Killingly Engineering Associates
Civil Engineering & Surveying

P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglengineering.com

July 5, 2022

Proposed Multi Family Condominium Development

Shane J. Pollock & Erin F. Mancuso
Louise Berry Drive
Brooklyn, CT

APPLICATION PACKAGE CONTENTS – Inland Wetlands Modification

1. Application fee: $110.00
   - Publication Fee $50.00
   - State Fee $60.00
2. 5- full sized sets of plans revised to: 6/17/2022
3. Inland Wetlands Application
4. CTDEEP Reporting Form
5. GIS Mapping
6. List of adjacent land owners including across the street
7. Soil Scientist Report
8. Planting recommendations
9. Web Soil Survey Map
10. Applicant's Certification
11. Applicant's Statement of Familiarity

INLAND WETLANDS & WATERCOURSES COMMISSION

RECEIVED
Date JUL 05 2022
By

TOWN OF BROOKLYN
CONECTICUT

IWWC-22-001
Application # W
Check # 10718

APPLICATION FOR INLAND WETLANDS PERMIT

Name of Applicant Shane Pollock Phone 860-888-3129
Mailing Address 101 Mackin Drive, Griswold, CT 06351
Applicants Interest in the Property Owner / Developer

Property Owner Shane Pollock & Erin F. Maniscuso Phone 860-888-3129
Mailing Address 101 Mackin Drive, Griswold, CT 06351

Name of Engineer/Surveyor Killingly Engineering Associates, LLC
Address P.O. Box 421, Killingly, CT 06241
Contact Person Normand Thibeault, JR, P.E Phone 860-779-7299 Fax

Name of Attorney Nicholas H Maniscuso
Address 116 Parum Road, Colchester, CT 06415
Phone 860-603-2258 Fax

Property location/Address Louise Berry Drive
Map # 33 Lot # 19 Zone R-30 Total Acres 13.497 Acres of Wetlands 2.33 AC

Purpose and Description of the Activity Construction of 50 Single-Family Condominium units with activity in the upland review

Wetlands Excavation and Fill:
Fill Proposed 0 Cubic Yds 0 Sq ft 0
Excavation Proposed 0 Cubic Yds 0 Sq ft 0
Location where material will be placed: On Site N/A Off Site N/A
Total Regulated Area altered: Sq ft Acres

Explain any alternatives that were considered Previous application was for 51 units and a single stormwater basin. One unit has been removed and a second stormwater basin added per town consultants review

Mitigation Measures if Required:
Wetlands or watercourses created: Cubic Yds 0 Sq ft 0 Acres 0

Is parcel located within 500ft of an adjoining Town? No

Is the activity located within the watershed of a water company as defined in CT General Statutes 25-32a?

No

REQUIREMENTS

- **Application Fee $** 50.00 **State Fee ($60.00)** 60.00
- Completion of DEP Reporting Form
- Compliance with the Inland Wetlands & Watercourses Regulations
- Three (30) copies of all materials required shall be submitted
- Pre application meeting with the Wetlands Agent is recommended to examine the scope of the activity
- Site Plan showing location of the wetlands (Commission may require a soil scientist to identify the wetlands), existing and proposed conditions
- Compliance with the 2002 Erosion & Sedimentation Control Manual
- If the proposed activity is deemed to be a "significant impact activity" a Public Hearing is required along with the following information:
  - Names and addresses of abutting property owners
  - Additional Information as contained in Article 6.17

Other applications if required:

Application to State of Connecticut DEP
Inland Water Resources Division
79 Elm St.
Hartford, Ct. 06106 1-860-424-3019

Department of the Army
Corps of Engineers
696 Virginia Road
Concord, Ma. 01742 1-860-343-4789

The owner and applicant hereby grant the Brooklyn Inland Wetlands and Watercourses Commission, the Board of Selectman, Authorized Agents of the Inland Wetlands and Watercourses Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Inland Wetlands and Watercourses Regulations of the Town of Brooklyn.

Applicant: Shane J Pollock Date 7-5-22

Owner: Shane J Pollock Date 7-5-22

*Note : All consulting fees shall be paid by the applicant

Revised 11-18-14

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions - one code only): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Brooklyn
   does this project cross municipal boundaries (check one)? yes ☐ no ☑
   if yes, list the other town(s) in which the activity is occurring (print name(s)): _____, _____
6. LOCATION (see instructions for information): USGS quad name: Brooklyn or number: 43
   subregional drainage basin number: 3711
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Shane Pollock
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Louise Berry Drive
   briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☑ description:
   Construction of 50 Single-Family Condominium Units
9. ACTIVITY *PURPOSE* CODE (see instructions - one code only): C
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 9, 12, 14, _____
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
    wetlands: 0 acres open water body: 0 acres stream: 0 linear feet
12. UPLAND AREA ALTERED (must provide acres): 6.9 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.26 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

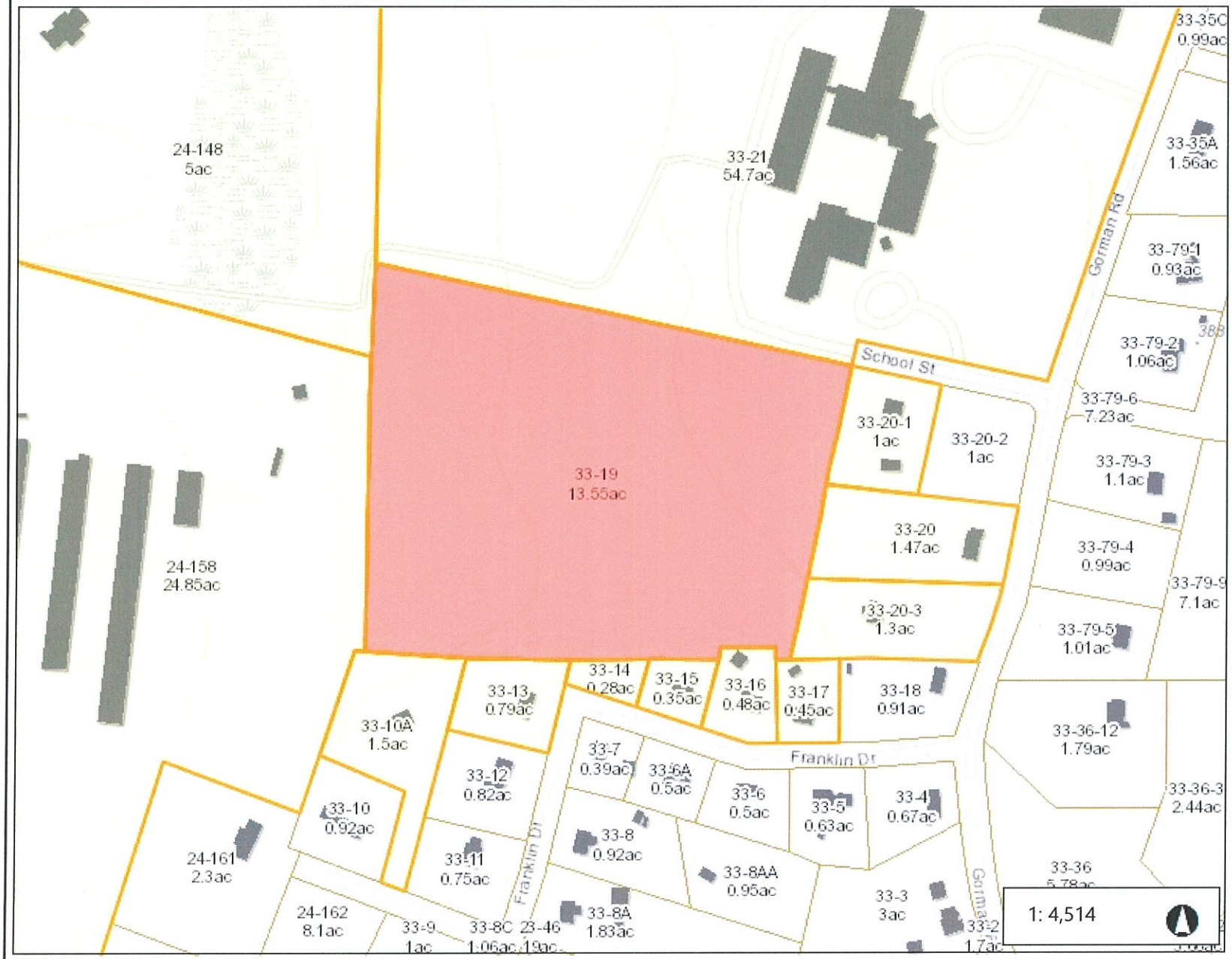
DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

neccog

Neccog GIS Site



Legend

- Town
- Buildings 2012
- Parcels

Notes

Pollock

0.1 0 0.07 0.1 Miles

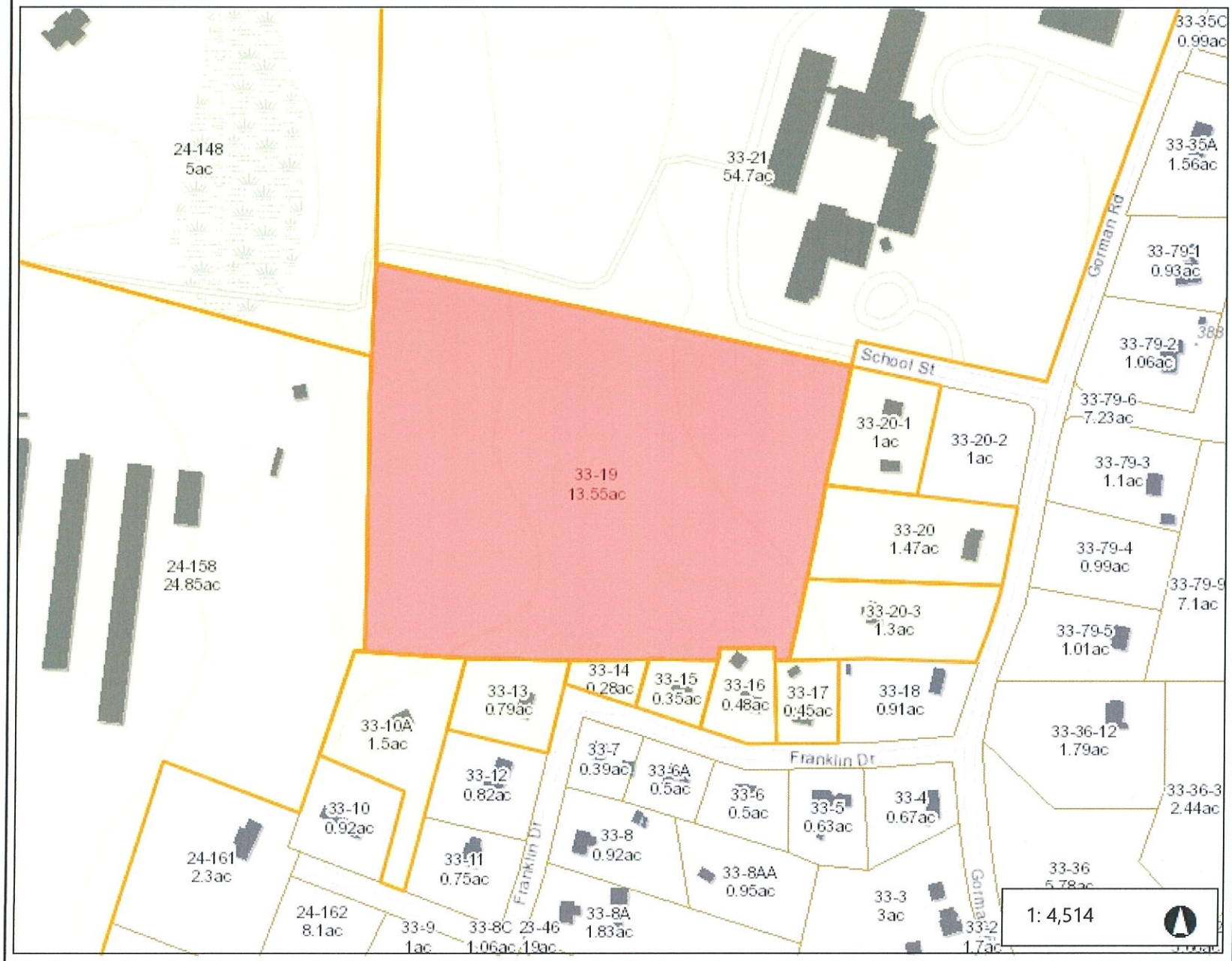
WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

neccog

Neccog GIS Site



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- Town
- Buildings 2012
- Parcels

Notes

Pollock

0.1 0 0.07 0.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

173 GORMAN RD
BROOKLYN CT 06234

273 MAIN ST
HAMPTON CT 06247

36 FRANKLIN DR
BROOKLYN CT 06234

P O BOX 351
BROOKLYN CT 06234-1933

20 FRANKLIN DR
BROOKLYN CT 06234

24 FRANKLIN DR
BROOKLYN CT 06234

68 FRANKLIN DR
BROOKLYN CT 06234

12 FRANKLIN DR
BROOKLYN CT 06234-1908

-
BROOKLYN CT 06234-2530

211 WAUREGAN RD
BROOKLYN CT 06234

101 MACKIN DR
GRISWOLD CT 06351

179 GORMAN RD
BROOKLYN CT 06234

44 CANTERBURY RD
BROOKLYN CT 06234

JOSEPH R. THEROUX
~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
PHONE 860-428-7992~ FAX 860-376-6842
P.O. BOX 32, VOLUNTOWN, CT. 06384
FORESTRY SERVICES ~ ENVIRONMENTAL IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE MONITORING
WETLAND FUNCTION AND VALUE ASSESSMENTS

5/10/2022

KILLINGLY ENGINEERING ASSOCIATES
P.O. BOX 421
DAYVILLE, CT. 06241

RE: TREE PLANTING RECOMMENDATIONS, POLLOCK PROPERTY, LOUISE BERRY DRIVE, BROOKLYN, CT.

DEAR MR. THIBEAULT,

AT YOUR REQUEST I HAVE INSPECTED THE ABOVE REFERENCED PROPERTY AND THE SITE PLAN DEPICTING THE PROPOSED DEVELOPMENT FOR THE PURPOSES OF MAKING RECOMMENDATIONS ON TREE SPECIES SUITABLE FOR THE SITE.

IN THE SOUTHERN PORTION OF THE PROPERTY WHERE IT WAS HEAVILY LOGGED AND THE OVERSTORY WAS REMOVED, IN AND ADJACENT TO THE WETLANDS, I WOULD RECOMMEND PLANTING WHITE PINE SEEDLINGS, (PINUS STROBUS). THESE SEEDLINGS SHOULD BE 3-YEAR-OLD STOCK, APPROX. 15 TO 18 INCHES IN HEIGHT.
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AS WITH ANY PLANTINGS, THE PINES AND ARBORVITAES SHOULD BE PLANTED IN SPRING OR FALL TO MINIMIZE MORTALITY AND SHOULD BE MONITORED FOR SURVIVAL THE FIRST YEAR.

IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING MY RECOMMENDATIONS, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

JOSEPH R. THEROUX
CERTIFIED SOIL SCIENTIST
MEMBER SSSSNE, NSCSS.

MONITORING

JOSEPH R. THEROUX
~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
PHONE 860-428-7992~ FAX 860-376-6842
P.O. BOX 32, VOLUNTOWN, CT. 06384
FORESTRY SERVICES ~ WETLAND IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE

WETLAND FUNCTION & VALUE ASSESSMENTS

9/23/20

Killingly Engineering Associates
P.O. Box 421
Dayville, CT. 06241

Re: Wetland function/value and impact assessment report for the proposed site development for Shane Pollock, Louise Berry Drive, Brooklyn, Connecticut.

Dear Mr. Thibeault,

At your request, I have reviewed the site plans entitled: "PROPOSED MULTI- FAMILY DEVELOPMENT, LOUISE BERRY DRIVE BROOKLYN, CONNECTICUT. PREPARED FOR SHANE POLLOCK, dated April 23, 2020, revised to August 24, 2020 and the above referenced property for the purposes of assessing the wetland functions and values and potential impacts to the inland wetlands and watercourses in proximity to the proposed housing development.

The wetland function and value assessment was conducted on 9/22/2020.

Existing Conditions

The property is 13.497 acres in size and is located on the south side of Louise Berry Drive, in Brooklyn, CT.

The majority of the parcel is comprised of uplands, with gentle to moderate slopes and gravelly, well drained soils. The southern portion of the property is occupied by a large palustrine forested/scrub-shrub wetland & watercourse complex and adjacent forested uplands along the southern property line.

Upland Review Areas

The 125 foot upland review area around the delineated forested/scrub-shrub wetland/watercourse is vegetated in the overstory with a mix of white pine and mixed hardwoods in the sawtimber and polewood size classes. The mixed hardwoods include white, black and scarlet oaks, hickory, black birch and red maple.

The site was heavily logged several years ago resulting in the removal of the majority of the overstory. This increase in light has released the understory saplings, shrub and herbaceous species resulting in a very dense understory, especially in and adjacent to the wetlands.

This densely vegetated understory is comprised of polewood and saplings in these species as well as shrub species such as, spicebush, winterberry, Japanese barberry, multiflora rose and highbush blueberry. Herbaceous vegetation includes numerous fern species, goldenrod, black raspberry and miscellaneous grasses.

Wetlands

A palustrine forested/scrub-shrub wetland with 2 watercourses were delineated in the southern and eastern portions of the property. (See wetland delineation report).

One intermittent watercourse flows to the south along the eastern property boundary. The only source of hydrology for the watercourse is from storm water discharges from the impervious surfaces associated with the school, and from Louise Berry Drive.

The other watercourse, (Anderson Brook), flows onto the property in the southeast property corner, and joins with the eastern watercourse. It then flows to the west off the parcel along the western property line. Storm water discharges from Franklin Drive enter the wetlands and watercourse on the southern property line.

The wetlands and watercourses were inundated on the date of the delineation, (12/28/15 and 5/4/20). On the date of the assessment, (9/22/2020), the wetlands were not inundated nor were the watercourses flowing, however a few small pockets were inundated within the watercourse, due to perched water trapped in depressions.

It should also be noted that floodplain soils were found adjacent to Anderson Brook which flows to the west off the parcel.

The majority of this wetland/watercourse is densely vegetated with red maple, white oak, white ash and elm in the overstory, and in the understory saplings and typical wetland shrub species such as highbush blueberry, speckled alder, arrowwood, sweet pepperbush, winterberry and spicebush. Other species included Japanese barberry, multiflora rose, grapevines and bittersweet.

Herbaceous vegetation included sphagnum moss, sensitive, Christmas, interrupted, hay scented, lady & cinnamon ferns, black raspberry, sedges, rushes, skunk cabbage, goldenrod, jewelweed and misc. grasses.

Wildlife tracks/sign found and directly observed in and adjacent to the wetland/watercourse included mammals and bird species such as: white tailed deer, eastern coyote, red fox, raccoon gray & red squirrels, red tailed hawk, American crow, red wing blackbird, and numerous songbird species.

Amphibians found included green and pickerel frogs. Undoubtedly, this wetland complex serves as habitat to numerous reptile and amphibian species.

I am uncertain if a fish population exists within Anderson Brook, due to its shallow average depths and status as intermittent. I do not believe it is possible for fish to inhabit the eastern intermittent watercourse due to its steep, rocky slope, intermittent nature and poor water quality due to the untreated, non-attenuated storm water discharges that severely erode the stream channel during significant storm events.

Wetland Functions and Values

The forested/scrub-shrub wetland and watercourse(s), were inspected to determine wetland functions and values utilizing the Army Corps. Of Engineers methodology as outlined in "The Highway Methodology Workbook Supplement".

This methodology recognizes 8 separate wetland functions: groundwater recharge/discharge, floodflow alteration/storage, fish/shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization and wildlife habitat. The 4 wetland values include: recreational value, educational/scientific value, uniqueness/heritage value and threatened/endangered species habitat.

For each wetland function or value to be determined, 2 to 31 different considerations/or qualifiers are considered as rationale to apply or eliminate that specific function or value.

Palustrine forested/scrub-shrub wetland & Anderson Brook functions:

The following is a list of the wetland functions exhibited by this wetland/watercourse and their descriptions:

Ground water recharge: Ground water recharge function is possible due to the perched water table being trapped in small inundated pockets within the wetlands and slowly infiltrating during dry season. Anderson Brook stream flows off the property diminishes this function.

Sediment/toxicant retention: Dense herbaceous vegetation, shrubs and flat topography in the wetlands can effectively trap sediments/toxicants from surface flows from the adjacent topography. Although with no current sources of sediments or toxicants present, this wetland has little opportunity to provide this function.

Nutrient removal/retention: Herbaceous and shrub vegetation in the wetlands can effectively trap and utilize potential nutrients before reaching watercourses. Nitrogen fixing bacteria in wetland soils also trap nitrogen. Although with no current sources of nutrients present, this wetland has little opportunity to provide this function.

Production export: numerous tree, shrub and herbaceous plant species in the wetlands provide food, berries and seeds for wildlife. Invertebrates and amphibians provide food for birds and mammals.

Sediment and shoreline stabilization: Roots from herbaceous grasses and plants, shrub species and trees found in wetlands adjacent to the watercourses help bind and stabilize soils which helps prevent erosion along steeper edges of wetlands and streambanks.

Wildlife habitat: Numerous amphibians, reptile, mammal, and bird species inhabit this wetland and watercourse complex. The wetland and upland riparian zones adjacent to the wetland serve as wildlife habitat. Wildlife habitat is the primary function of this wetland.

This wetland did not exhibit the wetland functions of fish habitat nor floodflow alteration due to the lack of significant deep-water habitat areas capable of sustaining fish or storing flood waters.

Palustrine forested scrub-shrub wetland & Anderson Brook values

The following wetland values were exhibited by this wetland/watercourse:

Recreation: This wetland/watercourse complex holds the potential for active or passive recreational opportunities such as hiking, hunting or viewing of wildlife, although with no public access on this property, this wetland has little opportunity to provide this value.

Educational/scientific value: this wetland/watercourse is relatively undisturbed, contains multiple wetland classes, and is considered as valuable wildlife habitat, although with no public access on this property, this wetland has little opportunity to provide this value.

Uniqueness/heritage value: this wetland/watercourse serves an important role in the ecological system of the area, it is a typical wetland class for the area, and serves as valuable wildlife habitat.

Visual/aesthetic value: the wetland/watercourse is visible from multiple viewing locations due to its position in the landscape, it contains a diversity of vegetation that turns vibrant colors during different seasons, it is considered valuable wildlife habitat, and is not significantly disturbed.

This wetland/watercourse did not exhibit the value of threatened/endangered species habitat as the site was not shown within the shaded areas on the current natural diversity database maps.

Potential wetland impacts

The project plans and site were reviewed to assess the potential impacts to the wetlands from the proposed parking area expansion.

On this parcel, a 51-unit development is proposed with an access road/cul de sac, utilities, water, sanitary sewer & storm water discharge/treatment systems.

Along the southern limits of the development, a 3:1 slope or less is proposed as shown on the site plan.

The clearing limits and E&S measures shown on the plans vary from approx. 120 feet in width to immediately adjacent to the wetlands.

The topsoil stockpile is shown a considerable distance from the wetlands and silt fencing is shown along its downslope perimeter.

A two-bay grassed storm water basin is proposed to remove sediments and attenuate storm water flows before discharge.

E&S Measures:

The submitted project plans show the proposed E&S measures around the perimeter of the clearing limits adjacent to the wetlands as silt fencing.

It should be noted that the proposed storm water treatment basin and swale are proposed to be utilized as a temporary sediment basin during construction to prevent potential sediment discharges from reaching the wetlands.

Jute netting is proposed to help hold and establish vegetation on steeper slopes.

It would be my recommendation that the E&S measures be installed as soon as possible after the initial timber cutting/land clearing and before the stumping and topsoil removal operation. It is during this phase where the most likely opportunity will occur for erosion and sedimentation. In the northeast area the existing slopes adjacent to the wetlands/watercourse are moderate, and the excavation, filling and grading are proposed directly adjacent to the wetlands.

Along the portions of the clearing limits within 75 feet of the wetlands, I would recommend either super silt fencing or silt fencing backed by staked hay bales should be proposed and implemented. The silt fencing will also prevent reptiles and amphibians from entering the development areas.

Silt fencing should be shown along wetland flags WF-37 to WF-39 for the excavation/installation of the rip rap level spreader and pipe.

I would also recommend that E&S inspections be conducted on a frequent basis during the land clearing/stumping/topsoil stripping phases, and prior to significant storm events.

Direct wetland impacts:

No direct wetland or watercourse disturbance is proposed.

Potential short-term impacts:

The potential short-term impacts associated with the land clearing, stumping, top soil stripping and construction would be limited to potential sediment discharges during significant storm events.

Provided that the proposed/recommended E&S measures/inspections are correctly implemented and maintained throughout the project timeframe, the disturbance directly adjacent to the wetlands will not significantly impact the wetlands or their existing functions due to erosion and sedimentation. Once the top soils are removed, the well-drained, sandy/gravelly soils will allow for good infiltration of storm water runoff both pre and post construction.

The quick and permanent establishment of vegetation in the disturbed areas is crucial to the prevention of erosion. To minimize the potential for these impacts, E&S control measures have been incorporated into the project plans on sheet 7 of 9.

Potential long-term impacts:

Wetland hydrology

I see no direct or long-term impacts to the wetland/watercourse hydrology as a result of the proposed development, or storm water treatment basin. The storm water associated with the access drives, parking areas and the impervious surfaces, (roof areas), will be a significant input to the existing hydrology, through some minor overland flow, but mostly through the storm water basin, impervious grass & rip rap swale, as ground water recharge or as direct discharge during significant storm events after treatment. It is my opinion that these inputs from the impervious surfaces will augment the existing hydrology.

Currently, the storm water associated with the school storm water system, Louise Berry Drive and Franklin Drive and ground water discharge are all inputs into the hydrology of Anderson Brook and the wetlands. These inputs will not change as a result of the construction of the development.

It should be noted that currently the sources of hydrology for the wetlands/watercourses are ground water, off site stream and storm water flows, minor overland storm water & precipitation flows and a small measure of direct infiltration through the well-drained gravelly soils within the upland areas adjacent to the wetlands.

Water quality:

Due to the incorporation of the paved parking surfaces, rip rap and grass lined water swales, the 2-bay grassed storm water treatment basin, rain garden, and some direct infiltration of storm water in the well-drained, sandy, gravelly soils, I see no significant or adverse impacts to the existing water quality of the wetlands or Anderson Brook from storm water discharges.

Adjacent upland wildlife habitat

Potential long-term impacts to the upland habitat from the project would include the loss of a significant portion of the URA serving as riparian zones and upland wildlife habitat adjacent to the wetlands and brook corridor. This intrusion will force wildlife into the vegetated corridor in and around the wetlands and brook, during and after the construction timeframe, and into other areas where the uplands are not disturbed.

The remaining non-developed southern portion of the property below the development varies in width from 100 feet to 270 feet in width, within this area, the wetlands and adjacent upland riparian zones will still provide for all of the wetland functions/values and significant wildlife habitat.

In summary, the design of the project implements features intended to minimize or eliminate potential impacts to the wetlands such as storm water runoff, significant loss of wetland and watercourse habitats, and erosion and sedimentation associated with construction activities.

I feel these proposed measures are adequate to protect the wetlands provided that the recommended erosion and sedimentation control features are implemented and maintained throughout the development timeframe.

The existing wetlands and watercourses will still have the ability to provide the same wetland functions and values they currently provide.

If you have any questions concerning the site assessment or this report, please feel free to contact me.

Sincerely,

Joseph R. Theroux

Joseph R. Theroux
Certified Forester and Soil Scientist
Member SSSSNE, SSSA

JOSEPH R. THEROUX
~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
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5/10/2022

KILLINGLY ENGINEERING ASSOCIATES
P.O. BOX 421
DAYVILLE, CT. 06241

RE: TREE PLANTING RECOMMENDATIONS, POLLOCK PROPERTY, LOUISE BERRY DRIVE, BROOKLYN, CT.

DEAR MR. THIBEAULT,

AT YOUR REQUEST I HAVE INSPECTED THE ABOVE REFERENCED PROPERTY AND THE SITE PLAN DEPICTING THE PROPOSED DEVELOPMENT FOR THE PURPOSES OF MAKING RECOMMENDATIONS ON TREE SPECIES SUITABLE FOR THE SITE.

IN THE SOUTHERN PORTION OF THE PROPERTY WHERE IT WAS HEAVILY LOGGED AND THE OVERSTORY WAS REMOVED, IN AND ADJACENT TO THE WETLANDS, I WOULD RECOMMEND PLANTING WHITE PINE SEEDLINGS, (PINUS STROBUS). THESE SEEDLINGS SHOULD BE 3-YEAR-OLD STOCK, APPROX. 15 TO 18 INCHES IN HEIGHT.
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IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING MY RECOMMENDATIONS, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

JOSEPH R. THEROUX
CERTIFIED SOIL SCIENTIST
MEMBER SSSSNE, NSCSS.

Hydrologic Soil Group—State of Connecticut
(Louise Berry Drive)

Map Scale: 1:1,850 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 14, 2011—Aug 27, 2016

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	3.1	27.8%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	0.4%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	4.7	42.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	2.9	26.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	0.1	0.7%
701B	Ninigret fine sandy loam, 3 to 8 percent slopes	C	0.2	2.2%
Totals for Area of Interest			**11.0**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Killingly Engineering Associates

P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglyengineering.com

July 5, 2022

Shane J. Pollock
Louise Berry Drive
Brooklyn, CT

Per Section 7.7 of the Inland Wetland and Watercourses regulations

On behalf of the applicant, Killingly Engineering Associates, LLC. certifies that:

a. The property on which the regulated activity is proposed is not located within 500 feet of the boundary of an adjoining municipality;

b. Traffic attributable to the completed project on the site will not use streets within an adjoining municipality to enter or exit the site;

c. Sewer or water drainage from the project site will not flow through and impact the sewage or drainage system within an adjoining municipality;

d. Water run-off from the improved site will not impact streets of other municipal or private property within an adjoining municipality.

Applicant CONSULTANT Date 7/5/2022

Shane J. Pollock
Louise Berry Drive
Brooklyn, CT

The applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception or through inaccurate information.

Consultant: Date: 7/05/2022

PROPOSED MULTI-FAMILY CONDOMINIUM DEVELOPMENT

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

PREPARED FOR:

SHANE POLLOCK

TABLE OF ZONING REQUIREMENTS		
ZONE = R–30*		
	REQUIRED	PROVIDED
Lot Area	30,000 s.f.	13.497 Acres
Front Yard Setback	50'	53.4'
Side Yard Setback	30'	48'
Rear Yard Setback	50'	257'
Building Height	35' Max.	<35'
Lot Frontage	110'	243.74'
Building Separation	40' min	40'–115'

DENSITY: 1 unit per every 5,000 s.f.
13.497 ac = 587,929 s/f – 117 units max
50 units proposed

PARKING: 2 spaces per unit required – 100 required
1 garage space + 1 driveway space per unit for 48 units = 96 spaces
1 garage space + 2 driveway spaces per accessible units = 6 spaces
+ 36 additional spaces – 140 spaces total

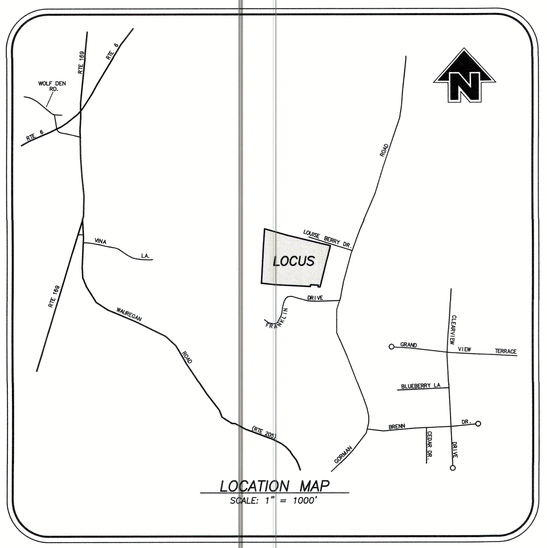
Multi–family development in accordance with Section 6.E. ZONE = RA

GENERAL NOTES:

1. Ownership of the stormwater basin and drainage system shall be the Homeowner's Association. The Town of Brooklyn will not assume responsibility as such.
2. There shall be no parking along the main access roadway or side drives. Appropriate signage shall be installed accordingly.
3. The only work allowed prior to installing the perimeter sediment controls shall be clearing vegetation. No grubbing shall be allowed until the perimeter sediment controls have been installed as per plan. Call (860) 779–3411. ext. 31, for an inspection of the perimeter sediment controls. The perimeter sediment controls must be approved in writing by the IWWC Agent or a Commission member prior to commencing any other work.
4. The temporary sediment basin and swale must be at least temporarily stabilized prior to discharging any stormwater into them. Call (860) 779–3411. ext. 31, for an inspection of the temporary sediment basin and swale. The temporary stabilization of the temporary sediment basin and swale must be approved in writing by the IWWC Agent or a Commission member prior to discharging any stormwater into them.
5. Detention basin side slopes and bottom shall be mowed annually by 6/30 and 10/1 for the life of the basin, in perpetuity.
6. The Homeowner's Association shall be responsible for maintenance of the stormwater basin and its outlets in perpetuity.
7. The construction of the temporary sediment basin and swale shall begin between April 14 and September 1 to allow for vegetation to become at east temporarily established in the basin prior to discharging stormwater into the temporary sediment basin and swale. The basin and swale should be substantially completed by September 1. Construction of the temporary sediment basin and swale shall not commence between September 2 and April 13 in accordance with the provisions od Section 11.1 of the Brooklyn IWWC Regulations.

