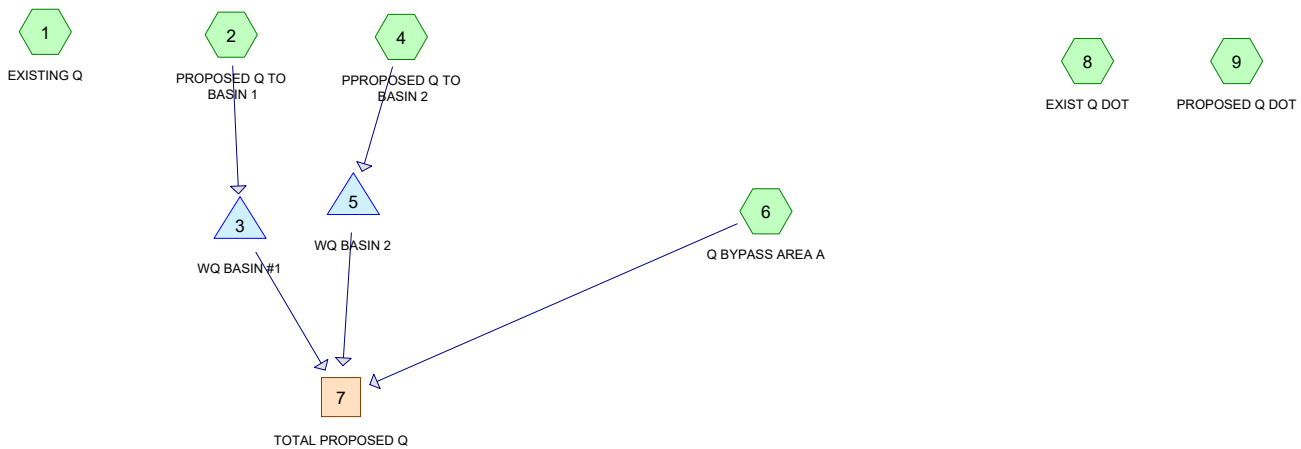
remove as required.

2. In the fall, remove leaf debris from the site to avoid excessive loading of the water quality areas and rain gardens. Mow area, as required eliminating unwanted plant species.
3. All catchbasins to be inspected and cleaned yearly.
 4. The infiltration gallery system to be inspected yearly. If there is significant sediment accumulation in system, the cleaning schedule for the catchbasins to be increased to 2 times per year.

F. REPORTING AND RECORD KEEPING REQUIREMENTS

1. The permittee shall retain copies of Stormwater Pollution Control Plans and all reports required by this general permit, and records of all data used to complete the registration to be authorized by this general permit, for a period of at least three years from the date that construction at the site is completed unless the commissioner specifies another time period in writing.
2. The permittee shall retain an updated copy of the Stormwater Pollution Control Plan required by this general permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.
3. Upon completion of construction, for sites authorized by the General Permit for the Discharge of Stormwater Associated with Commercial Activity or the General Permit for the Discharge of Stormwater Associated with Industrial Activity, the Stormwater Pollution Control Plan shall be kept as an appendix to the Stormwater Management Plan or Stormwater Pollution Prevention Plan (as applicable) for a period of at least three years from the date of completion of construction. A notice of termination form shall be completed by the permittee and forwarded to DEP upon completion of all site construction.

ADDENDUM #2
DRAINAGE ANALYSIS



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.122	74	>75% Grass cover, Good, HSG C (2, 4)
0.308	98	Paved parking, HSG C (2, 9)
2.089	98	Unconnected pavement, HSG C (4, 6)
36.408	73	Woods, Fair, HSG C (1, 2, 4, 6, 8, 9)
41.927	75	TOTAL AREA

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: EXISTING Q Runoff Area=889,582 sf 0.00% Impervious Runoff Depth>5.09"
Flow Length=1,450' Tc=38.9 min CN=73 Runoff=65.42 cfs 8.662 af

Subcatchment 2: PROPOSED Q TO BASIN Runoff Area=57,615 sf 19.96% Impervious Runoff Depth>5.71"
Flow Length=705' Tc=21.1 min CN=78 Runoff=6.15 cfs 0.630 af

Subcatchment 4: PROPOSED Q TO Runoff Area=245,383 sf 34.06% Impervious Runoff Depth>6.18"
Flow Length=980' Tc=25.4 min CN=82 Runoff=25.85 cfs 2.903 af

Subcatchment 6: Q BYPASS AREA A Runoff Area=586,584 sf 1.27% Impervious Runoff Depth>5.09"
Tc=38.9 min CN=73 Runoff=43.14 cfs 5.712 af

Subcatchment 8: EXIST Q DOT Runoff Area=28,245 sf 0.00% Impervious Runoff Depth>5.11"
Flow Length=400' Slope=0.0500 '/' Tc=24.0 min CN=73 Runoff=2.59 cfs 0.276 af

Subcatchment 9: PROPOSED Q DOT Runoff Area=18,916 sf 10.02% Impervious Runoff Depth>5.47"
Flow Length=400' Tc=23.5 min CN=76 Runoff=1.86 cfs 0.198 af

Reach 7: TOTAL PROPOSED Q Inflow=63.42 cfs 8.933 af
Outflow=63.42 cfs 8.933 af

Pond 3: WQ BASIN #1 Peak Elev=547.45' Storage=3,557 cf Inflow=6.15 cfs 0.630 af
Outflow=6.10 cfs 0.588 af

Pond 5: WQ BASIN 2 Peak Elev=568.43' Storage=43,557 cf Inflow=25.85 cfs 2.903 af
Outflow=16.94 cfs 2.632 af

Total Runoff Area = 41.927 ac Runoff Volume = 18.381 af Average Runoff Depth = 5.26"
94.28% Pervious = 39.530 ac 5.72% Impervious = 2.397 ac

Summary for Subcatchment 1: EXISTING Q

Runoff = 65.42 cfs @ 12.53 hrs, Volume= 8.662 af, Depth> 5.09"

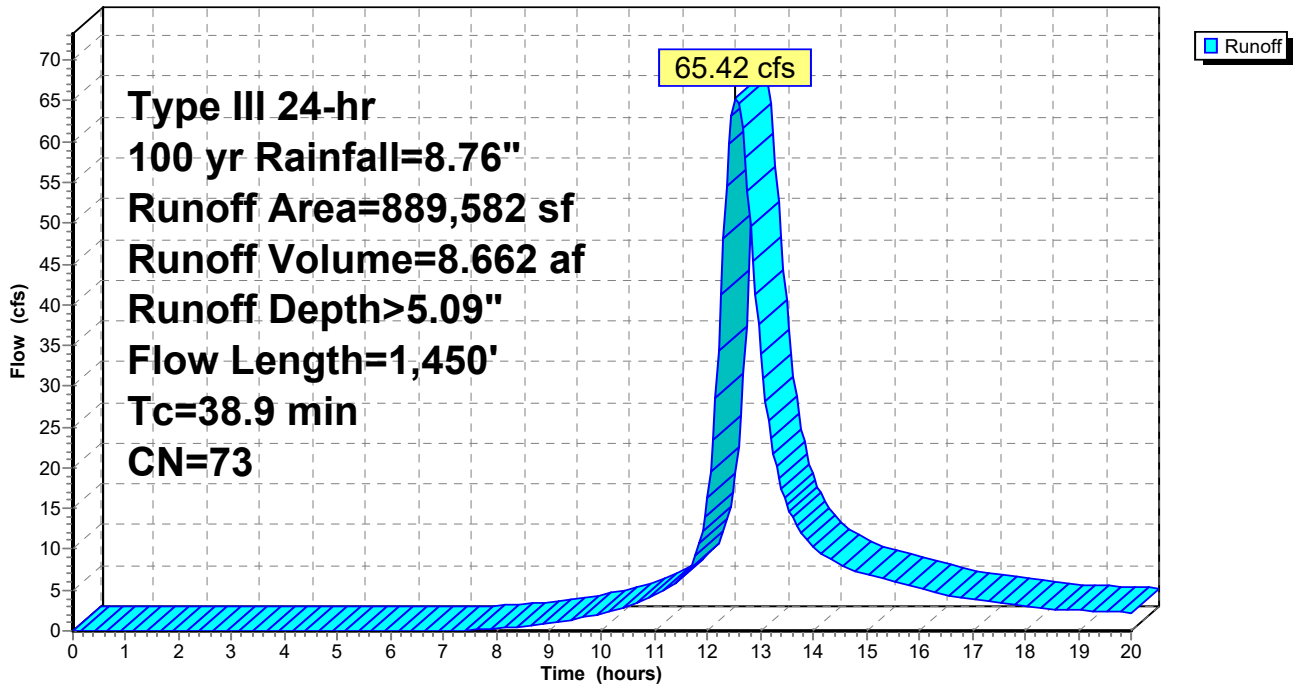
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
889,582	73	Woods, Fair, HSG C
889,582		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
16.4	920	0.0350	0.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	380	0.3500	25.25	101.01	Channel Flow, Area= 4.0 sf Perim= 5.0' r= 0.80' n= 0.030 Earth, grassed & winding
38.9	1,450	Total			

Subcatchment 1: EXISTING Q

Hydrograph



Summary for Subcatchment 2: PROPOSED Q TO BASIN 1

Runoff = 6.15 cfs @ 12.29 hrs, Volume= 0.630 af, Depth> 5.71"
 Routed to Pond 3 : WQ BASIN #1

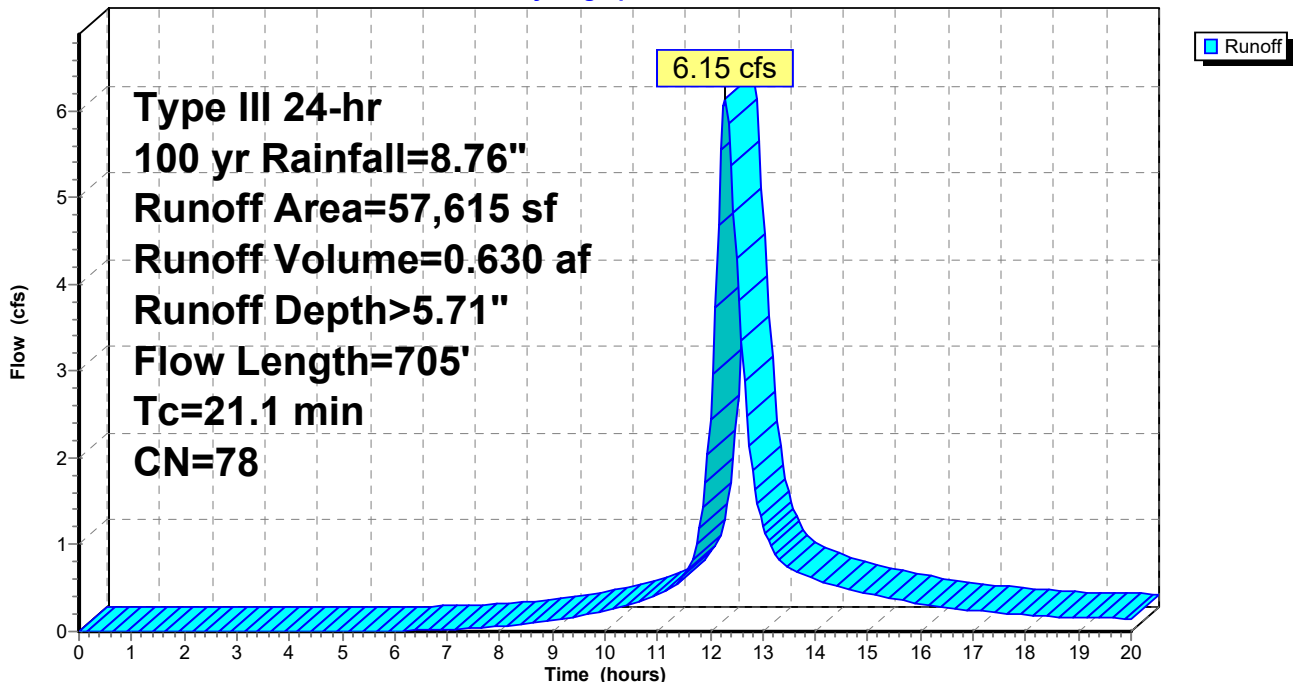
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
11,500	98	Paved parking, HSG C
34,115	73	Woods, Fair, HSG C
12,000	74	>75% Grass cover, Good, HSG C
57,615	78	Weighted Average
46,115		80.04% Pervious Area
11,500		19.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	150	0.0650	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.8	225	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
1.0	330	0.0100	5.26	6.46	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
21.1	705	Total			

Subcatchment 2: PROPOSED Q TO BASIN 1

Hydrograph



Summary for Subcatchment 4: PPROPOSED Q TO BASIN 2

Runoff = 25.85 cfs @ 12.34 hrs, Volume= 2.903 af, Depth> 6.18"
 Routed to Pond 5 : WQ BASIN 2

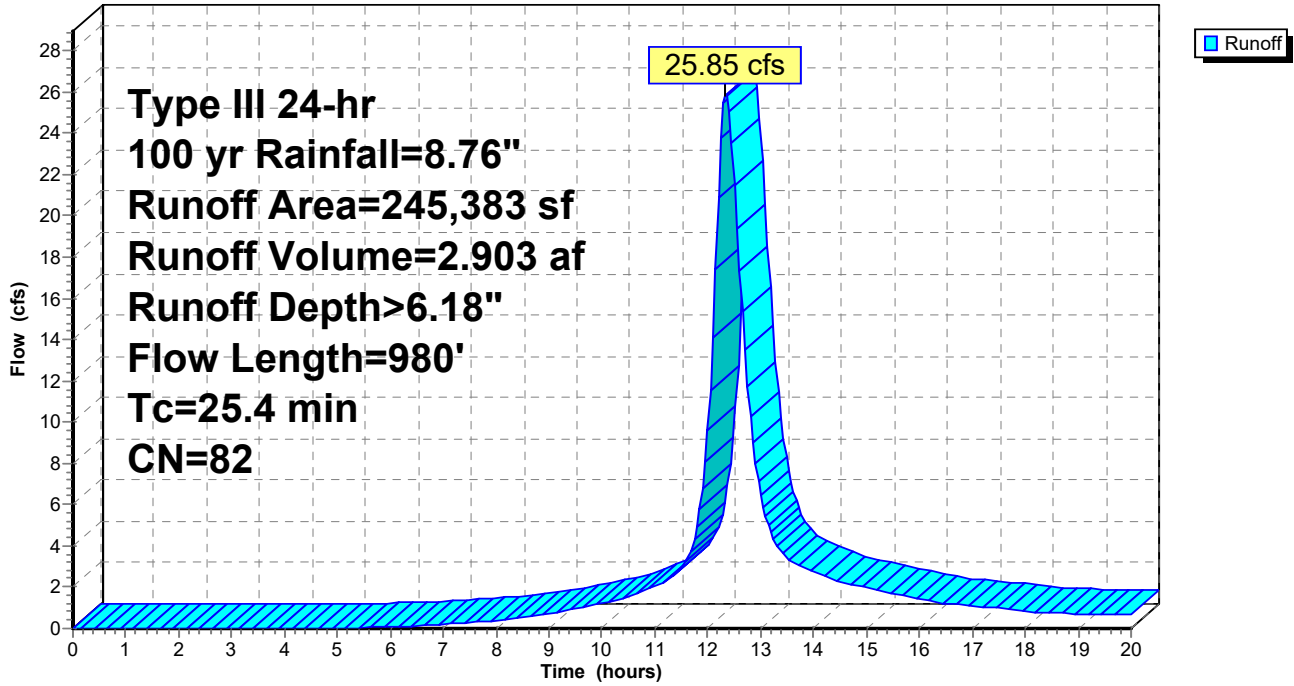
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
83,582	98	Unconnected pavement, HSG C
124,000	74	>75% Grass cover, Good, HSG C
37,801	73	Woods, Fair, HSG C
245,383	82	Weighted Average
161,801		65.94% Pervious Area
83,582		34.06% Impervious Area
83,582		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
2.4	230	0.0500	1.57		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	600	0.0500	11.77	14.44	Pipe Channel, 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
25.4	980	Total			

Subcatchment 4: PPROPOSED Q TO BASIN 2

Hydrograph



Summary for Subcatchment 6: Q BYPASS AREA A

Runoff = 43.14 cfs @ 12.53 hrs, Volume= 5.712 af, Depth> 5.09"
 Routed to Reach 7 : TOTAL PROPOSED Q