LEGEND

●	IRON PIN TO BE SET
○	IRON PIN FOUND
O DH	DRILL HOLE FOUND
□ CB	CATCH BASIN
⌀	UTILITY POLE
○ SMH	SANITARY SEWER MANHOLE
HYDRANT	
100	EXISTING CONTOURS
100	PROPOSED CONTOURS
#	INLAND WETLANDS FLAG
BL	BUILDING SETBACK LINE
S	EXISTING SANITARY SEWER LINE
W	EXISTING WATER LINE
	STONE WALL
	STONE WALL REMAINS
	SILT FENCE
	175' WATERCOURSE SETBACK
	125' UPLAND REVIEW



LOCATION MAP
SCALE: 1" = 1000'

INDEX TO DRAWINGS

PREPARED BY:

REVISIONS	
DATE	DESCRIPTION
01/04/2021	TOWN & ENGINEERING REVIEW
01/27/2021	PER BWPCA REVIEW
02/10/2021	EASE. ADDED/ZONE/CT WATER COMMENTS
03/30/2021	TOWN & ENGINEERING REVIEW
04/20/2021	IWWC APPROVAL CONDITIONS
09/15/2021	TOWN ROAD FRONTAGE
10/15/2021	CONSULTANT REVIEW & COMMISSION
10/26/2021	PHASING PLANS / E&S
06/17/2022	APPLICATION RESUBMISSION

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

April 23, 2020

APPROVED BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

FINAL APPROVAL DATE _____

CHAIRMAN _____ DATE: _____

EXPIRATION DATE: _____

Per Sec. 8.26c of the Connecticut General Statutes, as amended, approval automatically expires _____ if all public improvements required by this plan are not completed by that date.

ENDORSED BY THE BROOKLYN INLAND
WETLANDS COMMISSION

_____
CHAIRMAN DATE

STATE OF CONNECTICUT
NORMAND THIBEAULT, JR.
No. 22834
LICENSED
PROFESSIONAL ENGINEER

_____ 7/05/2022
NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

RECEIVED
JUL 05 2022
By _____

SHEET 1 OF 16
JOB NO: 20014

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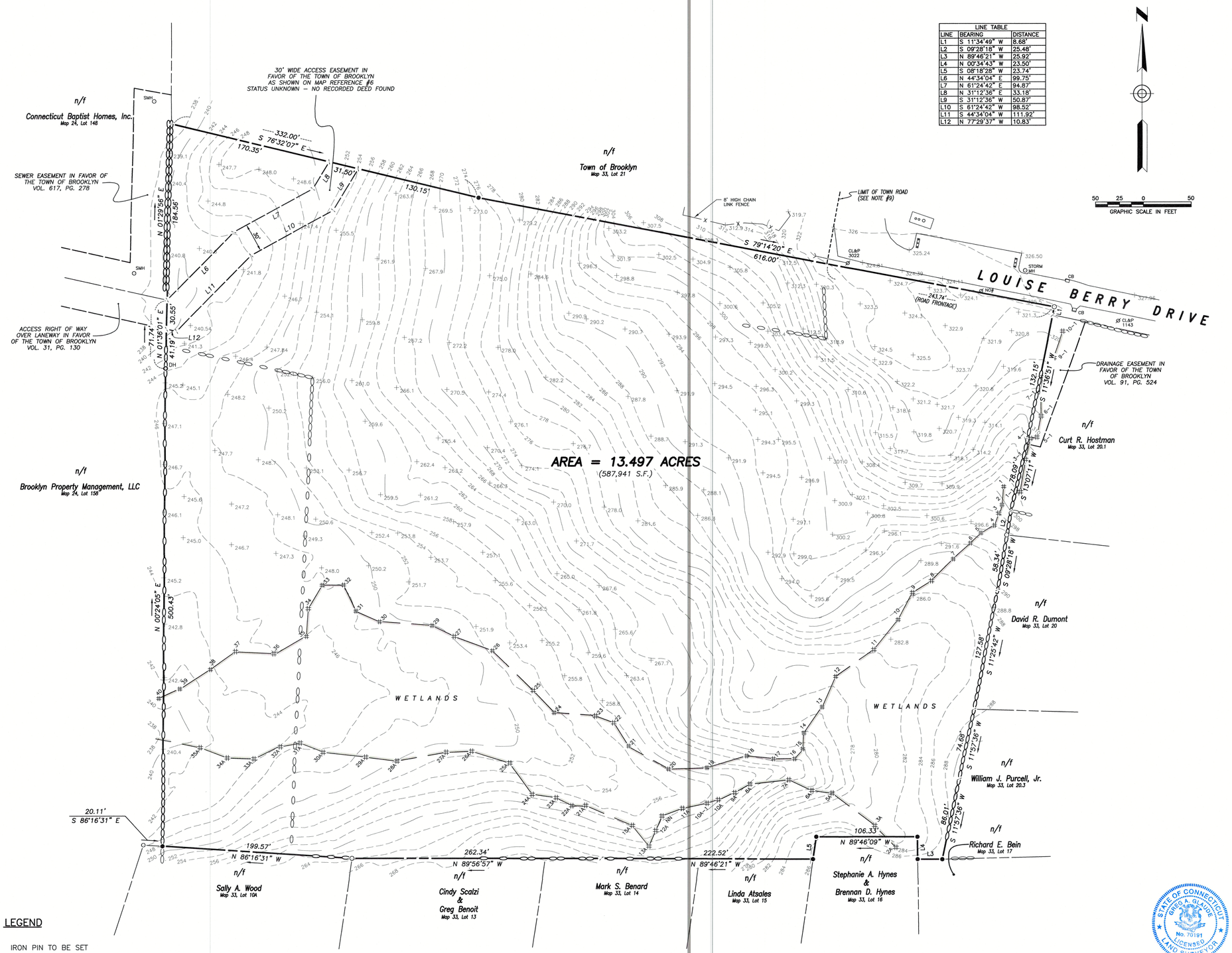

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 11°34'49" W	8.68'
L2	S 09°28'18" W	25.48'
L3	N 89°46'21" W	25.92'
L4	N 00°34'43" W	23.50'
L5	S 08°18'28" W	23.74'
L6	N 44°34'04" E	99.75'
L7	N 61°24'42" E	94.87'
L8	N 31°12'36" E	33.18'
L9	S 31°12'36" W	50.87'
L10	S 61°24'42" W	98.52'
L11	S 44°34'04" W	111.92'
L12	N 77°29'37" W	10.83'

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND (DH)
- UTILITY POLE
- CATCH BASIN (CB)
- SANITARY MANHOLE (SMH)
- 260 EXISTING CONTOURS
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20–300b–1 through 20–300b–20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
   - This survey conforms to a Class "A–2" horizontal accuracy.
   - Topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - Survey Type: Property Survey
   - Boundary Determination Category: Resurvey.
2. Zone = R–30.
3. Owner of record: Shane J. Pollock & Erin F. Mancuso
   101 Mackin Drive
   Griswold, CT 06351
   See Volume 659, Page 151
4. Parcel is shown as Lot 19 on Assessors Map 33.
5. North orientation is based on North American Datum of 1982 (NAD 82) and is taken from GPS observations.
6. Elevations shown are based on an North American Vertical Datum of 1988 (NAVD 88). Contours taken from actual field survey. Contour interval = 2'.
7. Parcel lies within Flood Hazard Zone 'C' (areas of minimal flooding) as shown on FIRM Map # 090164 Panel 0005A Effective Date: Jan. 3, 1985.
8. Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in 2019.
9. Town road limit was established by referencing the CDOT 2020 Town Roads Report, which designates the length of Louise Berry Drive to be .12 miles or 634' in length.

MAP REFERENCES:

1. "Plan of site for new school in the Town of Brooklyn, Conn. – Scale: 1" = 100' Date: June 9, 1952 – Prepared by: William W. Pike, Surveyor." On file in the Brooklyn land records.
2. "Layout of Franklin Drive in the Town of Brooklyn, Conn. – Scale: 1" = 100' – Date: Oct. 15, 1959 – Prepared by: William W. Pike, Surveyor." On File in the Brooklyn land records.
3. "Subdivision Plan – property of Kurt R. & Lempi E. Hostman – Gorman Road – Brooklyn, CT – Date: Aug. 1987 – Revised to: Jan. 21, 1988 – Scale: 1" = 40' Prepared by: Louis J. Soja, Jr." On file in the Brooklyn land records.
4. "Property Survey and inland wetland field location – Pierce Memorial Baptist Home Inc. – Route 169 – Brooklyn, Connecticut – Date: Mar. 6, 1989 – Revised to: 7/25/1989 – Scale: 1" = 50' – Sheet 6 of 6 – Prepared by: Hallisey & Herbert, Civil Engineers & Surveyors." On File in the Brooklyn Land Records.
5. "Easement Plan prepared for Town of Brooklyn – Brooklyn Elementary School & Brooklyn Junior High School – Route 205 (Wauregan Road) – Brooklyn, Connecticut Date: 4/5/1999 – Scale: 1" = 40' – Sheet 2 of 2. Prepared by: KWP Associates." On File in the Brooklyn land records.
6. "Easement Plan showing proposed easement on land of Eggs, Inc. prepared for Town of Brooklyn – Wauregan Road (Route #205) – Brooklyn, Connecticut – Date: 4/20/2001 – Scale: 1" = 50' – Sheet 1 of 1 – Prepared by KWP Associates. On file in the Brooklyn land records.
7. "Property survey showing portion of land of pierce Memorial Baptist Home, Inc. 44 Canterbury Road and Vina Lane – Brooklyn, Connecticut – Date: November 26, 2007 – Scale: 1" = 100' – Sheet 1 of 2 – Prepared by Dicesare Bentley." On file in the Brooklyn land records.
8. "Perimeter Survey prepared for Eggs Inc. – Gorman Road / Franklin Drive / Wauregan Road – Brooklyn, Connecticut – Date: Oct. 2014 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." On file in the Brooklyn land records.
9. "Boundary Line Agreement prepared for Brooklyn Center Complex, BLB, LLC and Vina Land, LLC – Wauregan Road & Vina Lane – Brooklyn, Connecticut – Date: December 11, 2019 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." Not on file.

DATE	DESCRIPTION
06/17/2022	APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

PROPERTY SURVEY

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE

BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
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DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 50'	DESIGN: NET
SHEET: 2 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

STATE OF CONNECTICUT · NORMAN E. THIBEAULT JR. · No. 22534 · LICENSED PROFESSIONAL ENGINEER

I HAVE REVIEWED THE FLAGGED INLAND WETLANDS LOCATION SHOWN ON THIS PLAN AND THEY APPEAR TO BE SUBSTANTIALLY CORRECT.

Certified Soil Scientist — Date

STATE OF CONNECTICUT · GREG A. GLAUDE · No. 70191 · LICENSED LAND SURVEYOR

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

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CURVE TABLE	
C1	C2
R = 227.50'	R = 172.50'
D = 37°31'09"	D = 104°16'33"
L = 148.97'	L = 313.94'
CH = N 83°42'39" W	CH = N 62°54'39" E
146.33'	272.37'
C3	C4
R = 227.50'	R = 172.50'
D = 104°16'33"	D = 37°31'09"
L = 414.04'	L = 112.96'
CH = S 62°54'39" W	CH = S 83°42'39" E
359.22'	110.95'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 11°34'49" W	8.68'
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L3	N 89°46'21" W	25.92'
L4	N 00°34'43" W	23.50'
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L6	S 77°29'37" E	38.81'
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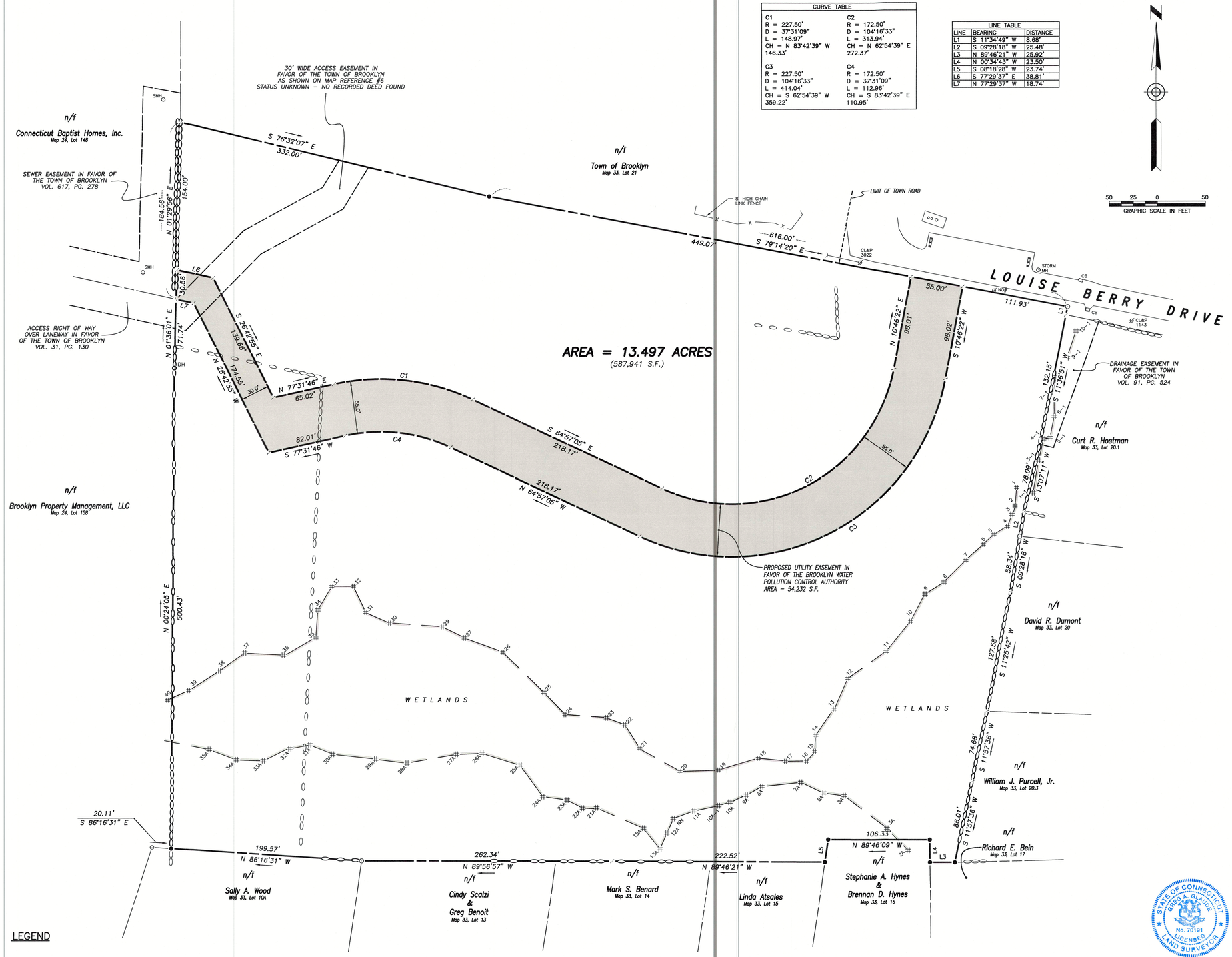

NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20–300b–1 through 20–300b–20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
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   - Topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - Survey Type: Easement Map.
   - Boundary Determination Category: Resurvey.
2. Zone = R–30.
3. Owner of record: Shane j. Pollock & Erin F. Mancuso
   101 Mackin Drive
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9. "Boundary Line Agreement prepared for Brooklyn Center Complex, BLB, LLC and Vina Land, LLC – Wauregan Road & Vina Lane – Brooklyn, Connecticut – Date: December 11, 2019 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." Not on file.

DATE	DESCRIPTION
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10/15/2021	CONSULTANT REVIEW & COMMISSION
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04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

LEGEND

- ● IRON PIN TO BE SET
- ○ IRON PIN FOUND
- ○ DH DRILL HOLE FOUND
- Ø UTILITY POLE
- □ CB CATCH BASIN
- ○ SMH SANITARY MANHOLE
- #—# INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

STATE OF CONNECTICUT GREG A. GLAUDE No. 70191 LICENSED LAND SURVEYOR

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

EASEMENT MAP

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE

BROOKLYN, CONNECTICUT

Killingly Engineering Associates
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DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 50'	DESIGN: NET
SHEET: 3 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

n/f
Town of Brooklyn
Map 33, Lot 21

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

n/f
Curt R. Hostman
Map 33, Lot 20.1

n/f
David R. Dumont
Map 33, Lot 20

n/f
William J. Purcell, Jr.
Map 33, Lot 20.3

n/f
Richard E. Bein
Map 33, Lot 17

n/f
Stephanie A. Hynes & Brennan D. Hynes
Map 33, Lot 16

n/f
Linda Atsales
Map 33, Lot 15

n/f
Mark S. Benard
Map 33, Lot 14

n/f
Cindy Scalzi & Greg Benoit
Map 33, Lot 13

n/f
Sally A. Wood
Map 33, Lot 10A

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

EXISTING SANITARY SEWER LINE

NOTE: PRIOR TO CONSTRUCTION, TEST PITS SHALL BE EXCAVATED IN THE VICINITY OF THE WATER LINE AND SANITARY SEWER UNDER THE GUIDANCE OF THE BROOKLYN WPCA & CT WATER

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

EXISTING WATER LINE

332.00'

28,000 S.F. RECREATION AREA

PROVIDE JUTE NETTING OR TURF REINFORCEMENT MAT

184.56'

SILT FENCE BACKED WITH WOOD CHIP BERM STORM WATTLES OR COMPOST FILTER SOCKS

EXISTING SMH
I/F = 236.9
I/L = 227.8

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

71.74'

PROPOSED MULCHED PLAYSCAPE AREA 40'X60'

CRUSHED STONE WALKWAY

PROPOSED ROAD

616.00'

PROVIDE JUTE NETTING OR TURF REINFORCEMENT MAT

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

PAINTED CROSSWALK

SITE ENTRANCE SIGN

EXISTING HYDRANT

EXISTING WATER LINE

STORM MH

FENCED DUMPSTERS

MAIL KIOSK

LOUISE BERRY DRIVE

HYDRANT

BITUMINOUS CONCRETE CURBING

5' CONCRETE SIDEWALK

CONCRETE SIDEWALK

8" HDPE ROOF LEADER (TYP)

WOOD GUIDE RAIL

ACCESSIBLE UNITS

PROPOSED UTILITY EASEMENT IN FAVOR OF THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY

BLOCK RETAINING WALL 1
TOP = 318.0
BOTTOM = 314.0

BLOCK RETAINING WALL 2
TOP = 313.50
BOTTOM = 310.00

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

GARAGE

GARAGE

132.15'

74.09'

58.34'

74.68'

127.58'

86.01'

199.57'

262.34'

222.52'

106.33'

500.43'

PAVED APRON

GRAVEL MAINTENANCE ACCESS

SEDIMENT FOREBAY

STORMWATER BASIN

6' DEPTH FOREBAY
VOLUME BELOW OUTLET = MIN. 10% WQV

EXTENDED DETENTION SHALLOW WETLAND SYSTEM
MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET)
LOW MARSH WATER DEPTH <6"
HIGH MARSH WATER DEPTH 6"–18"

MICROPOOL – 6' IN DEPTH IN FRONT OF OUTLET STRUCTURE

BERM = 240' (8' WIDE)

3' WIDE EARTH BERMS ACROSS BOTTOM OF BASIN TO INCREASE FLOW PATH AND ENHANCE POLLUTANT REMOVAL

PROVIDE TURF REINFORCEMENT MAT

UNDISTURBED WOODED BUFFER

100' FROM WATERCOURSES

PROVIDE STRAW WATTLES OR COMPOST FILTER SOCKS WITH WIRE BACKED SILT FENCE

WET SWALE WITH SCATTERED FIELD STONES BOTTOM WIDTH 8' W/2:1 SIDE SLOPES. PLANT WITH WETLANDS SEED MIX AND PLACE 6"–8" DIAMETER FIELDS STONES ON BOTTOM & SLOPE SIDES WITH 2"–3" GAPS BETWEEN STONES

30 L.F. – 18" HDPE

20 L.F. MODIFIED RIPRAP

ARC OF FIELD STONES TO FURTHER DISSIPATE OUTLET FLOWS, BASE WIDTH OF 4', CENTERLINE HEIGHT OF 1.5', PARABOLIC CROSS SECTION

INV = 242.0

MODIFIED RIPRAP LEVEL SPREADER BTTM = 241.00

WETLANDS

AREA = 13.497 ACRES
(587,941 S.F.)

OUTLET STRUCTURE #2

8' WIDE BERM ELEV = 278.0

PROPOSED CLEARING LIMITS

EXTENDED DETENTION SHALLOW WETLAND SYSTEM
MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET)
LOW MARSH WATER DEPTH <6"
HIGH MARSH WATER DEPTH 6"–18"

3' WIDE EARTH BERMS ACROSS BOTTOM OF BASIN TO INCREASE FLOW PATH AND ENHANCE POLLUTANT REMOVAL

PROVIDE STRAW WATTLES OR COMPOST FILTER SOCKS WITH WIRE ANCHED SILT FENCE

ROOF DRAIN

NOTE: SEE SHEET 6 FOR EROSION AND SEDIMENTATION CONTROLS

GRAPHIC SCALE IN FEET
40 40 0 40

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DH DRILL HOLE FOUND
- CB CATCH BASIN
- UTILITY POLE
- SMH SANITARY SEWER MANHOLE
- HYDRANT
- 100 EXISTING CONTOURS
- (100) PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- S EXISTING SANITARY SEWER LINE
- W EXISTING WATER LINE
- STONE WALL
- STONE WALL REMAINS
- 175' WATERCOURSE SETBACK
- 125' UPLAND REVIEW

DATE	DESCRIPTION
06/17/2022	APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

SITE PLAN

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

STATE OF CONNECTICUT · NORMAND E. THIBEAULT JR. · No. 22834 · REGISTERED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 40'	DESIGN: NET
SHEET: 4 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

n/f
Town of Brooklyn
Map 33, Lot 21

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

n/f
Curt R. Hostman
Map 33, Lot 20.1

n/f
David R. Dumont
Map 33, Lot 20

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

EXISTING SANITARY SEWER LINE

EXISTING SMH
T/F = 236.9
F/L = 227.8

EXISTING WATER LINE

LIMITS OF 28,000 S.F. RECREATION AREA

THIS AREA TO BE USED FOR TEMPORARY SOIL STOCKPILE DURING CONSTRUCTION SHALL BE RESTORED WITH NEW ENGLAND EROSION CONTROL MIX (SEE SHEET 14)

PROPOSED MULCHED PLAYSCAPE AREA

CRUSHED STONE WALKWAY

NEW ENGLAND RESTORATION MIX

PROVIDE ARBORVITAE PRIVACY ROW

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

PROPOSED SITE SIGN LOCATION

EXISTING HYDRANT

LOUISE BERRY DRIVE

MAIL KIOSK

LIGHT

CURBING

ADDITIONAL PARKING (TYP)

PROPOSED UTILITY EASEMENT IN FAVOR OF THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY

TAPER TO 24'

LAWN

5' CONCRETE SIDEWALK

BITUMINOUS CONCRETE CURBING

BLOCK RETAINING WALL (ROCK-LOK OR EQUAL)

WOOD GUIDE RAIL

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

PLANT WHITE PINE TREES AS NEEDED TO PROVIDE SUFFICIENT SCREENING TO ADJACENT PROPERTY

ACCESSIBLE UNITS

BLOCK RETAINING WALLS (TIERED)

PROPOSED LIGHT

PROPOSED LIGHT (TYP)

RETAINING WALL (TYP)

LEATHERLEAF VIBURNUM

PAVED APRON

GRAVEL MAINTENANCE ACCESS

STORMWATER BASIN LOCATION

NEW ENGLAND RESTORATION MIX

UNDISTURBED WOODED BUFFER

PROVIDE NEW ENGLAND EROSION CONTROL RESTORATION MIX FOR BASIN BOTTOM (SEE SHEET 6)

NOTE: DEVELOPER SHALL SELECTIVELY REMOVE DEAD, DAMAGED AND INVASIVE VEGETATION FROM PROPOSED CLEARING LIMITS TO WETLANDS BOUNDARY

PROPOSED CLEARING LIMITS

MODIFIED RIPRAP LEVEL SPREADER

W E T L A N D S

332.00'
616.00'
500.43'
184.36'
71.74'
132.15'
78.09'
58.34'
127.58'

INKBERRY
PURPLE SAND CHERRY
12" (TYP)
22'
LOAM AND SEED ALL DISTURBED AREAS

TYPICAL UNIT LANDSCAPING DETAIL

GRAPHIC SCALE IN FEET
40 40 0 40

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DH DRILL HOLE FOUND
- CB CATCH BASIN
- UTILITY POLE
- SMH SANITARY SEWER MANHOLE
- HYDRANT
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- # INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- STONE WALL
- STONE WALL REMAINS

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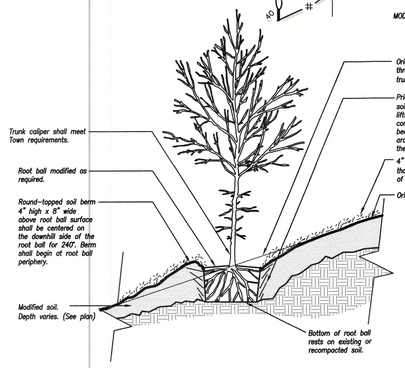
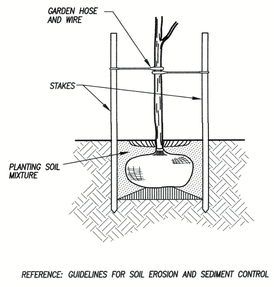
REVISIONS

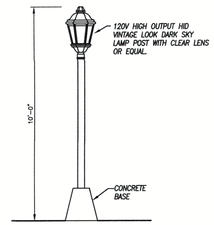


TREE ON SLOPE DETAIL
NOT TO SCALE

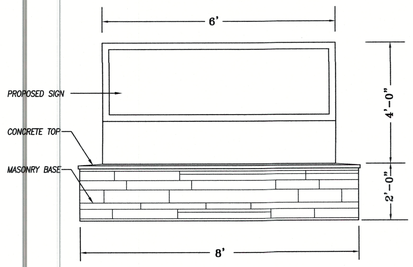


REFERENCE: GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL

PLANTING CROSS SECTION FOR TREES UNDER 20'
NOT TO SCALE



LIGHT POLE DETAIL
NOT TO SCALE
NOTE: BUILDING MOUNTED LIGHTING SHALL BE FULL CUTOFF FIXTURES



SITE SIGN DETAIL
NOT TO SCALE

LANDSCAPE SCHEDULE

BOTANICAL NAME	COMMON NAME	SIZE	NUMBER
Cornus kousa	Korean Flowering Dogwood Pink	2.5" cal.	10
Pyrus calleryna	Flowering Pear	2.5" cal.	23
Ilex glabra	Inkberry 'Shamrock'	1 gal.	102
Prunus x cistena	Purple Sand Cherry	1 gal.	51
Thuja occidentalis	Arborvitae "Emerald Green"	4' height	54
Viburnum rhytidophyllum	Leatherleaf Viburnum	4'	8

NOTE: Provide Cornus kousa at ends of drives and around cul-de-sac
Provide Pyrus calleryna for street trees

STATE OF CONNECTICUT
NORMAND THIBEAULT JR.
No. 22834
LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

LAYOUT & LANDSCAPING PLAN

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

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SEE SHEET 7 FOR WATER MAIN INSTALLATION NOTES

n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

n/f
Town of Brooklyn
Map 33, Lot 21

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

n/f
Curt R. Hostman
Map 33, Lot 20.1

n/f
David R. Dumont
Map 33, Lot 20

n/f
William J. Purcell, Jr.
Map 33, Lot 20.3

n/f
Richard E. Bein
Map 33, Lot 17

n/f
Stephanie A. Hynes & Brennan D. Hynes
Map 33, Lot 16

n/f
Linda Atsales
Map 33, Lot 15

n/f
Mark S. Benard
Map 33, Lot 14

n/f
Cindy Scalzi & Greg Benoit
Map 33, Lot 13

n/f
Sally A. Wood
Map 33, Lot 10A

LOUISE BERRY DRIVE

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

PROPOSED UTILITY EASEMENT IN FAVOR OF THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY

EXISTING WATER LINE

EXISTING SANITARY SEWER LINE

EXISTING HYDRANT

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

PROPOSED BURIED UTILITIES

8" DUCTILE IRON WATER MAIN

332.00'
616.00'
184.56'
71.74'
500.43'
132.15'
78.09'
58.34'
127.58'
74.68'
86.01'
199.57'
262.34'
222.52'
106.33'

AREA = 13.497 ACRES
(587,941 S.F.)

WETLANDS

CWC BLOW OFF
6" GV (OL)
FULL STICK 6" WM (NO TAPS)
6"x2" TYTON PLUG
2"x24" BRASS NIPPLE
2" THREADED GV (O/L)
2"x24" GALV. NIPPLE
2" GALV. ELBOW
2"x48" GALV. RISER
2" GALV. COUPLING
2" THREADED PVC PLUG

CWC BLOW OFF
8" GV (OL)
FULL STICK 8" WM (NO TAPS)
8"x2" TYTON PLUG
2"x24" BRASS NIPPLE
2" THREADED GV (O/L)
2"x24" GALV. NIPPLE
2" GALV. ELBOW
2"x48" GALV. RISER
2" GALV. COUPLING
2" THREADED PVC PLUG

8"x6" SWIVEL TEE
6" GV (O/L)
5'-6" BURY HYDRANT (O/L)

8"x6" SWIVEL TEE
8" GV (O/L)
6" GV (OL)

12"x8" TAPPING SLEEVE & VALVE (O/L)

20 LF 8" SDR 35 PVC STUB S=0.4% PLUG & CAP FOR FUTURE CONNECTION

ENSURE 18" VERTICAL SEPARATION FROM DRAINAGE & 3'-FT SEPARATION FROM CB

ENSURE 8" VERTICAL SEPARATION FROM DRAINAGE

ENSURE 18" VERTICAL SEPARATION FROM SEWER

PROVIDE 18" VERTICAL SEPARATION FROM SEWER OR ENCASE IN CONCRETE.

PROVIDE 4" SANITARY SERVICE W/CLEANOUT PER DETAIL, SHEET 14 (TYP EACH UNIT)

PROVIDE JUTE NETTING OR TURF REINFORCEMENT MAT

PROVIDE TURF REINFORCEMENT MAT

SILT FENCE BACKED WITH WOOD CHIP BERM STRAW WATTLES OR COMPOST FILTER SOCKS

PROVIDE STRAW WATTLES OR COMPOST FILTER SOCKS WITH WIRE BACKED SILT FENCE

CONSTRUCTION TEMPORARY SOIL STOCKPILE LOCATION

NOTE: AREAS SHALL BE RESTORED WITH NEW ENGLAND EROSION CONTROL MIX

NOTE: PRIOR TO CONSTRUCTION, TEST PITS SHALL BE EXCAVATED IN THE VICINITY OF THE WATER LINE AND SANITARY SEWER UNDER THE GUIDANCE OF THE BROOKLYN WPCA & CT WATER

COORDINATE CONNECTION WITH THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY INSPECTORS. CORE-N-SEAL PENETRATION TO EXISTING MANHOLE. MAINTAIN SYSTEM FLOW AND FUNCTION DURING CONSTRUCTION.

EXISTING SMH
T/F = 236.9
F/L = 227.8

6" DEPTH FOREBAY VOLUME BELOW OUTLET = MIN. 10% WQV

EXTENDED DETENTION SHALLOW WETLAND SYSTEM MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET) LOW MARSH WATER DEPTH <6". HIGH MARSH WATER DEPTH 6"-18"

MICROPOOL = 6" IN DEPTH IN FRONT OF OUTLET STRUCTURE

ARC OF FIELD STONES TO FURTHER DISSIPATE OUTLET FLOWS, BASE WIDTH OF 4', CENTERLINE HEIGHT OF 1.5', PARABOLIC CROSS SECTION

MODIFIED RIPRAP LEVEL SPREADER BTTM = 241.00

INV = 242.0

BERM = 246' (6' WIDE)

3' WIDE EARTH BERMS ACROSS BOTTOM OF BASIN TO INCREASE FLOW PATH AND ENHANCE POLLUTANT REMOVAL

SEED WITH NEW ENGLAND EROSION CONTROL/RESTORATION MIX WHEN CONSTRUCTION IS COMPLETE (SEE SHEET 14)

NOTE: STABILIZE BASIN WITH JUTE NETTING PRIOR CONSTRUCTION STORMWATER DISCHARGE

UNDISTURBED WOODED BUFFER

WET SWALE WITH SCATTERED FIELD STONES BOTTOM WIDTH 6' W/2:1 SIDE SLOPES. PLANT WITH WETLANDS SEED MIX AND PLACE 6"-8" DIAMETER FIELDS STONES ON BOTTOM & SLOPE SIDES WITH 2"-3" GAPS BETWEEN STONES

30 L.F. - 18" HDPE

20 L.F. MODIFIED RIPRAP

OUTLET STRUCTURE #2

8' WIDE BERM ELEV = 278.0

EXTENDED DETENTION SHALLOW WETLAND SYSTEM MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET) LOW MARSH WATER DEPTH <6". HIGH MARSH WATER DEPTH 6"-18"

8" HDPE ROOF LEADER (TYP)

ROOF DRAIN

HORIZONTAL SCALE IN FEET
40 20 0 40
4 2 0 4
VERTICAL SCALE IN FEET

DRAINAGE GENERAL NOTES:

1. ALL DRAINAGE PIPE SHALL BE CORRUGATED HIGH DENDITY POLYETHYLENE (HDPE), SMOOTH INTERIOR AS MANUFACTURED BY ADVANCED DRAINAGE SOLUTIONS OR APPROVED EQUAL.
2. CATCH BASIN TOPS SHALL BE TYPE "C" UNLESS OTHERWISE NOTED.
3. ALL BASINS SHALL BE INSTALLED WITH 4' SUMPS.
4. PROVIDE 4' SUMP AND HOODED OUTLET AT TERMINATION CATCH BASIN PRIOR TO DISCHARGE INTO STORMWATER BASIN.

SANITARY SEWER GENERAL NOTES:

1. ALL SANITARY SEWER MAINS SHALL BE 8" SDR 35 PVC.
2. SANITARY SEWER LATERALS TO RESIDENCES SHALL BE 4" SDR 35 PVC. AND SHALL BE INSTALLED WITH A MINIMUM 42" OF COVER AND A SLOPE OF 2%.
3. LATERALS SHALL NOT BE INSTALLED DIRECTLY TO OR WITHIN 5' OF A SANITARY MANHOLE.
4. SANITARY SEWER SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE BROOKLYN WPCA. THE CONTRACTOR SHALL SCHEDULE A PRE CONSTRUCTION MEETING WITH THE BROOKLYN WPCA AND NOTIFY THE BROOKLYN WPCA A MINIMUM OF 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
5. AS-BUILT DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO PROJECT ACCEPTANCE.

WATER MAIN & SERVICES:

1. ALL WATER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE IN ACCORDANCE WITH CT WATER REQUIREMENTS.
2. TAPS INTO EXISTING MAINS SHALL BE UNDER THE SUPERVISION OF CT WATER REPRESENTATIVES.
3. WATER SERVICE CONNECTIONS TO THE WATER MAIN SHALL BE PER CT WATER REQUIREMENTS. SERVICES FROM SHUT OFF VALVES TO RESIDENCES SHALL BE 1" HDPE.
4. HYDRANT REQUIREMENTS AND LOCATIONS SHALL BE DETERMINED BY THE TOWN OF BROOKLYN FIRE MARSHAL.

TOWN OF BROOKLYN WATER POLLUTION CONTROL AUTHORITY (BWPCA) NOTES:

1. PRIOR TO ANY WORK BEING CONDUCTED SANITARY SEWER, CONTRACTOR SHALL CONTACT ALAN CARPENTER, P.E., REPRESENTATIVE FOR THE BROOKLYN WPCA PHONE: 860-208-3394 OR 508-659-7020 EMAIL AT ACARPENTER@CHICORP.COM
2. THE MAIN TRUNK LINE THROUGH THE SITE BE DEDICATED TO THE BWPCA UNDER A 30 FOOT WIDE EASEMENT (15 FEET EACH SIDE OF THE LINE) FOR OWNERSHIP, CONTROL AND MAINTENANCE RESPONSIBILITY. THE PERMANENT EASEMENT OVER THE MAIN TRUNK LINE WILL NEED TO BE CREATED, APPROVED BY BWPCA AND RECORDED IN THE TOWN OF BROOKLYN LAND RECORDS PRIOR TO ANY CONNECTIONS TO THE SYSTEM.
3. THE EASTERN TERMINUS MANHOLE IN LOUISE BERRY DRIVE BE A MINIMUM OF 8 FEET DEEP FROM TOP OF FRAME TO INVERT AND AN 8 INCH SDR 35 STUB BE INSTALLED A MINIMUM OF 1 PIPE LENGTH (20 FEET) AT 0.4 FT/FT SLOPE AND CAPPED IN THE EAST FACING INVERT.
4. THE ENTIRE SYSTEM BE CONSTRUCTED/INSTALLED IN ACCORDANCE WITH THE TOWN OF BROOKLYN WPCA CONSTRUCTION STANDARDS BY THE DEVELOPER. THE SYSTEM TO BE INSPECTED BY BWPCA REPRESENTATIVES DURING CONSTRUCTION, TESTED BY THE DEVELOPER AND CERTIFIED BY HIS ENGINEER AND 'CLEARED FOR USE' BY BWPCA REPRESENTATIVES BEFORE THE SYSTEM CAN BE USED.
5. UNLESS PROVIDED WITH DOCUMENTED PROOF OF ANTICIPATED USAGE, THE BWPCA IS CALCULATING THE ANTICIPATED USAGE AT 22,950 GALLONS PER DAY. (51 UNITS X 450 GPD/PER UNIT).
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE SEWER SYSTEM, THE BWPCA REQUIRES A PRE-CONSTRUCTION MEETING BE SCHEDULED BY THE DEVELOPER, TO INCLUDE AT A MINIMUM, AN INVITE TO THE BWPCA 72 HOURS MINIMUM IN ADVANCE OF THE MEETING AND ATTENDANCE BY THE DEVELOPER, HIS ENGINEER, THE GENERAL CONTRACTOR AND UTILITY CONTRACTOR (IF DIFFERENT ENTITIES).
7. IT IS UNDERSTOOD THAT ALL COSTS RELATING TO THE CREATION OF THIS UTILITY EXTENSION, AND THE LEGAL CONTROL AND DOCUMENTATION OF IT SHALL BE BORNE ENTIRELY BY THE DEVELOPER.
8. IT IS EXPECTED THAT CONNECTION FEES PER UNIT, BE PAID PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND THE ONLY GUARANTEE OF SYSTEM CAPACITY AVAILABILITY IS RECEIPT OF THE CONNECTION FEES BY THE BWPCA.

GENERAL NOTES:

1. An as-built plan showing locations of all roadways, drainage and utilities shall be completed and filed with the town at the completion of the project infrastructure.
2. Ownership of the stormwater basin and drainage system shall be the Homeowner's Association. The Town of Brooklyn will not assume responsibility as such.
3. There shall be no parking along the main access roadway or side drives. Appropriate signage shall be installed accordingly.

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REVISIONS

EROSION CONTROL AND UTILITIES PLAN

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

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STATE OF CONNECTICUT · NORMAND THIBEAULT JR. · No. 22834 · LICENSED PROFESSIONAL ENGINEER

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DRAINAGE PIPE SCHEDULE				
LABEL	LENGTH	SLOPE	DIAMETER	MATERIAL
P1	20'	2.0%	12"	HDPE
P2	128.7'	9.75%	15"	HDPE
P3	20'	2.0%	12"	HDPE
P4	131.1'	9.35%	15"	HDPE
P5	20'	2.0%	12"	HDPE
P6	168.9'	8.23%	15"	HDPE
P7	23'	2.17%	15"	HDPE
P8	123.7'	2.96%	15"	HDPE
P9	20'	2.0%	15"	HDPE
P10	20'	1.0%	12"	HDPE
P11	172'	4.6%	18"	HDPE
P12	58'	1.1%	15"	HDPE
P13	36'	2.77%	18"	RCP
P14	80'	0.63%	15"	RCP

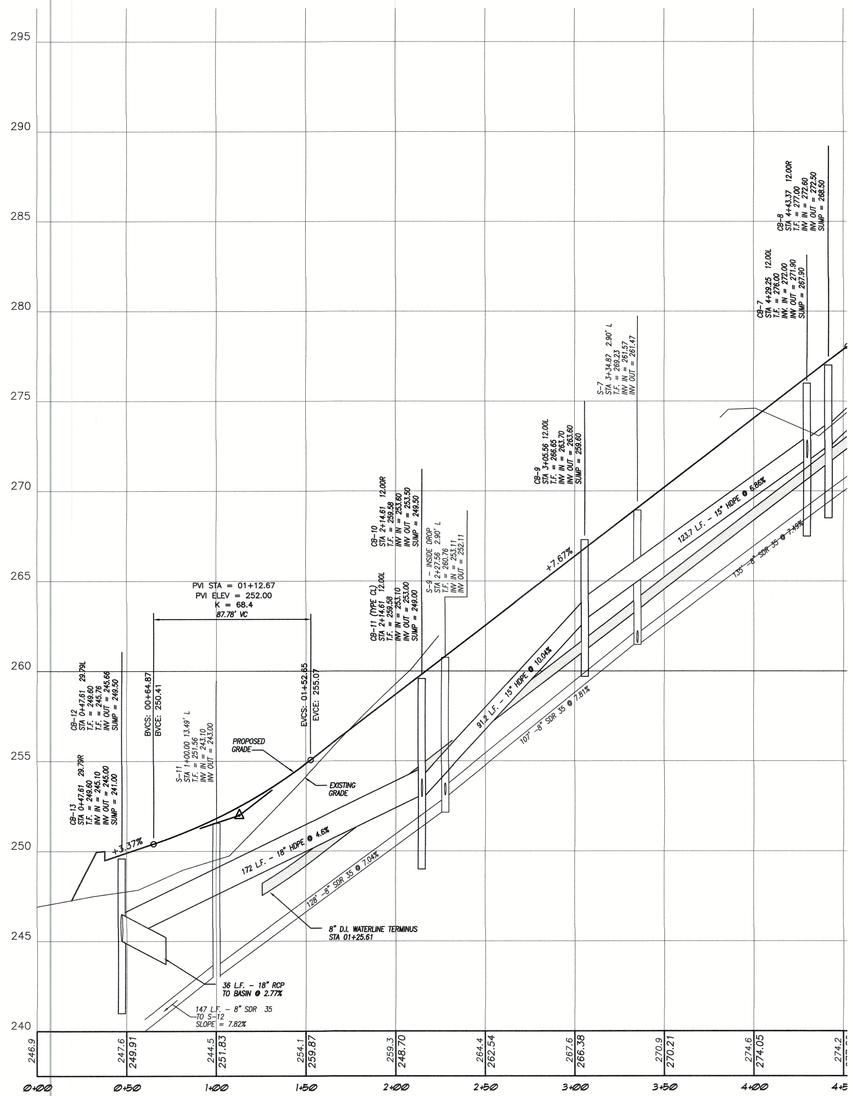
SANITARY STRUCTURE SCHEDULE		
LABEL	T.F	F/Lout
S4	296.50	292.50
S6	289.20	285.20
S8	277.50	273.50
S10	267.80	263.80
S12	240.00	231.40

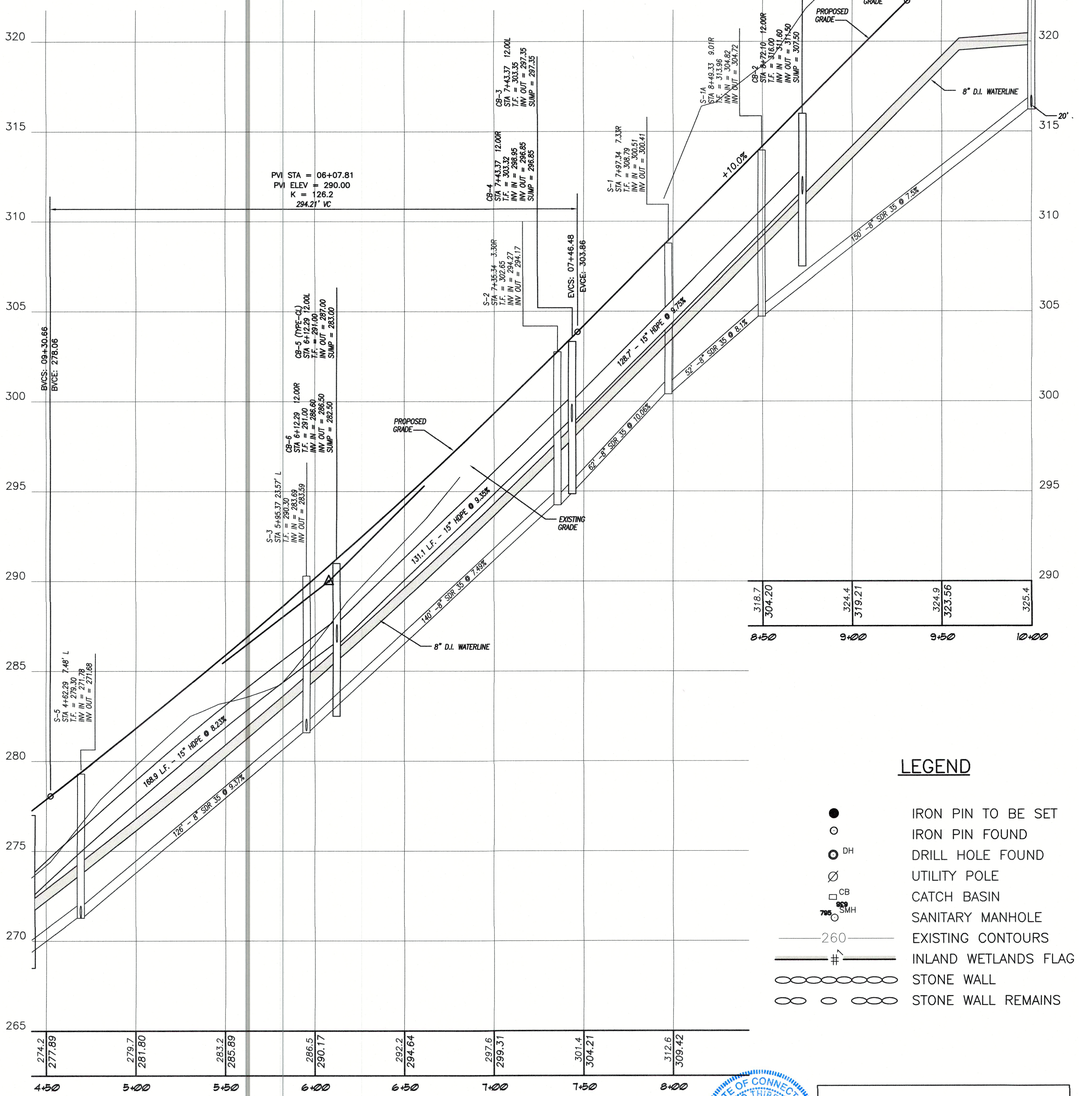
SANITARY PIPE SCHEDULE		
LABEL	LENGTH	SLOPE
S4P	137'	5.68%
S6P	190'	6.42%
S8P	154'	7.06%
S10P	148'	5.07%
S12P	60'	6.00%

FLARED END SECTIONS

FES-1	INV = 244.00	18" RCP
FES-2	INV = 242.00	15" RCP

OUTLET STRUCTURE (OS-1)





WATER MAIN INSTALLATION NOTES:

1. *PROJECT MUST BE BUILT TO CONNECTICUT WATER COMPANY SPECIFICATIONS.*
2. *CLASS 52 DUCTILE IRON PIPE REQUIRED.*
3. *COPPER AND/OR DUCTILE IRON SERVICE LATERAL MATERIAL REQUIRED.*
4. *GATE VALVES OPEN LEFT.*
5. *FIRE HYDRANTS OPEN LEFT. HYDRANTS ARE 5.5' BURY DEPTH. CT WATER COMPANY WILL FURNISH MATERIALS INCLUDING TEE, VALVE, PIPE, HYDRANT AND ACCESSORIES. FIRE HYDRANTS TO BE INSTALLED WITH FACE OF HYDRANT 3-FEET OFF FACE OF CURB. HYDRANTS ARE NOT TO BE INSTALLED IN SIDEWALKS. WHERE 3-FEET CANNOT BE OBTAINED, INSTALL HYDRANT BEHIND SIDEWALK UNLESS OTHERWISE NOTED OR AS DIRECTED BY A CT WATER COMPANY PROJECT MANAGER. 10-FEET HORIZONTAL SEPARATION REQUIRED BETWEEN HYDRANTS, SEWER MANHOLES AND STORM DRAINS. ***FIRE HYDRANTS TO BE INSTALLED WITH FINISH GRADE AT THE BURY LINE CAST INTO THE LOWER BARREL. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENTS OF WATER MAIN AND LATERAL ELEVATION TO ACHIEVE PROPER BURY DEPTH. ANY COSTS RELATED TO ADJUSTMENTS REQUIRED BY CT WATER COMPANY WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR AND/OR APPLICANT OF RECORD.*
6. *ALL WATER MAIN PIPING AND APPURTENANCES MUST BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA ANSI-AWWA C105/A21.5-99(10). POLYETHYLENE ENCASEMENT SHALL BE V-BIO ENHANCED POLYETHYLENE ENCASEMENT ONLY AND CONSIST OF THREE CO-EXTRUDED LAYERS OF LINEAR LOW-DENSITY POLYETHYLENE (LLDPE) FILM THAT ARE FUSED INTO ONE.*
7. *MEGALUG RESTRAINTS REQUIRED ON ALL FITTINGS, BENDS, OFFSETS, TEES, GATE VALVES AND HYDRANTS.*
8. *FIELD LOK (U.S. PIPE) OR SURE STOP 350 (MCWANE) RESTRAINING GASKETS ARE REQUIRED 2 PIPE JOINTS BEFORE AND AFTER EACH FITTING AND ON THE LAST 3 PIPE LENGTHS ON DEAD ENDS.*
9. *THRUST BLOCKING IS REQUIRED ON ALL BENDS, TEES, OFFSETS, HYDRANTS AND DEAD ENDS.*
10. *ALL WATER MAINS SHALL BE INSTALLED TO A DEPTH OF 4-FEET OF COVER BASED ON THE ROADWAY GRADE, EXCEPT AS NOTED.*
11. *3-FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND ANY OTHER UTILITY/UNDERGROUND STRUCTURE. 10-FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND SEWER/SEPTIC ("SEWER")*** SLEEVE REQUIRED WHERE WATER CROSSES SEWER IF WATER IS BELOW SEPTIC AND/OR WHEN 18" VERTICAL SEPARATION CANNOT BE ACHIEVED WHEN WATER IS ABOVE SEWER. 4-FEET MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER MAIN AND DRAINAGE WHEN AT LIKE ELEVATIONS.*
12. *WATER MAINS TO BE DEFLECTED UNDER ALL STORM DRAINS UNLESS OTHERWISE NOTED OR AS DIRECTED BY A CT WATER COMPANY PROJECT MANAGER. A VERTICAL CLEARANCE OF 18" TO BE MAINTAINED BETWEEN STORM DRAIN AND WATER MAINS. THE CONTRACTOR IS RESPONSIBLE FOR PROPER COMPACTION AROUND AND UNDER EXISTING DRAINAGE FACILITIES WHICH MAY INCLUDE REMOVAL AND RESETTING TO PROPER GRADE.*
13. *ANGLE OF BENDS TO BE FIELD DETERMINED.*
14. *MAXIMUM ALLOWABLE DEFLECTION PER FULL LENGTH PUSH-ON JOINT FOR 4" TO 12" IS FIVE (5) DEGREES AND THREE (3) DEGREES FOR 14" AND GREATER DUCTILE IRON PIPE.*
15. *EXISTING SERVICES TO SITE THAT WILL NO LONGER BE USED MUST BE TERMINATED AT THE WATER MAIN BY EXPOSING AND SHUTTING OFF THE CORPORATION VALVE. THE LINE MUST BE SEVERED IMMEDIATELY AFTER THE CORPORATION VALVE. SAID SERVICES MUST BE SHOWN ON PLANS.*
16. *WHERE A WATER SUPPLY WELL FOR ANY PURPOSE EXISTS OR IS APPROVED WITHIN THE LIMITS OF THIS PROJECT, ALL SERVICE LINES CONNECTED TO THE PUBLIC WATER SUPPLY REQUIRE A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPD), AND MUST MEET THE REQUIREMENTS OF SEC.19A-209A OF THE CONNECTICUT GENERAL STATUTES ("CGS"), AND SEC. 19-13-B38A OF THE PUBLIC HEALTH CODE.*
17. *WHERE AN AIR RELIEF IS REQUIRED, CT WATER COMPANY WILL PERFORM TAP AND INSTALL WHILE THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR THE EXCAVATION AND RESTORATION UNLESS OTHERWISE NOTED. LABOR AND MATERIALS FOR THE INSTALLATION(S) WILL BE CHARGED TO THE PROJECT.*
18. *WHEN THE INSTALLATION OF UNDERGROUND INFRASTRUCTURE DEVIATES FROM THE CT WATER COMPANY APPROVED PLANS(S), THE APPLICANT, AT HIS/HER COST, WILL BE HELD LIABLE FOR THE RELOCATION OF INFRASTRUCTURE AS REQUIRED TO THE SATISFACTION OF THE CT WATER COMPANY. FAILURE TO CORRECT ANY DEVIATION DEEMED UNACCEPTABLE TO THE CT WATER COMPANY WILL RESULT IN LITIGATION.*

HORIZONTAL SCALE IN FEET
40 20 0 40

VERTICAL SCALE IN FEET
4 2 0 4

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- UTILITY POLE
- CATCH BASIN
- SANITARY MANHOLE
- EXISTING CONTOURS
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

06/17/2022	APPLICATION RESUBMISSION
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04/20/2021	IWWC APPROVAL CONDITIONS
DATE	DESCRIPTION
REVISIONS	

ROAD PROFILE

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

STATE OF CONNECTICUT · NORMAND THIBEAULT JR. · No. 22834 · LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

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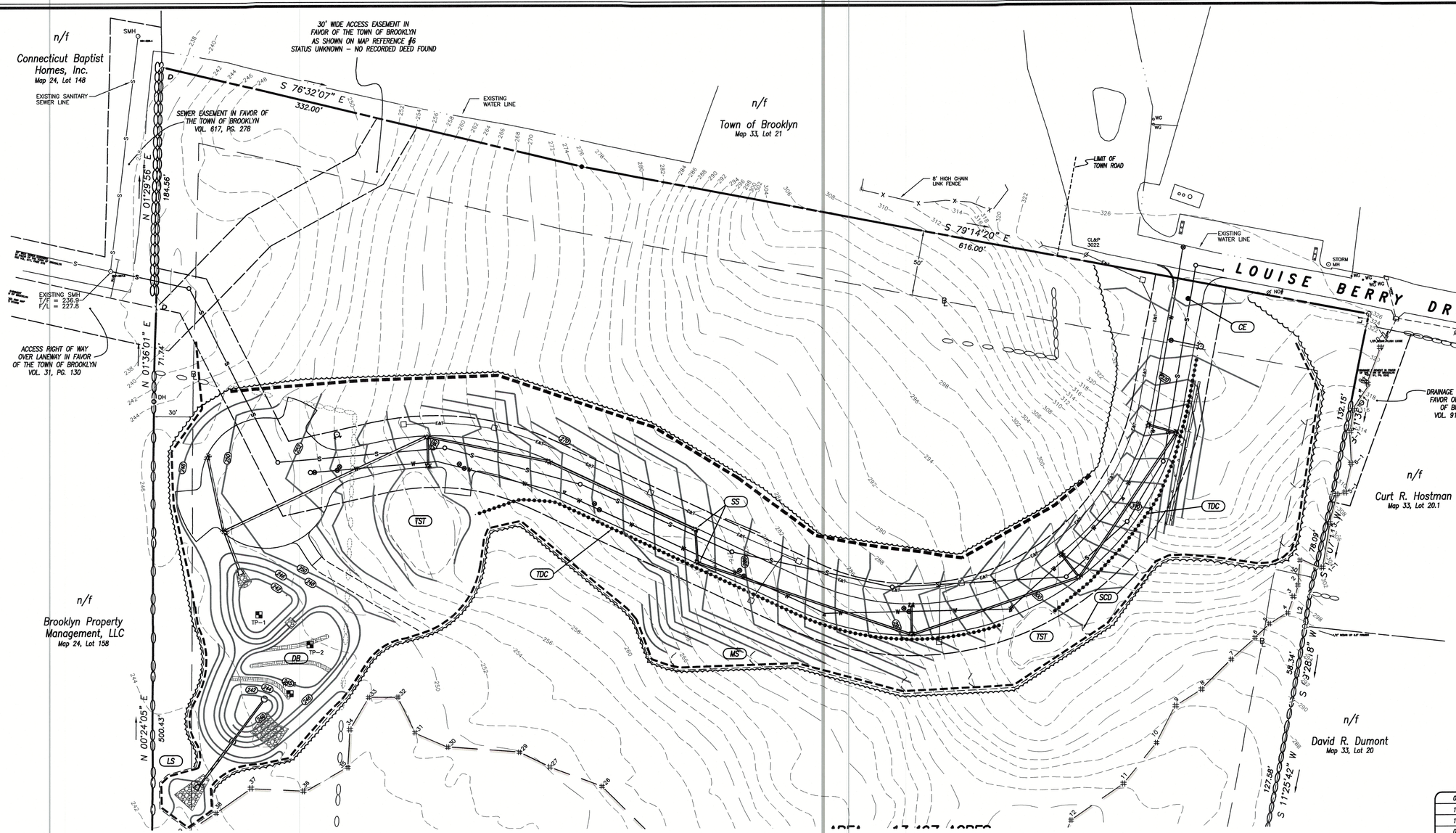

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Silt Sock	SS	A cylindrical erosion control device used for slope interruption, perimeter control and inlet protection.
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REVISIONS

PHASING PLAN - PHASE 1

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT · NORMAND R. THIBEAULT JR. · No. 22834 · REGISTERED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

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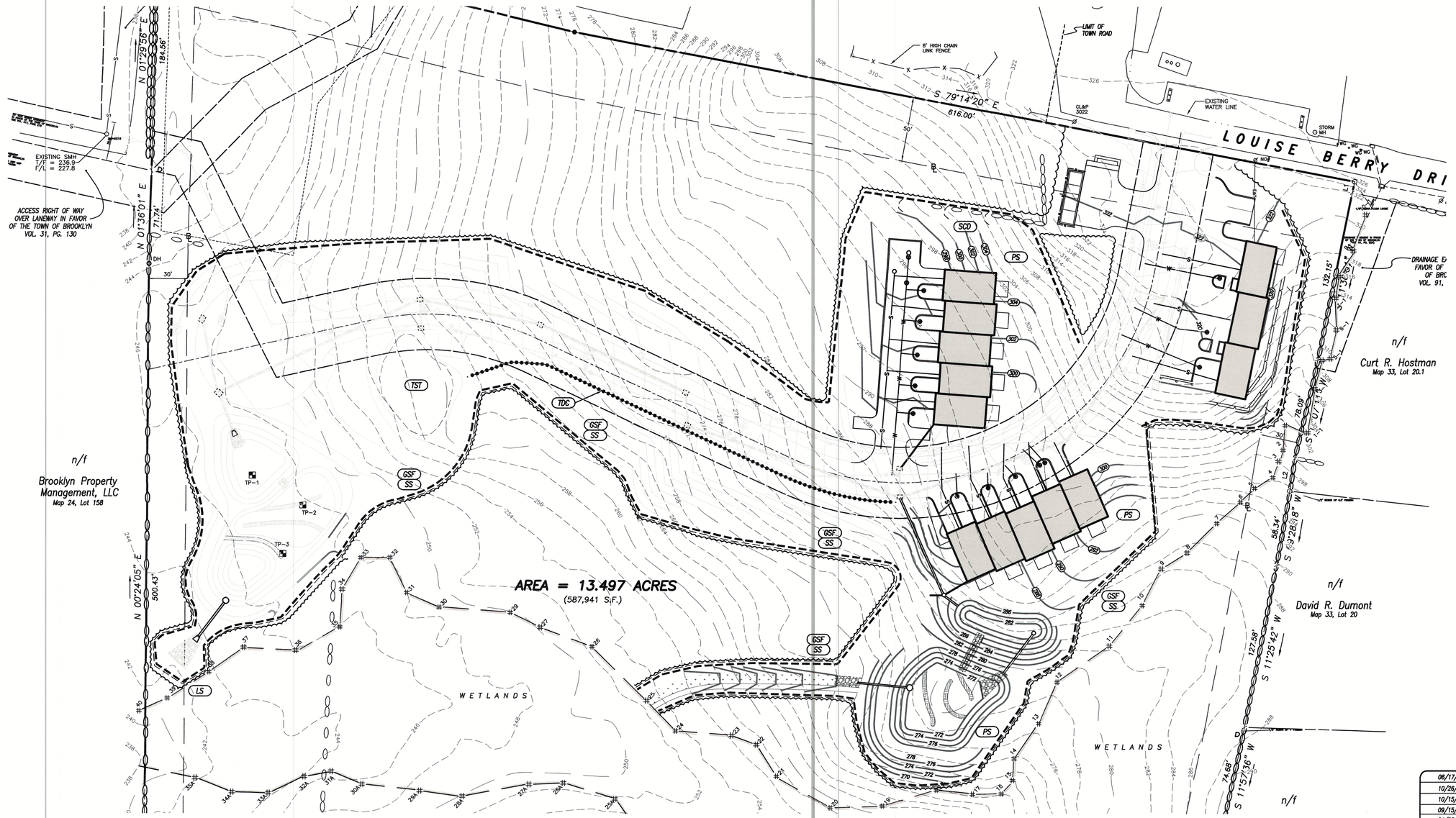

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- CATCH BASIN
- UTILITY POLE
- EXISTING CONTOURS
- SMH EXISTING SEWER MANHOLE
- PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- PROPOSED BURIED UTILITIES
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- STONE WALL
- STONE WALL/WATERCOURSE SETBACK
- SILT FENCE
- STAKED HAYBALES

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PHASING PLAN - PHASE 2

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT · NORMAND THIBEAULT JR · No. 22834 · LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

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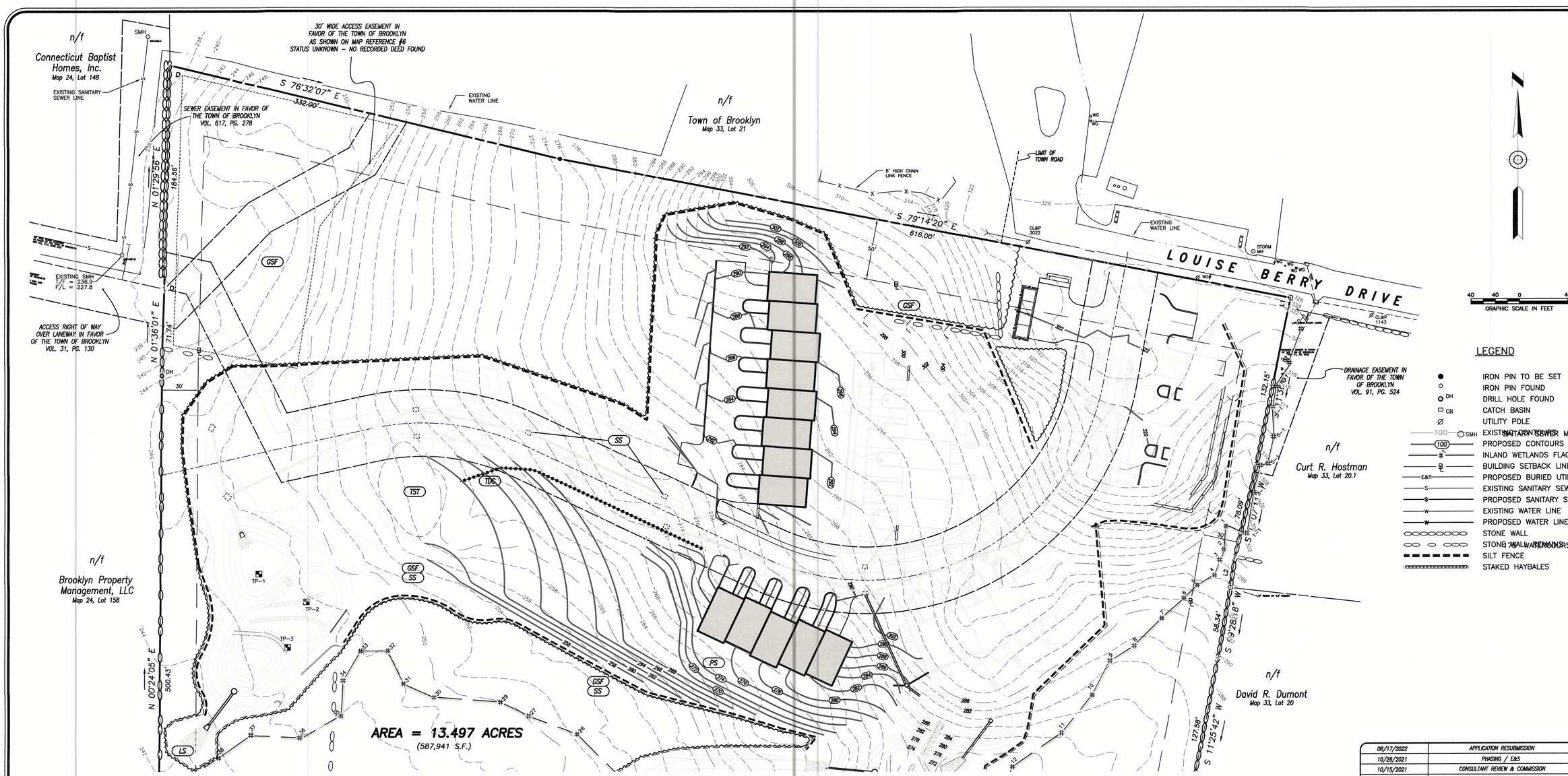