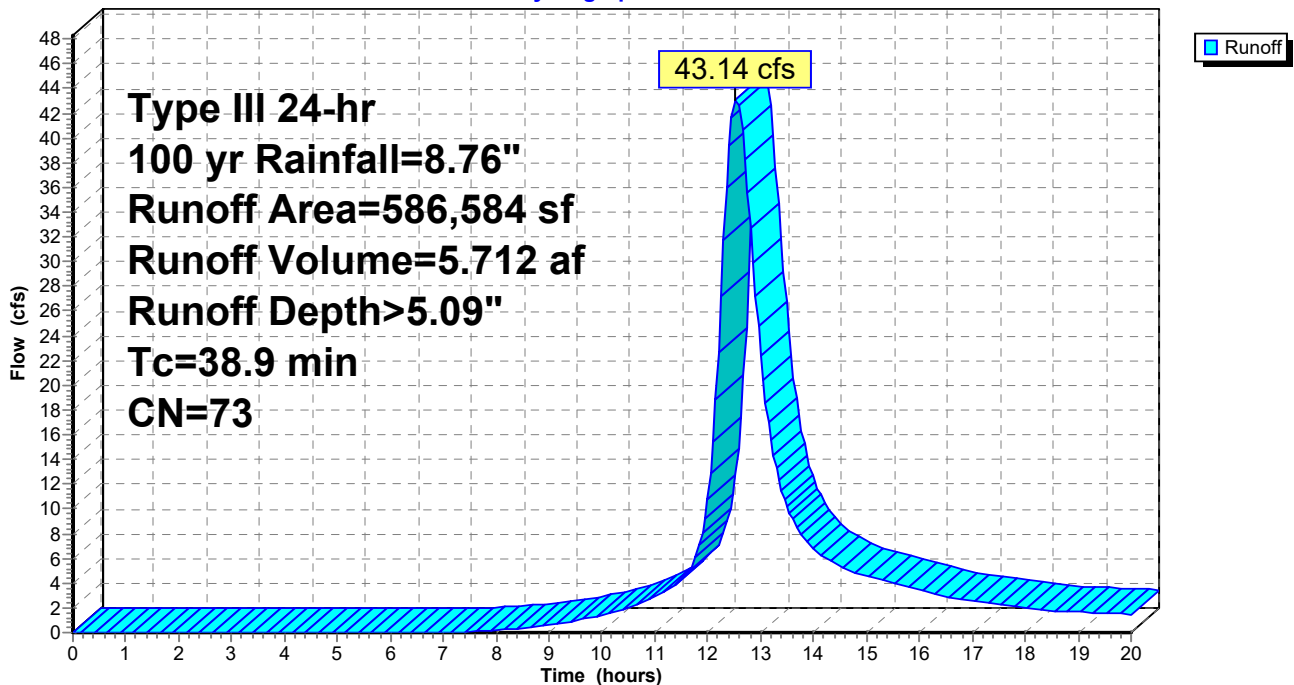
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
579,159	73	Woods, Fair, HSG C
7,425	98	Unconnected pavement, HSG C
586,584	73	Weighted Average
579,159		98.73% Pervious Area
7,425		1.27% Impervious Area
7,425		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.9					Direct Entry, SAME AS EXISTING

Subcatchment 6: Q BYPASS AREA A

Hydrograph



Summary for Subcatchment 8: EXIST Q DOT

Runoff = 2.59 cfs @ 12.33 hrs, Volume= 0.276 af, Depth> 5.11"

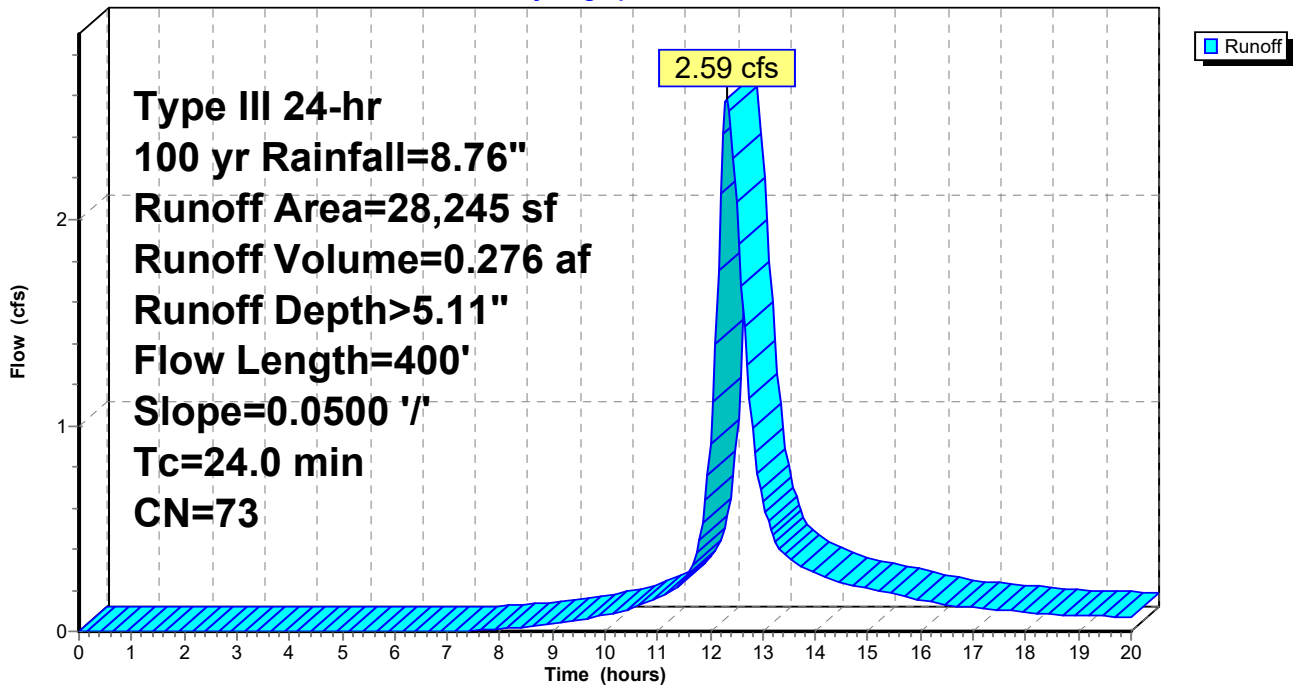
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
28,245	73	Woods, Fair, HSG C
28,245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	150	0.0500	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
3.7	250	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
24.0	400	Total			

Subcatchment 8: EXIST Q DOT

Hydrograph



Summary for Subcatchment 9: PROPOSED Q DOT

Runoff = 1.86 cfs @ 12.32 hrs, Volume= 0.198 af, Depth> 5.47"

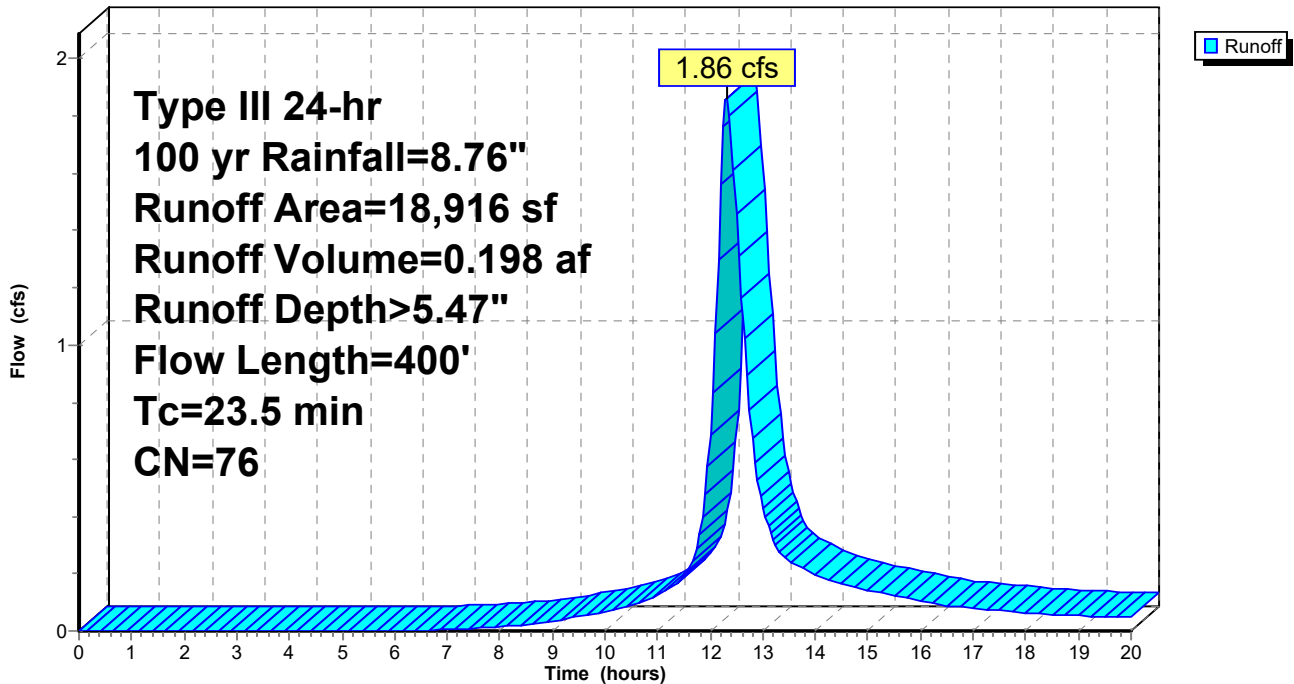
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 yr Rainfall=8.76"

Area (sf)	CN	Description
1,895	98	Paved parking, HSG C
17,021	73	Woods, Fair, HSG C
18,916	76	Weighted Average
17,021		89.98% Pervious Area
1,895		10.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	150	0.0500	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
3.0	200	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	50	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.5	400	Total			

Subcatchment 9: PROPOSED Q DOT

Hydrograph

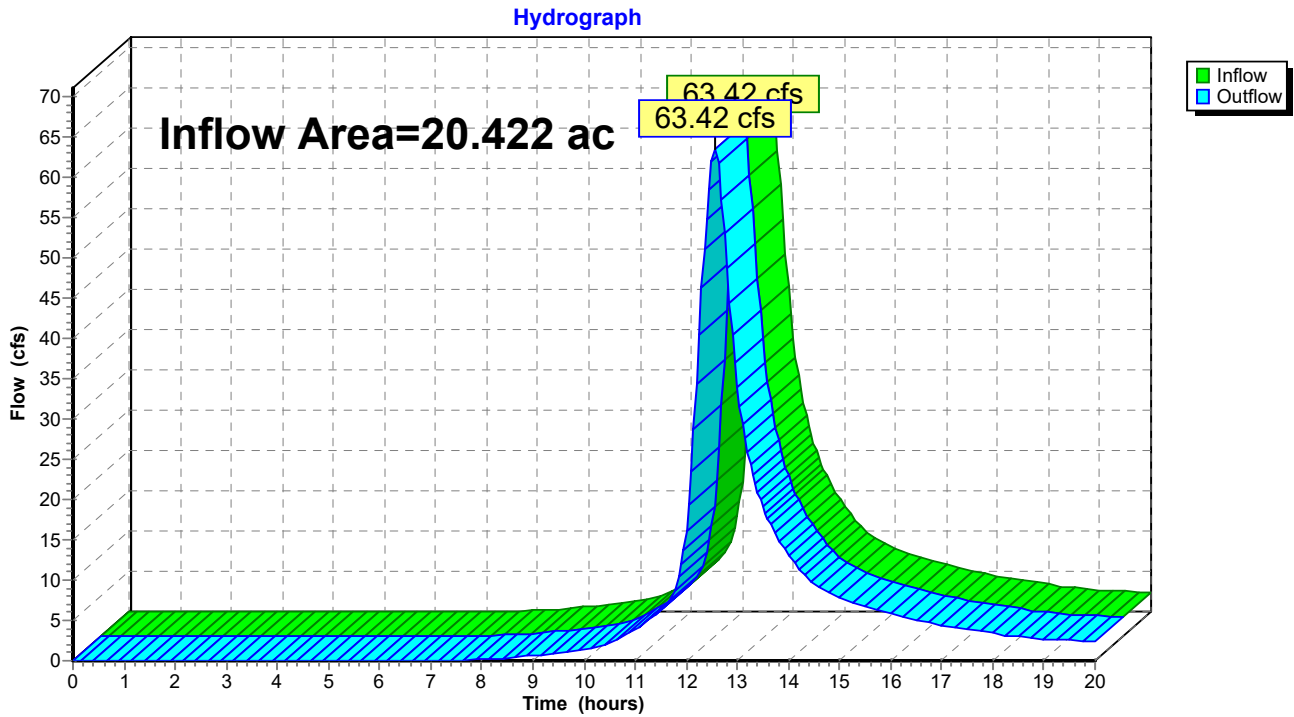


Summary for Reach 7: TOTAL PROPOSED Q

Inflow Area = 20.422 ac, 11.52% Impervious, Inflow Depth > 5.25" for 100 yr event
Inflow = 63.42 cfs @ 12.56 hrs, Volume= 8.933 af
Outflow = 63.42 cfs @ 12.56 hrs, Volume= 8.933 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Reach 7: TOTAL PROPOSED Q



Summary for Pond 3: WQ BASIN #1

Inflow Area = 1.323 ac, 19.96% Impervious, Inflow Depth > 5.71" for 100 yr event
 Inflow = 6.15 cfs @ 12.29 hrs, Volume= 0.630 af
 Outflow = 6.10 cfs @ 12.31 hrs, Volume= 0.588 af, Atten= 1%, Lag= 1.7 min
 Primary = 6.10 cfs @ 12.31 hrs, Volume= 0.588 af
 Routed to Reach 7 : TOTAL PROPOSED Q

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 547.45' @ 12.31 hrs Surf.Area= 1,883 sf Storage= 3,557 cf

Plug-Flow detention time= 53.7 min calculated for 0.587 af (93% of inflow)
 Center-of-Mass det. time= 31.4 min (815.7 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	544.00'	7,032 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

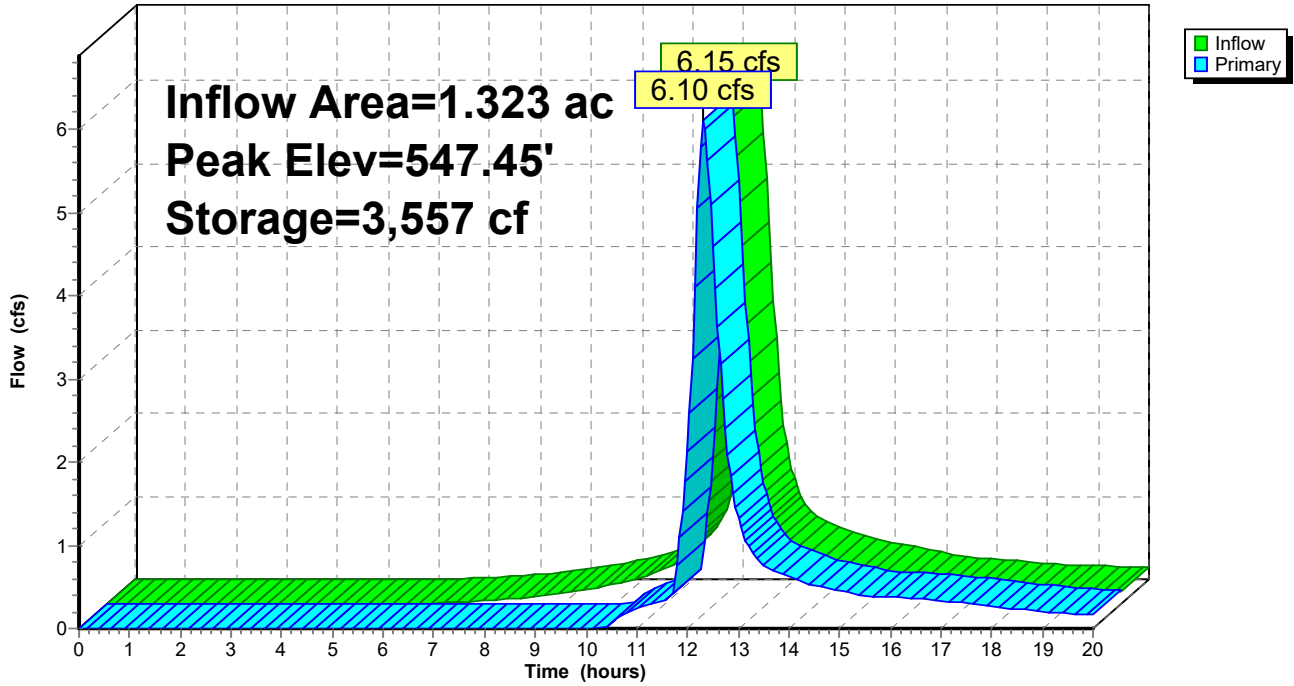
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.00	382	0	0
546.00	1,050	1,432	1,432
548.00	2,200	3,250	4,682
549.00	2,500	2,350	7,032

Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	547.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 5.00 9.00

Primary OutFlow Max=6.06 cfs @ 12.31 hrs HW=547.45' (Free Discharge)
 1=Orifice/Grate (Orifice Controls 0.48 cfs @ 5.45 fps)
 2=Custom Weir/Orifice (Weir Controls 5.59 cfs @ 2.12 fps)