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REVISIONS

PHASING PLAN - PHASE 3

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
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n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

EXISTING SANITARY SEWER LINE

SMH

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

S 76°32'07" E
332.00'

EXISTING WATER LINE

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

N 01°29'56" E
184.56'

EXISTING SMH
I/F = 236.9
I/L = 227.8

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

N 01°36'01" E
71.74'

n/f
Town of Brooklyn
Map 33, Lot 21

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

S 79°14'20" E
616.00'

CL&P 3022

EXISTING WATER LINE

STORM MH

LOUISE BERRY DRIVE

CL&P 1143

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

n/f
Curt R. Hostman
Map 33, Lot 20.1

S 11°31'51" W
132.15'

S 11°25'42" W
78.09'

S 03°28'18" W
58.34'

S 11°25'42" W
127.58'

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

N 00°24'05" E
500.43'

n/f
David R. Dumont
Map 33, Lot 20

TP-1
TP-2
TP-3

GSF
SS
DB
TST
LS
HB
CE
SCD
TRM

40 40 0 40
GRAPHIC SCALE IN FEET

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DH DRILL HOLE FOUND
- CB CATCH BASIN
- UTILITY POLE
- SMH EXISTING SANITARY SEWER MANHOLE
- 100 PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BL BUILDING SETBACK LINE
- E&T PROPOSED BURIED UTILITIES
- S EXISTING SANITARY SEWER LINE
- S PROPOSED SANITARY SEWER LINE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- STONE WALL
- STONE WALL REMOVED
- 75' WATERCOURSE SETBACK
- SILT FENCE
- STAKED HAYBALES

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REVISIONS

PHASING PLAN - PHASE 4

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT · NORMAND THIBEAULT JR · No. 22834 · LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
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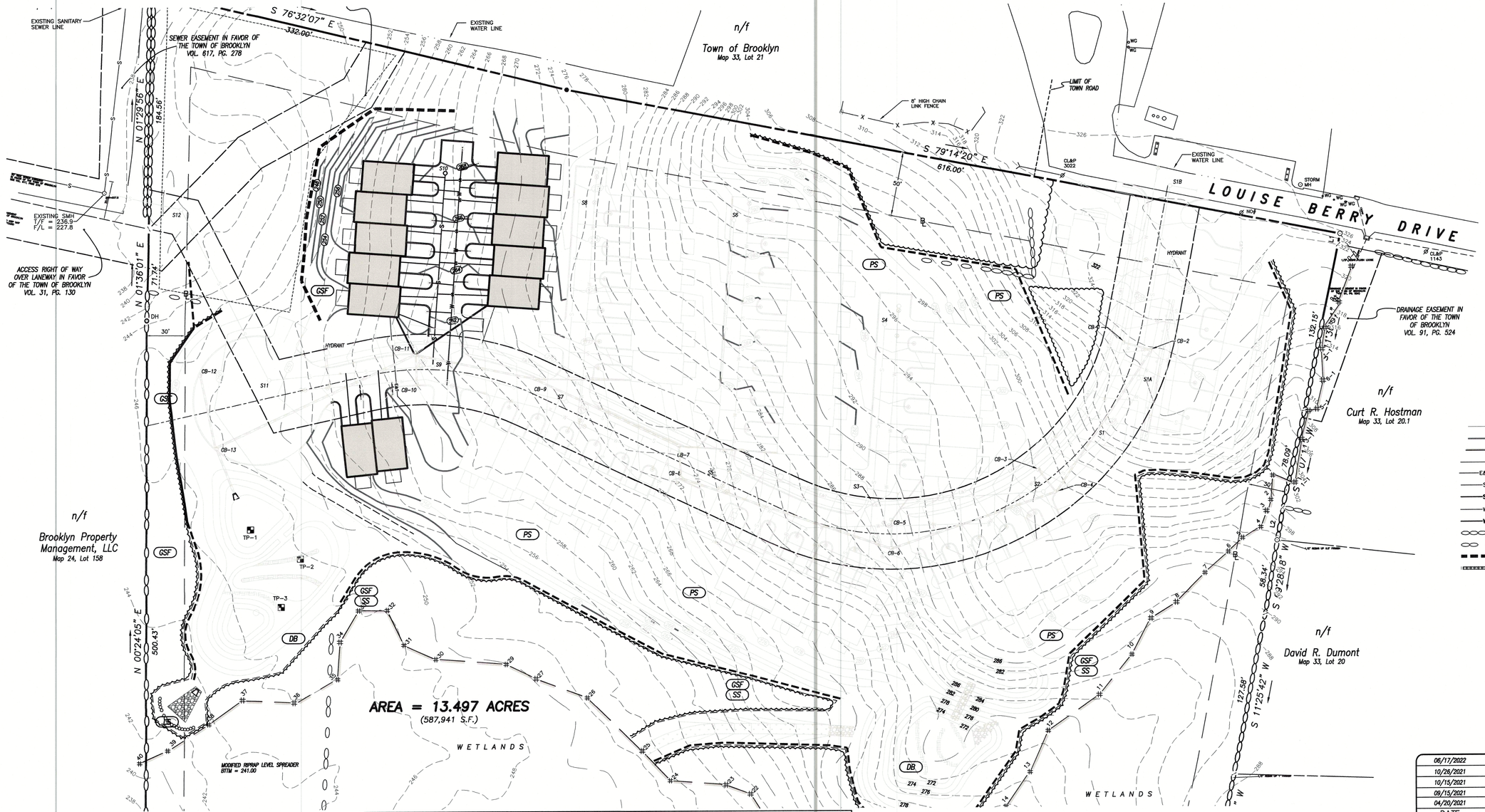

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- CATCH BASIN
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- PROPOSED CONTOURS
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- PROPOSED BURIED UTILITIES
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
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- PROPOSED WATER LINE
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- STONE WALL REMOVAL
- SILT FENCE
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REVISIONS

PHASING PLAN - PHASE 5

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT · NORMAND THIBEAULT, JR. · No. 22834 · LICENSED PROFESSIONAL ENGINEER

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EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. U.S.D.A. N.R.C.S. Web Soil Survey.

The project will require registration under the "GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES" with the CTDEEP. 60 days prior to any activity on site, the developer or his representative shall submit the registration to the CTDEEP. The Town of Brooklyn shall be given a copy of the registration approval.

DEVELOPMENT CONTROL PLAN:

1. Development of the site will be performed by the Contractor, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town of Brooklyn will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water. The application of calcium chloride is not permitted adjacent to wetland resource areas or within 100' of these areas.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
6. Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
   - the fence has been overtopped, undercut or bypassed by runoff water,
   - the fence has been moved out of position (knocked over), or
   - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
   - the barrier has been overtopped, undercut or bypassed by runoff water,
   - the barrier has been moved out of position, or
   - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure TS-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent reoccurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, retill compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
6. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

DEVELOPMENT SCHEDULE/SEQUENCE OF OPERATIONS:

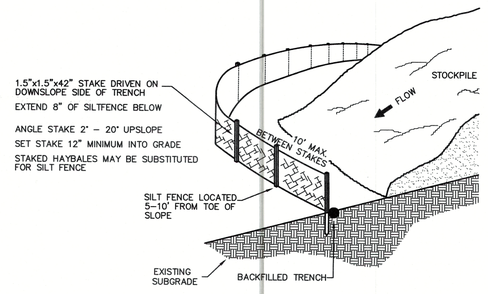
1. Flag the limits of disturbance and schedule pre-construction meeting with Town of Brooklyn wetlands Agent.
2. The only work that shall be permitted prior to installation of perimeter erosion controls shall be clearing of vegetation. No grubbing shall be conducted until the perimeter erosion and sediment controls have been installed per the plan and inspected by the Town of Brooklyn Agent. Written approval for installation of the erosion and sedimentation controls shall be obtained from the Town of Brooklyn IWWC Agent prior to commencing with any other work.
3. Contact utility companies for scheduling installation of utilities and connections
4. Install the anti-tracking construction entrance.
5. Cut trees within the defined clearing limits and remove the cut wood.
6. Install perimeter erosion and sedimentation controls in accordance with the site development plan.
7. Chip brush and slash, stockpile chips for use on site or remove off site.
8. Box out driveway and stockpile topsoil in locations shown on the plans. Install erosion controls around stockpile and apply temporary seeding.
9. Contact utility companies (CT Water and the Brooklyn WPCA) to coordinate water main and sanitary sewer connections. Install water and sanitary sewer lines beginning from the lowest elevation.
10. Excavate stormwater basin to be utilized as a temporary sedimentation basin during construction. Install drainage structures and pipe and provide inlet protection at catch basins.
11. Install and compact processed gravel for roadway base.
12. Remove tree stumps and dispose of at an approved disposal site. Alternatively, stumps may be chipped in place. No stumps shall be buried on site.
13. Strip and stockpile topsoil that is within the footprint of the site. Surround stockpile with silt fence or staked haybales, and apply temporary seeding in accordance with recommended mixtures. Divert runoff around the perimeter of the stockpile.
14. Make all required cuts and fills. Establish the subgrade for the driveway as required and install additional erosion controls as necessary and as shown on the plans.
15. Inspect perimeter erosion and sedimentation controls weekly and after rain events in excess of 0.5". Repair any damaged controls and provide additional erosion control devices as necessary to address areas of concentrated runoff that may develop as a result of the construction activities. The contractor shall review discharge conditions with the design engineer or the Town of Brooklyn prior to installing additional erosion controls. Apply water as necessary for dust control.
16. Install utilities to in the locations shown on the plans.
17. Prepare sub-base for roadway for final grading.
18. Excavate for building footings, stockpile soil and pour footings & slab. Begin phased building construction.
19. Place topsoil where required and install any proposed landscaping upon completion of each building.
20. Install first course of pavement to each building as they are completed and required landscaping.
21. When the remainder of the site work is near completion, sweep all paved areas for the final course of paving. Inspect erosion controls and remove any accumulated sediment.
22. Install final course of pavement upon the completion of the final structure.
23. Fine grade, rake, seed and mulch to within 2' of the pavement.
24. Remove and dispose of all silt fence and hay bales after the site has been stabilized to the satisfaction of the Town of Brooklyn.

RESPONSIBLE PARTY FOR E&S MAINTENANCE:

Shane Pollock
101 Mackin Drive
Griswold, CT 06351
(860) 888-3129

CONSTRUCTION NOTES/GENERAL PROVISIONS

1. The locations of existing utilities are based upon visible field observations, record mapping and interviews with the property owner and abutting property owners. They are is shown for informational purposes only. Contractor shall coordinate exploratory test hole excavation with the Engineer if necessary to verify and/or determine actual locations of some utilities & structures. It is the responsibility of the contractor to verify the location and elevation of all utilities. Contact "CALL BEFORE YOU DIG" at 1-800-922-4455, and obtain all applicable permits, prior to any excavation around utilities.
2. All existing site features not scheduled to remain shall be removed and disposed of in a proper manner, by the contractor.
3. All Materials and methods of construction shall conform to "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 818", and supplements thereto.
4. The Contractor shall obtain copies of all regulatory agency permits from the Owner prior to any site disturbance.
5. Unless otherwise noted on the plans, the contractor shall use the geometry provided on the construction plans. Benchmark information shall be provided to the contractor by the Owner or the Owner's surveyor. Any discrepancies between field measurements and construction plan information shall be brought to the attention of the Engineer or Surveyor immediately.
6. The Contractor shall not revise elevations or locations of items shown on the plans without written consent of the project Engineer or Surveyor.
7. The Contractor shall protect benchmarks, property corners, and other survey monuments from damage or displacement. If a marker needs to be removed, it shall be referenced by a licensed land surveyor and replaced as necessary by the same.
8. The Contractor shall be responsible for preparing and compacting base for proposed pavement. Owner shall provide general fill to establish subgrade - contractor shall spread and compact. Contractor shall provide, spread and compact required processed aggregate
9. The entire project site shall be thoroughly cleaned at the completion of the work. Clean all installed paved areas, accumulated silt and sediment shall be removed from the stormwater system, silt fence removed and disposed of, excess construction materials removed, plus all adjacent areas affected by the construction activities as directed by the Owner or the jurisdictional Agency. Any material removed from the site shall be relocated to an approved off-site disposal area.
10. Upon completion of construction, accumulated sediment and other deleterious materials shall be thoroughly removed catch basins, manholes, pipes and swales and disposed of off site. Additionally, the stormwater detention basin bottom and structures shall be cleaned and restored to "like new" condition.



SILT FENCE @ TOE OF SLOPE APPLICATION

NOT TO SCALE

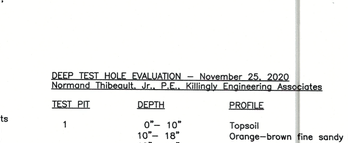
DEEP TEST HOLE EVALUATION - November 25, 2020
Normand Thibeault, Jr., P.E., Killingly Engineering Associates

TEST PIT	DEPTH	PROFILE
1	0"- 10"	Topsoil
	10"- 18"	Orange-brown fine sandy loam
	18"- 44"	Gray fine silty sand w/rocks
	44"- 72"	Gray rocky gravel - compact
	Ledge	N/A
	GWT	N/A
	Mottling	44"
2	0"- 9"	Topsoil
	9"- 21"	Orange-brown fine sandy loam
	21"- 41"	Gray fine silty sand/rocks
	41"- 74"	Gray rocky sandy gravel - compact
	Ledge	N/A
	GWT	N/A
	Mottling	41"
3	0"- 10"	Topsoil
	10"- 24"	Orange-brown fine sandy loam
	24"- 41"	Gray fine silty sand/rocks
	41"- 71"	Hardpan
	Ledge	N/A
	GWT	N/A
	Mottling	41"

PERCOLATION TEST RESULT - November 27, 2020
Killingly Engineering Associates - Normand Thibeault, P.E.

Depth = 24" Rate = 6.7 min./in.

Time	Reading
1:30	4.5"
1:35	7.5"
1:40	11"
1:45	12.5"
1:50	14"
2:00	15.5"
2:05	16.75"
2:10	17.5"
2:15	18.25"
2:20	19"



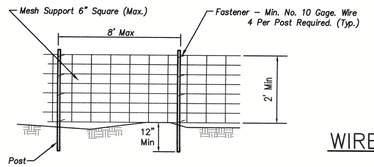
SECTION VIEW

PLAN VIEW

NOTES:

1. *PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.*
2. *USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH ½ INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.*
3. *INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.*
4. *WHEN INSTALLING CURB INLET PROTECTION DEVICES, NEVER BLOCK THE CURB INLET.*

STANDARD GRAVEL BAG CURB INLET PROTECTION

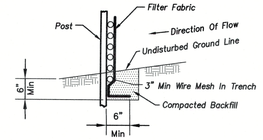


ELEVATION

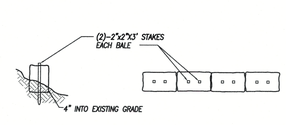
NOTES:

1. *Wires of mesh support shall be min. gage no. 12.*
2. *Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.*
3. *Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 50 for woven.*
4. *Fence posts shall be either wood post with a minimum cross-sectional area of 3.0 sq. in. or a standard steel post.*

WIRE BACKED SILT FENCE

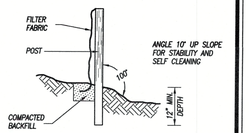


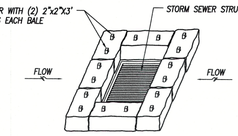
FABRIC ANCHOR DETAIL



HAYBALE BARRIER

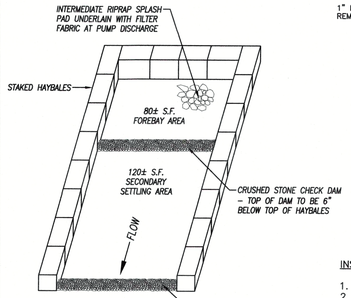
NOT TO SCALE





HAYBALE INSTALLATION AT CATCH BASIN

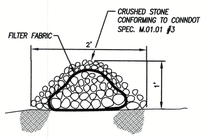
NOT TO SCALE



PUMPING OUTLET BASIN

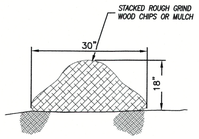
NOT TO SCALE

NOTES:
1.) TO BE USED IN THE EVENT THAT DEWATERING IS REQUIRED
2.) LOCATE BASINS OUTSIDE OF WETLANDS UPLAND REVIEW AREAS



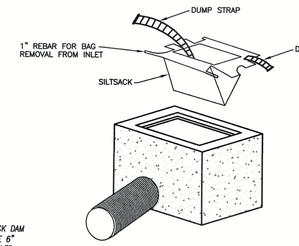
STONE CHECK DAM

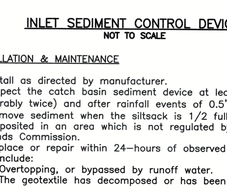
NOT TO SCALE



WOOD CHIP BERM

NOT TO SCALE



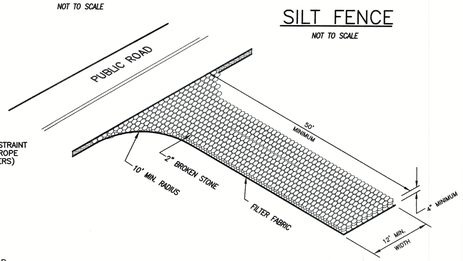


INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE

INSTALLATION & MAINTENANCE

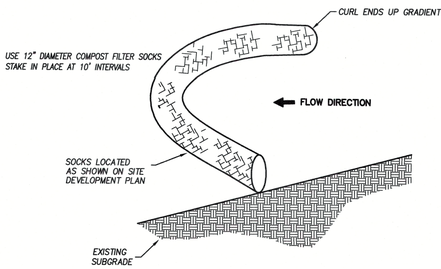
1. Install as directed by manufacturer.
2. Inspect the catch basin sediment device at least once a week (preferably twice) and after rainfall events of 0.5" or greater.
3. Remove sediment when the siltsack is 1/2 full. Sediment shall be deposited in an area which is not regulated by the Inland Wetlands Commission.
4. Replace or repair within 24-hours of observed failure. Failure may include:
   - -Overtopping, or bypassed by runoff water.
   - -The geotextile has decomposed or has been damaged.



SILT FENCE

NOT TO SCALE

BAG DETAIL



COMPOST FILTER SOCK APPLICATION

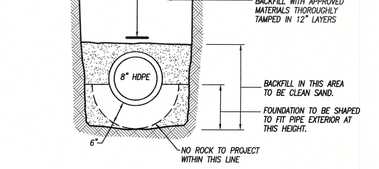
NOT TO SCALE

NOTES:

- *MAY BE USED AS A STRUCTURAL BACKING FOR SILT FENCE.*
- *WHEN USED SINGLY, REMOVE SEDIMENT WHEN HALF THE HEIGHT OF THE SOCK HAS BEEN REACHED*
- *PROVIDE SOCK AS MANUFACTURED BY "FILTREXX" OR ENGINEER APPROVED, EQUAL.*

CONSTRUCTION ENTRANCE

NOT TO SCALE



ROOF LEADER PIPE IN TRENCH DETAIL

NOT TO SCALE
NOTE: MINIMUM SLOPE OF ROOF LEADERS SHALL BE 2%

DATE	DESCRIPTION
06/17/2022	APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

DETAIL SHEET

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 13 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

STATE OF CONNECTICUT - NORMAND THIBEAULT, JR. - No. 22834 - LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

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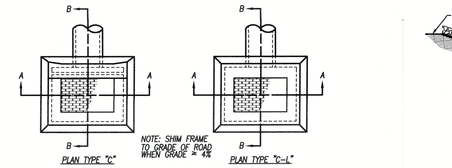
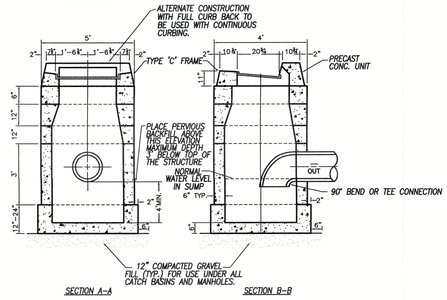
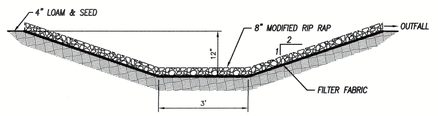




HOODED CATCH BASIN DETAIL

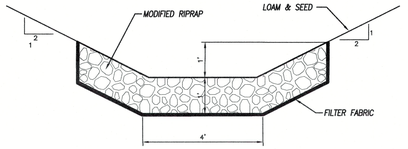
NOT TO SCALE

NOTES:
- TO BE INSTALLED AT FINAL CATCH BASIN WITH OUTLET TO STORMWATER BASIN.
- A CATCH BASIN HOOD MAY BE SUBSTITUTED WITH THE PRE-APPROVAL OF THE TOWN ENGINEER



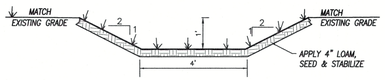
SECTION THROUGH LEVEL SPREADER

NOT TO SCALE



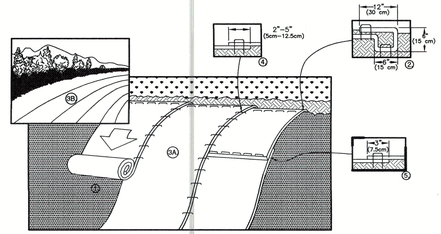
MODIFIED RIPRAP SWALE

NOT TO SCALE



GRASS LINED SWALE

NOT TO SCALE

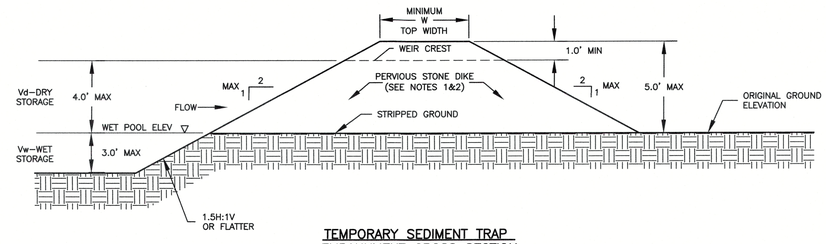


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™ STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTES:
1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
2. TURF REINFORCEMENT MAT SHALL BE NORTH AMERICAN GREEN BIONAT SC-150BN OR APPROVED BIODEGRADABLE EQUIVALENT.

TURF REINFORCEMENT MAT INSTALLATION

NOT TO SCALE



TEMPORARY SEDIMENT TRAP EMBANKMENT CROSS SECTION

NOT TO SCALE

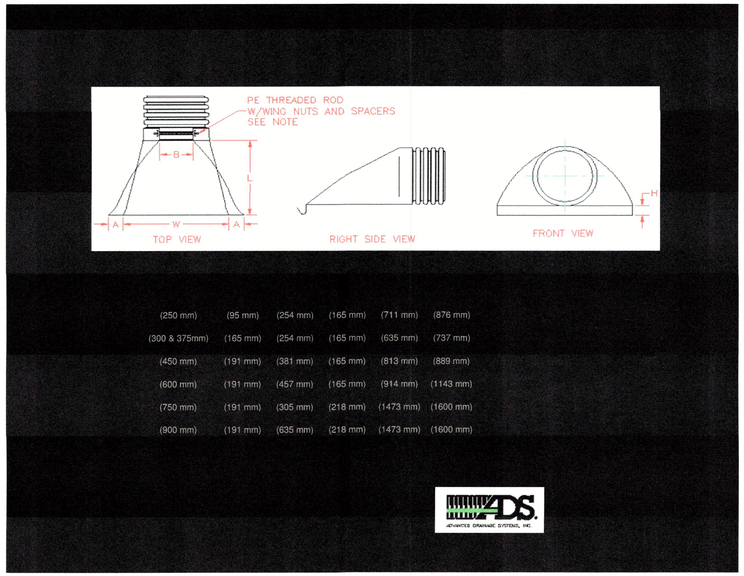
TOP WIDTH VS. HEIGHT

H = HEIGHT OF EMBANKMENT
W= TOP WIDTH OF EMBANKMENT

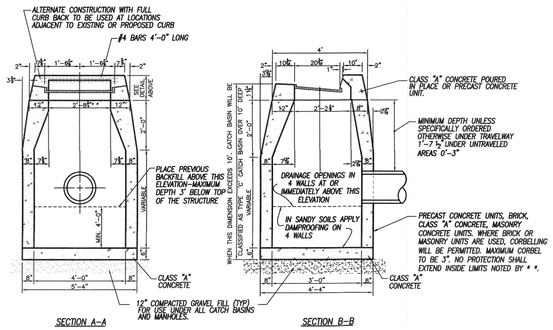
H(ft)	W(ft)
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

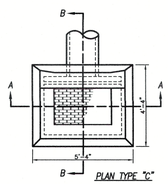
NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL AND EROSION CONTROL, SECTIONS 5-11-25 THRU 5-11-29.
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF MODIFIED RIPRAP (CTDOT M.12.02) WITH #3 STONE ON FACE (CTDOT M.01.01).
3. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OF ENGINEER APPROVED BACKFILL COMPACTED IN 9" LAYERS. USE ONLY MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, ROCKS OVER 6" IN DIAMETER OR OTHER UNSUITABLE MATERIALS.
4. IF, IN THE JUDGEMENT OF THE ENGINEER, MATERIALS FROM ON-SITE EXCAVATION ACTIVITIES ARE NOT SUITABLE FOR CONSTRUCTION OF SEDIMENT TRAP EMBANKMENTS, MATERIALS SHALL BE IMPORTED TO THE SITE.
5. EARTHEN EMBANKMENTS SHALL BE STABILIZED WITH TEMPORARY SEEDING, PERMENANT SEEDING OR STONE SLOPE PROTECTION IMMEDIATELY AFTER INSTALLATION.
6. TEMPORARY SEDIMENT TRAP(S) SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS OF THE END OF A STORM OF 0.5 INCHES OF RAINFALL OR GREATER. REMOVE ACCUMULATED SEDIMENT WHEN ONE HALF OF THE MINIMUM WET STORAGE VOLUME HAS BEEN FILLED. DISPOSE OF REMOVED SEDIMENT IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.



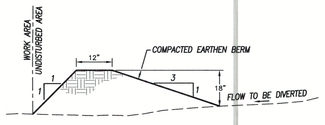
NOTE: WHEN CATCH BASIN IS SET IN CONCRETE PAVEMENT THE 1/2" SLOPE ON THE TOP SURFACE SHALL BE CHANGED TO MATCH ADJOINING PAVEMENT.





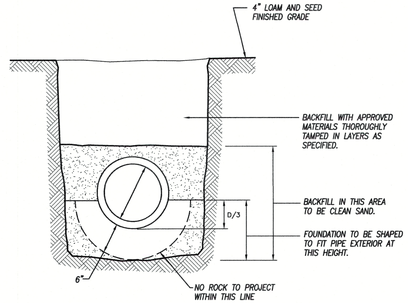
TYPE 'C' CATCH BASIN DETAIL

NOT TO SCALE



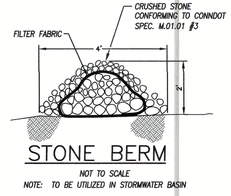
TEMPORARY DIVERSION

NOT TO SCALE



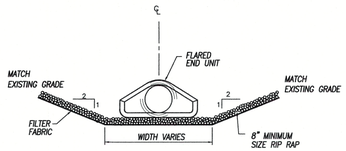
STORM DRAIN PIPE IN TRENCH DETAIL

NOT TO SCALE

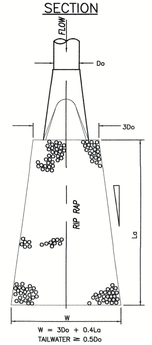


STONE BERM

NOT TO SCALE
NOTE: TO BE UTILIZED IN STORMWATER BASIN



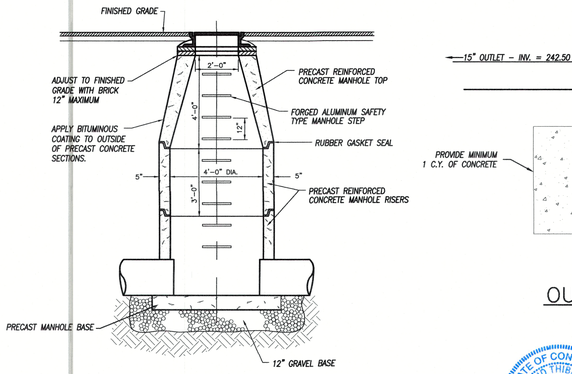
SECTION



PLAN

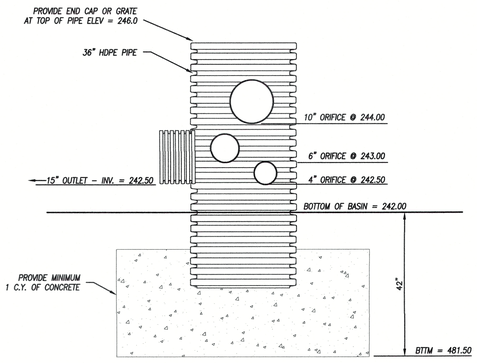
RIP RAP OUTFALL

NOT TO SCALE



TYPICAL MANHOLE CROSS SECTION

NOT TO SCALE



STORMWATER BASIN OUTLET STRUCTURE DETAIL

NOT TO SCALE

SEED MIX REQUIREMENTS:

AREA	SPECIES	SEEDING RATE (lbs/acre)
Mowed & maintained banks	Creeping Red Fescue (Pennlawn, Wintergreen)	20
	Bird's-foot Trefoil (Empire, Viking) with innoculant	8
	Tall Fescue (Kentucky 31)	20
	TOTAL	48
Unmowed banks & slopes	Tall Fescue (Kentucky 31)	20
	Flatpea (Lathco) with inoculant	30
	TOTAL	50
Diversions & channels	Creeping Red Fescue (Pennlawn, Wintergreen)	20
	Redtop (Sreeker, Common)	2
	Tall Fescue (Kentucky 31)	20
	TOTAL	42
Lawns & high maintenance areas	Turf type Tall Fescue	TOTAL 150

***Alternative seed mixes may be used. Alternative seed mix selections shall be in accordance with Figures PS-2 and PS-3 in the 2002 Guidelines for Soil Erosion and Sediment Control or as specified by and coordinated with the landscape designer.

New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites

The New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites contains a selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation. This mix is particularly appropriate for detention basins that do not hold standing water for extended periods. Many of the plants in this mix can tolerate infrequent inundation, but not constant flooding. The mix may be applied by hand, by mechanical spreader, or by hydro-seeder. After sowing, lightly rake, roll or cultipack to insure good seed to soil contact. Best results are obtained with a Spring or late Summer seeding. Late Fall and Winter dormant seeding requires an increase in the application rate. A light mulching of clean, weed-free straw is recommended.

SPECIES: Riverbank Wild Rye (Elymus riparius), Creeping Red Fescue (Festuca rubra), Little Bluestem (Schizachyrium scoparium), Big Bluestem (Andropogon gerardii), Switch Grass (Panicum virgatum), Upland Bentgrass (Agrostis perennans), Nodding Bur Marigold (Bidens cernua), Hollow-Stem Joe Pye Weed (Eupatorium fistulosum/Eutrochium fistulosum), New England Aster (Aster novae-angliae), Boneset (Eupatorium perfoliatum), Blue Vervain (Verbena hastata), Soft Rush (Juncus effusus), Wool Grass (Scirpus cyperinus).</P>

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REVISIONS

DETAIL SHEET 2

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 14 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

STATE OF CONNECTICUT NORMAND E. THIBEAULT JR. No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. LIC #PEN 0022834 DATE

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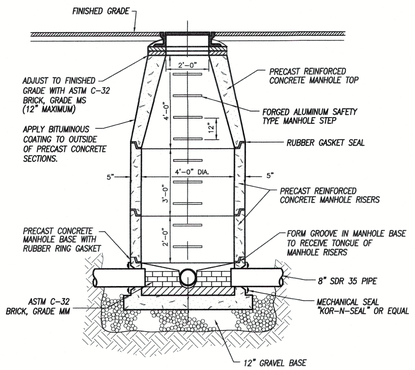

TYPICAL SANITARY MANHOLE CROSS SECTION

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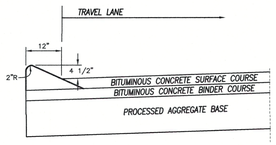
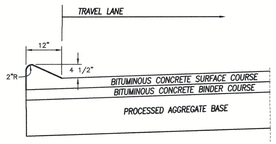


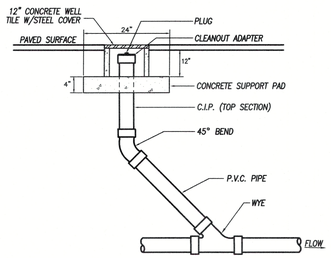
ALTERNATE 1 – CURB ON BINDER



ALTERNATE 2 – MONOLITHIC CONSTRUCTION

CAPE COD CURBING

NOT TO SCALE



SANITARY CLEANOUT DETAIL

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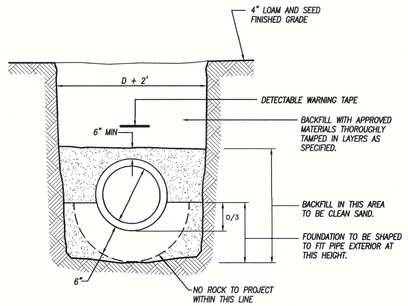

SANITARY SEWER PIPE IN TRENCH DETAIL

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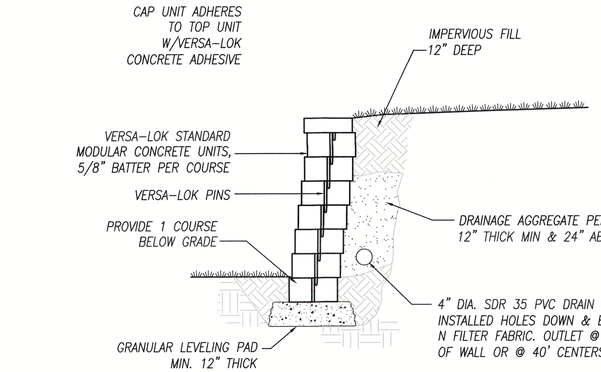
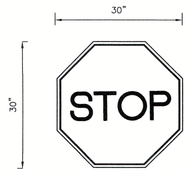


TYPICAL SECTION–UNREINFORCED RETAINING WALL

VERSA-LOK OR APPROVED EQUAL



CTDOT R1-1 (31-0552)

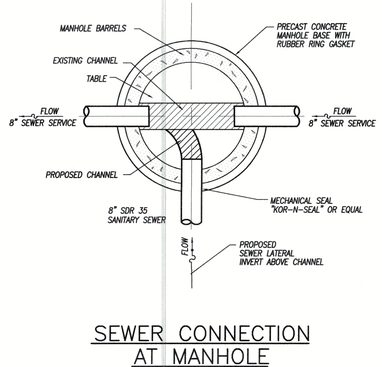
STOP SIGN

NOT TO SCALE

31-5505

SPEED LIMIT SIGN DETAIL

NOT TO SCALE



SEWER CONNECTION AT MANHOLE

NOT TO SCALE

NO OUTLET SIGN DETAIL

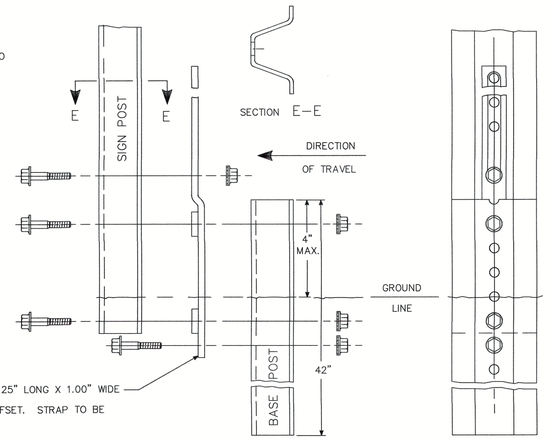
NOT TO SCALE

CTDOT W14-2 (41-4605)
SETON #44851

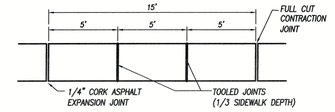
BOLTS – HEX HEAD,INTEGRAL FLANGE CONFORMING TO ASTM A354. –18 UNC X 1.75", GRADE BC FOR 3.00 LBS./FT. POSTS –18 UNC X 2.0", GRADE BD FOR 4.00 LB./FT. POSTS.

NUTS –18 UNC HEX HEAD, INTEGRAL FLANGE CONFORMING TO ASTM A563, GRADE DH.

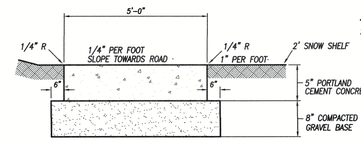
LOCKWASHERS – HEAVY DUTY EXTERNAL TYPE.



BREAKAWAY TYPE I INSTALLATION – FOR 3 & 4 LB. POSTS



PLAN VIEW



CONCRETE SIDEWALK DETAIL

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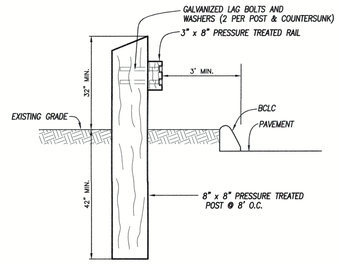
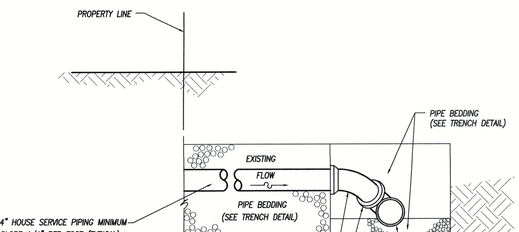


WOOD GUIDE RAIL

NOT TO SCALE

1. WOOD POST COMPONENTS SHALL BE SPRUCE OR HEMLOCK, GRADE #2 PRIME OR BETTER
2. POST SHALL BE CERTIFIED 0.6 CCF PRESERVATIVE RETENTION RATE, AWPA CATEGORY UC4C
3. PRESERVATIVE SHALL BE WATER BASED AN CONSIST OF COPPER AZOLE TYPE B OR C



SEWER CONNECTION DETAIL

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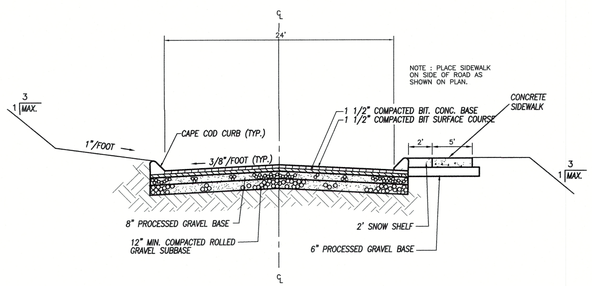

ROADWAY CROSS SECTION

NOT TO SCALE

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REVISIONS

DETAIL SHEET 3

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
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SHEET: 15 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

STATE OF CONNECTICUT · NORMAND THIBEAULT JR. · No. 22634 · LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

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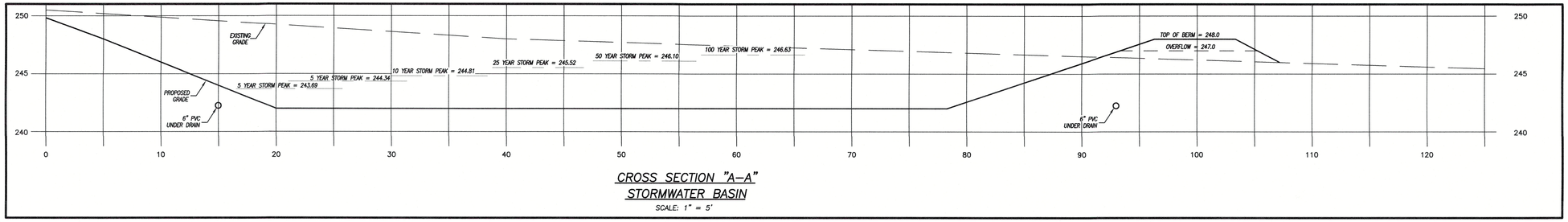
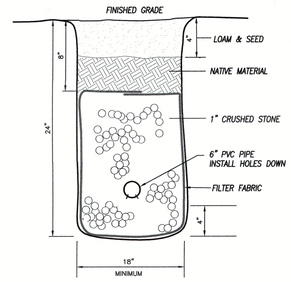


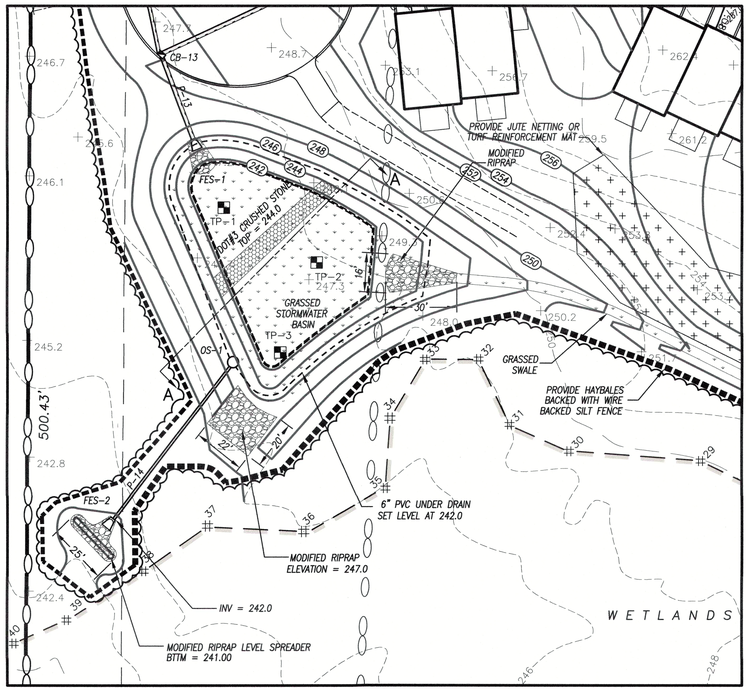
CROSS SECTION "A–A" STORMWATER BASIN

SCALE: 1" = 5'



CURTAIN DRAIN DETAIL

NOT TO SCALE



STORMWATER BASIN DETAIL

SCALE: 1"=30'

NOTE: THE CONDOMINIUM ASSOCIATION SHALL BE RESPOSIBLE FOR THE MAINTENANCE OF THE ENTIRE STORMWATER SYSTEM

STORMWATER BASIN CONSTRUCTION NOTES:

1. Detention basin embankments shall be constructed of silty sand and/or clayey sand materials. On–site borrow material may be used if suitable deposits are found. Embankment fill shall contain at least 15% by weight of material passing the #200 sieve and not more than 50% passing the #200 sieve.
2. Embankment fill shall have no stones larger than 6" in their greatest dimension. No stones larger than 3" in their greatest dimension shall be allowed within 2 feet of structures or pipes.
3. All fill material shall be free of topsoil, roots, stumps, organics, frozen material and other deleterious matter.
4. All embankment material shall be compacted to 95% minimum relative compaction as determined by ASTM D1557 – Modified Proctor. The maximum loose lift thickness of embankment fill shall be 12".
5. Sufficient dewatering equipment shall be provided to dewater excavations for proposed embankments, cutoff trenches and other construction.
6. All topsoil, organics, roots and other deleterious matter shall be removed from the existing ground surface prior to construction of the proposed embankments.
7. All embankments and disturbed areas of the detention basin shall be permanently stabilized with 4" of loam, seed and mulch. Suitable hydroseeding equipment may be used for application of seed, mulch and/or fertilizer. The following seed mix shall be used in these areas:

Variety	Lbs/Acre
Creeping Red Fescue	20
Redtop	2
Crown Vetch	15
TOTAL	37

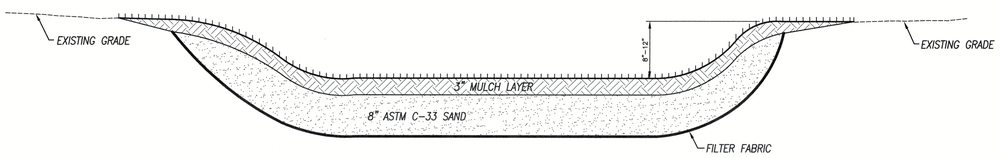
DETENTION BASIN OPERATION AND MAINTENANCE NOTES:

1. The contractor shall be responsible for all basin maintenance and inspections prior to acceptance of the roadway by the Condominium Association.
2. During the first year of operation, the basin shall be inspected on a monthley basis or within 24 hours after a rainfall event of 0.5" or greater. Any erosion of embankments or outlet areas shall be repaired promptly. Any debris shall be removed from trash racks and disposed of. Sedimentation that would interfere with proper operation of the basin shall be removed and disposed of and the area restored and stabilized as required.
3. The Condominium Association shall be responsible for maintenance of the stormwater basin and it's outlets in perpetuity. After the basin has been in operation for one year, inspections shall be performed quarterly or within 24 hours after a storm event of 2.0" or greater. Quarterly inspections shall include the following items:

– Noxious weeds shall be removed. Detention basin side slopes and bottom shall be mowed annually by 6/30 and 10/1 for the life of the basin, in perpetuity. Inspect embankments for any woody growth. All trees, vines and other woody plants shall be removed and voids left from their removal shall be repaired.
– Inspect embankments for animal burrows. All burrows and voids shall be repaired immediately.
– Accumulated sediment shall be removed from the basin forebay and other areas to restore original design grades. Disturbed areas shall be restabilized as required after removal of sediment.
– Inlets and outlets shall be inspected for scour damage and erosion and repaired as required.
– Outlet structures shall be cleaned of accumulated sediment.
– Any evidence of piping or seepage at the toe of embankments or around inlet/outlet structures shall be investigated by a qualified professional engineer and reported to the Town. Required repairs to maintain the proper function or repair potential structural deficiencies in the basin shall be implemented within one month of the discovery of the problem or at the discretion of the responsible professional engineer performing the invesitigation or designing such repairs. The engineer shall certify that all repairs are performed to his/her satisfaction and shall provide such certification to the Town.

STORMWATER SYSTEM OPERATION AND MAINTENANCE NOTES:

- Provide annual street sweeping, preferably after final snow melt to alleviate sediment buildup in catch basin sumps and to insure efficient TSS removal from stormwater.
- Remove sediment from catch basin sumps when sediment reaches half the depth of the sump (2').
- Inspect catch basins for trash and debris bi–annually. Remove accumulated sediment and debris from pipe inlets and outlets to prevent clogging.
- Remove accumulated trash and leaves from catch basin grates to insure adequate grate inflow capacities.



RAIN GARDEN SECTION

NOT TO SCALE

CONNECTICUT RAIN GARDENS
SUGGESTED PLANT LIST

PERENNIALS

A. Swamp Milkweed (Asclepias incarnata)
B. New York aster (Aster novae–belgii)
C. Astilbe (Astilbe spp.)
D. Tickseed sunflower (Bidens aristosa)
E. Joe Pye weed (Eupatorium fistulosum)
F. Rose mallow (Hibiscus moscheutos)
G. Iris (Iris versicolor)
H. Cardinal flower (Lobelia cardinalis)
I. Spiked gay feather (Liatris spicata)
J. Sensitive fern (Onoclea sensibilis)
K. Cinnamon fern (Osmunda cinnamomea)
L. Royal fern (Osmunda regalis)
M. Marsh fern (Thelypteris palustris)
N. Spiderwort (Tradescantia virginiana)
O. Black–Eyed Susan (Rudbeckia birta)

GRASSES

p. Creeping bentgrass (Agrostis stolonifera)
Q. Meadow foxtail (Alopecurus pratensis)
R. Blue joint (Calamogrostis Canadensis)
S. Tussock sedge (Carex stricta)
T. Tufted hair grass (Deschampsia caespitosa)
U. Switch grass (Panicum virgatum)
V. Ribbon grass (Phalaris arundinacea)

SHRUBS

1. Red chokeberry (Aronia arbutifolia)
2. Buttonbush (Cephalanthus occidentalis)
3. Summersweet clethra (Clethra alnifolia)
4. Silky dogwood (Cornus amomum)
5. Gray dogwood (Cornus racemosum)
6. Red osier dogwood (cornus sericea)
7. Inkberry (Ilex glabra)
8. Winterberry (Illex vertifillata)
9. Spicebush (Lindera aestivale benzoin)
10. Pinxterbloom azalea (Rhododendron periclymenoides)
11. Swamp azalea (Rhododendron viscosum)
12. Elderberry (Sambuscus Candensis)
13. Lowbush blueberry (Vacinium angusifolium)
14. Highbush blueberry (Vaccinium corymbosum)
15. Witherod (Viburnum cassinoides)
16. Arrowwood (Viburnum dentatum)
17. Nannyberry (Viburnum legtago)
18. Black haw (Viburnum prunifolium)
19. American cranberry (Viburnum trilobum)

One or more trees can be added to a rain garden, depending upon its size. Caution should be used though, as a tree can quickly take over the garden and create a different look. Remember, most trees will grow very large unless they are purposely kept small. If a tree is desired, the following types are recommended:

TREES

20. River birch (Betula negra)
21. Red maple (Acer rubrum)
22. Sweetgum (Liquidambar styraciflua)
23. Swamp white oak (Quercus bicolor)
24. Pin oak (Quercus palustris)
25. Larch (larix laricina)
26. Cottonwood (Populus deltoides)
27. Shadblow (Amelanchier spp.)
28. Green ash (Fraxinus pennsylvanica)

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04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

DETAIL SHEET 4

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

NORMAND THIBEAULT JR. STATE OF CONNECTICUT No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
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DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 16 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 11°34'49" E	8.68'
L2	N 09°28'18" E	25.48'
L3	S 89°46'21" E	25.92'
L4	N 00°34'43" W	23.50'
L5	N 08°18'28" E	23.74'

50 25 0 50
GRAPHIC SCALE IN FEET

n/f
Pierce Baptist Home, Inc.
Map 19, Block 24, Lot 148

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #?? STATUS UNKNOWN – NO RECORDED DEED FOUND

n/f
Town of Brooklyn
Map 19, Block 33, Lot 21

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

N 01°29'56" E 184.56'

N 01°36'01" E 171.74'

S 76°32'07" E 332.00'

8' HIGH CHAIN LINK FENCE

S 79°14'20" E 616.00'

LOUISE BERRY DRIVE

CL&P 3022

CL&P 1143

STORM MH

CB

DH

SMH

3S
3.633 ACRES

2S
7.387 ACRES

1S
2.477 ACRES

1R
1R¹

2R
WETLANDS

WETLANDS

564' @ 12.5%

600' @ 12.4%

270' @ 11.1%

Tc

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

S 11°36'51" W 132.75'

S 13°07'11" W 78.09'

S 09°28'18" W 58.34'

S 11°25'42" W 127.58'

S 11°57'36" W 74.68'

S 11°57'36" W 86.01'

n/f
Curt R. Hostman
Map 19, Block 33, Lot 20.1

n/f
Curt R. Hostman
Map 19, Block 33, Lot 20

n/f
William J. Purcell, Jr.
Map 19, Block 33, Lot 20.3

n/f
Carl R. Baker
&
Darlene A. Baker
Map 19, Block 24, Lot 158

20.11'
S 86°16'31" E

199.57'
N 86°16'31" W

262.34'
N 89°56'57" W

222.52'
N 89°46'21" W

106.33'
N 89°46'09" W

N 00°24'05" E 500.43'

n/f
Sally A. Wood
Map 19, Block 33, Lot 10A

n/f
Sean P. Mahan
Map 19, Block 33, Lot 13

n/f
Mark S. Benard
Map 19, Block 33, Lot 14

n/f
Linda Atsales
Map 19, Block 33, Lot 15

n/f
Stephanie A. Hynes
&
Brennan D. Hynes
Map 19, Block 33, Lot 16

n/f
Richard E. Bein
Map 19, Block 33, Lot 17

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- UTILITY POLE
- CATCH BASIN
- SANITARY MANHOLE
- EXISTING CONTOURS
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

08/24/2020	PER TOWN REVIEW
DATE	DESCRIPTION
REVISIONS	

EXISTING DRAINAGE AREAS

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: NET
SCALE: 1" = 50'	DESIGN: NET
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DWG. No: CLIENT FILE	JOB No: 20014

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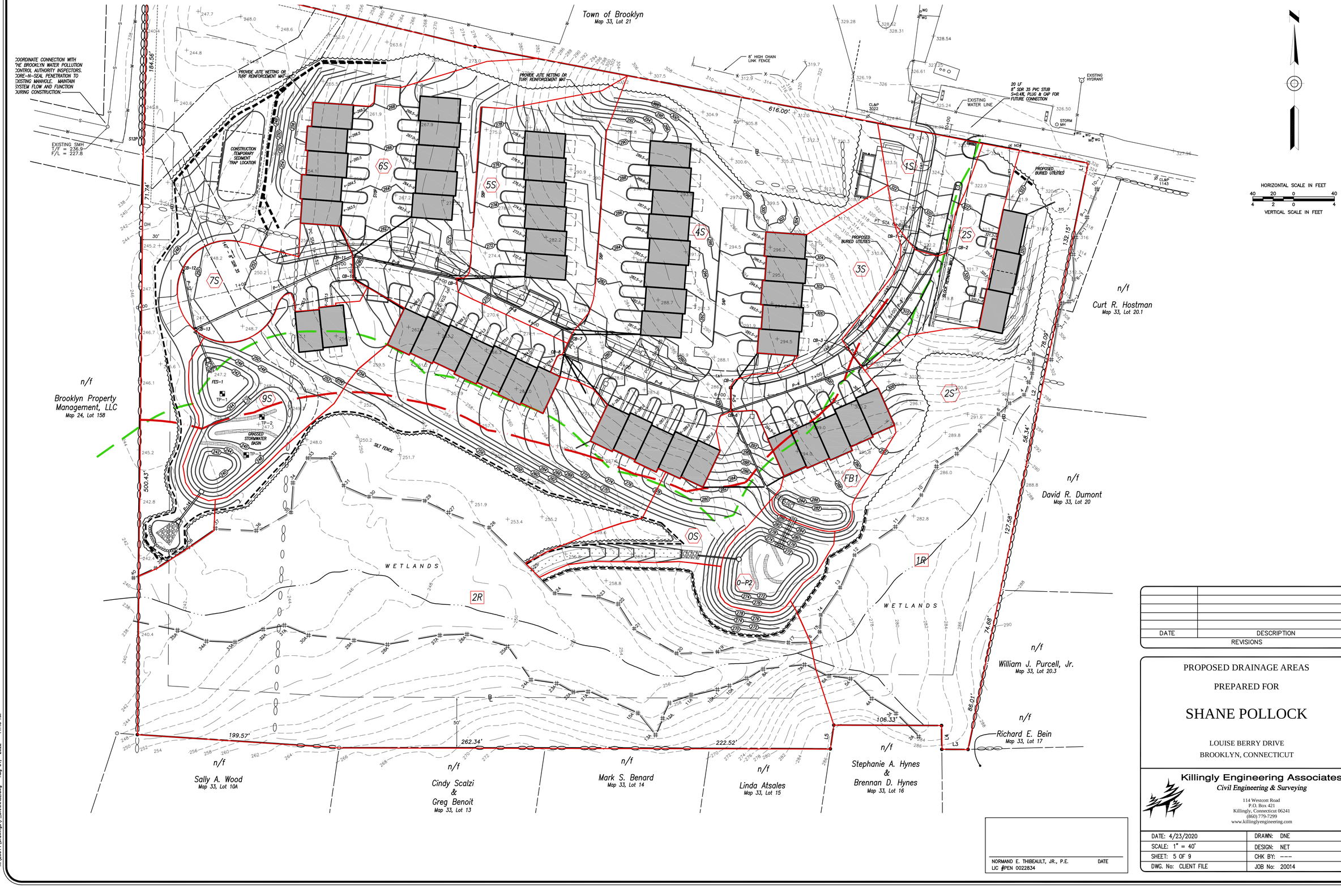

COORDINATE CONNECTION WITH THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY INSPECTORS. CORE-N-SEAL PENETRATION TO EXISTING MANHOLE. MAINTAIN SYSTEM FLOW AND FUNCTION DURING CONSTRUCTION.

DATE	DESCRIPTION

REVISIONS

PROPOSED DRAINAGE AREAS

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 40'	DESIGN: NET
SHEET: 5 OF 9	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 20014

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

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DRAINAGE REPORT

Prepared for

PROPOSED MULTI-FAMILY DEVELOPMENT
LOUISE BERRY DRIVE
BROOKLYN, CT

July 2022

Prepared for

Shane Pollock

Prepared by

Killingly Engineering Associates
Civil Engineering & Surveying

Normand Thibeault Jr., P.E.
CT License #22834

Introduction

Shane Pollock & Erin F Mancuso have submitted a proposal to the Tow of Brooklyn to construct a 50-unit condominium development with access from Louise Berry Drive in Brooklyn. The project will require construction of a 1000-foot-long paved private roadway with a cul-de-sac turnaround and public water and sanitary sewer. The original design for the property consisted of 100 units. The current design results in the creation of impervious surfaces consisting of pavement and roof but is a significant reduction then the original design. The current stormwater management design has been prepared in response to and in conjunction with Steven Trinkaus, P.E., a drainage consultant retained by the Town of Brooklyn to review the project.

Summary

According to the USDA-NRCS Soil Survey, the area of disturbance consists of Canton and Charlton fine sandy loams and the wetlands consist of Ridgebury, Leicester and Whitman soils. A walk of the property and wetlands delineation by Joseph Theroux verify that these descriptions are accurate. These soils are associated with hydrologic soil group B & D. The site sheet flows primarily to the south to a linear wetlands system before flowing to the west and ultimately off site. To the greatest degree possible, the existing drainage patterns will be preserved.

The bulk of the drainage from developed areas will be directed to two (2) separate stormwater basins with forebays. The first basin is centrally located on the site and will collect drainage from approximately 400ô of the proposed roadway and three (3) of the building rooftops. This basin will discharge to a wet swale prior to flowing to the wetlands. The discharge from this basin ultimately flows to the on-site wetlands at approximately the midpoint of the wetlands system which addresses previous concerns of recharge to the wetlands. The second basin and forebay collects drainage from the remainder of the roadway and buildings and discharges at the terminus of the on-site wetlands.

The calculations utilized HydroCAD® Stormwater Modeling System, a computer model, to analyze pre-and post-development drainage conditions, and to aid in the design of the stormwater detention system. The model used the Soil Conservation Service TR-20 method with a Type III 24-hour rainfall to calculate the runoff. The 2 through 100-year frequency storms were analyzed to evaluate peak runoff for conditions with grassed and stone dust parking. Table 1 summarizes our findings; all peaks have been rounded to the nearest 0.1.

Table 1. Grassed Parking vs. Stone Dust Parking Peak Runoff Rates

Design Storm	Depth (in)	Existing Peak	Proposed Peak	Difference
2-Year	3.37	3.7 CFS	3.6 CFS	-0.1 CFS
5-Year	4.28	8.6 CFS	8.3 CFS	-0.3 CFS
10-Year	5.04	13.5 CFS	13.2 CFS	-0.3 CFS
25-Year	6.08	20.7 CFS	19.6 CFS	-1.1 CFS
50-Year	6.85	26.5 CFS	25.7 CFS	-0.8 CFS
100-Year	7.68	33.5 CFS	33.1 CFS	-0.4 CFS

As seen by the computations, there are slight decreases in runoff rates for all design storms. It is important to note that for post-construction conditions, we have conservatively modeled the post construction soils as hydrologic soil group ñCò.

In addition to addressing pre- and post-construction peak runoff rates from the property to the wetlands and adjacent property, the design considers stormwater treatment and water quality for the project. Wherever possible, overland sheet flow is encouraged, catch basins will be constructed with sediment sumps, the final catch basin prior to discharge to the terminus stormwater basin will be fitted with a hooded outlet and the stormwater basins account for water quality volume (WQV).

Per Chapter 7 of the Connecticut DEEP Stormwater Quality Manual

Section 7.4.1 Water Quality Volume

Basin 1 Water Quality Volume (WQV)

WQV = (1ò)(R)(A)/12

R = 0.05 + 0.009(I) I = % Impervious = 32.67%

R = 0.05 + 0.009(32.67) = 0.344

A = 1.383 acres

WQV = (1ò) (0.344) (1.383) / 12 = 0.04 ac-ft = 1,728 c.f.

3,023 c.f. provided to elevation 285.0

Basin 2 Water Quality Volume

WQV = (1ò)(R)(A)/12

R = 0.05 + 0.009(I) I = % Impervious = 43.44%

R = 0.05 + 0.009(43.44) = 0.391

A = 4.169 acres

WQV = (1ò) (0.91) (4.169) / 12 = 0.317 ac-ft = 13,771 c.f.

9,375 c.f. provided in forebay & 5,230 to elevation 285.5 in main basin = 14,605 c.f.

Section 7.4.2 Water Quality Flow

This section is utilized for treatment mechanisms such as grasses swales or proprietary treatment devices. Although the project calls for a wet swale from the first stormwater basin, the swale will not convey runoff directly from impervious surfaces.

Section 7.5.1 Groundwater Recharge Volume

Per review of the project drainage by Mr. Trinkaus, it was determined that groundwater recharge volume was not an appropriate application for the site. The Water Quality Volume and Channel protection volume (first 1.5ò of rain) have been accounted for based upon consultation with Mr. Trinkaus.

Section 7.5.2 Runoff Capture Volume (RCV)

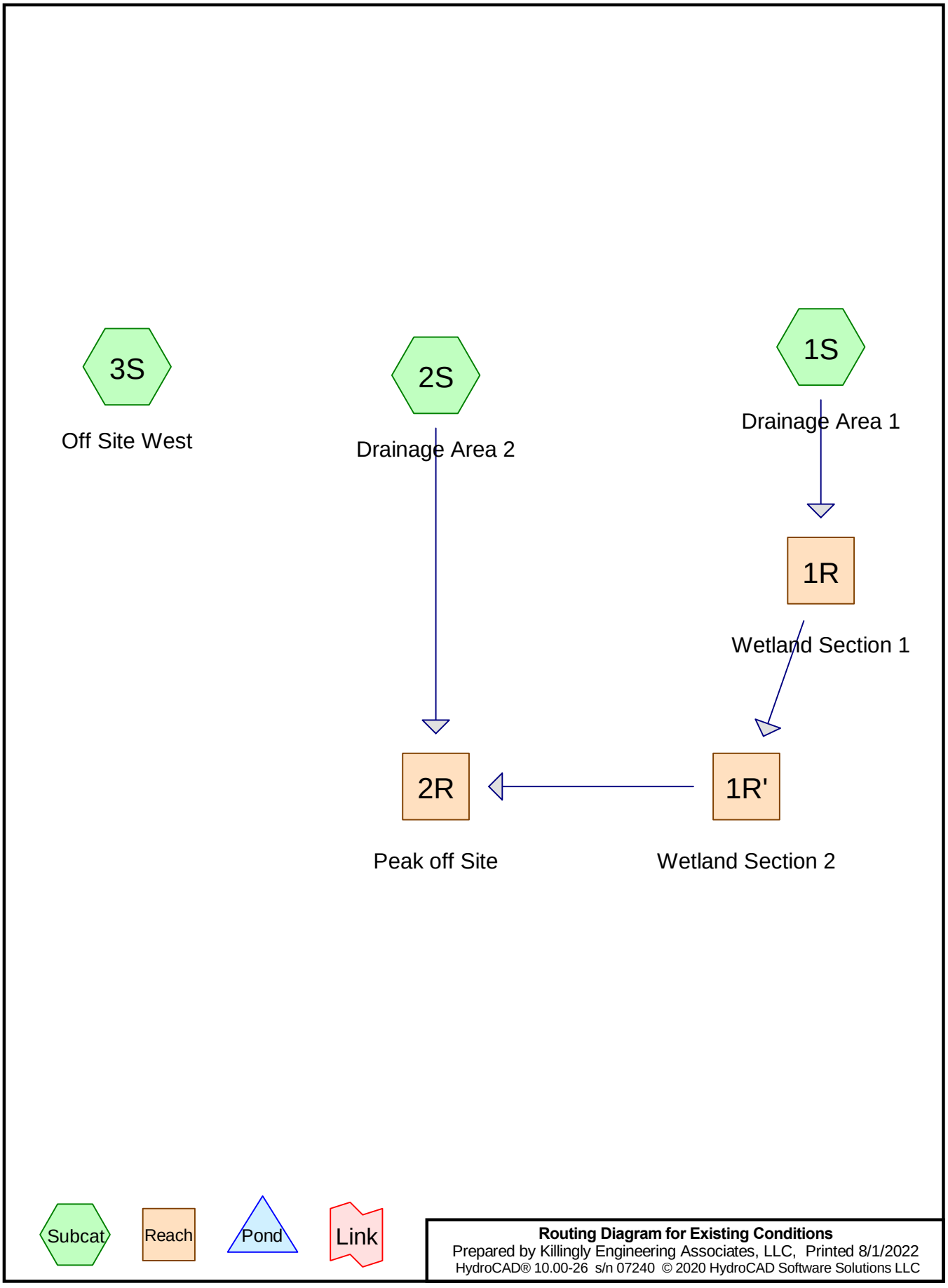
Not utilized for this application. This method is typically utilized to capture ñcleanò runoff from surfaces such as rooftops and infiltrate it into the soil.