Pond 3: WQ BASIN #1

Hydrograph



Stage-Discharge for Pond 3: WQ BASIN #1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
544.00	0.00	546.65	0.29
544.05	0.00	546.70	0.31
544.10	0.00	546.75	0.32
544.15	0.00	546.80	0.33
544.20	0.00	546.85	0.35
544.25	0.00	546.90	0.36
544.30	0.00	546.95	0.37
544.35	0.00	547.00	0.38
544.40	0.00	547.05	0.58
544.45	0.00	547.10	0.94
544.50	0.00	547.15	1.41
544.55	0.00	547.20	1.99
544.60	0.00	547.25	2.65
544.65	0.00	547.30	3.40
544.70	0.00	547.35	4.23
544.75	0.00	547.40	5.14
544.80	0.00	547.45	6.13
544.85	0.00	547.50	7.20
544.90	0.00	547.55	8.35
544.95	0.00	547.60	9.57
545.00	0.00	547.65	10.88
545.05	0.00	547.70	12.26
545.10	0.00	547.75	13.72
545.15	0.00	547.80	15.25
545.20	0.00	547.85	16.87
545.25	0.00	547.90	18.56
545.30	0.00	547.95	20.33
545.35	0.00	548.00	22.18
545.40	0.00	548.05	23.78
545.45	0.00	548.10	25.18
545.50	0.00	548.15	26.46
545.55	0.00	548.20	27.66
545.60	0.00	548.25	28.80
545.65	0.00	548.30	29.88
545.70	0.00	548.35	30.92
545.75	0.00	548.40	31.92
545.80	0.00	548.45	32.88
545.85	0.00	548.50	33.82
545.90	0.00	548.55	34.72
545.95	0.00	548.60	35.60
546.00	0.00	548.65	36.46
546.05	0.01	548.70	37.30
546.10	0.02	548.75	38.12
546.15	0.05	548.80	38.91
546.20	0.08	548.85	39.70
546.25	0.12	548.90	40.46
546.30	0.15	548.95	41.21
546.35	0.18	549.00	41.95
546.40	0.20		
546.45	0.22		
546.50	0.24		
546.55	0.26		
546.60	0.28		

Stage-Area-Storage for Pond 3: WQ BASIN #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
544.00	382	0	546.65	1,424	2,236
544.05	399	20	546.70	1,453	2,308
544.10	415	40	546.75	1,481	2,381
544.15	432	61	546.80	1,510	2,456
544.20	449	83	546.85	1,539	2,532
544.25	466	106	546.90	1,567	2,610
544.30	482	130	546.95	1,596	2,689
544.35	499	154	547.00	1,625	2,770
544.40	516	180	547.05	1,654	2,851
544.45	532	206	547.10	1,683	2,935
544.50	549	233	547.15	1,711	3,020
544.55	566	261	547.20	1,740	3,106
544.60	582	289	547.25	1,769	3,194
544.65	599	319	547.30	1,797	3,283
544.70	616	349	547.35	1,826	3,373
544.75	633	380	547.40	1,855	3,465
544.80	649	412	547.45	1,884	3,559
544.85	666	445	547.50	1,913	3,654
544.90	683	479	547.55	1,941	3,750
544.95	699	514	547.60	1,970	3,848
545.00	716	549	547.65	1,999	3,947
545.05	733	585	547.70	2,028	4,048
545.10	749	622	547.75	2,056	4,150
545.15	766	660	547.80	2,085	4,253
545.20	783	699	547.85	2,114	4,358
545.25	800	738	547.90	2,142	4,465
545.30	816	779	547.95	2,171	4,573
545.35	833	820	548.00	2,200	4,682
545.40	850	862	548.05	2,215	4,792
545.45	866	905	548.10	2,230	4,904
545.50	883	949	548.15	2,245	5,015
545.55	900	993	548.20	2,260	5,128
545.60	916	1,039	548.25	2,275	5,241
545.65	933	1,085	548.30	2,290	5,355
545.70	950	1,132	548.35	2,305	5,470
545.75	967	1,180	548.40	2,320	5,586
545.80	983	1,229	548.45	2,335	5,702
545.85	1,000	1,278	548.50	2,350	5,820
545.90	1,017	1,329	548.55	2,365	5,937
545.95	1,033	1,380	548.60	2,380	6,056
546.00	1,050	1,432	548.65	2,395	6,175
546.05	1,079	1,485	548.70	2,410	6,296
546.10	1,108	1,540	548.75	2,425	6,416
546.15	1,136	1,596	548.80	2,440	6,538
546.20	1,165	1,654	548.85	2,455	6,660
546.25	1,194	1,712	548.90	2,470	6,783
546.30	1,222	1,773	548.95	2,485	6,907
546.35	1,251	1,835	549.00	2,500	7,032
546.40	1,280	1,898			
546.45	1,309	1,963			
546.50	1,338	2,029			
546.55	1,366	2,096			
546.60	1,395	2,166			

Summary for Pond 5: WQ BASIN 2

Inflow Area = 5.633 ac, 34.06% Impervious, Inflow Depth > 6.18" for 100 yr event
 Inflow = 25.85 cfs @ 12.34 hrs, Volume= 2.903 af
 Outflow = 16.94 cfs @ 12.61 hrs, Volume= 2.632 af, Atten= 34%, Lag= 16.4 min
 Primary = 16.94 cfs @ 12.61 hrs, Volume= 2.632 af
 Routed to Reach 7 : TOTAL PROPOSED Q

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 568.43' @ 12.61 hrs Surf.Area= 11,319 sf Storage= 43,557 cf

Plug-Flow detention time= 86.6 min calculated for 2.626 af (90% of inflow)
 Center-of-Mass det. time= 57.0 min (836.8 - 779.8)

Volume	Invert	Avail.Storage	Storage Description
#1	563.00'	50,199 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
563.00	5,000	0	0
564.00	6,000	5,500	5,500
566.00	8,270	14,270	19,770
568.00	10,750	19,020	38,790
569.00	12,068	11,409	50,199

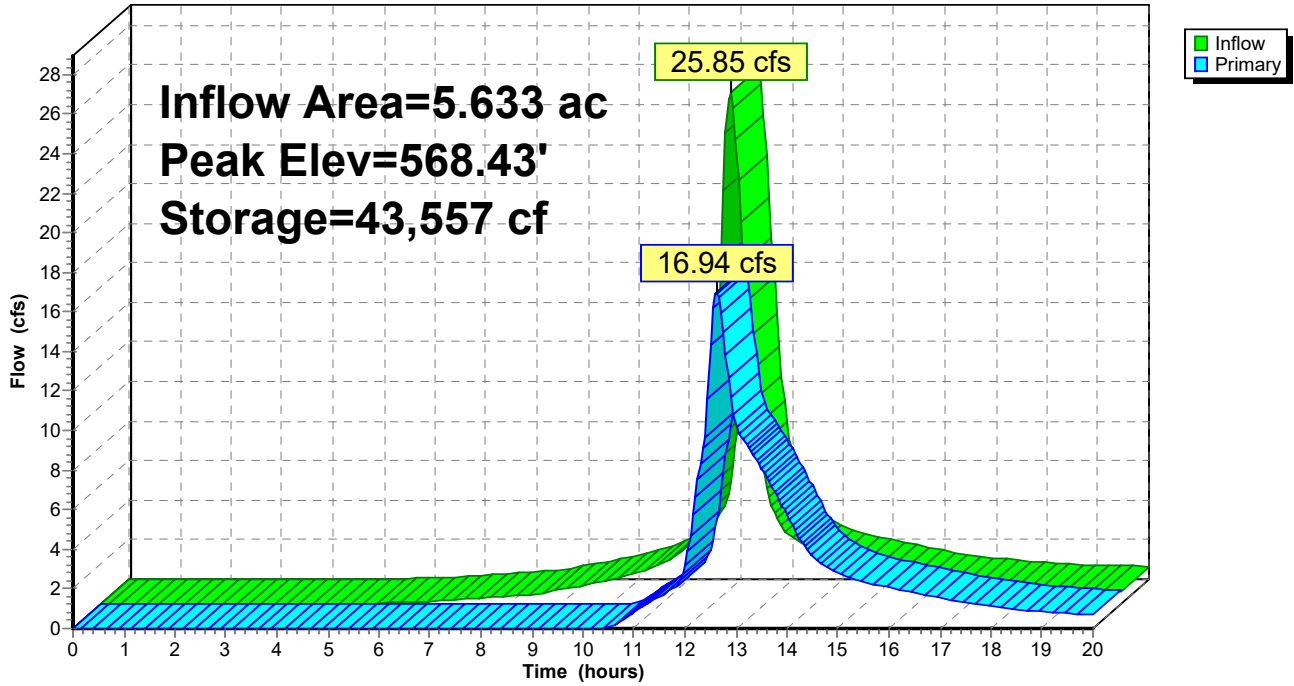
Device	Routing	Invert	Outlet Devices
#1	Primary	564.50'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	565.60'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	568.00'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 Width (feet) 6.00 10.00

Primary OutFlow Max=16.83 cfs @ 12.61 hrs HW=568.43' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 4.92 cfs @ 9.02 fps)
- 2=Orifice/Grate (Orifice Controls 5.77 cfs @ 7.35 fps)
- 3=Custom Weir/Orifice (Weir Controls 6.14 cfs @ 2.09 fps)

Pond 5: WQ BASIN 2

Hydrograph



Stage-Discharge for Pond 5: WQ BASIN 2

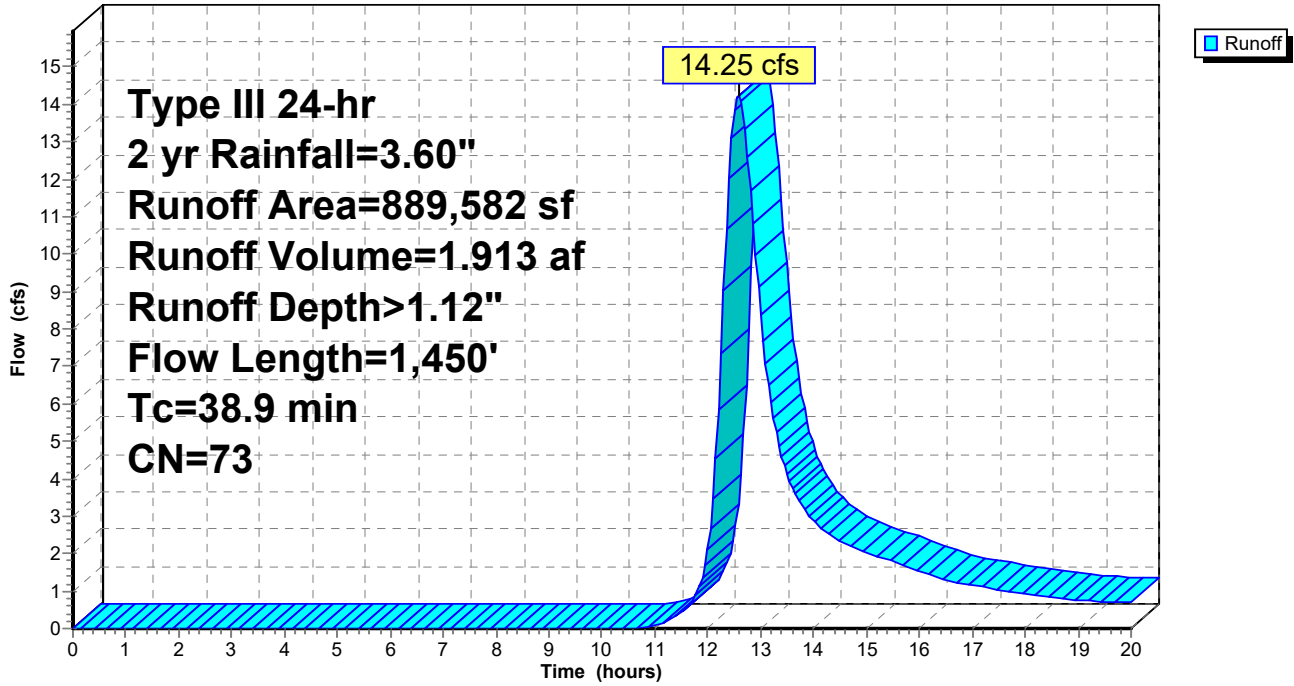
Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
563.00	0.00	565.65	2.26	568.30	13.93
563.05	0.00	565.70	2.37	568.35	14.99
563.10	0.00	565.75	2.49	568.40	16.14
563.15	0.00	565.80	2.64	568.45	17.38
563.20	0.00	565.85	2.80	568.50	18.70
563.25	0.00	565.90	2.97	568.55	20.12
563.30	0.00	565.95	3.16	568.60	21.61
563.35	0.00	566.00	3.37	568.65	23.20
563.40	0.00	566.05	3.58	568.70	24.86
563.45	0.00	566.10	3.80	568.75	26.61
563.50	0.00	566.15	4.03	568.80	28.45
563.55	0.00	566.20	4.27	568.85	30.37
563.60	0.00	566.25	4.52	568.90	32.37
563.65	0.00	566.30	4.76	568.95	34.46
563.70	0.00	566.35	5.01	569.00	36.64
563.75	0.00	566.40	5.25		
563.80	0.00	566.45	5.49		
563.85	0.00	566.50	5.71		
563.90	0.00	566.55	5.91		
563.95	0.00	566.60	6.08		
564.00	0.00	566.65	6.26		
564.05	0.00	566.70	6.44		
564.10	0.00	566.75	6.60		
564.15	0.00	566.80	6.77		
564.20	0.00	566.85	6.93		
564.25	0.00	566.90	7.08		
564.30	0.00	566.95	7.23		
564.35	0.00	567.00	7.38		
564.40	0.00	567.05	7.52		
564.45	0.00	567.10	7.66		
564.50	0.00	567.15	7.80		
564.55	0.01	567.20	7.93		
564.60	0.04	567.25	8.07		
564.65	0.09	567.30	8.20		
564.70	0.15	567.35	8.32		
564.75	0.23	567.40	8.45		
564.80	0.33	567.45	8.57		
564.85	0.44	567.50	8.70		
564.90	0.56	567.55	8.82		
564.95	0.69	567.60	8.93		
565.00	0.82	567.65	9.05		
565.05	0.96	567.70	9.16		
565.10	1.11	567.75	9.28		
565.15	1.25	567.80	9.39		
565.20	1.39	567.85	9.50		
565.25	1.52	567.90	9.61		
565.30	1.64	567.95	9.72		
565.35	1.73	568.00	9.82		
565.40	1.83	568.05	10.15		
565.45	1.92	568.10	10.67		
565.50	2.01	568.15	11.32		
565.55	2.09	568.20	12.09		
565.60	2.17	568.25	12.96		

Stage-Area-Storage for Pond 5: WQ BASIN 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
563.00	5,000	0	568.30	11,145	42,074
563.10	5,100	505	568.40	11,277	43,195
563.20	5,200	1,020	568.50	11,409	44,330
563.30	5,300	1,545	568.60	11,541	45,477
563.40	5,400	2,080	568.70	11,673	46,638
563.50	5,500	2,625	568.80	11,804	47,812
563.60	5,600	3,180	568.90	11,936	48,999
563.70	5,700	3,745	569.00	12,068	50,199
563.80	5,800	4,320			
563.90	5,900	4,905			
564.00	6,000	5,500			
564.10	6,114	6,106			
564.20	6,227	6,723			
564.30	6,340	7,351			
564.40	6,454	7,991			
564.50	6,568	8,642			
564.60	6,681	9,304			
564.70	6,795	9,978			
564.80	6,908	10,663			
564.90	7,021	11,360			
565.00	7,135	12,068			
565.10	7,249	12,787			
565.20	7,362	13,517			
565.30	7,475	14,259			
565.40	7,589	15,012			
565.50	7,703	15,777			
565.60	7,816	16,553			
565.70	7,930	17,340			
565.80	8,043	18,139			
565.90	8,156	18,949			
566.00	8,270	19,770			
566.10	8,394	20,603			
566.20	8,518	21,449			
566.30	8,642	22,307			
566.40	8,766	23,177			
566.50	8,890	24,060			
566.60	9,014	24,955			
566.70	9,138	25,863			
566.80	9,262	26,783			
566.90	9,386	27,715			
567.00	9,510	28,660			
567.10	9,634	29,617			
567.20	9,758	30,587			
567.30	9,882	31,569			
567.40	10,006	32,563			
567.50	10,130	33,570			
567.60	10,254	34,589			
567.70	10,378	35,621			
567.80	10,502	36,665			
567.90	10,626	37,721			
568.00	10,750	38,790			
568.10	10,882	39,872			
568.20	11,014	40,966			

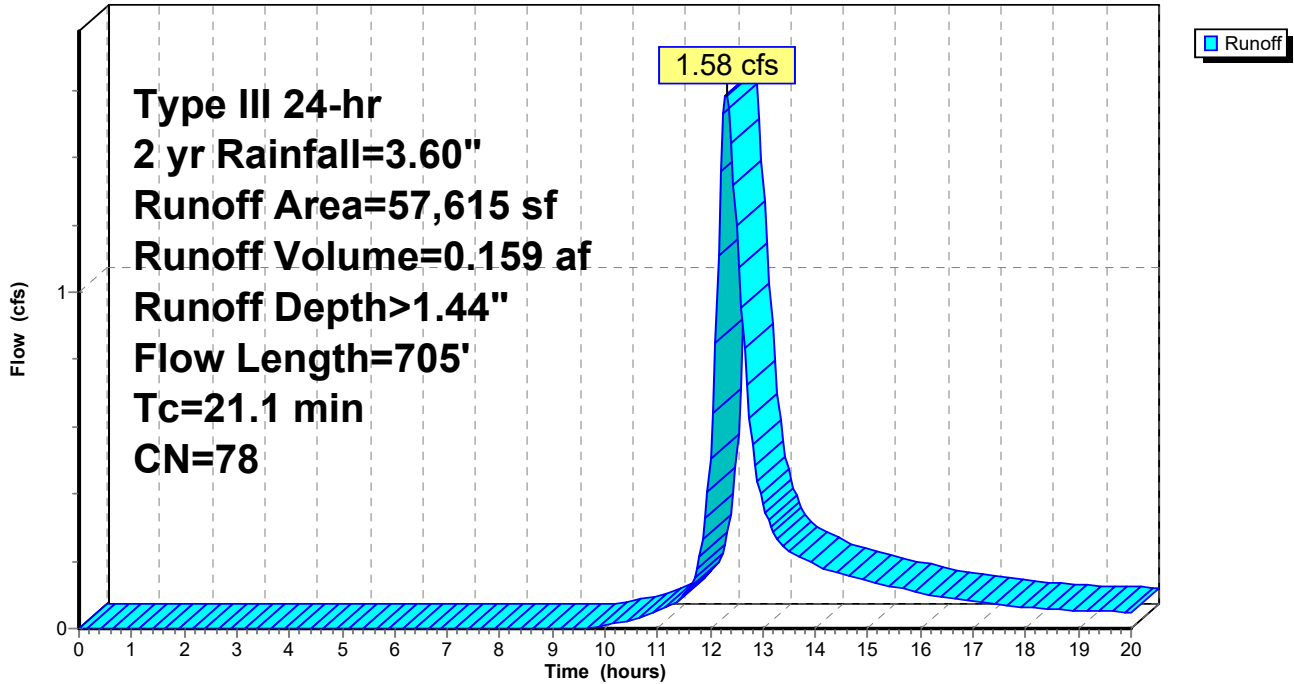
Subcatchment 1: EXISTING Q

Hydrograph



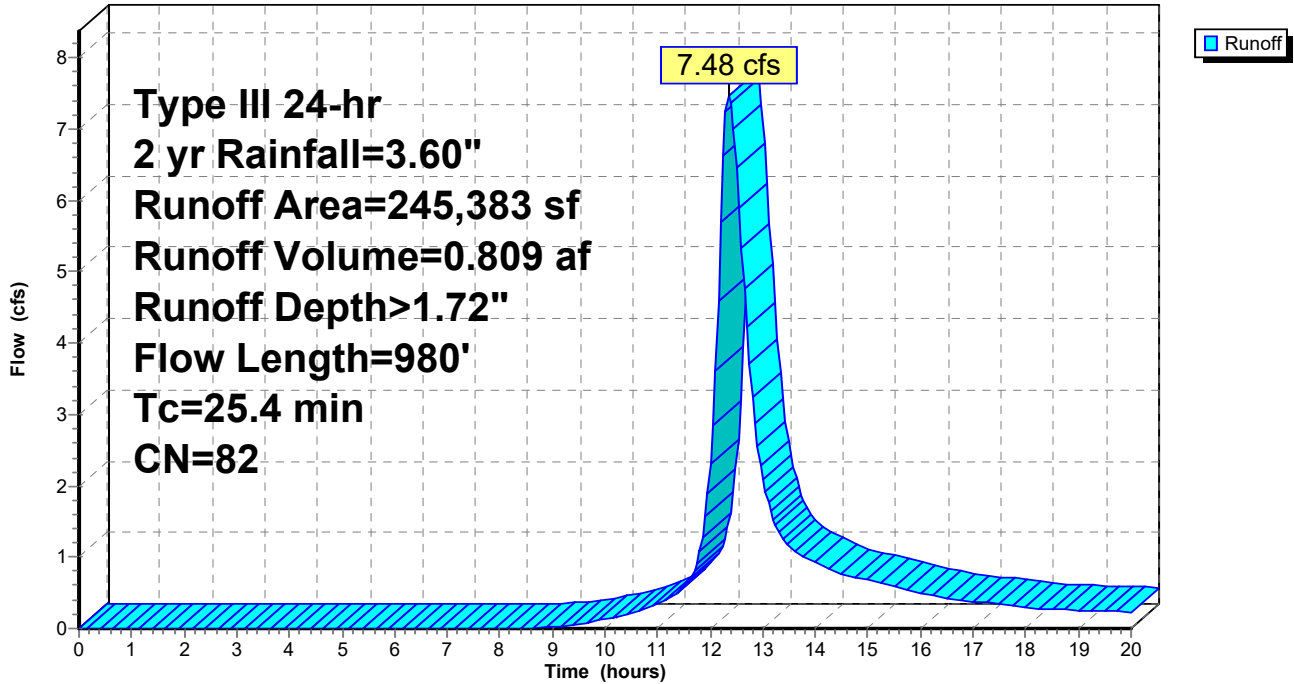
Subcatchment 2: PROPOSED Q TO BASIN 1

Hydrograph



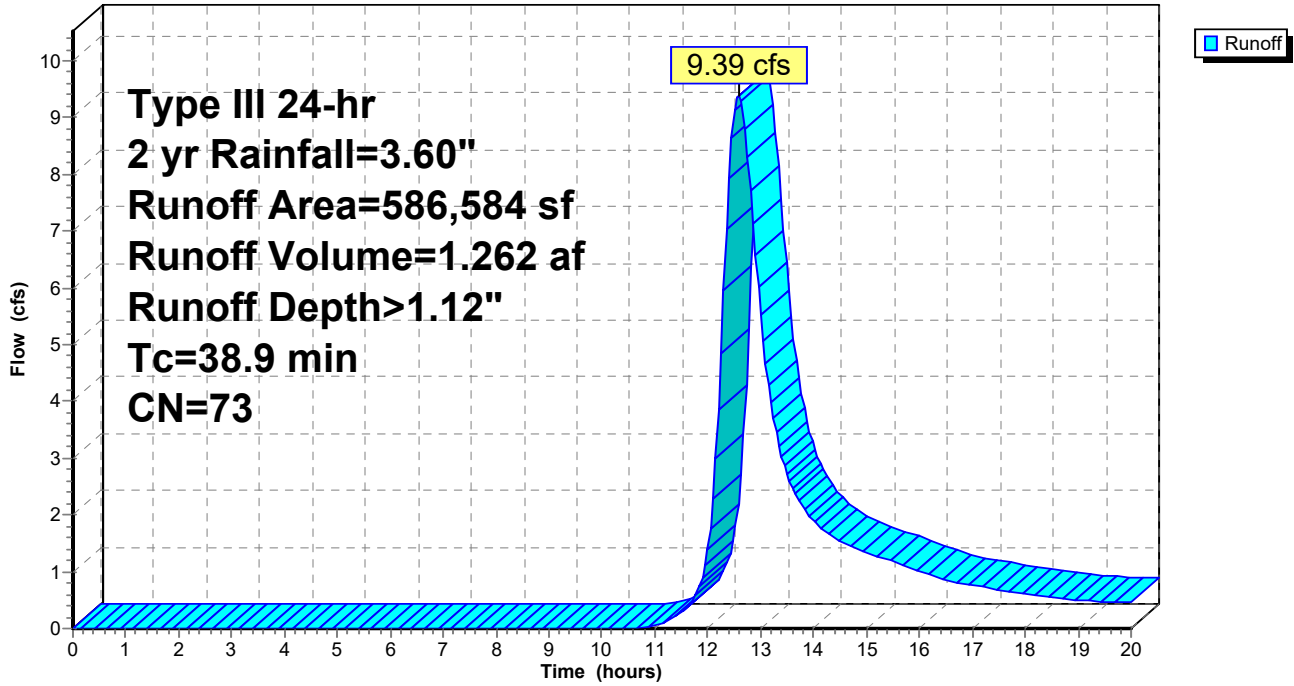
Subcatchment 4: PPROPOSED Q TO BASIN 2

Hydrograph



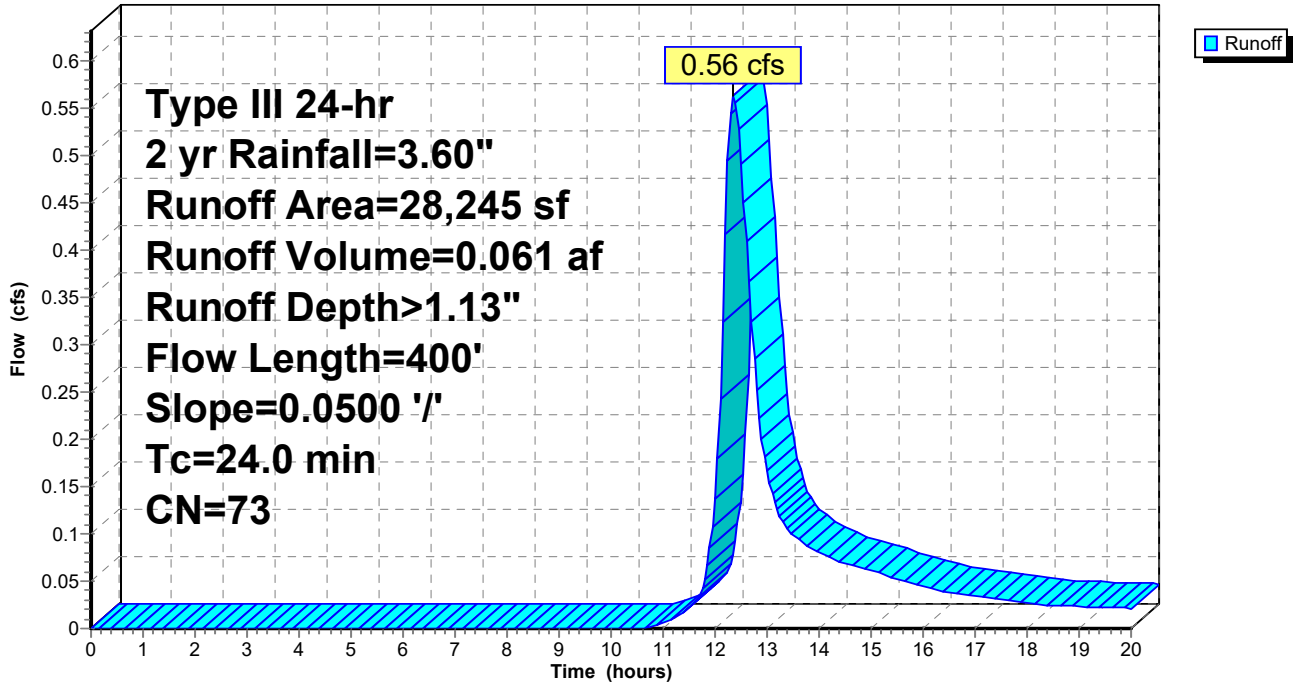
Subcatchment 6: Q BYPASS AREA A

Hydrograph



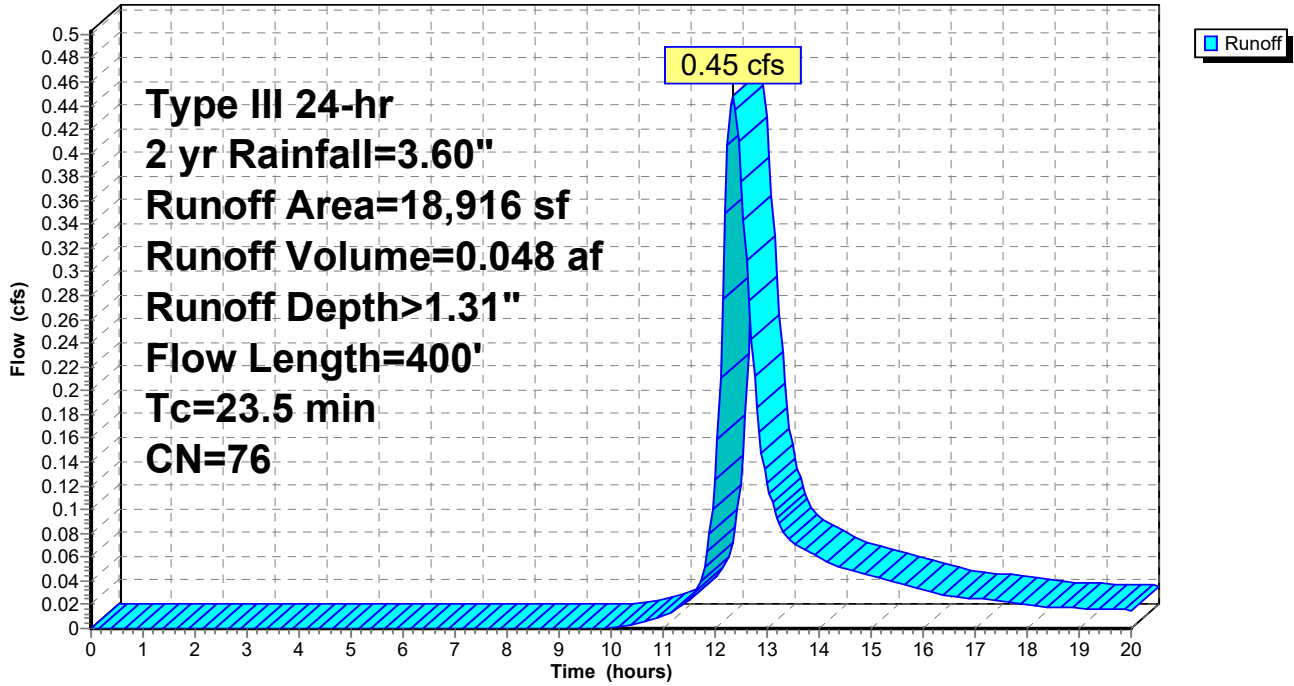
Subcatchment 8: EXIST Q DOT

Hydrograph



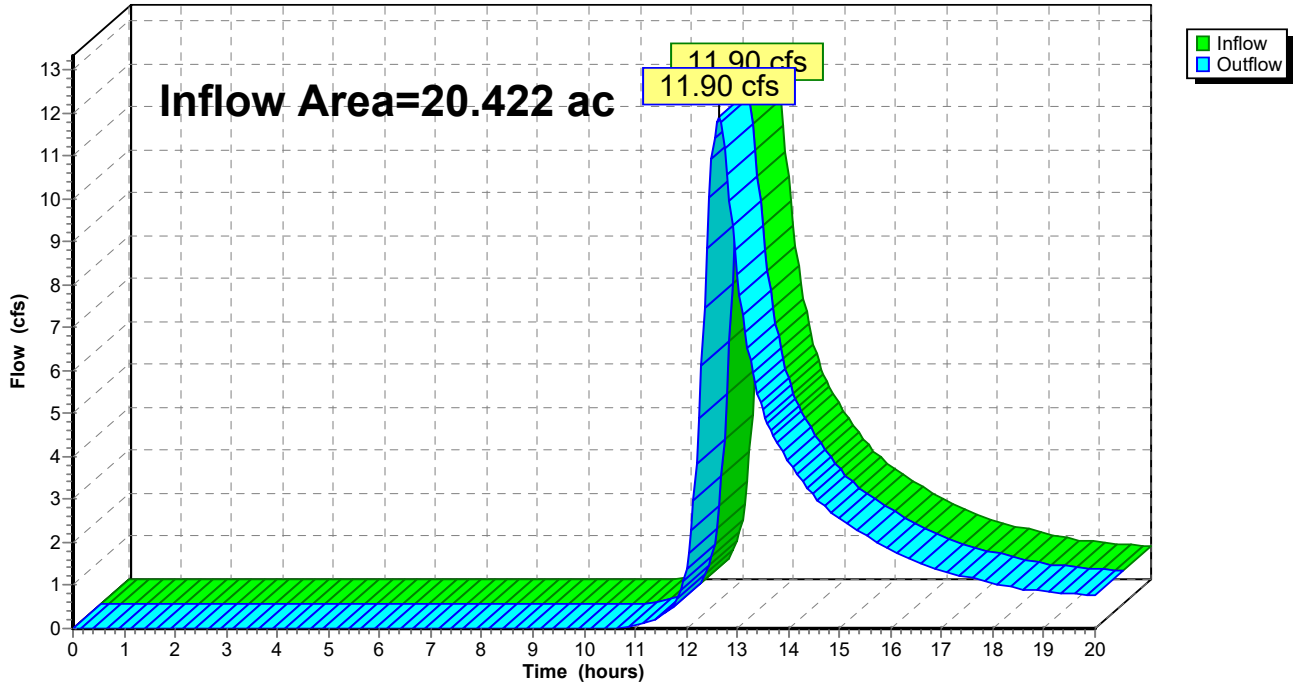
Subcatchment 9: PROPOSED Q DOT

Hydrograph



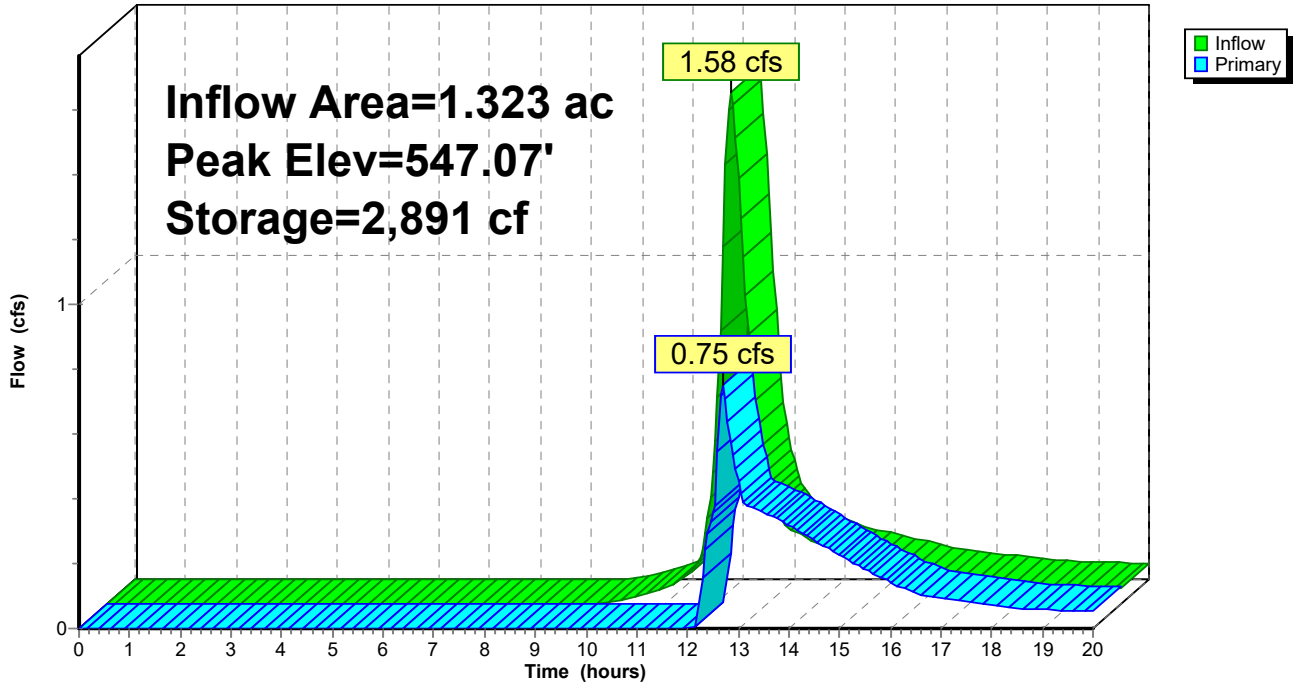
Reach 7: TOTAL PROPOSED Q

Hydrograph



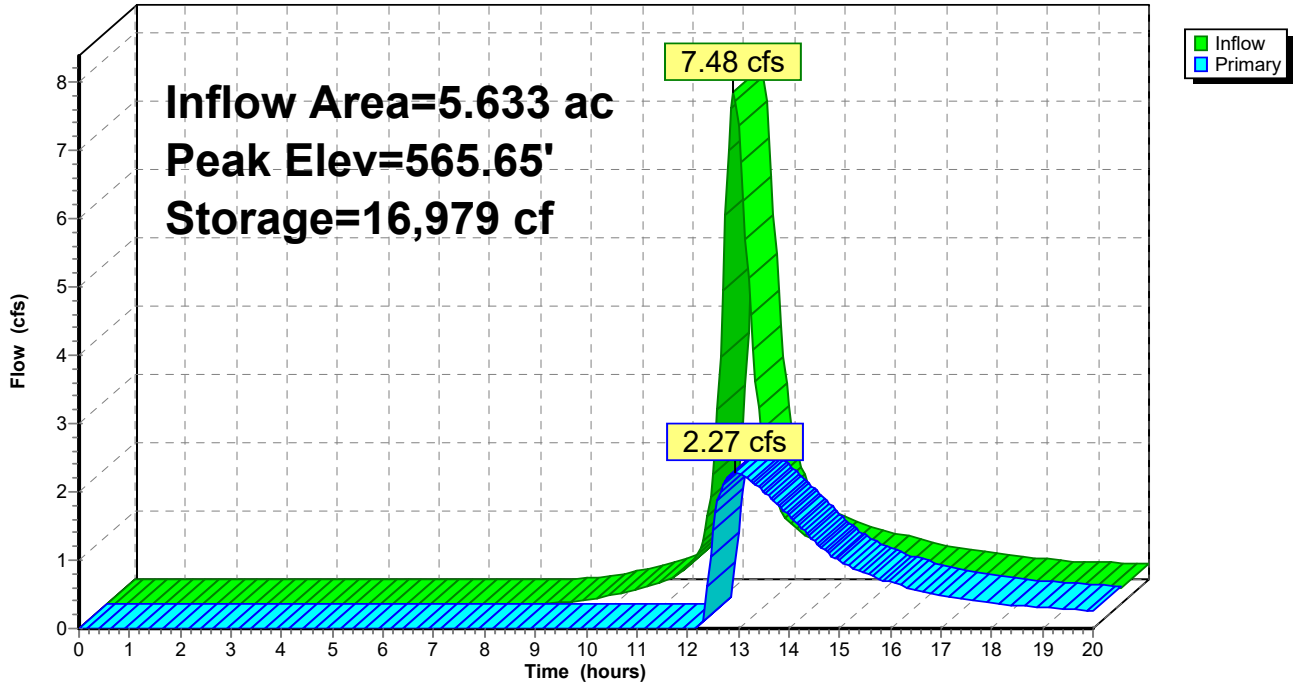
Pond 3: WQ BASIN #1

Hydrograph



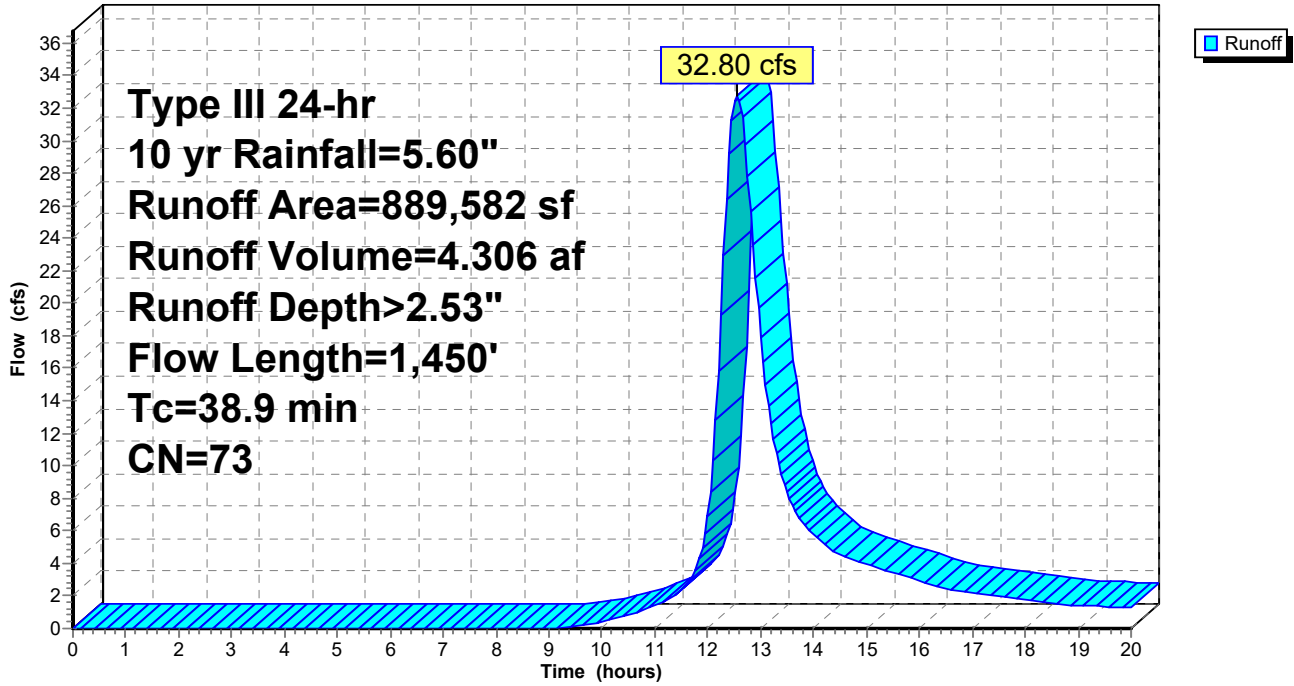
Pond 5: WQ BASIN 2

Hydrograph



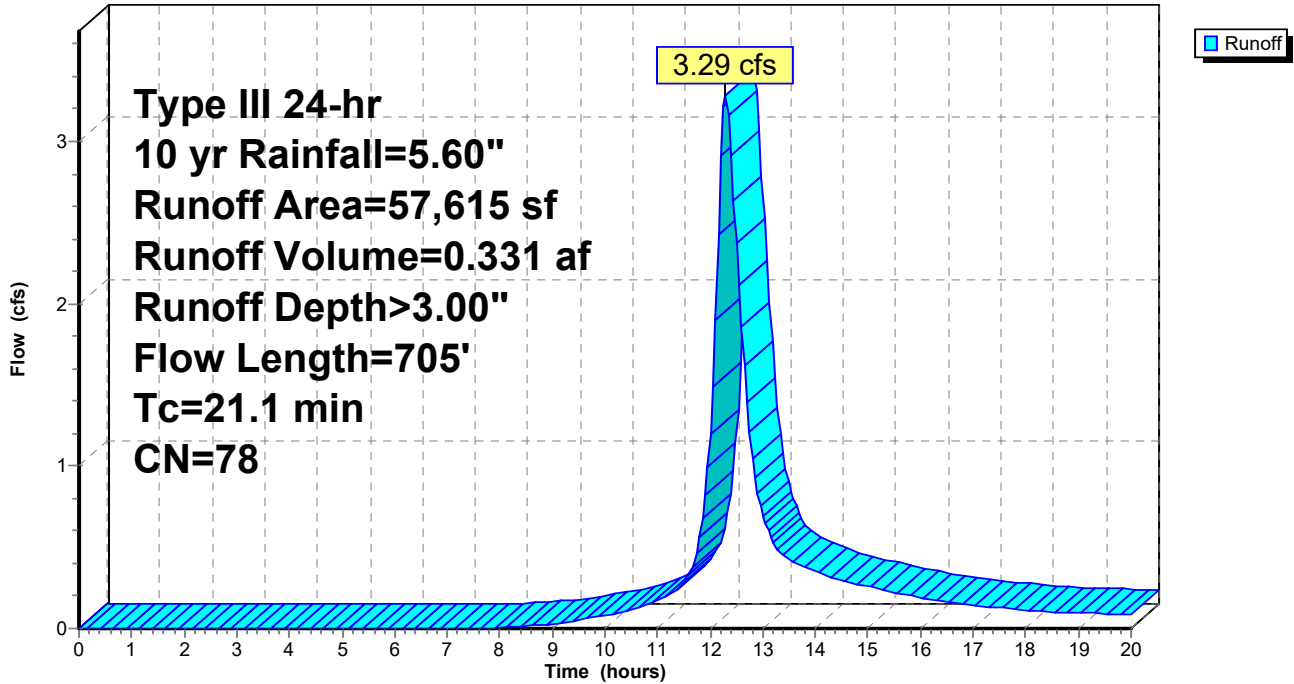
Subcatchment 1: EXISTING Q

Hydrograph



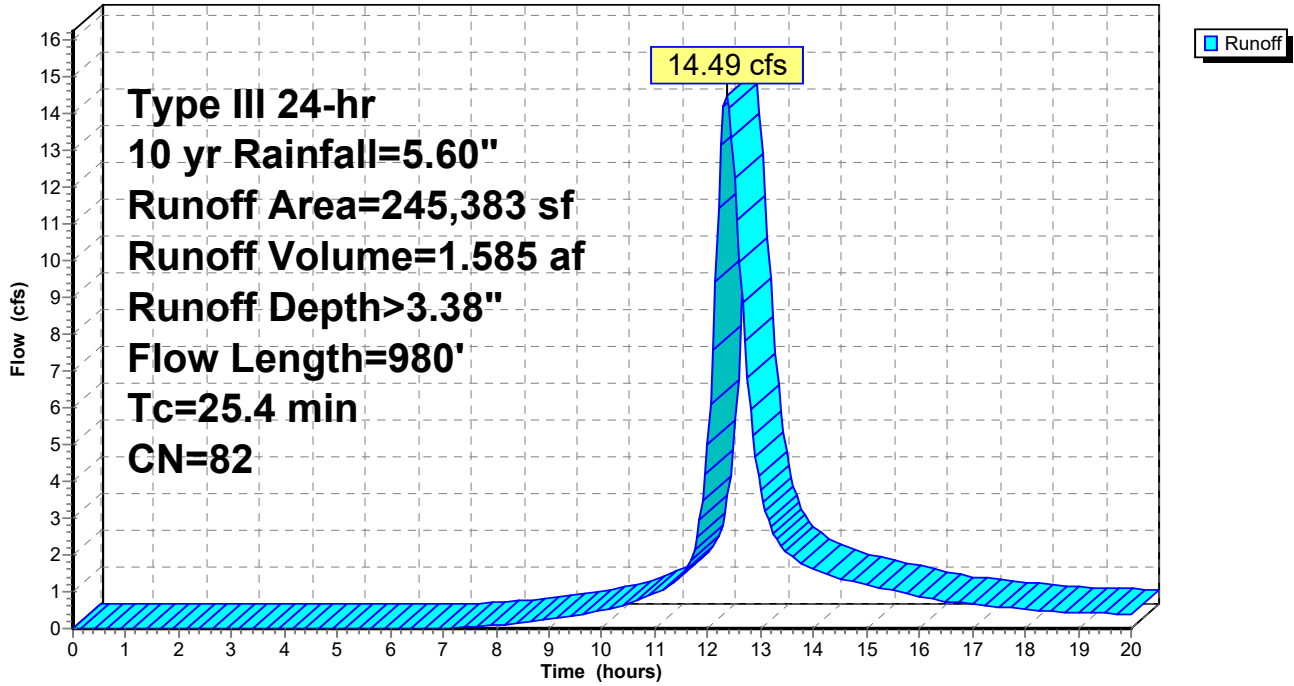
Subcatchment 2: PROPOSED Q TO BASIN 1

Hydrograph



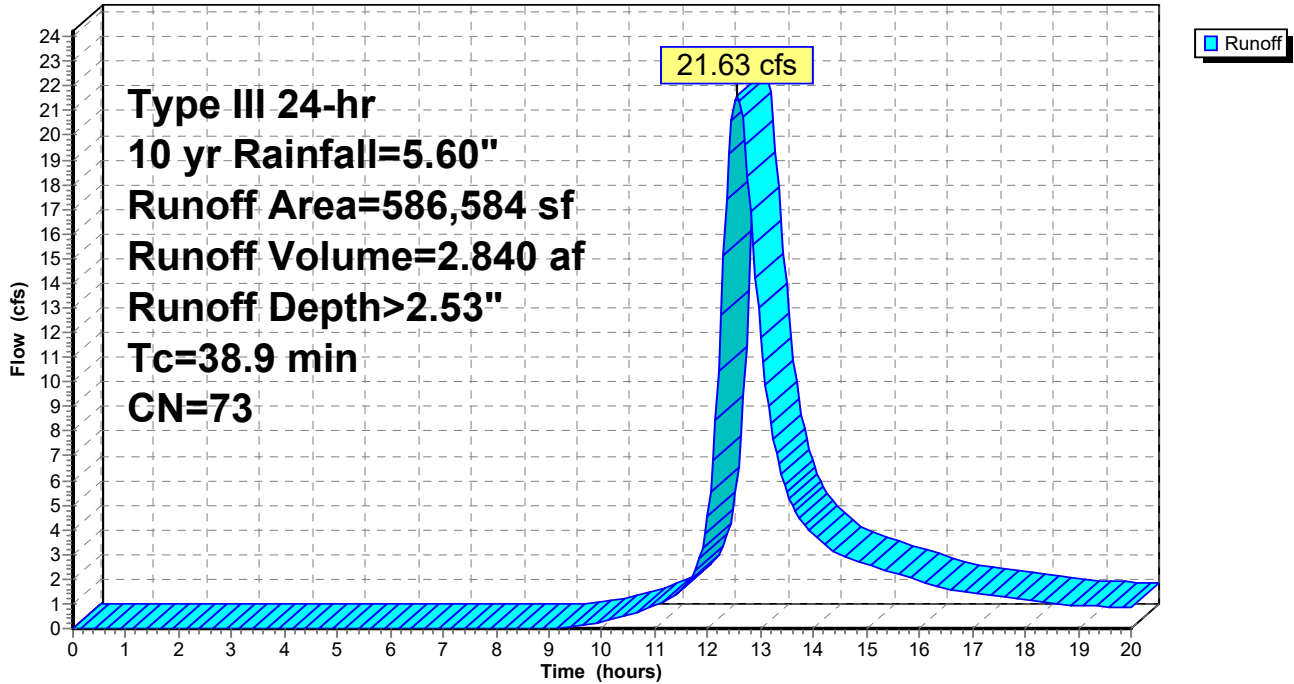
Subcatchment 4: PPROPOSED Q TO BASIN 2

Hydrograph



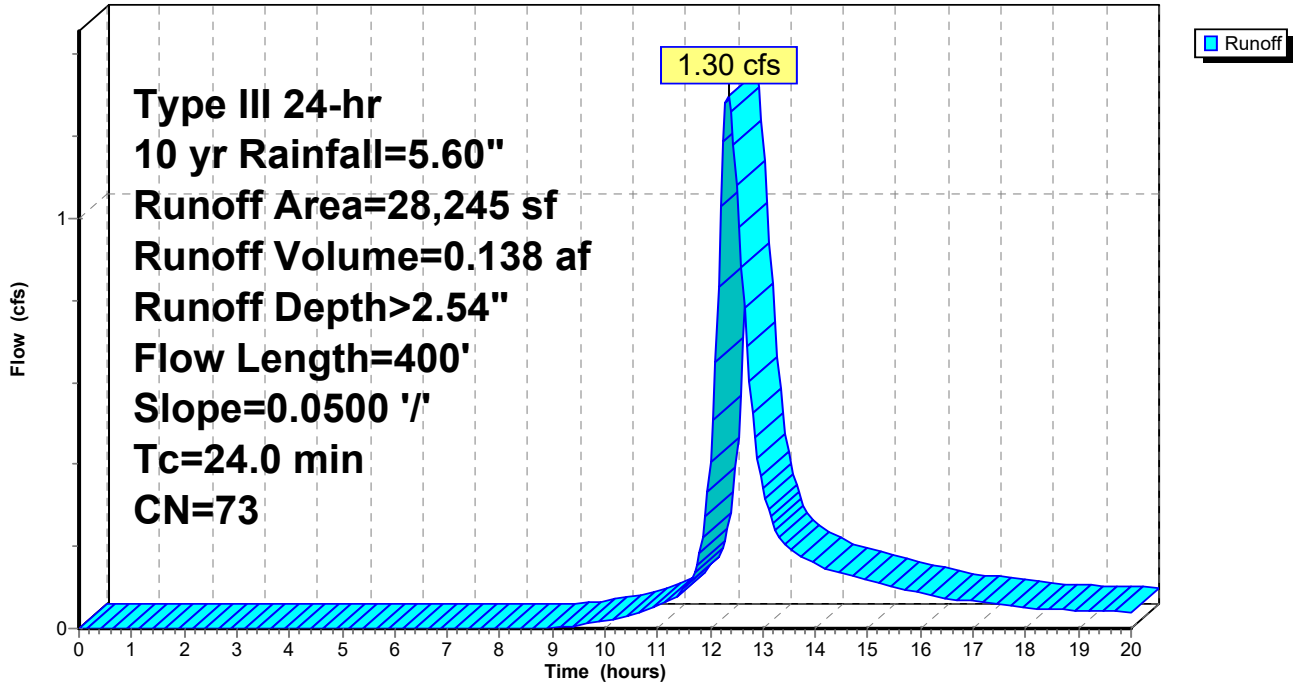
Subcatchment 6: Q BYPASS AREA A

Hydrograph



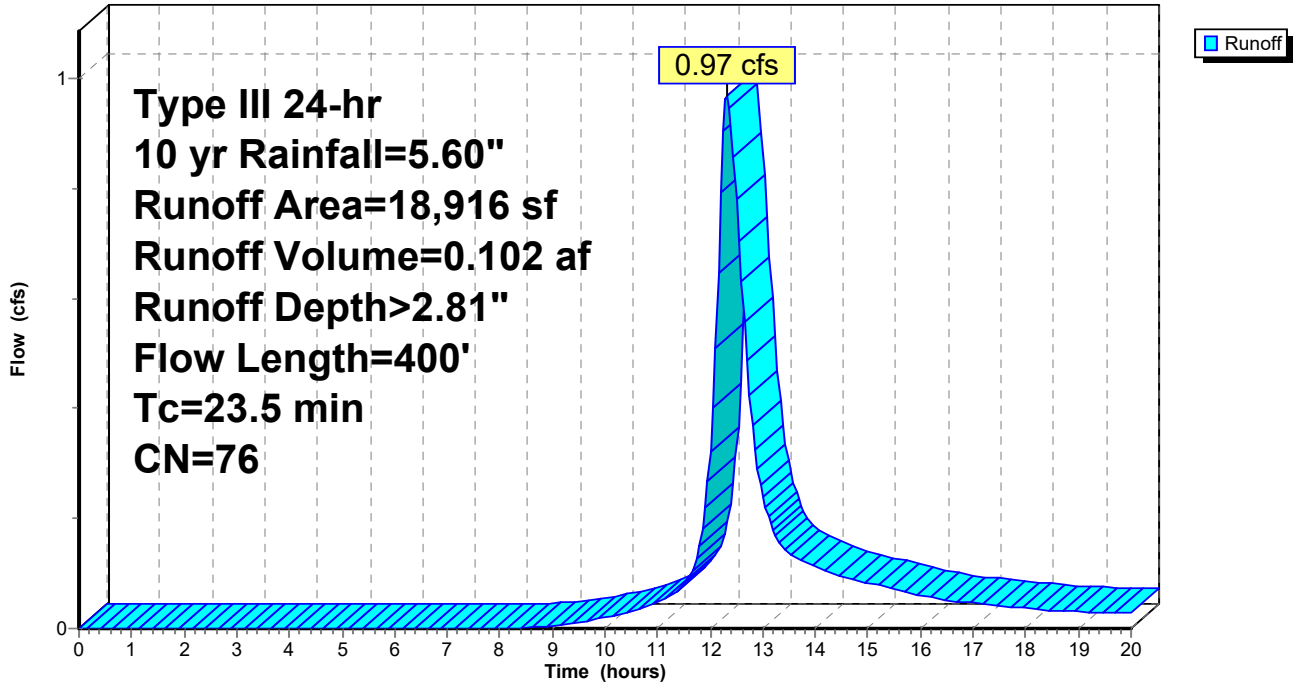
Subcatchment 8: EXIST Q DOT

Hydrograph



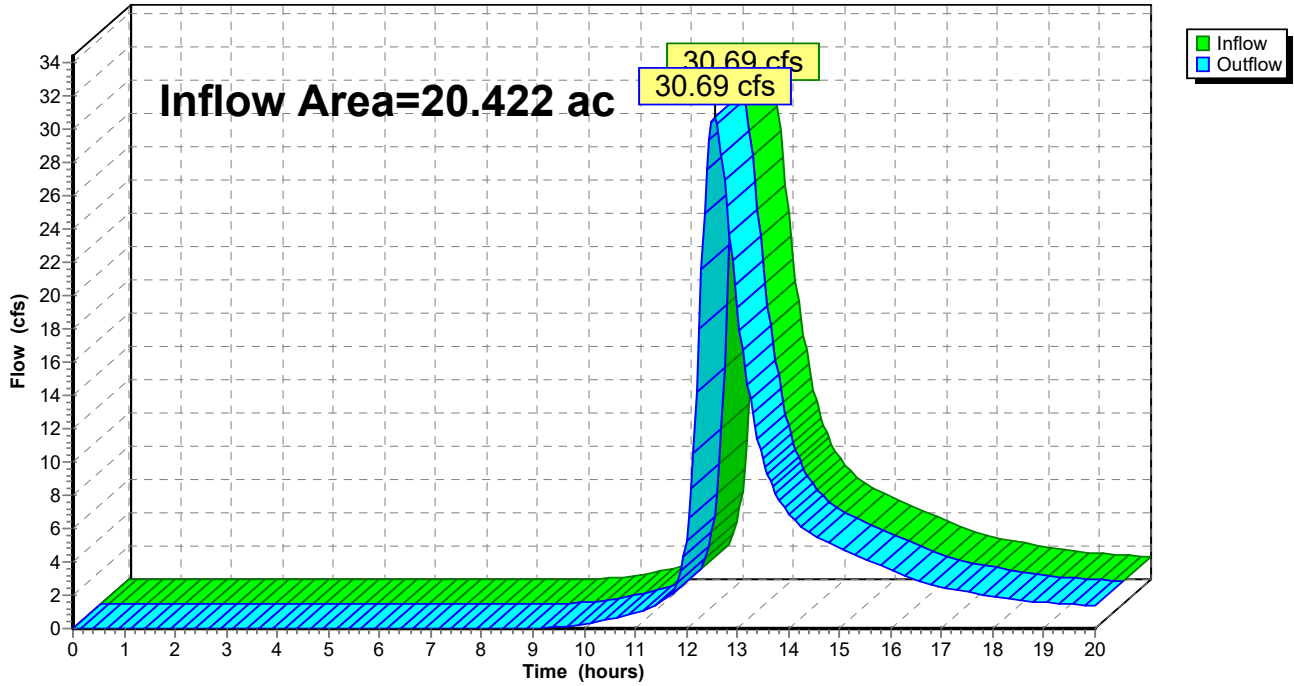
Subcatchment 9: PROPOSED Q DOT

Hydrograph



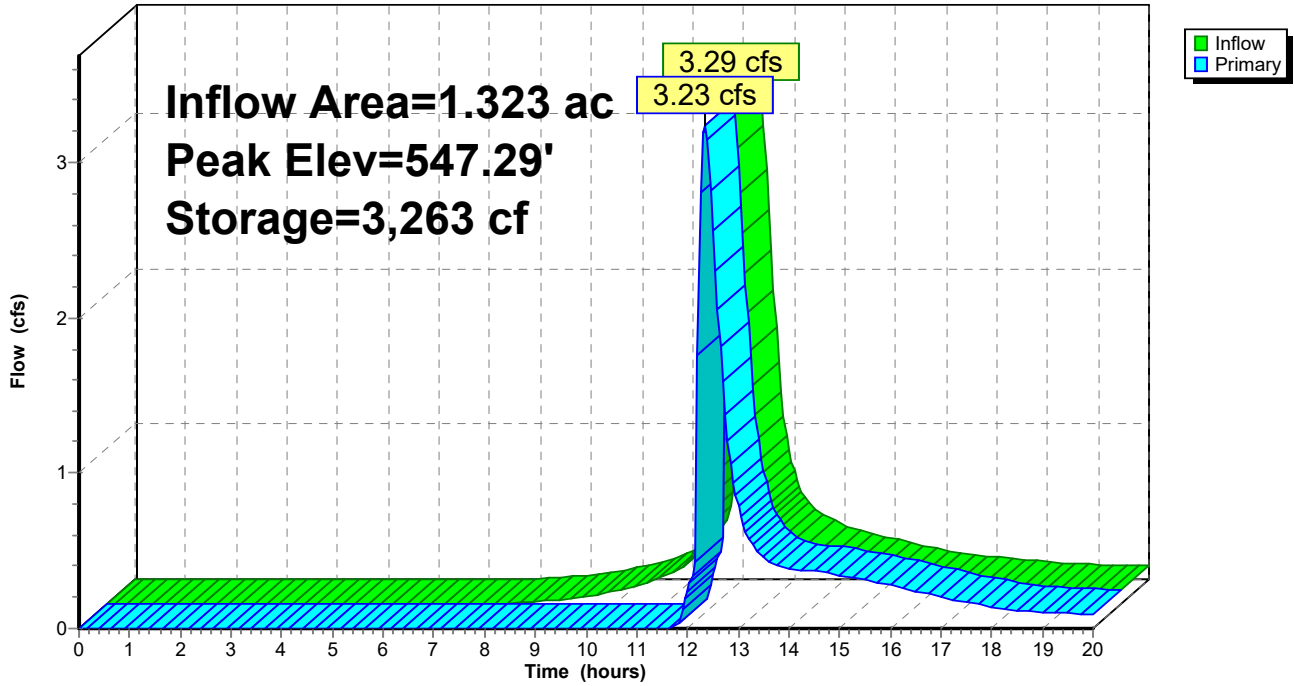
Reach 7: TOTAL PROPOSED Q

Hydrograph



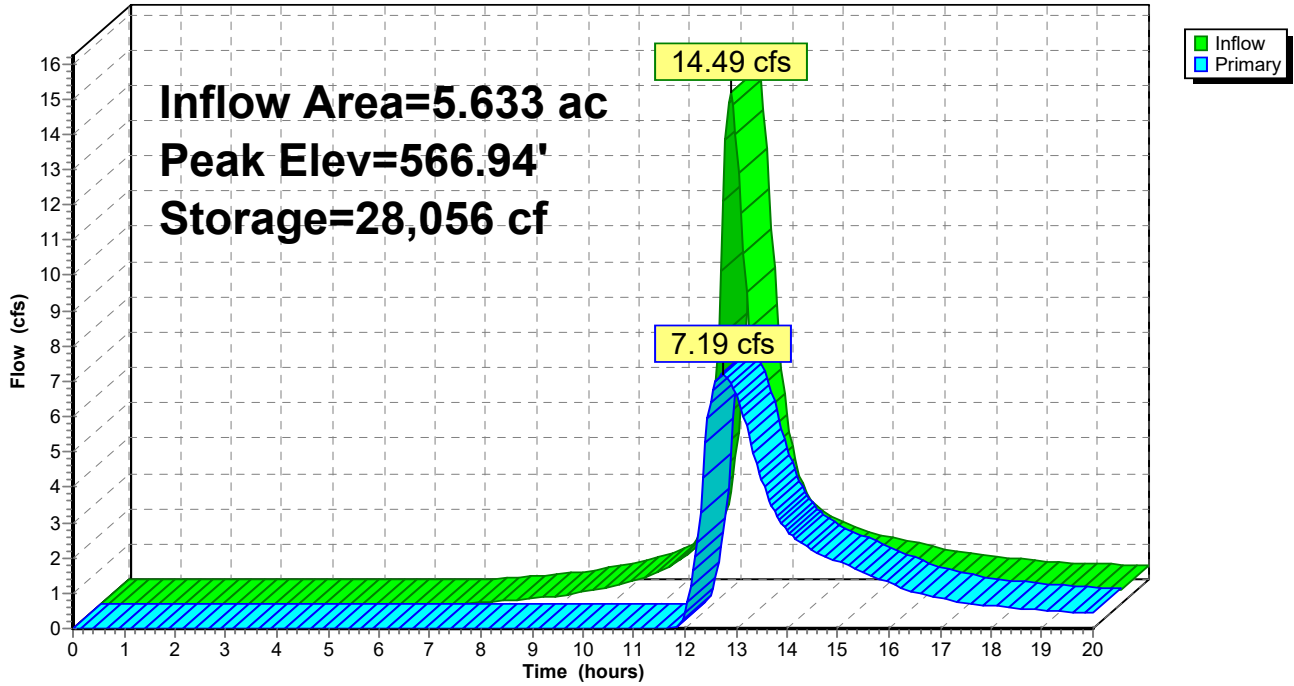
Pond 3: WQ BASIN #1

Hydrograph



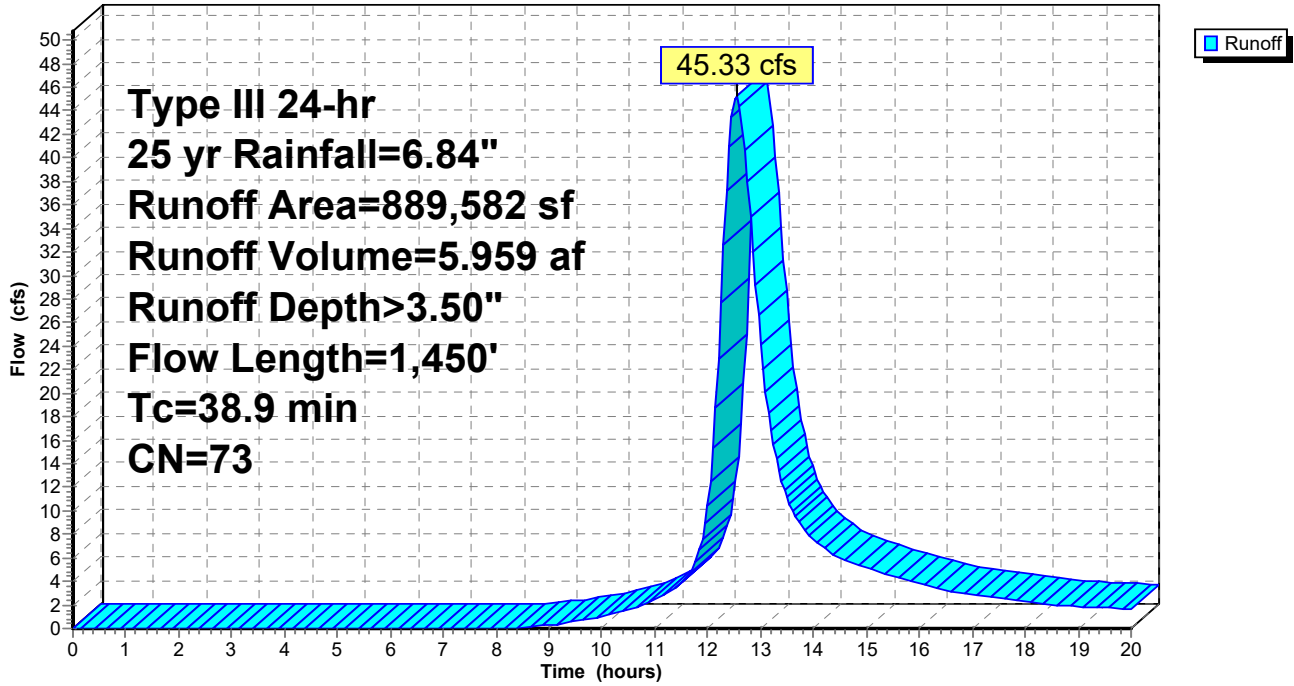
Pond 5: WQ BASIN 2

Hydrograph



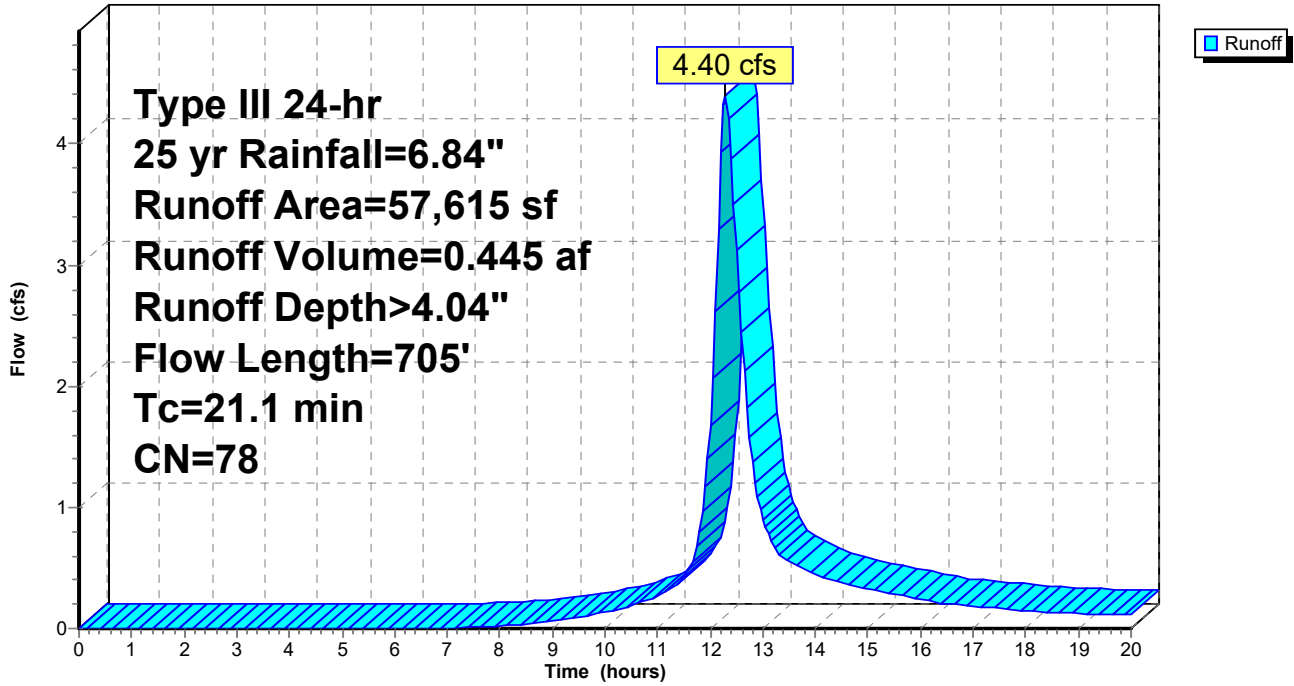