Section 7.6 Peak Flow Control

We have demonstrated that peak flows from the development will be slightly reduced for all design storms.

HYDROCAD CALCULATIONS

EXISTING CONDITIONS



Routing Diagram for Existing Conditions
Prepared by Killingly Engineering Associates, LLC, Printed 8/1/2022

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.99 cfs @ 12.10 hrs, Volume= 0.157 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.94 cfs @ 12.18 hrs, Volume= 0.301 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 3.36 cfs @ 12.12 hrs, Volume= 0.254 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

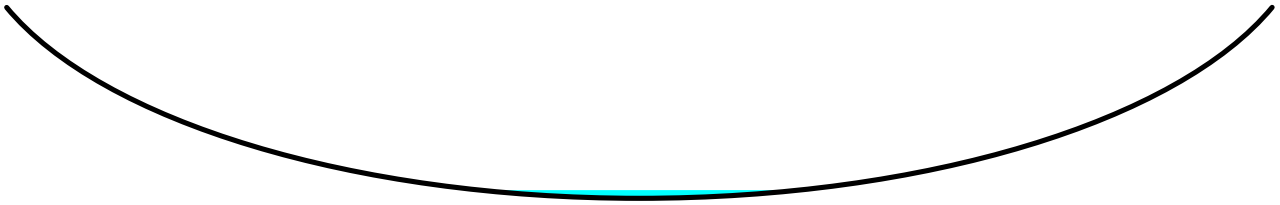
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.99 cfs @ 12.10 hrs, Volume= 0.157 af
Outflow = 1.75 cfs @ 12.21 hrs, Volume= 0.156 af, Atten= 12%, Lag= 6.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.15 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.58 fps, Avg. Travel Time= 6.9 min

Peak Storage= 371 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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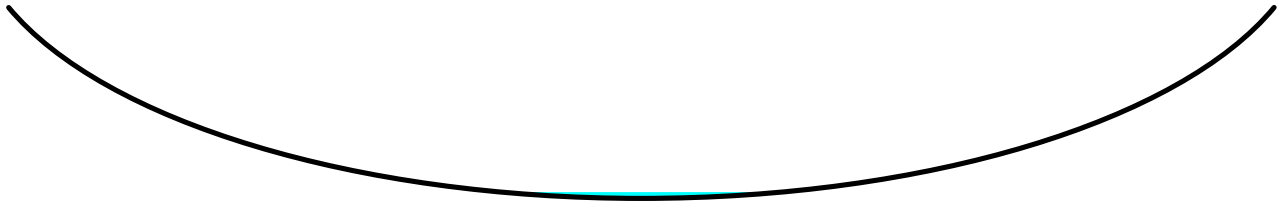
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.75 cfs @ 12.21 hrs, Volume= 0.156 af
Outflow = 1.72 cfs @ 12.22 hrs, Volume= 0.156 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.19 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.9 min

Peak Storage= 49 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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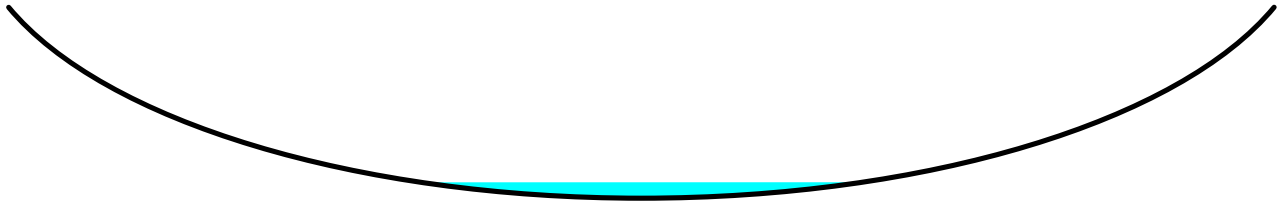
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 0.51" for 2-year event
Inflow = 4.60 cfs @ 12.21 hrs, Volume= 0.457 af
Outflow = 3.74 cfs @ 12.47 hrs, Volume= 0.449 af, Atten= 19%, Lag= 15.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.35 fps, Min. Travel Time= 7.9 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 14.5 min

Peak Storage= 1,783 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 4.00 cfs @ 12.09 hrs, Volume= 0.283 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 6.60 cfs @ 12.16 hrs, Volume= 0.561 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 5.82 cfs @ 12.12 hrs, Volume= 0.421 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

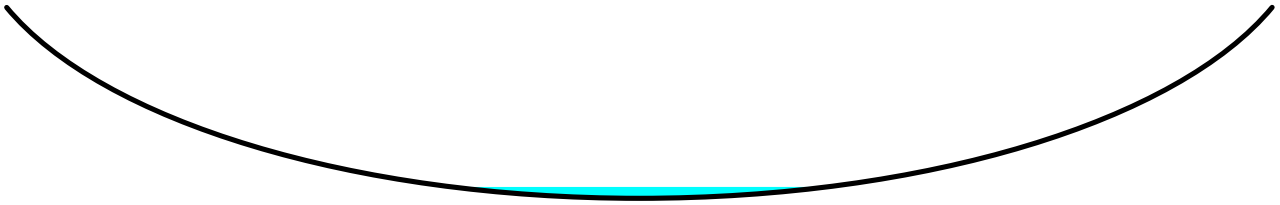
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.03" for 5-year event
Inflow = 4.00 cfs @ 12.09 hrs, Volume= 0.283 af
Outflow = 3.64 cfs @ 12.18 hrs, Volume= 0.281 af, Atten= 9%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.42 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 6.0 min

Peak Storage= 616 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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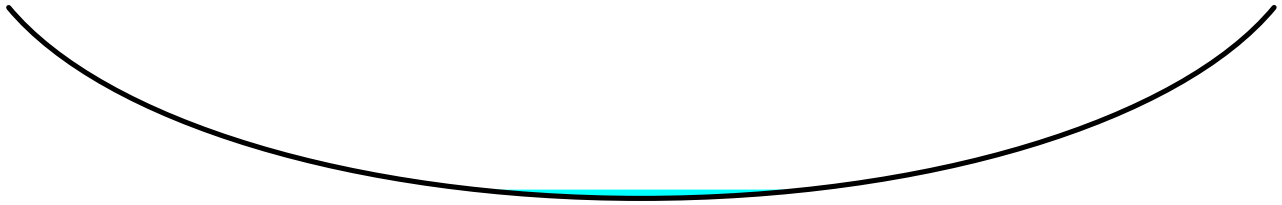
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.02" for 5-year event
Inflow = 3.64 cfs @ 12.18 hrs, Volume= 0.281 af
Outflow = 3.61 cfs @ 12.19 hrs, Volume= 0.281 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.46 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 0.8 min

Peak Storage= 82 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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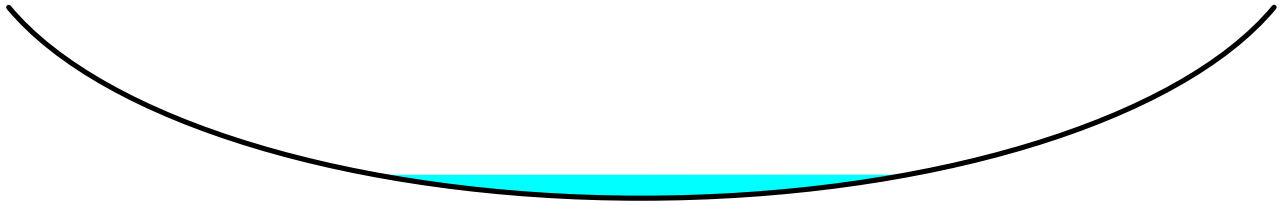
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 0.94" for 5-year event
Inflow = 10.14 cfs @ 12.17 hrs, Volume= 0.842 af
Outflow = 8.63 cfs @ 12.36 hrs, Volume= 0.832 af, Atten= 15%, Lag= 11.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 12.6 min

Peak Storage= 3,183 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 5.91 cfs @ 12.09 hrs, Volume= 0.404 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 10.12 cfs @ 12.16 hrs, Volume= 0.816 af, Depth> 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 8.07 cfs @ 12.12 hrs, Volume= 0.576 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

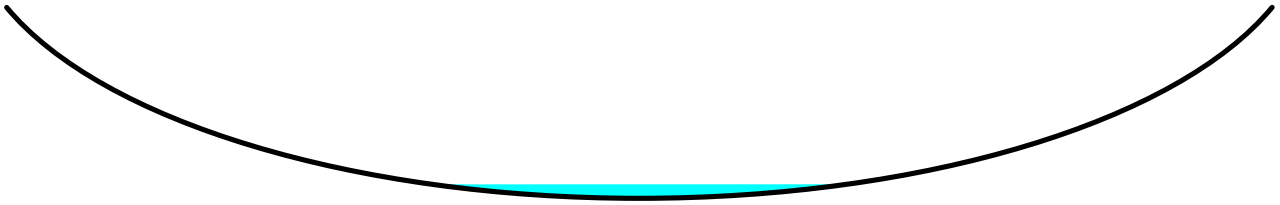
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-year event
Inflow = 5.91 cfs @ 12.09 hrs, Volume= 0.404 af
Outflow = 5.50 cfs @ 12.16 hrs, Volume= 0.403 af, Atten= 7%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.62 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 5.6 min

Peak Storage= 825 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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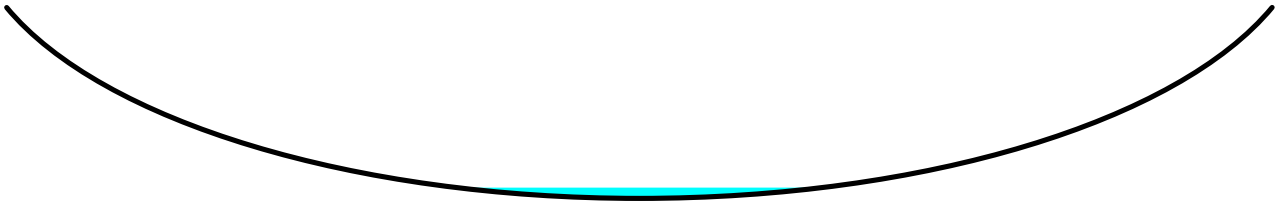
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-year event
Inflow = 5.50 cfs @ 12.16 hrs, Volume= 0.403 af
Outflow = 5.41 cfs @ 12.17 hrs, Volume= 0.402 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.31 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.28 fps, Avg. Travel Time= 0.7 min

Peak Storage= 108 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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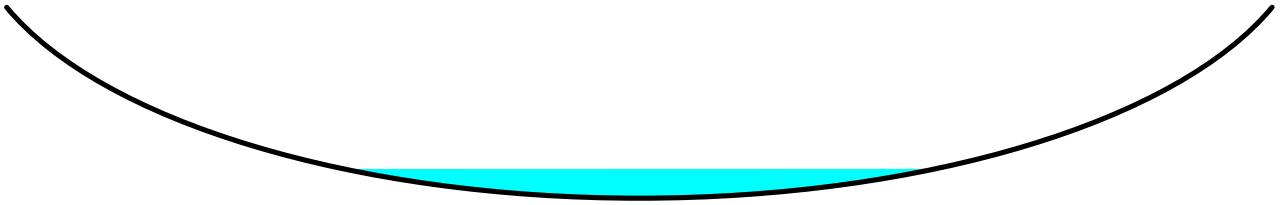
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 1.37" for 10-year event
Inflow = 15.48 cfs @ 12.16 hrs, Volume= 1.218 af
Outflow = 13.48 cfs @ 12.32 hrs, Volume= 1.206 af, Atten= 13%, Lag= 9.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.99 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.91 fps, Avg. Travel Time= 11.7 min

Peak Storage= 4,333 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 8.79 cfs @ 12.09 hrs, Volume= 0.589 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 15.46 cfs @ 12.15 hrs, Volume= 1.207 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 11.36 cfs @ 12.11 hrs, Volume= 0.804 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

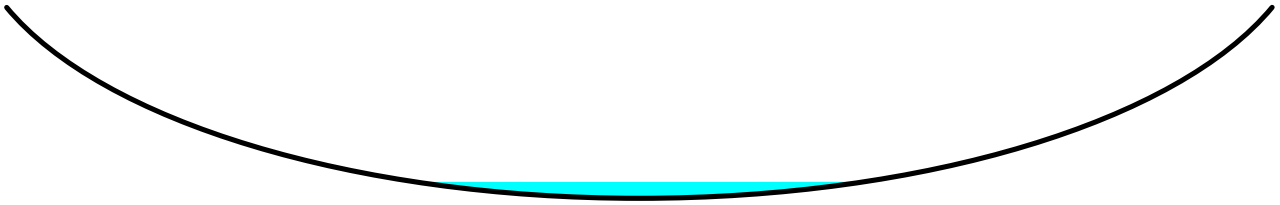
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.13" for 25-year event
Inflow = 8.79 cfs @ 12.09 hrs, Volume= 0.589 af
Outflow = 8.21 cfs @ 12.15 hrs, Volume= 0.586 af, Atten= 7%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 5.2 min

Peak Storage= 1,097 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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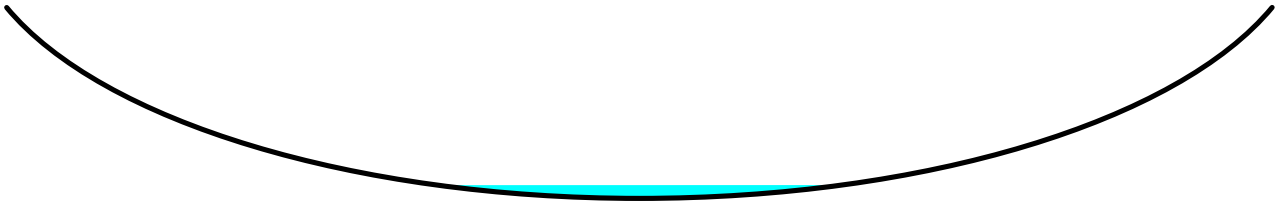
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.12" for 25-year event
Inflow = 8.21 cfs @ 12.15 hrs, Volume= 0.586 af
Outflow = 8.10 cfs @ 12.16 hrs, Volume= 0.586 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.28 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.54 fps, Avg. Travel Time= 0.7 min

Peak Storage= 143 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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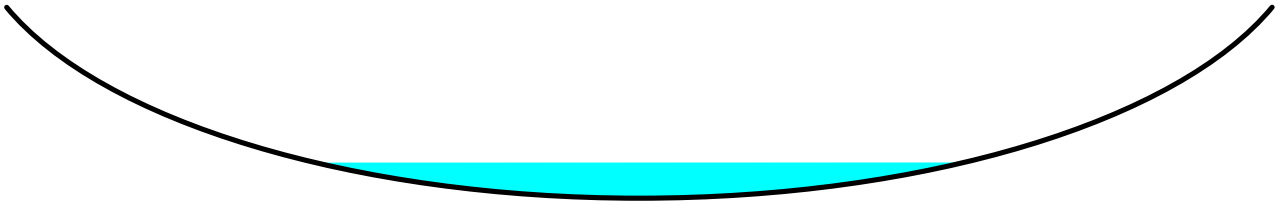
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 2.01" for 25-year event
Inflow = 23.54 cfs @ 12.16 hrs, Volume= 1.793 af
Outflow = 20.73 cfs @ 12.29 hrs, Volume= 1.778 af, Atten= 12%, Lag= 8.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.29 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 10.9 min

Peak Storage= 5,921 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 11.06 cfs @ 12.09 hrs, Volume= 0.736 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 19.71 cfs @ 12.15 hrs, Volume= 1.521 af, Depth> 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 13.89 cfs @ 12.11 hrs, Volume= 0.983 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

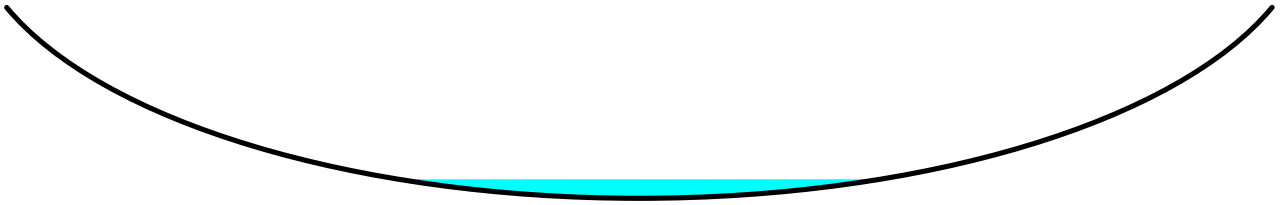
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.66" for 50-year event
Inflow = 11.06 cfs @ 12.09 hrs, Volume= 0.736 af
Outflow = 10.33 cfs @ 12.15 hrs, Volume= 0.733 af, Atten= 7%, Lag= 3.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 5.0 min

Peak Storage= 1,293 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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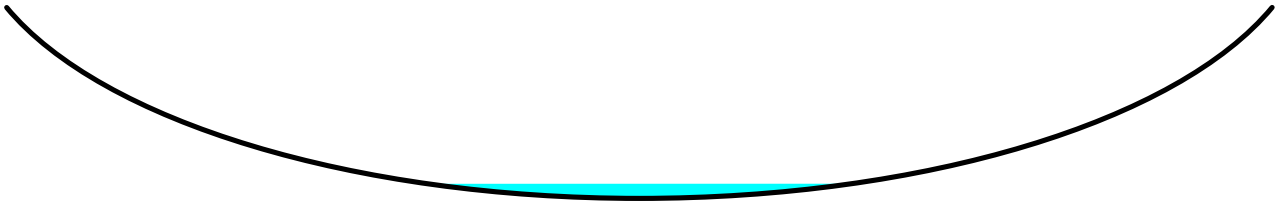
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.65" for 50-year event
Inflow = 10.33 cfs @ 12.15 hrs, Volume= 0.733 af
Outflow = 10.23 cfs @ 12.16 hrs, Volume= 0.733 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.91 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.7 min

Peak Storage= 168 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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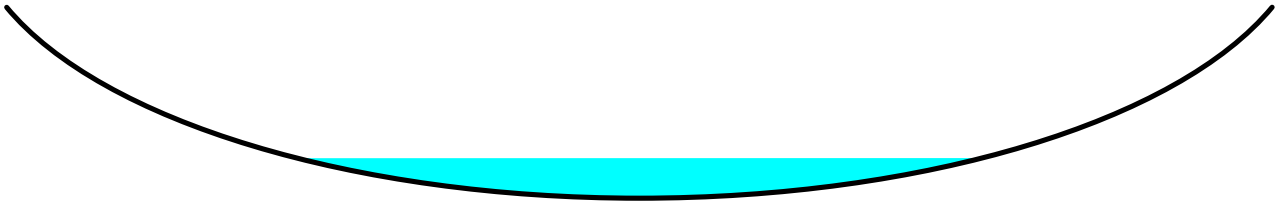
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 2.53" for 50-year event
Inflow = 29.92 cfs @ 12.15 hrs, Volume= 2.254 af
Outflow = 26.53 cfs @ 12.28 hrs, Volume= 2.236 af, Atten= 11%, Lag= 7.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 1.03 fps, Avg. Travel Time= 10.4 min

Peak Storage= 7,045 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 13.60 cfs @ 12.08 hrs, Volume= 0.902 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 24.50 cfs @ 12.15 hrs, Volume= 1.878 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 16.68 cfs @ 12.11 hrs, Volume= 1.182 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

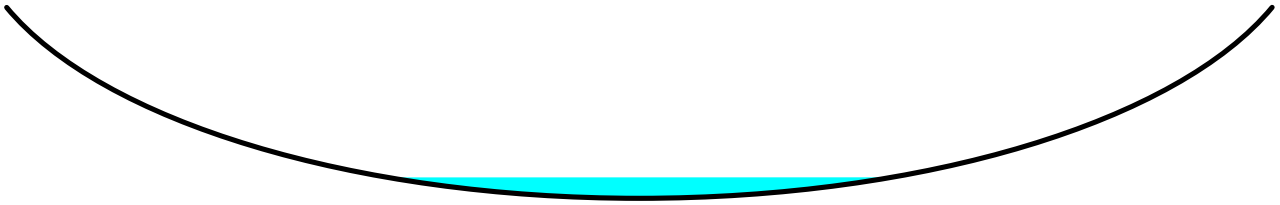
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 3.27" for 100-year event
Inflow = 13.60 cfs @ 12.08 hrs, Volume= 0.902 af
Outflow = 12.70 cfs @ 12.14 hrs, Volume= 0.899 af, Atten= 7%, Lag= 3.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.12 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 4.8 min

Peak Storage= 1,497 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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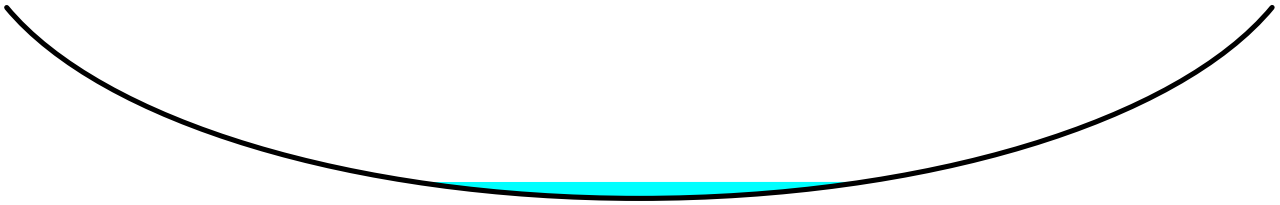
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 3.26" for 100-year event
Inflow = 12.70 cfs @ 12.14 hrs, Volume= 0.899 af
Outflow = 12.60 cfs @ 12.15 hrs, Volume= 0.899 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.50 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.85 fps, Avg. Travel Time= 0.6 min

Peak Storage= 194 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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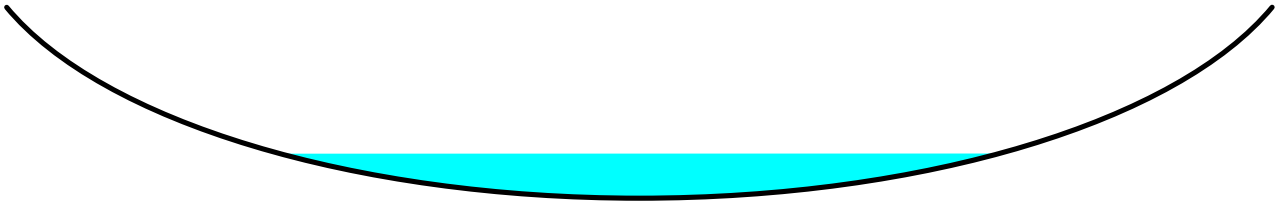
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 3.11" for 100-year event
Inflow = 37.10 cfs @ 12.15 hrs, Volume= 2.777 af
Outflow = 33.47 cfs @ 12.27 hrs, Volume= 2.758 af, Atten= 10%, Lag= 7.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 9.9 min

Peak Storage= 8,223 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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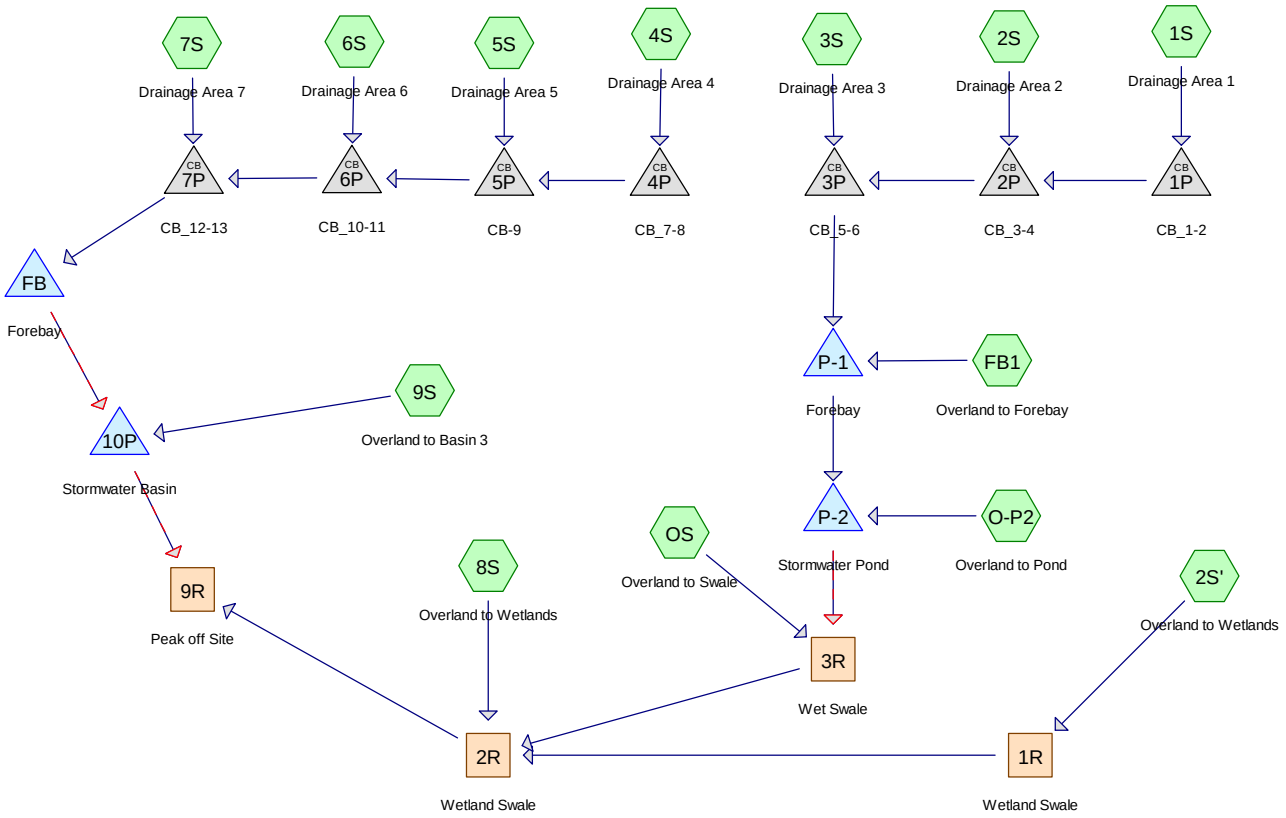
PROPOSED CONDITIONS



Subcat Reach Pond Link

Routing Diagram for Proposed Conditions

Prepared by Killingly Engineering Associates, LLC, Printed 8/1/2022

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af, Depth> 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 0.82 cfs @ 12.02 hrs, Volume= 0.049 af, Depth> 1.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 1.31 cfs @ 12.19 hrs, Volume= 0.117 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 1.62 cfs @ 12.02 hrs, Volume= 0.098 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 2.52 cfs @ 12.05 hrs, Volume= 0.154 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.07 cfs @ 12.02 hrs, Volume= 0.071 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 2.69 cfs @ 12.22 hrs, Volume= 0.255 af, Depth> 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 0.88 cfs @ 12.05 hrs, Volume= 0.054 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.19 cfs @ 12.05 hrs, Volume= 0.012 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.25 cfs @ 12.03 hrs, Volume= 0.016 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.44 cfs @ 12.05 hrs, Volume= 0.028 af, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

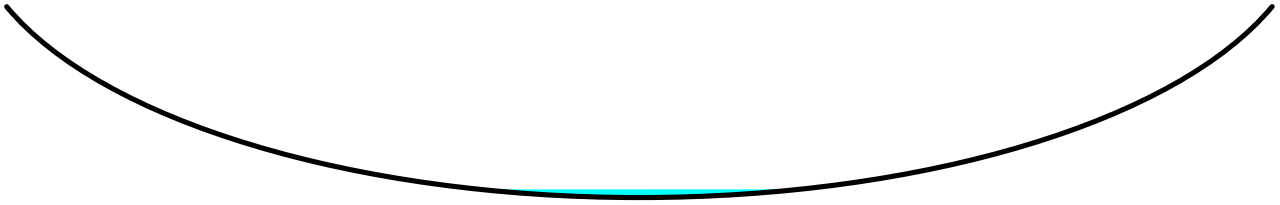
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 0.79" for 2-year event
Inflow = 1.31 cfs @ 12.19 hrs, Volume= 0.117 af
Outflow = 1.23 cfs @ 12.31 hrs, Volume= 0.116 af, Atten= 6%, Lag= 7.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.25 fps, Min. Travel Time= 3.9 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 7.8 min

Peak Storage= 288 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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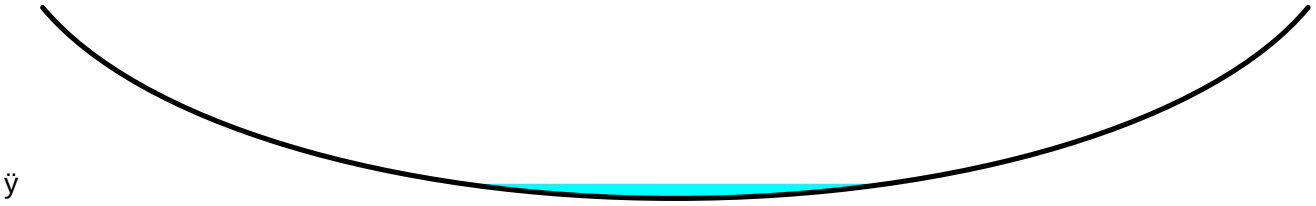
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 0.74" for 2-year event
Inflow = 3.97 cfs @ 12.26 hrs, Volume= 0.471 af
Outflow = 3.48 cfs @ 12.51 hrs, Volume= 0.463 af, Atten= 12%, Lag= 15.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.43 fps, Min. Travel Time= 8.3 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 15.4 min

Peak Storage= 1,738 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 0.69" for 2-year event
Inflow = 0.44 cfs @ 12.05 hrs, Volume= 0.100 af
Outflow = 0.40 cfs @ 12.11 hrs, Volume= 0.100 af, Atten= 9%, Lag= 3.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.32 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 3.3 min

Peak Storage= 52 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 0.81" for 2-year event
Inflow = 3.62 cfs @ 12.53 hrs, Volume= 0.800 af
Outflow = 3.62 cfs @ 12.53 hrs, Volume= 0.800 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 1.85" for 2-year event
Inflow = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af
Outflow = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.79' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.39 cfs @ 12.13 hrs HW=311.79' (Free Discharge)
1=Culvert (Inlet Controls 0.39 cfs @ 1.83 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 1.90" for 2-year event
Inflow = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af
Outflow = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.34' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.03 cfs @ 12.03 hrs HW=299.33' (Free Discharge)
1=Culvert (Inlet Controls 1.03 cfs @ 2.36 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 1.72" for 2-year event
Inflow = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af
Outflow = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.21' @ 12.07 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.01 cfs @ 12.07 hrs HW=287.20' (Free Discharge)
1=Culvert (Inlet Controls 2.01 cfs @ 2.85 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 1.70" for 2-year event
Inflow = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af
Outflow = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.53' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.62 cfs @ 12.04 hrs HW=273.51' (Free Discharge)
1=Culvert (Inlet Controls 3.62 cfs @ 3.42 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 1.75" for 2-year event
Inflow = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af
Outflow = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.0 min
Primary = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 265.03' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.13 cfs @ 12.03 hrs HW=264.98' (Free Discharge)
1=Culvert (Inlet Controls 5.13 cfs @ 4.18 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 1.73" for 2-year event
Inflow = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af
Outflow = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af, Atten= 0%, Lag= 0.0 min
Primary = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 254.59' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=7.57 cfs @ 12.04 hrs HW=254.54' (Free Discharge)
1=Culvert (Inlet Controls 7.57 cfs @ 4.28 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 1.82" for 2-year event
Inflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af
Outflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min
Primary = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.82' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.51 cfs @ 12.04 hrs HW=246.75' (Free Discharge)
1=Culvert (Inlet Controls 8.51 cfs @ 4.82 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 1.63" for 2-year event
Inflow = 6.84 cfs @ 12.12 hrs, Volume= 0.567 af
Outflow = 0.87 cfs @ 14.66 hrs, Volume= 0.338 af, Atten= 87%, Lag= 152.4 min
Primary = 0.87 cfs @ 14.66 hrs, Volume= 0.338 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.58' @ 14.66 hrs Surf.Area= 7,085 sf Storage= 13,937 cf

Plug-Flow detention time= 211.6 min calculated for 0.336 af (59% of inflow)

Center-of-Mass det. time= 134.2 min (960.7 - 826.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 14.66 hrs HW=246.58' (Free Discharge)
└**1=Culvert** (Passes 0.85 cfs of 15.54 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.61 cfs @ 4.51 fps)
  ├**3=Orifice/Grate** (Weir Controls 0.24 cfs @ 0.95 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 1.82" for 2-year event
Inflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af
Outflow = 6.25 cfs @ 12.12 hrs, Volume= 0.514 af, Atten= 29%, Lag= 4.8 min
Primary = 1.38 cfs @ 12.12 hrs, Volume= 0.437 af
Secondary = 4.87 cfs @ 12.12 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.17' @ 12.12 hrs Surf.Area= 2,432 sf Storage= 7,234 cf