Subcatchment 1: EXISTING Q

Hydrograph



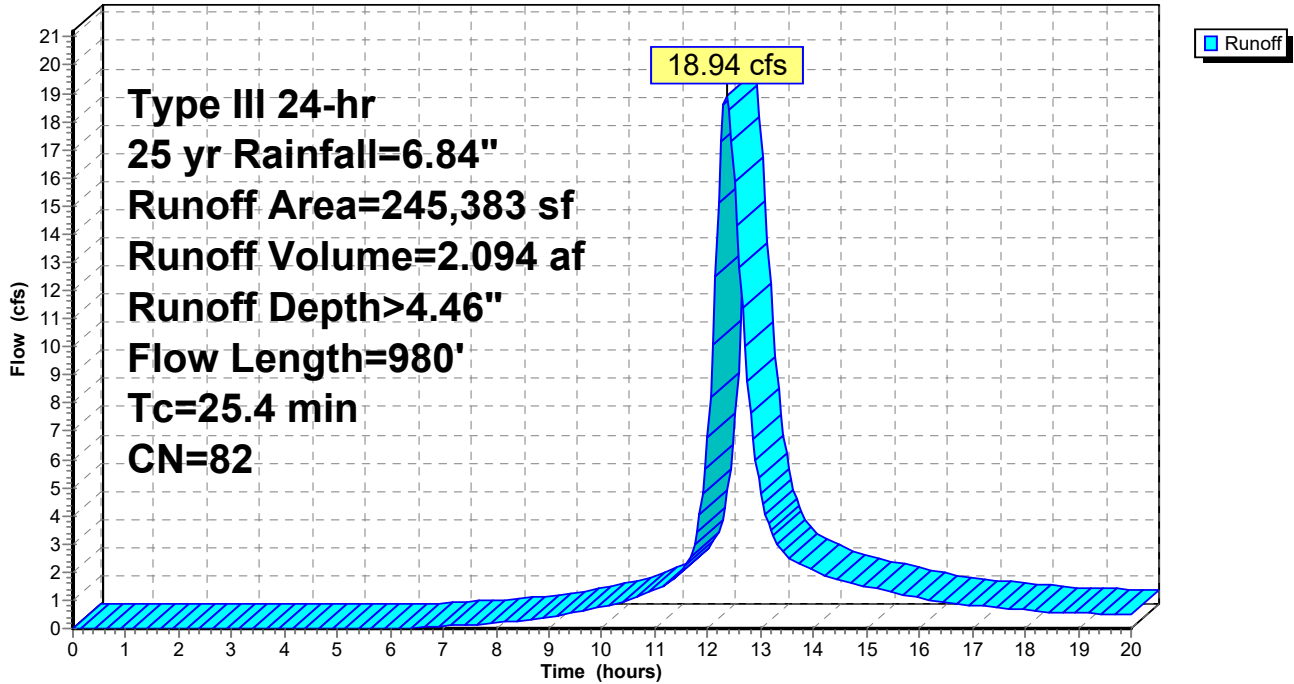
Subcatchment 2: PROPOSED Q TO BASIN 1

Hydrograph



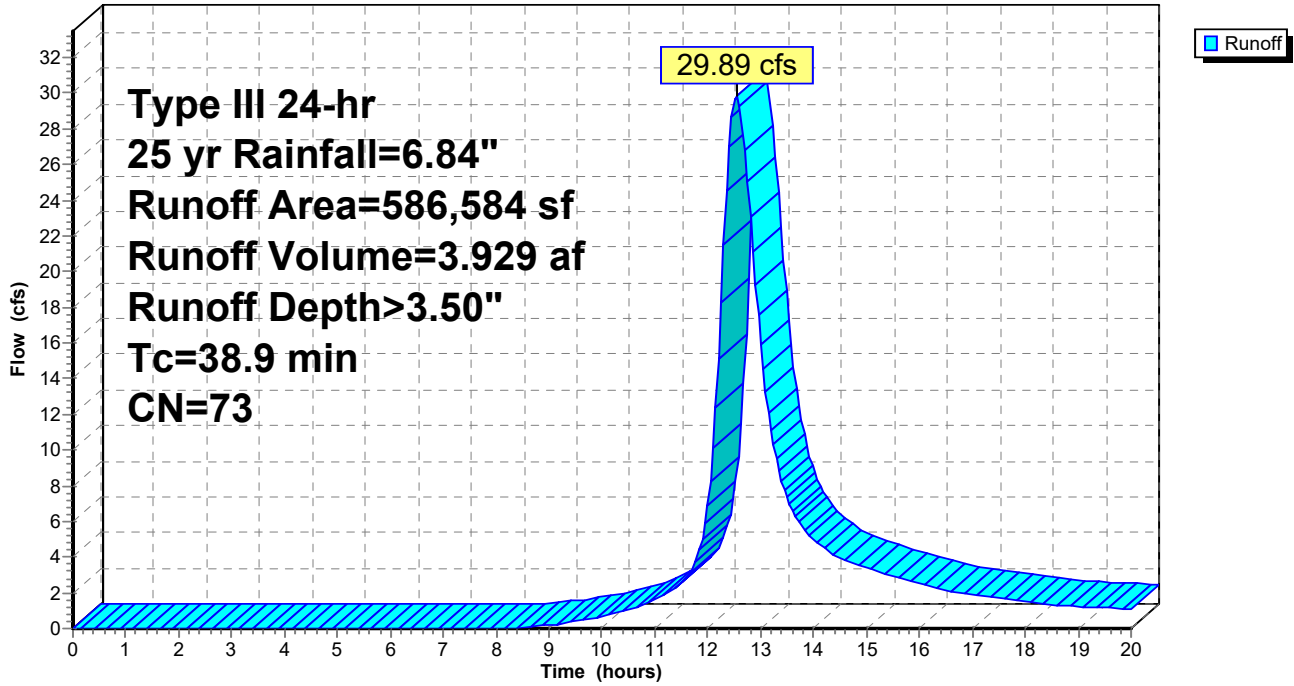
Subcatchment 4: PPROPOSED Q TO BASIN 2

Hydrograph



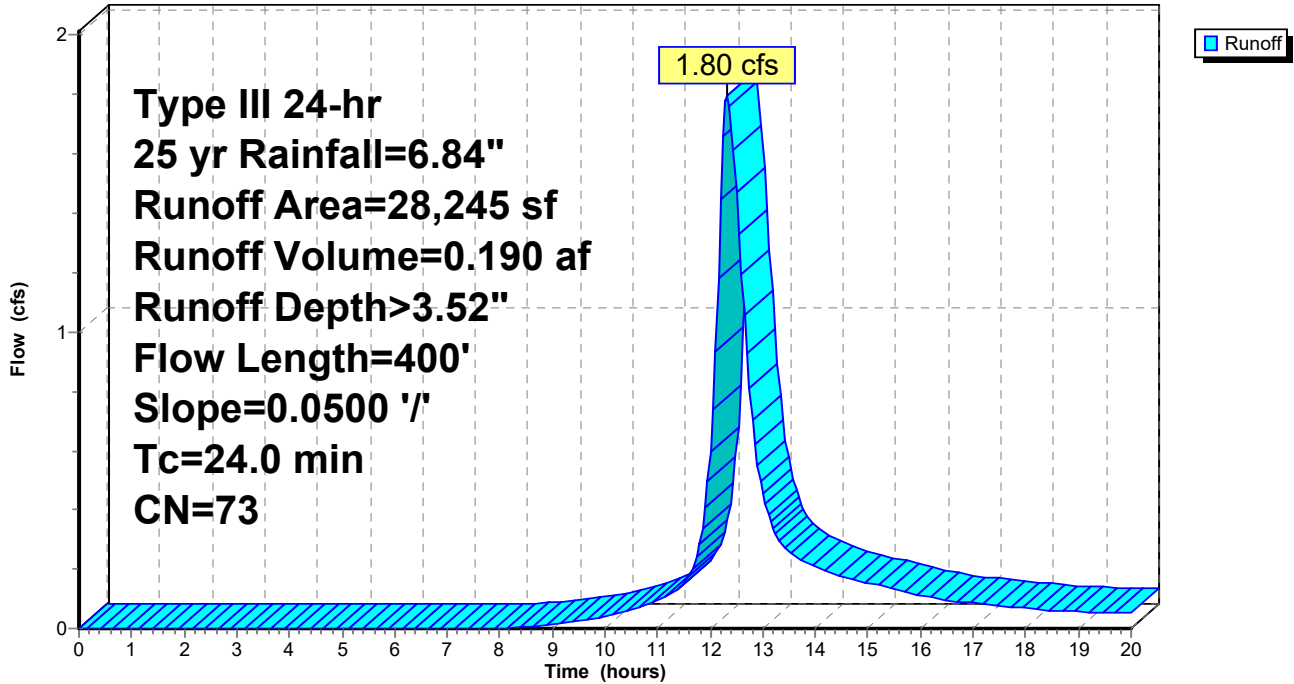
Subcatchment 6: Q BYPASS AREA A

Hydrograph



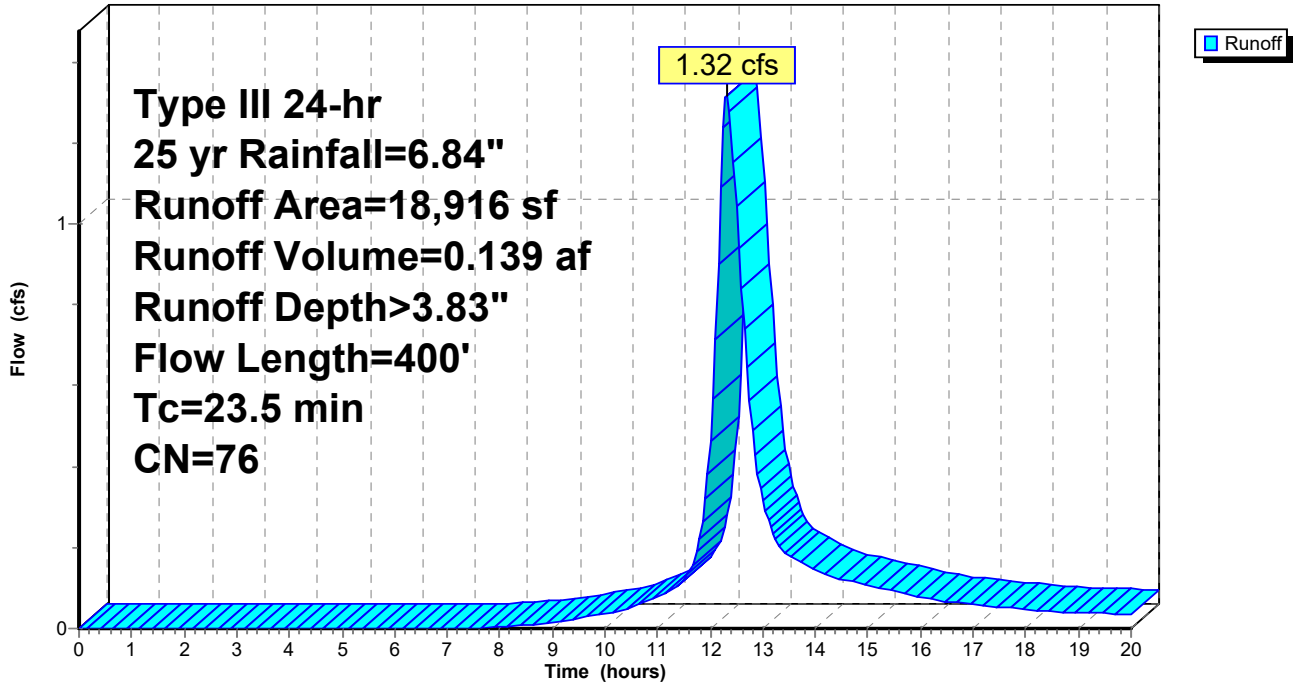
Subcatchment 8: EXIST Q DOT

Hydrograph



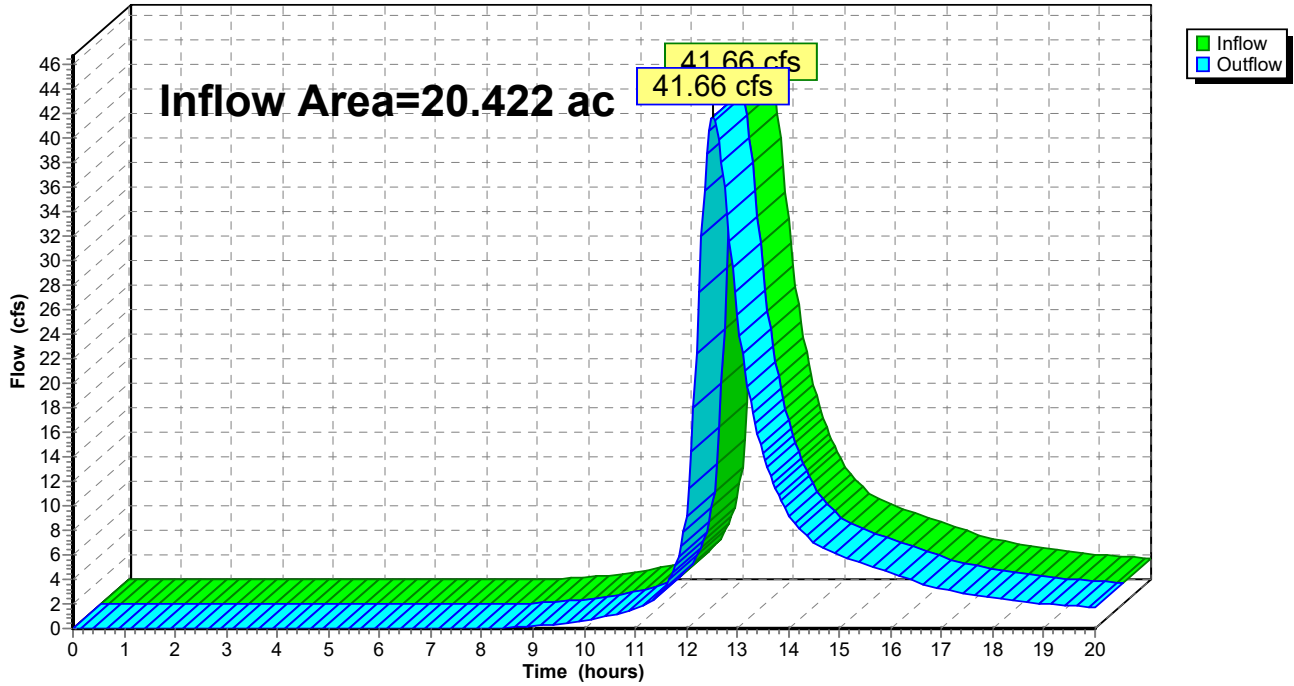
Subcatchment 9: PROPOSED Q DOT

Hydrograph



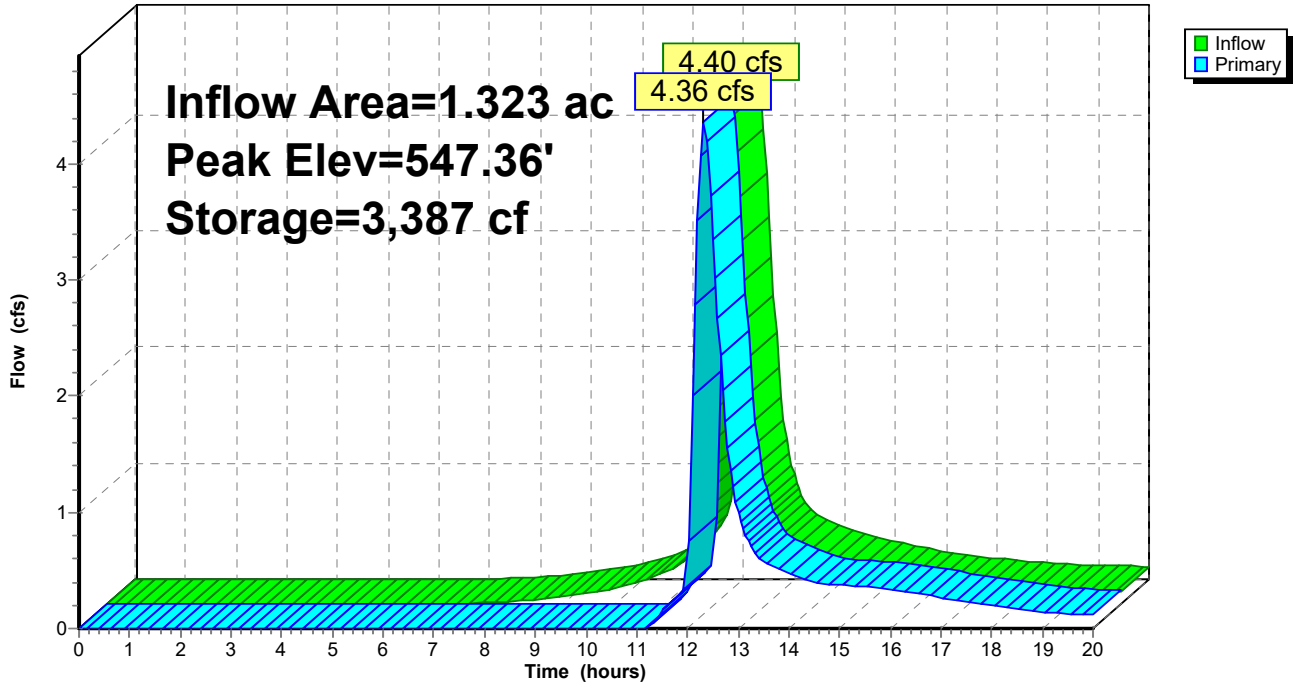
Reach 7: TOTAL PROPOSED Q

Hydrograph



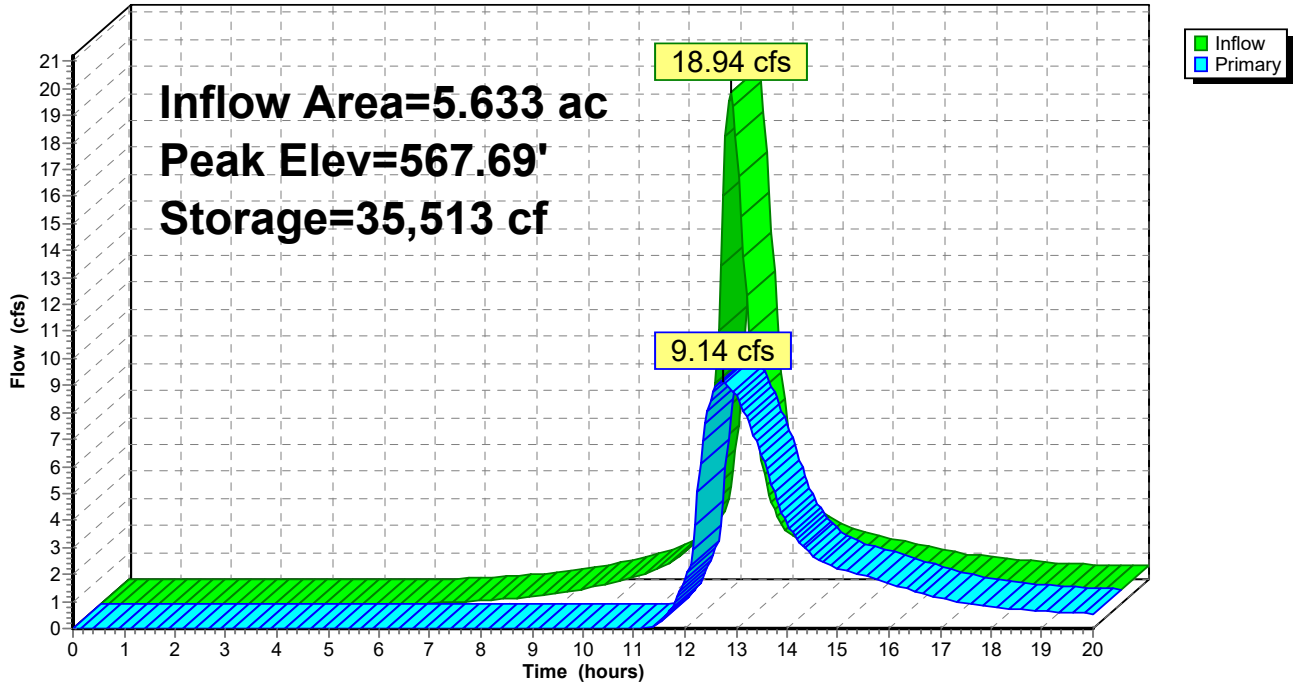
Pond 3: WQ BASIN #1

Hydrograph



Pond 5: WQ BASIN 2

Hydrograph





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NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CT

Data description

Data type: Units: Time series type:

Select location

1) Manually:

a) By location (decimal degrees, use "-" for S and W): Latitude: Longitude:

b) By station (list of CT stations):

c) By address

2) Use map (if ESRI interactive map is not loading, try adding the host: <https://is.arcais.com/> to the firewall, or contact us at hdsc.questions@noaa.gov):

a) Select location
Move crosshair or double click

b) Click on station icon
 Show stations on map

Location information:
Name: Monroe, Connecticut, USA*
Latitude: 41.3637°
Longitude: -73.1918°
Elevation: 527.5 ft **

* Source: ESRI Maps
 ** Source: USGS

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES
 WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
 NOAA Atlas 14, Volume 10, Version 3

PF tabular

PF graphical

Supplementary information

Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.365 (0.277-0.468)	0.427 (0.324-0.549)	0.529 (0.400-0.682)	0.614 (0.462-0.795)	0.731 (0.535-0.979)	0.818 (0.589-1.12)	0.910 (0.639-1.28)	1.01 (0.678-1.45)	1.16 (0.753-1.71)	1.29 (0.815-1.92)
10-min	0.517 (0.392-0.664)	0.605 (0.459-0.778)	0.750 (0.567-0.965)	0.870 (0.654-1.13)	1.03 (0.758-1.39)	1.16 (0.834-1.58)	1.29 (0.905-1.81)	1.44 (0.961-2.05)	1.65 (1.07-2.42)	1.82 (1.15-2.72)
15-min	0.608 (0.461-0.781)	0.712 (0.540-0.915)	0.882 (0.667-1.14)	1.02 (0.770-1.33)	1.22 (0.891-1.63)	1.36 (0.982-1.86)	1.52 (1.07-2.13)	1.69 (1.13-2.41)	1.94 (1.25-2.85)	2.15 (1.36-3.20)
30-min	0.842 (0.639-1.08)	0.986 (0.748-1.27)	1.22 (0.923-1.57)	1.42 (1.07-1.83)	1.69 (1.23-2.25)	1.89 (1.36-2.57)	2.10 (1.47-2.93)	2.33 (1.56-3.32)	2.64 (1.71-3.87)	2.89 (1.83-4.31)
60-min	1.08 (0.817-1.38)	1.26 (0.956-1.62)	1.56 (1.18-2.01)	1.81 (1.36-2.34)	2.15 (1.57-2.88)	2.42 (1.73-3.28)	2.68 (1.87-3.74)	2.96 (1.98-4.22)	3.34 (2.16-4.90)	3.63 (2.30-5.42)
2-hr	1.40 (1.07-1.78)	1.64 (1.25-2.09)	2.03 (1.55-2.60)	2.36 (1.79-3.04)	2.81 (2.07-3.74)	3.15 (2.28-4.27)	3.51 (2.47-4.90)	3.91 (2.62-5.55)	4.49 (2.91-6.55)	4.96 (3.15-7.36)
3-hr	1.61 (1.23-2.05)	1.90 (1.45-2.41)	2.36 (1.80-3.01)	2.75 (2.09-3.52)	3.28 (2.43-4.36)	3.68 (2.68-4.98)	4.11 (2.91-5.74)	4.60 (3.09-6.50)	5.33 (3.46-7.75)	5.94 (3.78-8.78)
6-hr	2.03 (1.56-2.56)	2.41 (1.86-3.05)	3.04 (2.33-3.85)	3.56 (2.72-4.53)	4.28 (3.18-5.65)	4.81 (3.52-6.48)	5.38 (3.85-7.50)	6.06 (4.09-8.52)	7.09 (4.62-10.2)	7.96 (5.08-11.7)