Plug-Flow detention time= 71.0 min calculated for 0.514 af (93% of inflow)
Center-of-Mass det. time= 47.3 min (828.3 - 781.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.37 cfs @ 12.12 hrs HW=246.14' (Free Discharge)
1=Culvert (Barrel Controls 1.37 cfs @ 7.00 fps)

Secondary OutFlow Max=4.22 cfs @ 12.12 hrs HW=246.14' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 4.22 cfs @ 0.88 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 1.65" for 2-year event
Inflow = 2.25 cfs @ 12.06 hrs, Volume= 0.165 af
Outflow = 1.09 cfs @ 12.31 hrs, Volume= 0.095 af, Atten= 52%, Lag= 14.9 min
Primary = 1.09 cfs @ 12.31 hrs, Volume= 0.095 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.15' @ 12.31 hrs Surf.Area= 1,601 sf Storage= 3,253 cf

Plug-Flow detention time= 147.0 min calculated for 0.095 af (58% of inflow)
Center-of-Mass det. time= 68.7 min (859.5 - 790.8)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=1.06 cfs @ 12.31 hrs HW=285.14' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.06 cfs @ 0.92 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 0.96" for 2-year event
Inflow = 1.18 cfs @ 12.31 hrs, Volume= 0.111 af
Outflow = 0.17 cfs @ 14.14 hrs, Volume= 0.073 af, Atten= 85%, Lag= 110.1 min
Primary = 0.17 cfs @ 14.14 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.84' @ 14.14 hrs Surf.Area= 2,761 sf Storage= 2,156 cf

Plug-Flow detention time= 172.5 min calculated for 0.073 af (65% of inflow)
Center-of-Mass det. time= 93.2 min (946.0 - 852.9)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 14.14 hrs HW=272.84' (Free Discharge)
└**1=Culvert** (Passes 0.17 cfs of 2.80 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.17 cfs @ 2.00 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.14 cfs @ 12.02 hrs, Volume= 0.069 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 2.31 cfs @ 12.18 hrs, Volume= 0.195 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 1.60 cfs @ 12.09 hrs, Volume= 0.108 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 2.26 cfs @ 12.02 hrs, Volume= 0.139 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 3.58 cfs @ 12.05 hrs, Volume= 0.221 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.36 cfs @ 12.02 hrs, Volume= 0.091 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 4.84 cfs @ 12.21 hrs, Volume= 0.431 af, Depth> 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 1.37 cfs @ 12.04 hrs, Volume= 0.083 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.31 cfs @ 12.04 hrs, Volume= 0.019 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.41 cfs @ 12.03 hrs, Volume= 0.025 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.73 cfs @ 12.04 hrs, Volume= 0.044 af, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

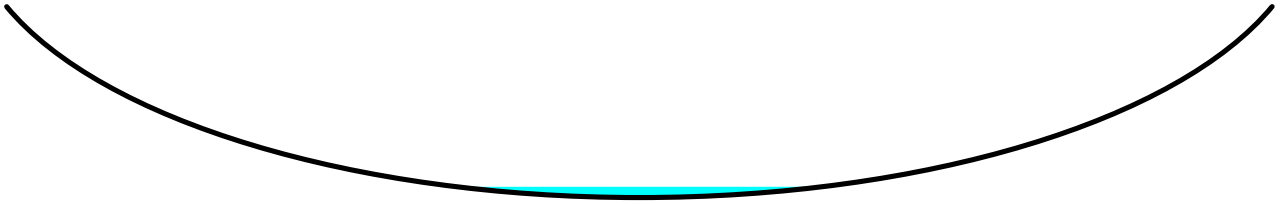
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 1.32" for 5-year event
Inflow = 2.31 cfs @ 12.18 hrs, Volume= 0.195 af
Outflow = 2.20 cfs @ 12.28 hrs, Volume= 0.194 af, Atten= 5%, Lag= 5.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.48 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 6.9 min

Peak Storage= 430 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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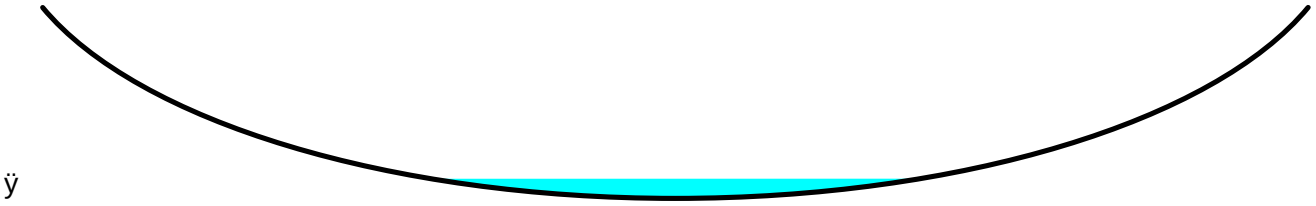
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 1.29" for 5-year event
Inflow = 7.26 cfs @ 12.24 hrs, Volume= 0.822 af
Outflow = 6.57 cfs @ 12.45 hrs, Volume= 0.811 af, Atten= 10%, Lag= 12.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 6.8 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 13.8 min

Peak Storage= 2,700 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 1.36" for 5-year event
Inflow = 0.73 cfs @ 12.04 hrs, Volume= 0.197 af
Outflow = 0.67 cfs @ 12.09 hrs, Volume= 0.196 af, Atten= 9%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.63 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.7 min

Peak Storage= 72 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 1.41" for 5-year event
Inflow = 8.20 cfs @ 12.47 hrs, Volume= 1.386 af
Outflow = 8.20 cfs @ 12.47 hrs, Volume= 1.386 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 2.62" for 5-year event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af
Outflow = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.85' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.55 cfs @ 12.13 hrs HW=311.84' (Free Discharge)
1=Culvert (Inlet Controls 0.55 cfs @ 2.00 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 2.68" for 5-year event
Inflow = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af
Outflow = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min
Primary = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.43' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.43 cfs @ 12.03 hrs HW=299.43' (Free Discharge)
1=Culvert (Inlet Controls 1.43 cfs @ 2.59 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 2.46" for 5-year event
Inflow = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af
Outflow = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.38' @ 12.07 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.87 cfs @ 12.07 hrs HW=287.37' (Free Discharge)
1=Culvert (Inlet Controls 2.87 cfs @ 3.17 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 2.45" for 5-year event
Inflow = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af
Outflow = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.94' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.14 cfs @ 12.04 hrs HW=273.88' (Free Discharge)
1=Culvert (Inlet Controls 5.14 cfs @ 4.19 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 2.50" for 5-year event
Inflow = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af
Outflow = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min
Primary = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 265.84' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.25 cfs @ 12.03 hrs HW=265.73' (Free Discharge)
1=Culvert (Inlet Controls 7.25 cfs @ 5.91 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 2.48" for 5-year event
Inflow = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af
Outflow = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af, Atten= 0%, Lag= 0.0 min
Primary = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.43' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=10.71 cfs @ 12.04 hrs HW=255.33' (Free Discharge)
1=Culvert (Inlet Controls 10.71 cfs @ 6.06 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 2.58" for 5-year event
Inflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af
Outflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af, Atten= 0%, Lag= 0.0 min
Primary = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.85' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=11.92 cfs @ 12.04 hrs HW=247.71' (Free Discharge)
1=Culvert (Inlet Controls 11.92 cfs @ 6.75 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 2.37" for 5-year event
Inflow = 15.79 cfs @ 12.06 hrs, Volume= 0.823 af
Outflow = 1.79 cfs @ 12.61 hrs, Volume= 0.575 af, Atten= 89%, Lag= 32.9 min
Primary = 1.79 cfs @ 12.61 hrs, Volume= 0.575 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.75' @ 12.61 hrs Surf.Area= 7,523 sf Storage= 15,132 cf

Plug-Flow detention time= 161.9 min calculated for 0.575 af (70% of inflow)

Center-of-Mass det. time= 94.4 min (908.0 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.87 cfs @ 12.61 hrs HW=246.75' (Free Discharge)
└─**1=Culvert** (Passes 1.87 cfs of 15.91 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.67 cfs @ 4.91 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.20 cfs @ 2.39 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 2.58" for 5-year event
Inflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af
Outflow = 14.44 cfs @ 12.06 hrs, Volume= 0.740 af, Atten= 0%, Lag= 1.2 min
Primary = 1.41 cfs @ 12.06 hrs, Volume= 0.547 af
Secondary = 13.03 cfs @ 12.06 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.29' @ 12.06 hrs Surf.Area= 2,475 sf Storage= 7,510 cf

Plug-Flow detention time= 59.6 min calculated for 0.737 af (95% of inflow)
Center-of-Mass det. time= 41.4 min (815.3 - 773.9)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.40 cfs @ 12.06 hrs HW=246.27' (Free Discharge)
1=Culvert (Barrel Controls 1.40 cfs @ 7.14 fps)

Secondary OutFlow Max=11.95 cfs @ 12.06 hrs HW=246.27' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 11.95 cfs @ 1.27 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 2.37" for 5-year event
Inflow = 3.24 cfs @ 12.06 hrs, Volume= 0.238 af
Outflow = 3.01 cfs @ 12.12 hrs, Volume= 0.168 af, Atten= 7%, Lag= 3.7 min
Primary = 3.01 cfs @ 12.12 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.29' @ 12.12 hrs Surf.Area= 1,636 sf Storage= 3,483 cf

Plug-Flow detention time= 112.0 min calculated for 0.168 af (71% of inflow)
Center-of-Mass det. time= 46.0 min (828.6 - 782.6)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.78 cfs @ 12.12 hrs HW=285.27' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.78 cfs @ 1.28 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 1.68" for 5-year event
Inflow = 3.24 cfs @ 12.12 hrs, Volume= 0.193 af
Outflow = 0.35 cfs @ 13.15 hrs, Volume= 0.152 af, Atten= 89%, Lag= 61.6 min
Primary = 0.35 cfs @ 13.15 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.37' @ 13.15 hrs Surf.Area= 3,007 sf Storage= 3,696 cf

Plug-Flow detention time= 147.4 min calculated for 0.152 af (79% of inflow)
Center-of-Mass det. time= 92.3 min (917.5 - 825.2)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 13.15 hrs HW=273.37' (Free Discharge)
├**1=Culvert** (Passes 0.35 cfs of 5.97 cfs potential flow)
│ └**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 4.05 fps)
│ └**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.41 cfs @ 12.01 hrs, Volume= 0.086 af, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 3.23 cfs @ 12.18 hrs, Volume= 0.268 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 2.03 cfs @ 12.09 hrs, Volume= 0.137 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 2.80 cfs @ 12.02 hrs, Volume= 0.173 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 4.49 cfs @ 12.05 hrs, Volume= 0.280 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.61 cfs @ 12.02 hrs, Volume= 0.109 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 6.84 cfs @ 12.21 hrs, Volume= 0.596 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 1.81 cfs @ 12.04 hrs, Volume= 0.109 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.41 cfs @ 12.04 hrs, Volume= 0.025 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.54 cfs @ 12.03 hrs, Volume= 0.033 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.99 cfs @ 12.04 hrs, Volume= 0.060 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

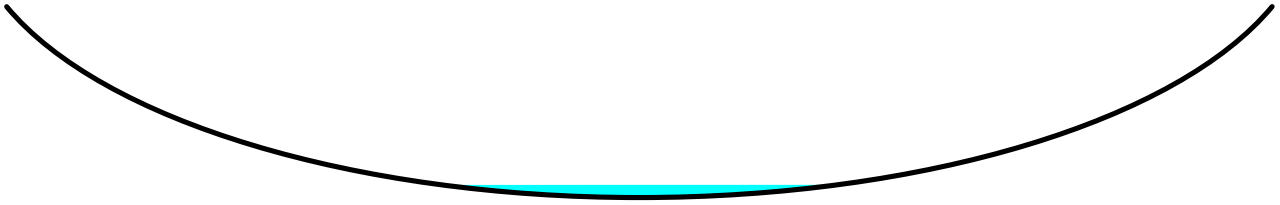
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 1.81" for 10-year event
Inflow = 3.23 cfs @ 12.18 hrs, Volume= 0.268 af
Outflow = 3.13 cfs @ 12.27 hrs, Volume= 0.267 af, Atten= 3%, Lag= 5.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.65 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 6.5 min

Peak Storage= 549 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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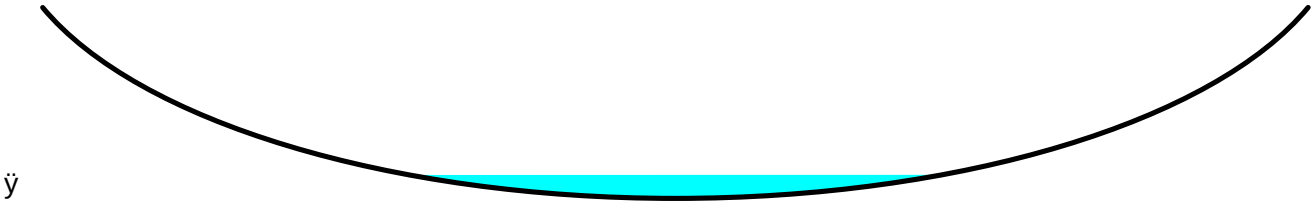
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 1.79" for 10-year event
Inflow = 10.48 cfs @ 12.23 hrs, Volume= 1.143 af
Outflow = 9.64 cfs @ 12.41 hrs, Volume= 1.129 af, Atten= 8%, Lag= 10.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.96 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.93 fps, Avg. Travel Time= 12.8 min

Peak Storage= 3,512 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 1.94" for 10-year event
Inflow = 1.00 cfs @ 12.05 hrs, Volume= 0.280 af
Outflow = 0.95 cfs @ 12.10 hrs, Volume= 0.279 af, Atten= 5%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.85 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 2.5 min

Peak Storage= 88 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 1.94" for 10-year event
Inflow = 13.19 cfs @ 12.42 hrs, Volume= 1.911 af
Outflow = 13.19 cfs @ 12.42 hrs, Volume= 1.911 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 3.28" for 10-year event
Inflow = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af
Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.89' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.68 cfs @ 12.13 hrs HW=311.89' (Free Discharge)
1=Culvert (Inlet Controls 0.68 cfs @ 2.12 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 3.34" for 10-year event
Inflow = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af
Outflow = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.51' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.77 cfs @ 12.03 hrs HW=299.50' (Free Discharge)
1=Culvert (Inlet Controls 1.77 cfs @ 2.75 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 3.11" for 10-year event
Inflow = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af
Outflow = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.0 min
Primary = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.52' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.60 cfs @ 12.06 hrs HW=287.50' (Free Discharge)
1=Culvert (Inlet Controls 3.60 cfs @ 3.41 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 3.09" for 10-year event
Inflow = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af
Outflow = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af, Atten= 0%, Lag= 0.0 min
Primary = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.40' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.42 cfs @ 12.03 hrs HW=274.31' (Free Discharge)
1=Culvert (Inlet Controls 6.42 cfs @ 5.23 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 3.15" for 10-year event
Inflow = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af
Outflow = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af, Atten= 0%, Lag= 0.0 min
Primary = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.74' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.04 cfs @ 12.03 hrs HW=266.57' (Free Discharge)
1=Culvert (Inlet Controls 9.04 cfs @ 7.37 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 3.13" for 10-year event
Inflow = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af
Outflow = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min
Primary = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.37' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=13.36 cfs @ 12.04 hrs HW=256.22' (Free Discharge)
1=Culvert (Inlet Controls 13.36 cfs @ 7.56 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 3.23" for 10-year event
Inflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af
Outflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af, Atten= 0%, Lag= 0.0 min
Primary = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 248.98' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=14.79 cfs @ 12.04 hrs HW=248.77' (Free Discharge)
1=Culvert (Inlet Controls 14.79 cfs @ 8.37 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 3.00" for 10-year event
Inflow = 16.88 cfs @ 12.04 hrs, Volume= 1.044 af
Outflow = 3.60 cfs @ 12.46 hrs, Volume= 0.782 af, Atten= 79%, Lag= 24.9 min
Primary = 3.60 cfs @ 12.46 hrs, Volume= 0.782 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.19' @ 12.46 hrs Surf.Area= 8,701 sf Storage= 18,704 cf

Plug-Flow detention time= 137.7 min calculated for 0.782 af (75% of inflow)

Center-of-Mass det. time= 76.3 min (882.1 - 805.8)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.58 cfs @ 12.46 hrs HW=247.19' (Free Discharge)
└─**1=Culvert** (Passes 3.58 cfs of 16.88 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 5.85 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.99 cfs @ 3.99 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.79 cfs @ 1.41 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 3.23" for 10-year event
Inflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af
Outflow = 15.07 cfs @ 12.04 hrs, Volume= 0.935 af, Atten= 2%, Lag= 0.4 min
Primary = 1.41 cfs @ 12.04 hrs, Volume= 0.634 af
Secondary = 13.66 cfs @ 12.04 hrs, Volume= 0.301 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.29' @ 12.04 hrs Surf.Area= 2,478 sf Storage= 7,527 cf

Plug-Flow detention time= 53.9 min calculated for 0.935 af (96% of inflow)
Center-of-Mass det. time= 38.3 min (807.4 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.41 cfs @ 12.04 hrs HW=246.29' (Free Discharge)
1=Culvert (Barrel Controls 1.41 cfs @ 7.16 fps)

Secondary OutFlow Max=13.34 cfs @ 12.04 hrs HW=246.29' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 13.34 cfs @ 1.32 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 3.01" for 10-year event
Inflow = 4.08 cfs @ 12.06 hrs, Volume= 0.302 af
Outflow = 3.93 cfs @ 12.09 hrs, Volume= 0.232 af, Atten= 4%, Lag= 1.9 min
Primary = 3.93 cfs @ 12.09 hrs, Volume= 0.232 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.34' @ 12.09 hrs Surf.Area= 1,648 sf Storage= 3,564 cf

Plug-Flow detention time= 96.6 min calculated for 0.232 af (77% of inflow)
Center-of-Mass det. time= 38.8 min (816.0 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=3.88 cfs @ 12.09 hrs HW=285.33' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.88 cfs @ 1.45 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 2.30" for 10-year event
Inflow = 4.31 cfs @ 12.08 hrs, Volume= 0.265 af
Outflow = 0.47 cfs @ 13.03 hrs, Volume= 0.220 af, Atten= 89%, Lag= 56.9 min
Primary = 0.47 cfs @ 13.03 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.94' @ 13.03 hrs Surf.Area= 3,266 sf Storage= 5,462 cf

Plug-Flow detention time= 154.8 min calculated for 0.219 af (83% of inflow)
Center-of-Mass det. time= 108.2 min (921.7 - 813.5)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 13.03 hrs HW=273.94' (Free Discharge)
└**1=Culvert** (Passes 0.47 cfs of 8.18 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.43 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af, Depth> 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.77 cfs @ 12.01 hrs, Volume= 0.110 af, Depth> 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 4.62 cfs @ 12.17 hrs, Volume= 0.377 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 2.62 cfs @ 12.09 hrs, Volume= 0.179 af, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 3.55 cfs @ 12.02 hrs, Volume= 0.222 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 5.74 cfs @ 12.05 hrs, Volume= 0.362 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.95 cfs @ 12.02 hrs, Volume= 0.132 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 9.79 cfs @ 12.20 hrs, Volume= 0.843 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 2.42 cfs @ 12.04 hrs, Volume= 0.147 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.56 cfs @ 12.04 hrs, Volume= 0.034 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.74 cfs @ 12.02 hrs, Volume= 0.045 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.37 cfs @ 12.04 hrs, Volume= 0.082 af, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

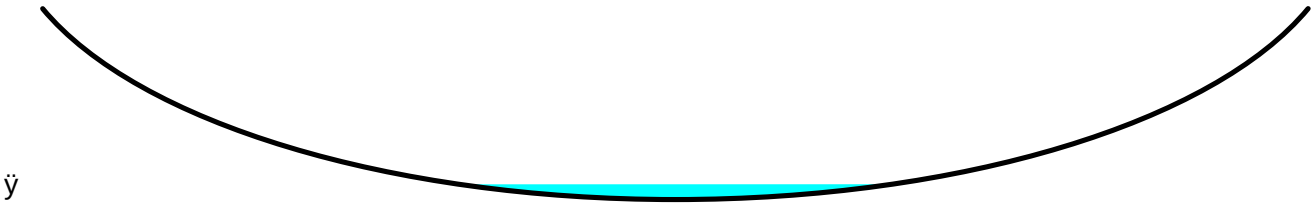
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 2.54" for 25-year event
Inflow = 4.62 cfs @ 12.17 hrs, Volume= 0.377 af
Outflow = 4.45 cfs @ 12.26 hrs, Volume= 0.375 af, Atten= 4%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 6.1 min

Peak Storage= 704 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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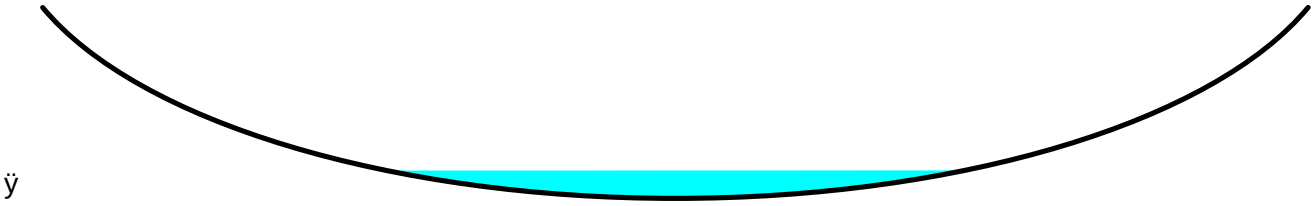
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 2.52" for 25-year event
Inflow = 15.08 cfs @ 12.22 hrs, Volume= 1.607 af
Outflow = 13.91 cfs @ 12.38 hrs, Volume= 1.590 af, Atten= 8%, Lag= 9.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.19 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 11.9 min

Peak Storage= 4,546 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 2.70" for 25-year event
Inflow = 1.66 cfs @ 12.05 hrs, Volume= 0.390 af
Outflow = 1.54 cfs @ 12.09 hrs, Volume= 0.389 af, Atten= 7%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.26 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 2.3 min

Peak Storage= 120 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 2.71" for 25-year event
Inflow = 19.55 cfs @ 12.38 hrs, Volume= 2.667 af
Outflow = 19.55 cfs @ 12.38 hrs, Volume= 2.667 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 4.20" for 25-year event
Inflow = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af
Outflow = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.94' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.87 cfs @ 12.13 hrs HW=311.94' (Free Discharge)
1=Culvert (Inlet Controls 0.87 cfs @ 2.26 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 4.27" for 25-year event
Inflow = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af
Outflow = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min
Primary = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.60' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.24 cfs @ 12.03 hrs HW=299.59' (Free Discharge)
1=Culvert (Inlet Controls 2.24 cfs @ 2.94 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 4.02" for 25-year event
Inflow = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af
Outflow = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.76' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.62 cfs @ 12.06 hrs HW=287.73' (Free Discharge)
1=Culvert (Inlet Controls 4.62 cfs @ 3.78 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 4.00" for 25-year event
Inflow = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af
Outflow = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af, Atten= 0%, Lag= 0.0 min
Primary = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.20' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=8.20 cfs @ 12.03 hrs HW=275.05' (Free Discharge)
1=Culvert (Inlet Controls 8.20 cfs @ 6.68 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 4.06" for 25-year event
Inflow = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af
Outflow = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af, Atten= 0%, Lag= 0.0 min
Primary = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.31' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=11.51 cfs @ 12.03 hrs HW=268.02' (Free Discharge)
1=Culvert (Inlet Controls 11.51 cfs @ 9.38 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 4.04" for 25-year event
Inflow = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af
Outflow = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af, Atten= 0%, Lag= 0.0 min
Primary = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.02' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=17.02 cfs @ 12.04 hrs HW=257.75' (Free Discharge)
1=Culvert (Inlet Controls 17.02 cfs @ 9.63 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.14" for 25-year event
Inflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af
Outflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af, Atten= 0%, Lag= 0.0 min
Primary = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.95' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=18.76 cfs @ 12.04 hrs HW=250.61' (Free Discharge)
1=Culvert (Inlet Controls 18.76 cfs @ 10.62 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 3.90" for 25-year event
Inflow = 21.90 cfs @ 12.04 hrs, Volume= 1.356 af
Outflow = 5.64 cfs @ 12.40 hrs, Volume= 1.077 af, Atten= 74%, Lag= 21.1 min
Primary = 5.64 cfs @ 12.40 hrs, Volume= 1.077 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.72' @ 12.40 hrs Surf.Area= 10,130 sf Storage= 23,735 cf

Plug-Flow detention time= 117.6 min calculated for 1.073 af (79% of inflow)

Center-of-Mass det. time= 63.1 min (860.8 - 797.7)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.64 cfs @ 12.40 hrs HW=247.72' (Free Discharge)
└─**1=Culvert** (Passes 5.64 cfs of 17.99 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.93 cfs @ 6.83 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 2.66 cfs @ 5.32 fps)
  └─**4=Orifice/Grate** (Orifice Controls 2.04 cfs @ 4.09 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.14" for 25-year event
Inflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af
Outflow = 19.48 cfs @ 12.05 hrs, Volume= 1.209 af, Atten= 0%, Lag= 0.6 min
Primary = 1.42 cfs @ 12.05 hrs, Volume= 0.747 af
Secondary = 18.06 cfs @ 12.05 hrs, Volume= 0.462 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.35' @ 12.05 hrs Surf.Area= 2,499 sf Storage= 7,667 cf

Plug-Flow detention time= 48.3 min calculated for 1.205 af (96% of inflow)
Center-of-Mass det. time= 35.4 min (799.2 - 763.7)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.42 cfs @ 12.05 hrs HW=246.35' (Free Discharge)
1=Culvert (Barrel Controls 1.42 cfs @ 7.23 fps)

Secondary OutFlow Max=17.72 cfs @ 12.05 hrs HW=246.35' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 17.72 cfs @ 1.47 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 3.90" for 25-year event
Inflow = 5.26 cfs @ 12.06 hrs, Volume= 0.392 af
Outflow = 5.08 cfs @ 12.09 hrs, Volume= 0.322 af, Atten= 3%, Lag= 1.7 min
Primary = 5.08 cfs @ 12.09 hrs, Volume= 0.322 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.40' @ 12.09 hrs Surf.Area= 1,663 sf Storage= 3,663 cf

Plug-Flow detention time= 83.1 min calculated for 0.321 af (82% of inflow)
Center-of-Mass det. time= 34.0 min (805.3 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=4.99 cfs @ 12.09 hrs HW=285.39' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 4.99 cfs @ 1.59 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 3.18" for 25-year event
Inflow = 5.67 cfs @ 12.07 hrs, Volume= 0.366 af
Outflow = 0.60 cfs @ 13.01 hrs, Volume= 0.308 af, Atten= 89%, Lag= 56.3 min
Primary = 0.60 cfs @ 13.01 hrs, Volume= 0.308 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.72' @ 13.01 hrs Surf.Area= 3,630 sf Storage= 8,164 cf

Plug-Flow detention time= 171.8 min calculated for 0.308 af (84% of inflow)
Center-of-Mass det. time= 127.0 min (930.3 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 13.01 hrs HW=274.72' (Free Discharge)
├**1=Culvert** (Passes 0.60 cfs of 10.54 cfs potential flow)
│ ├**2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.90 fps)
│ └**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.05 cfs @ 12.01 hrs, Volume= 0.129 af, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 5.73 cfs @ 12.17 hrs, Volume= 0.466 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 3.08 cfs @ 12.09 hrs, Volume= 0.213 af, Depth> 4.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 4.13 cfs @ 12.02 hrs, Volume= 0.261 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 6.71 cfs @ 12.05 hrs, Volume= 0.427 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 2.21 cfs @ 12.02 hrs, Volume= 0.150 af, Depth> 6.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 12.20 cfs @ 12.20 hrs, Volume= 1.047 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 2.91 cfs @ 12.04 hrs, Volume= 0.177 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.68 cfs @ 12.04 hrs, Volume= 0.041 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.90 cfs @ 12.02 hrs, Volume= 0.054 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.67 cfs @ 12.04 hrs, Volume= 0.101 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

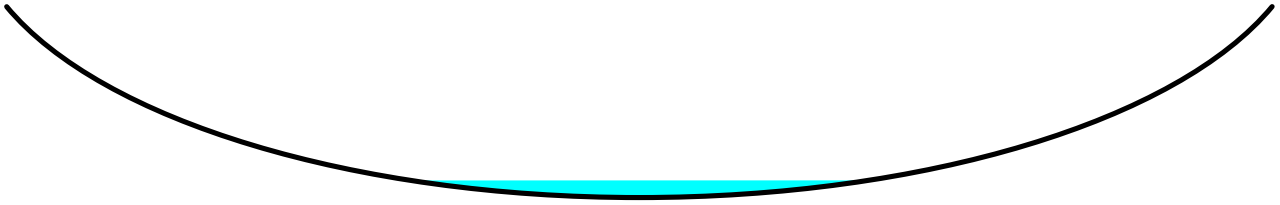
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 3.14" for 50-year event
Inflow = 5.73 cfs @ 12.17 hrs, Volume= 0.466 af
Outflow = 5.51 cfs @ 12.25 hrs, Volume= 0.464 af, Atten= 4%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.97 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 5.9 min

Peak Storage= 818 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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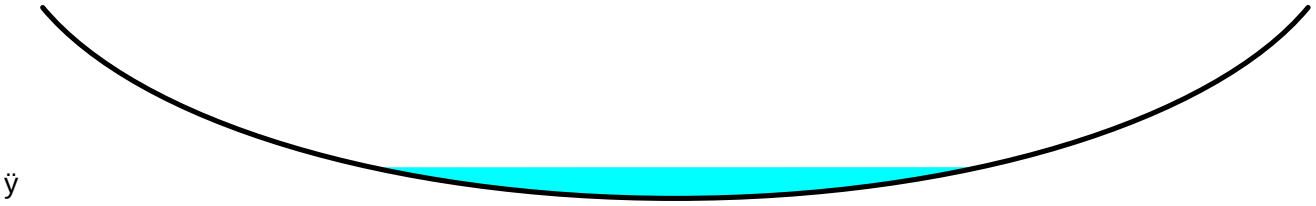
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 3.11" for 50-year event
Inflow = 18.76 cfs @ 12.22 hrs, Volume= 1.983 af
Outflow = 17.45 cfs @ 12.36 hrs, Volume= 1.963 af, Atten= 7%, Lag= 8.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.34 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 11.4 min

Peak Storage= 5,315 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 3.28" for 50-year event
Inflow = 2.07 cfs @ 12.04 hrs, Volume= 0.473 af
Outflow = 1.95 cfs @ 12.07 hrs, Volume= 0.472 af, Atten= 6%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 2.2 min

Peak Storage= 137 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.33" for 50-year event
Inflow = 25.74 cfs @ 12.35 hrs, Volume= 3.275 af
Outflow = 25.74 cfs @ 12.35 hrs, Volume= 3.275 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 4.93" for 50-year event
Inflow = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af
Outflow = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.98' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.01 cfs @ 12.13 hrs HW=311.98' (Free Discharge)
1=Culvert (Inlet Controls 1.01 cfs @ 2.35 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 5.00" for 50-year event
Inflow = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af
Outflow = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min
Primary = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.67' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.60 cfs @ 12.03 hrs HW=299.66' (Free Discharge)
1=Culvert (Inlet Controls 2.60 cfs @ 3.07 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 4.73" for 50-year event
Inflow = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af
Outflow = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af, Atten= 0%, Lag= 0.0 min
Primary = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 288.00' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.40 cfs @ 12.06 hrs HW=287.96' (Free Discharge)
1=Culvert (Inlet Controls 5.40 cfs @ 4.40 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 4.72" for 50-year event
Inflow = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af
Outflow = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af, Atten= 0%, Lag= 0.0 min
Primary = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.95' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.58 cfs @ 12.03 hrs HW=275.75' (Free Discharge)
1=Culvert (Inlet Controls 9.58 cfs @ 7.81 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 4.78" for 50-year event
Inflow = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af
Outflow = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af, Atten= 0%, Lag= 0.0 min
Primary = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.79' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=13.43 cfs @ 12.03 hrs HW=269.39' (Free Discharge)
1=Culvert (Inlet Controls 13.43 cfs @ 10.95 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 4.76" for 50-year event
Inflow = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af
Outflow = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af, Atten= 0%, Lag= 0.0 min
Primary = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.57' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=19.86 cfs @ 12.04 hrs HW=259.20' (Free Discharge)
1=Culvert (Inlet Controls 19.86 cfs @ 11.24 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.86" for 50-year event
Inflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af
Outflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af, Atten= 0%, Lag= 0.0 min
Primary = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 252.80' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=21.84 cfs @ 12.04 hrs HW=252.34' (Free Discharge)
1=Culvert (Inlet Controls 21.84 cfs @ 12.36 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 4.61" for 50-year event
Inflow = 25.65 cfs @ 12.04 hrs, Volume= 1.602 af
Outflow = 10.69 cfs @ 12.23 hrs, Volume= 1.313 af, Atten= 58%, Lag= 11.4 min
Primary = 10.69 cfs @ 12.23 hrs, Volume= 1.313 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.43' @ 12.24 hrs Surf.Area= 10,874 sf Storage= 26,654 cf