12-hr	2.49	3.01	3.85	4.55	5.51	6.22	6.99	7.91	9.28	10.5

	(1.93-3.12)	(2.33-3.77)	(2.97-4.84)	(3.49-5.75)	(4.12-7.24)	(4.57-8.33)	(5.02-9.69)	(5.35-11.0)	(6.07-13.3)	(6.69-15.2)
24-hr	2.93 (2.29-3.65)	3.60 (2.81-4.49)	4.69 (3.64-5.86)	5.60 (4.32-7.02)	6.84 (5.15-8.95)	7.76 (5.74-10.4)	8.76 (6.34-12.1)	9.98 (6.78-13.8)	11.8 (7.76-16.9)	13.4 (8.62-19.5)
2-day	3.33 (2.62-4.12)	4.15 (3.26-5.14)	5.50 (4.30-6.82)	6.61 (5.14-8.24)	8.14 (6.18-10.6)	9.27 (6.92-12.3)	10.5 (7.69-14.5)	12.1 (8.23-16.6)	14.6 (9.57-20.6)	16.7 (10.8-24.1)
3-day	3.64 (2.86-4.48)	4.54 (3.57-5.59)	6.01 (4.72-7.43)	7.23 (5.64-8.98)	8.92 (6.79-11.6)	10.1 (7.60-13.5)	11.5 (8.46-15.9)	13.3 (9.05-18.2)	16.0 (10.6-22.6)	18.5 (11.9-26.4)
4-day	3.91 (3.09-4.81)	4.87 (3.84-5.99)	6.43 (5.06-7.92)	7.72 (6.04-9.56)	9.50 (7.25-12.3)	10.8 (8.11-14.3)	12.3 (9.02-16.9)	14.1 (9.64-19.3)	17.0 (11.2-23.9)	19.6 (12.6-27.9)
7-day	4.70 (3.73-5.74)	5.75 (4.56-7.03)	7.47 (5.90-9.16)	8.90 (6.99-11.0)	10.9 (8.31-13.9)	12.3 (9.25-16.1)	13.9 (10.2-18.9)	15.8 (10.9-21.6)	18.9 (12.5-26.4)	21.5 (13.9-30.5)
10-day	5.47 (4.36-6.66)	6.58 (5.24-8.02)	8.40 (6.66-10.3)	9.90 (7.81-12.1)	12.0 (9.17-15.3)	13.5 (10.2-17.6)	15.2 (11.1-20.4)	17.2 (11.8-23.2)	20.2 (13.4-28.1)	22.7 (14.7-32.2)
20-day	7.84 (6.28-9.47)	9.05 (7.24-10.9)	11.0 (8.80-13.4)	12.7 (10.1-15.4)	14.9 (11.5-18.8)	16.7 (12.5-21.3)	18.4 (13.4-24.3)	20.4 (14.1-27.4)	23.2 (15.5-32.0)	25.4 (16.5-35.7)
30-day	9.79 (7.87-11.8)	11.1 (8.89-13.3)	13.1 (10.5-15.9)	14.9 (11.8-18.0)	17.2 (13.3-21.6)	19.1 (14.3-24.2)	20.9 (15.2-27.3)	22.8 (15.9-30.5)	25.4 (17.0-35.0)	27.5 (17.9-38.4)