Plug-Flow detention time= 108.1 min calculated for 1.308 af (82% of inflow)

Center-of-Mass det. time= 57.4 min (849.8 - 792.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.33 cfs @ 12.23 hrs HW=250.20' (Free Discharge)
└─**1=Culvert** (Passes 10.33 cfs of 22.43 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.39 cfs @ 10.21 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 4.63 cfs @ 9.26 fps)
  └─**4=Orifice/Grate** (Orifice Controls 4.31 cfs @ 8.62 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.86" for 50-year event
Inflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af
Outflow = 22.74 cfs @ 12.04 hrs, Volume= 1.425 af, Atten= 0%, Lag= 0.6 min
Primary = 1.43 cfs @ 12.04 hrs, Volume= 0.826 af
Secondary = 21.31 cfs @ 12.04 hrs, Volume= 0.599 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.39' @ 12.04 hrs Surf.Area= 2,514 sf Storage= 7,760 cf

Plug-Flow detention time= 45.3 min calculated for 1.425 af (97% of inflow)
Center-of-Mass det. time= 33.6 min (793.8 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.43 cfs @ 12.04 hrs HW=246.38' (Free Discharge)
1=Culvert (Barrel Controls 1.43 cfs @ 7.26 fps)

Secondary OutFlow Max=20.83 cfs @ 12.04 hrs HW=246.38' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 20.83 cfs @ 1.56 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 4.61" for 50-year event
Inflow = 6.17 cfs @ 12.06 hrs, Volume= 0.463 af
Outflow = 5.98 cfs @ 12.09 hrs, Volume= 0.393 af, Atten= 3%, Lag= 1.6 min
Primary = 5.98 cfs @ 12.09 hrs, Volume= 0.393 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.44' @ 12.09 hrs Surf.Area= 1,673 sf Storage= 3,733 cf

Plug-Flow detention time= 76.0 min calculated for 0.392 af (85% of inflow)
Center-of-Mass det. time= 32.0 min (799.4 - 767.5)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=5.86 cfs @ 12.09 hrs HW=285.43' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.86 cfs @ 1.69 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 3.88" for 50-year event
Inflow = 6.71 cfs @ 12.07 hrs, Volume= 0.447 af
Outflow = 0.84 cfs @ 12.83 hrs, Volume= 0.372 af, Atten= 87%, Lag= 45.5 min
Primary = 0.84 cfs @ 12.83 hrs, Volume= 0.372 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.25' @ 12.83 hrs Surf.Area= 3,875 sf Storage= 10,142 cf

Plug-Flow detention time= 176.6 min calculated for 0.372 af (83% of inflow)
Center-of-Mass det. time= 130.8 min (928.3 - 797.6)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 12.83 hrs HW=275.25' (Free Discharge)
└**1=Culvert** (Passes 0.84 cfs of 11.86 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.67 cfs @ 7.73 fps)
└**3=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.69 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af, Depth> 5.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.33 cfs @ 12.01 hrs, Volume= 0.147 af, Depth> 5.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 6.85 cfs @ 12.17 hrs, Volume= 0.558 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.246 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af, Depth> 5.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 4.70 cfs @ 12.02 hrs, Volume= 0.299 af, Depth> 5.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 7.67 cfs @ 12.05 hrs, Volume= 0.492 af, Depth> 5.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 2.47 cfs @ 12.02 hrs, Volume= 0.168 af, Depth> 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 14.65 cfs @ 12.20 hrs, Volume= 1.256 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 3.40 cfs @ 12.04 hrs, Volume= 0.208 af, Depth> 4.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.79 cfs @ 12.04 hrs, Volume= 0.048 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 1.05 cfs @ 12.02 hrs, Volume= 0.064 af, Depth> 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.97 cfs @ 12.04 hrs, Volume= 0.120 af, Depth> 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

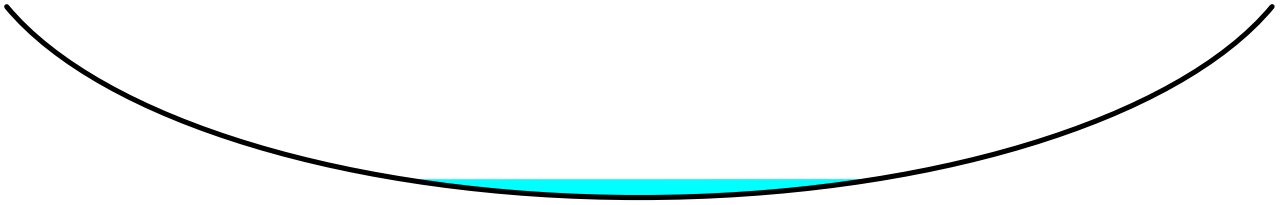
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 3.76" for 100-year event
Inflow = 6.85 cfs @ 12.17 hrs, Volume= 0.558 af
Outflow = 6.60 cfs @ 12.25 hrs, Volume= 0.556 af, Atten= 4%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.09 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 5.7 min

Peak Storage= 928 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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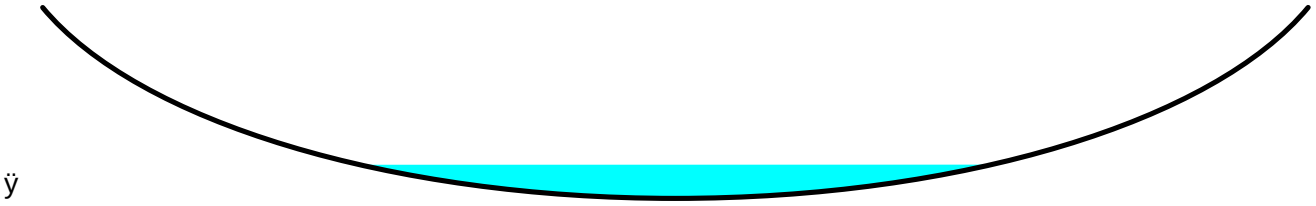
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 3.72" for 100-year event
Inflow = 22.50 cfs @ 12.21 hrs, Volume= 2.373 af
Outflow = 21.02 cfs @ 12.35 hrs, Volume= 2.351 af, Atten= 7%, Lag= 8.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.49 fps, Min. Travel Time= 4.8 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 11.1 min

Peak Storage= 6,069 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 3.90" for 100-year event
Inflow = 2.45 cfs @ 12.04 hrs, Volume= 0.563 af
Outflow = 2.32 cfs @ 12.07 hrs, Volume= 0.561 af, Atten= 5%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.64 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 2.1 min

Peak Storage= 153 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.96" for 100-year event
Inflow = 33.08 cfs @ 12.11 hrs, Volume= 3.901 af
Outflow = 33.08 cfs @ 12.11 hrs, Volume= 3.901 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 5.65" for 100-year event
Inflow = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af
Outflow = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 312.02' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.15 cfs @ 12.13 hrs HW=312.01' (Free Discharge)
1=Culvert (Inlet Controls 1.15 cfs @ 2.43 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 5.72" for 100-year event
Inflow = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af
Outflow = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Primary = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.74' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.95 cfs @ 12.03 hrs HW=299.73' (Free Discharge)
1=Culvert (Inlet Controls 2.95 cfs @ 3.19 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 5.45" for 100-year event
Inflow = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af
Outflow = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
Primary = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 288.26' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.18 cfs @ 12.06 hrs HW=288.22' (Free Discharge)
1=Culvert (Inlet Controls 6.18 cfs @ 5.04 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 5.43" for 100-year event
Inflow = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af
Outflow = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af, Atten= 0%, Lag= 0.0 min
Primary = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 276.82' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=10.94 cfs @ 12.03 hrs HW=276.55' (Free Discharge)
1=Culvert (Inlet Controls 10.94 cfs @ 8.91 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 5.50" for 100-year event
Inflow = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af
Outflow = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af, Atten= 0%, Lag= 0.0 min
Primary = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.47' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=15.33 cfs @ 12.03 hrs HW=270.95' (Free Discharge)
1=Culvert (Inlet Controls 15.33 cfs @ 12.49 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 5.48" for 100-year event
Inflow = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af
Outflow = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af, Atten= 0%, Lag= 0.0 min
Primary = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.33' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=22.67 cfs @ 12.04 hrs HW=260.85' (Free Discharge)
1=Culvert (Inlet Controls 22.67 cfs @ 12.83 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 5.58" for 100-year event
Inflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af
Outflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af, Atten= 0%, Lag= 0.0 min
Primary = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 254.90' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=24.87 cfs @ 12.03 hrs HW=254.30' (Free Discharge)
1=Culvert (Inlet Controls 24.87 cfs @ 14.08 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 5.32" for 100-year event
Inflow = 29.32 cfs @ 12.04 hrs, Volume= 1.848 af
Outflow = 24.44 cfs @ 12.11 hrs, Volume= 1.549 af, Atten= 17%, Lag= 3.7 min
Primary = 24.44 cfs @ 12.11 hrs, Volume= 1.549 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.37' @ 12.10 hrs Surf.Area= 10,874 sf Storage= 26,654 cf

Plug-Flow detention time= 99.2 min calculated for 1.549 af (84% of inflow)

Center-of-Mass det. time= 51.1 min (839.1 - 788.0)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=23.31 cfs @ 12.11 hrs HW=264.78' (Free Discharge)
└─**1=Culvert** (Passes 23.31 cfs of 39.48 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.87 cfs @ 21.03 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 10.29 cfs @ 20.59 fps)
  └─**4=Orifice/Grate** (Orifice Controls 10.15 cfs @ 20.30 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 5.58" for 100-year event
Inflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af
Outflow = 25.92 cfs @ 12.04 hrs, Volume= 1.640 af, Atten= 0%, Lag= 0.5 min
Primary = 1.43 cfs @ 12.04 hrs, Volume= 0.898 af
Secondary = 24.49 cfs @ 12.04 hrs, Volume= 0.741 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.42' @ 12.04 hrs Surf.Area= 2,527 sf Storage= 7,847 cf

Plug-Flow detention time= 42.6 min calculated for 1.634 af (97% of inflow)
Center-of-Mass det. time= 32.0 min (789.3 - 757.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.43 cfs @ 12.04 hrs HW=246.41' (Free Discharge)
1=Culvert (Barrel Controls 1.43 cfs @ 7.30 fps)

Secondary OutFlow Max=23.88 cfs @ 12.04 hrs HW=246.42' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 23.88 cfs @ 1.64 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 5.32" for 100-year event
Inflow = 7.08 cfs @ 12.06 hrs, Volume= 0.534 af
Outflow = 6.87 cfs @ 12.08 hrs, Volume= 0.464 af, Atten= 3%, Lag= 1.4 min
Primary = 6.87 cfs @ 12.08 hrs, Volume= 0.464 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.48' @ 12.08 hrs Surf.Area= 1,683 sf Storage= 3,798 cf

Plug-Flow detention time= 71.1 min calculated for 0.464 af (87% of inflow)
Center-of-Mass det. time= 30.3 min (794.6 - 764.3)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=6.73 cfs @ 12.08 hrs HW=285.47' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.73 cfs @ 1.78 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 4.58" for 100-year event
Inflow = 7.75 cfs @ 12.07 hrs, Volume= 0.528 af
Outflow = 1.31 cfs @ 12.62 hrs, Volume= 0.443 af, Atten= 83%, Lag= 32.8 min
Primary = 1.31 cfs @ 12.62 hrs, Volume= 0.443 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.63' @ 12.62 hrs Surf.Area= 4,054 sf Storage= 11,672 cf

Plug-Flow detention time= 163.8 min calculated for 0.443 af (84% of inflow)
Center-of-Mass det. time= 119.5 min (912.4 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.31 cfs @ 12.62 hrs HW=275.63' (Free Discharge)
├**1=Culvert** (Passes 1.31 cfs of 12.75 cfs potential flow)
│ ├**2=Orifice/Grate** (Orifice Controls 0.72 cfs @ 8.29 fps)
│ └**3=Orifice/Grate** (Orifice Controls 0.58 cfs @ 2.98 fps)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

SUPPORTING DOCUMENTATION

NOAA Point Precipitation Estimates
Web Soil Survey

NOAA Atlas 14, Volume 10, Version 3
Location name: Brooklyn, Connecticut, USA*
Latitude: 41.7827°, Longitude: -71.9363°
Elevation: 329.49 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point 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	**0.337** (0.256-0.442)	**0.400** (0.304-0.525)	**0.503** (0.381-0.662)	**0.587** (0.443-0.777)	**0.704** (0.515-0.965)	**0.793** (0.569-1.11)	**0.884** (0.618-1.27)	**0.982** (0.658-1.45)	**1.12** (0.723-1.70)	**1.23** (0.775-1.89)
10-min	**0.477** (0.363-0.626)	**0.566** (0.430-0.743)	**0.711** (0.539-0.937)	**0.831** (0.627-1.10)	**0.997** (0.730-1.37)	**1.12** (0.807-1.57)	**1.25** (0.876-1.80)	**1.39** (0.932-2.05)	**1.58** (1.02-2.40)	**1.74** (1.10-2.68)
15-min	**0.562** (0.427-0.737)	**0.666** (0.506-0.875)	**0.836** (0.634-1.10)	**0.978** (0.738-1.30)	**1.17** (0.859-1.61)	**1.32** (0.949-1.84)	**1.47** (1.03-2.12)	**1.64** (1.10-2.41)	**1.86** (1.21-2.83)	**2.04** (1.29-3.15)
30-min	**0.775** (0.590-1.02)	**0.919** (0.699-1.21)	**1.16** (0.875-1.52)	**1.35** (1.02-1.79)	**1.62** (1.19-2.22)	**1.82** (1.31-2.54)	**2.03** (1.42-2.92)	**2.26** (1.51-3.33)	**2.57** (1.66-3.90)	**2.82** (1.78-4.35)
60-min	**0.988** (0.752-1.30)	**1.17** (0.891-1.54)	**1.47** (1.12-1.94)	**1.72** (1.30-2.28)	**2.07** (1.51-2.83)	**2.33** (1.67-3.25)	**2.59** (1.81-3.73)	**2.88** (1.93-4.24)	**3.28** (2.12-4.97)	**3.59** (2.28-5.55)
2-hr	**1.26** (0.966-1.65)	**1.50** (1.15-1.96)	**1.89** (1.44-2.47)	**2.21** (1.67-2.91)	**2.65** (1.95-3.62)	**2.98** (2.15-4.15)	**3.32** (2.35-4.78)	**3.72** (2.49-5.44)	**4.28** (2.78-6.45)	**4.74** (3.01-7.28)
3-hr	**1.46** (1.12-1.90)	**1.73** (1.33-2.26)	**2.18** (1.66-2.85)	**2.55** (1.93-3.35)	**3.06** (2.26-4.17)	**3.44** (2.50-4.78)	**3.84** (2.72-5.52)	**4.31** (2.90-6.28)	**4.99** (3.24-7.49)	**5.55** (3.53-8.49)
6-hr	**1.87** (1.44-2.42)	**2.22** (1.70-2.88)	**2.79** (2.13-3.63)	**3.26** (2.49-4.26)	**3.91** (2.90-5.32)	**4.40** (3.21-6.10)	**4.92** (3.51-7.05)	**5.53** (3.73-8.02)	**6.43** (4.19-9.60)	**7.19** (4.58-10.9)
12-hr	**2.36** (1.82-3.05)	**2.81** (2.17-3.63)	**3.53** (2.72-4.58)	**4.14** (3.17-5.39)	**4.97** (3.70-6.72)	**5.59** (4.09-7.71)	**6.25** (4.47-8.91)	**7.03** (4.76-10.1)	**8.17** (5.34-12.1)	**9.14** (5.85-13.8)
24-hr	**2.82** (2.19-3.62)	**3.37** (2.61-4.34)	**4.28** (3.30-5.52)	**5.03** (3.87-6.52)	**6.06** (4.54-8.16)	**6.84** (5.03-9.38)	**7.66** (5.50-10.9)	**8.62** (5.86-12.4)	**10.1** (6.59-14.8)	**11.3** (7.22-16.9)
2-day	**3.17** (2.47-4.06)	**3.84** (2.99-4.92)	**4.92** (3.82-6.33)	**5.83** (4.50-7.52)	**7.07** (5.31-9.48)	**7.99** (5.90-10.9)	**8.98** (6.48-12.7)	**10.2** (6.92-14.5)	**11.9** (7.83-17.4)	**13.4** (8.62-19.9)
3-day	**3.44** (2.68-4.39)	**4.16** (3.25-5.32)	**5.35** (4.16-6.85)	**6.33** (4.90-8.14)	**7.68** (5.79-10.3)	**8.69** (6.44-11.8)	**9.77** (7.08-13.8)	**11.1** (7.55-15.7)	**13.0** (8.58-19.0)	**14.7** (9.48-21.8)
4-day	**3.67** (2.88-4.68)	**4.45** (3.47-5.67)	**5.71** (4.45-7.30)	**6.75** (5.23-8.67)	**8.19** (6.18-10.9)	**9.25** (6.87-12.6)	**10.4** (7.56-14.7)	**11.8** (8.06-16.7)	**13.9** (9.17-20.2)	**15.7** (10.1-23.2)
7-day	**4.34**	**5.21**	**6.63**	**7.81**	**9.43**	**10.6**	**11.9**	**13.5**	**15.9**	**18.0**

	(3.41-5.52)	(4.09-6.62)	(5.19-8.45)	(6.08-9.99)	(7.15-12.5)	(7.92-14.4)	(8.70-16.7)	(9.26-19.0)	(10.5-23.0)	(11.6-26.4)
10-day	**5.02** (3.95-6.36)	**5.95** (4.68-7.54)	**7.46** (5.84-9.48)	**8.71** (6.79-11.1)	**10.4** (7.92-13.8)	**11.7** (8.74-15.8)	**13.1** (9.54-18.3)	**14.7** (10.1-20.7)	**17.2** (11.4-24.8)	**19.3** (12.5-28.3)
20-day	**7.17** (5.67-9.05)	**8.16** (6.45-10.3)	**9.78** (7.70-12.4)	**11.1** (8.71-14.1)	**13.0** (9.85-17.0)	**14.4** (10.7-19.1)	**15.8** (11.4-21.6)	**17.4** (12.0-24.2)	**19.6** (13.0-28.0)	**21.3** (13.9-31.0)
30-day	**8.99** (7.12-11.3)	**10.0** (7.92-12.6)	**11.7** (9.20-14.7)	**13.0** (10.2-16.5)	**14.9** (11.3-19.4)	**16.4** (12.2-21.6)	**17.8** (12.8-24.1)	**19.3** (13.4-26.8)	**21.2** (14.2-30.2)	**22.6** (14.7-32.8)
45-day	**11.2** (8.93-14.1)	**12.3** (9.74-15.4)	**14.0** (11.1-17.6)	**15.4** (12.1-19.5)	**17.3** (13.2-22.4)	**18.9** (14.0-24.7)	**20.3** (14.6-27.1)	**21.7** (15.1-29.9)	**23.3** (15.6-33.0)	**24.3** (15.9-35.1)
60-day	**13.1** (10.4-16.4)	**14.2** (11.3-17.8)	**15.9** (12.6-20.0)	**17.4** (13.7-21.9)	**19.4** (14.7-24.9)	**21.0** (15.6-27.3)	**22.4** (16.1-29.8)	**23.7** (16.5-32.6)	**25.1** (16.9-35.5)	**26.0** (17.0-37.4)

[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.

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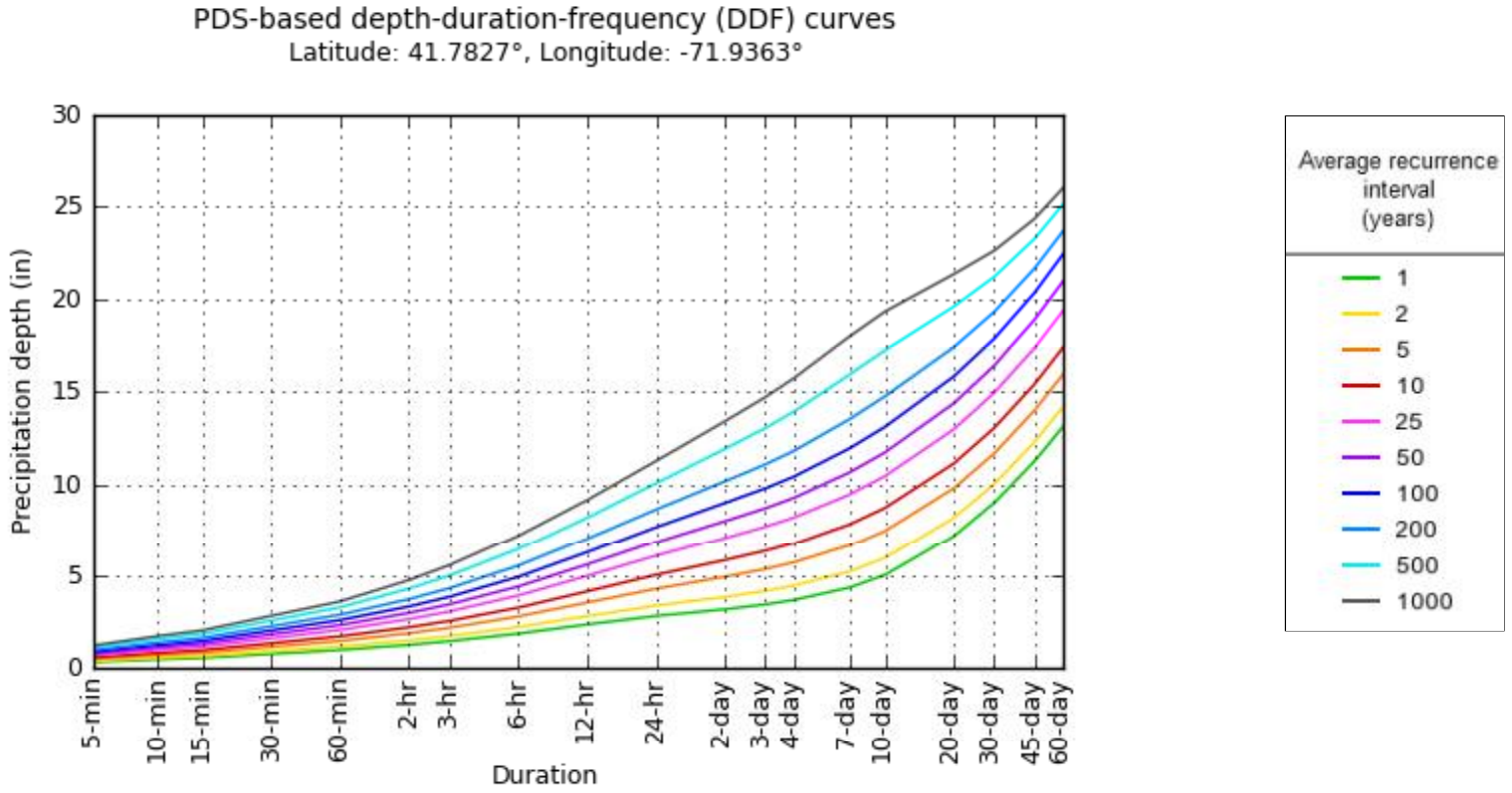
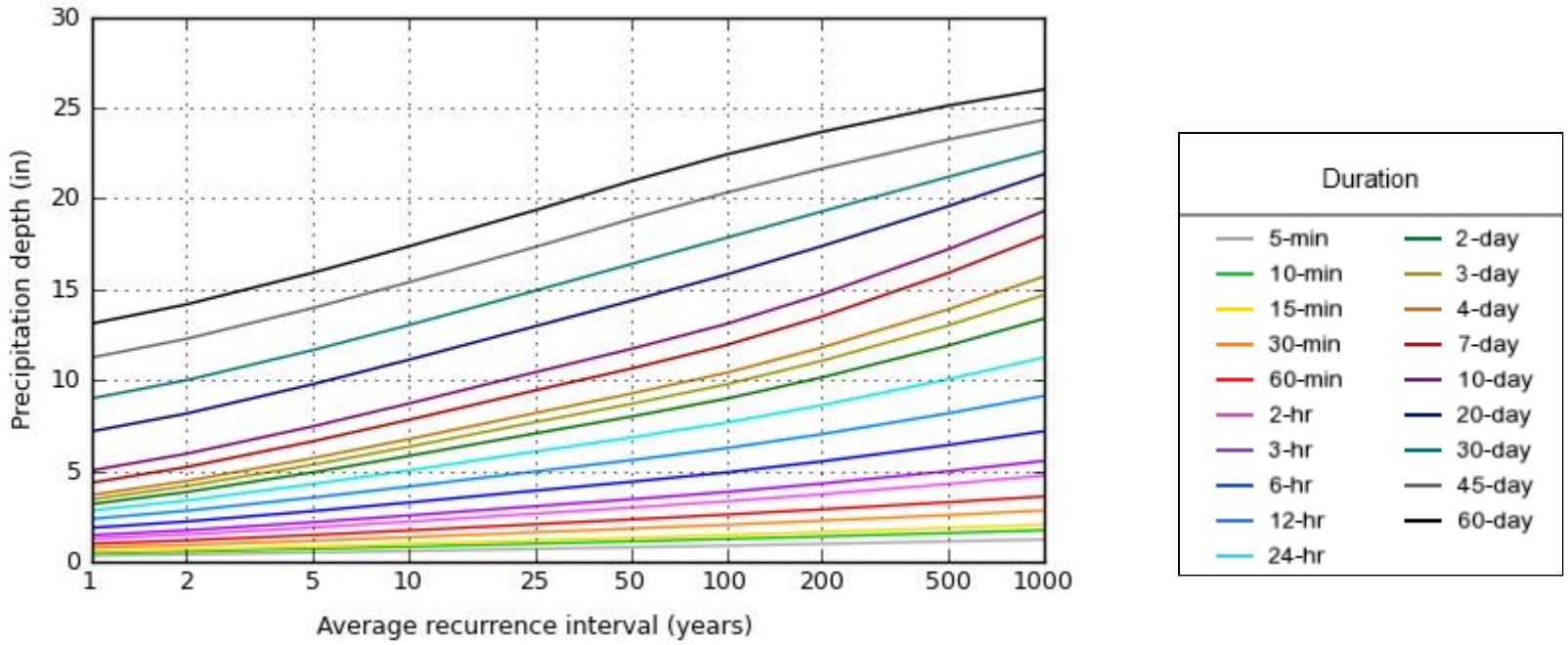
PF graphical





NOAA Atlas 14, Volume 10, Version 3 Created (GMT): Tue Dec 8 14:02:09 2020

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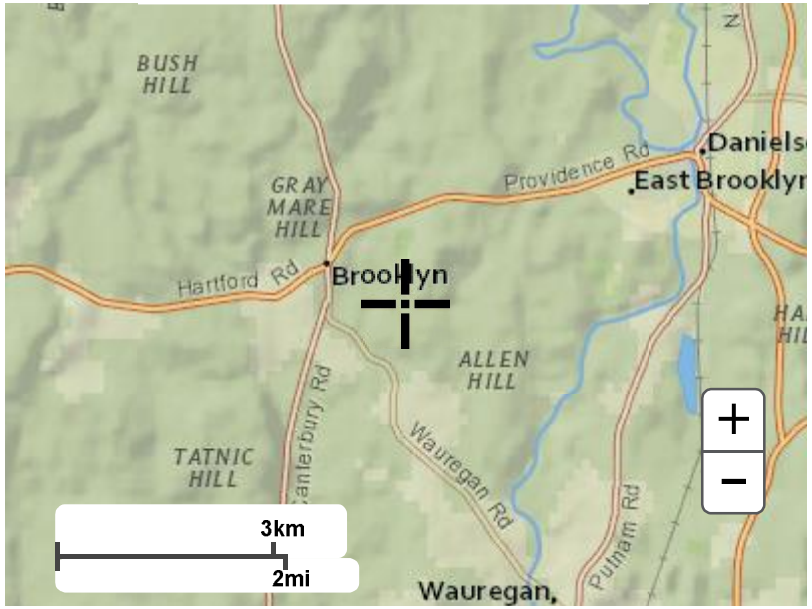
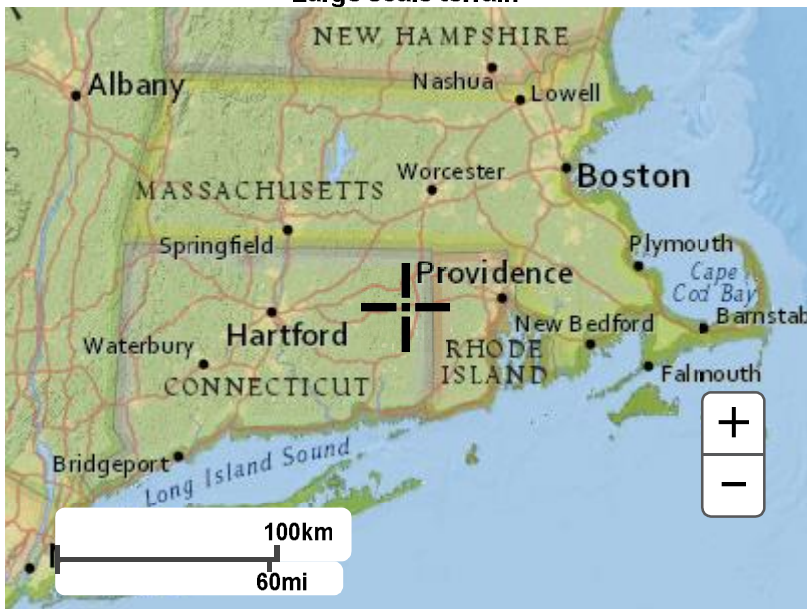
Maps & aerials

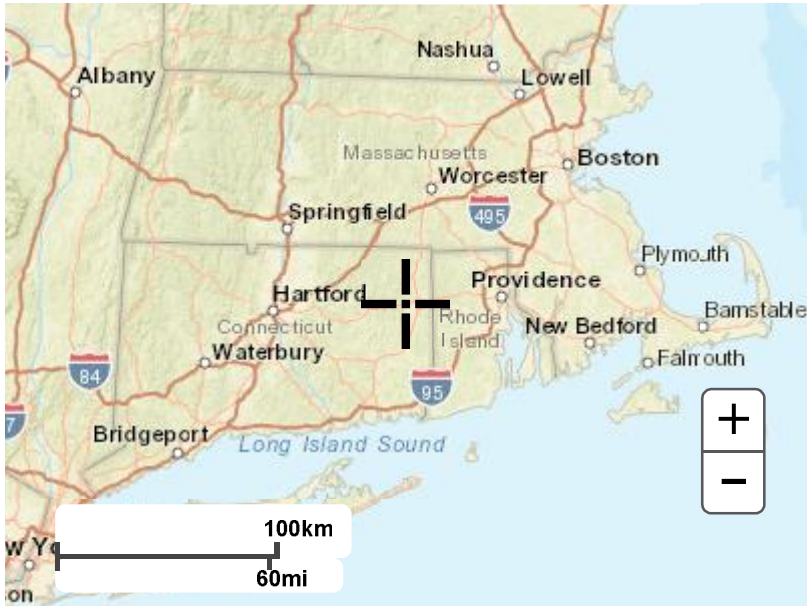
Small scale terrain



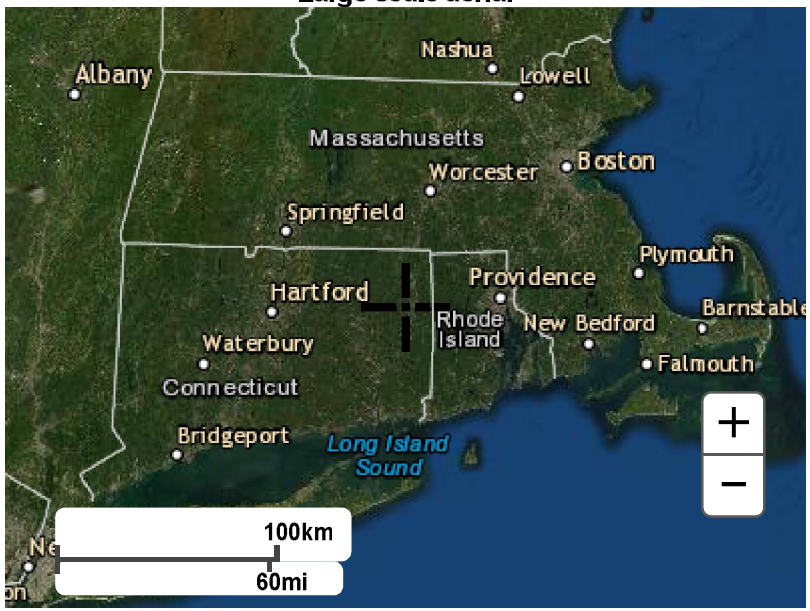
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Hydrologic Soil Group—State of Connecticut
(Louise Berry Drive)

Map Scale: 1:1,850 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 14, 2011—Aug 27, 2016

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	3.1	27.8%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	0.4%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	4.7	42.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	2.9	26.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	0.1	0.7%
701B	Ninigret fine sandy loam, 3 to 8 percent slopes	C	0.2	2.2%
Totals for Area of Interest			**11.0**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

DRAINAGE AREA PLANS