45-day	12.2 (9.83-14.6)	13.5 (10.9-16.2)	15.7 (12.6-18.9)	17.5 (14.0-21.2)	20.0 (15.4-24.9)	22.0 (16.5-27.7)	23.9 (17.3-30.8)	25.8 (18.0-34.3)	28.2 (18.9-38.6)	30.0 (19.6-41.7)
60-day	14.1 (11.4-16.9)	15.5 (12.6-18.6)	17.8 (14.3-21.4)	19.7 (15.8-23.7)	22.3 (17.2-27.6)	24.3 (18.3-30.5)	26.3 (19.1-33.7)	28.2 (19.7-37.3)	30.5 (20.5-41.6)	32.1 (21.0-44.6)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format:

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 Office of Water Prediction (OWP)
 1325 East West Highway
 Silver Spring, MD 20910
 Page Author: [HDSC webmaster](#)
 Page last modified: April 21, 2017

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PROJECT 1271 MONROE TURNPIKE

DATE 6/1/21 REV 061122

DRAINAGE CHART

LOCATION		AREA		C	TIME FLOW			I	Q		DESIGN			PROFILE				
from	to	inc	total		to in	pipe	total		incr.	total	pipe size	slope %	capacity full	length (ft)	drop (ft)	invert in	invert out	vel. (fps)
1	2	1.4	1.4	0.5	12	-	12	6.0		4.2	15"	0.7	4.8					
2	4	0.8																
	3	0.5	2.7	0.6	12	1	13	5.5		8.9	15"	3.5%	11.5					
4	6	0.5																
	5	0.2	3.4	0.6	13	1	14	5.4		11.0	15"	3.5	13.8					
6	7	0.2	3.6	0.6	14		15	5.3		11.4	18"	1.5	11.6					
3	2	0.5	0.5	0.6	10	-	10	6.3		1.9	12"	3.5	5.9					
5	4	0.2	0.2	0.7	6	-	6	7.2		1.0	12"	1.5	3.9					
14	13	0.9	0.9	0.6	10	-	10	6.4		3.4	15"	0.5	3.8					
13	10	0.1	1.0	0.6	10	1	11	6.3		3.8	15"	0.5	3.8					
11	12	4.9	4.9	0.35	17	-	17	6.0		10.3	18"	1.5	12.7	**				

DESIGNED FOR 25yr STORM PIPES HDPE ** DESIGNED FOR 100YR STORM

