

Brooklyn Inland Wetlands Commission
Regular Meeting Agenda
Tuesday, September 13, 2022
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.

In-Person: Clifford B. Green Meeting Center, Suite 24, 69 South Main Street, Brooklyn, CT	
Online: Click link below: https://us06web.zoom.us/j/82435574137	OR Go to Zoom.us , click Sign In On the top right, click Join a Meeting Enter meeting ID: 824 3557 4137 Enter meeting password: 038430
Phone: Dial 1 646 558 8656 US Toll Enter meeting number: 824 3557 4137 Enter meeting password: 038430 You can bypass attendee number by pressing #	

Call to Order:

Roll Call:

Seating of Alternates:

Public Commentary:

Additions to Agenda:

Approval of Minutes: Correction of minutes from 8/9/22 meeting.

061422B 170 South Street - written as “Approved 6-0”, should be “Approved 5/0”.

156 Darby Road - Joseph Kettelle - written as “Approved 6-0”, should be “Approved 5/0”

253 Wolf Den Road – Pasay Development - written as “Approved 6-0”, should be “Approved 5/0”

1. Regular Meeting Minutes

Public Hearings:

1. None.

Old Business:

1. **IWWC 22-001 – Louise Berry Drive – Shane Pollock and Erin F. Mancuso.**
Modification of 020921A: Shane Pollock and Fran Mancuso, Applicants/Owners; Louise Berry Drive, Map 33, Lot 19, R-30 Zone; Construction of 51 Single Family Condominium Units with activity in the upland review area.
2. **IWWC 22-002 – 104 Elliott Road - Map 18 Lot 10 – Ken Phillips.** Dredge 100' x 50' pond on northwestern section of property. All dredging material will be used to level pot holes in lawn and taper an embankment on the lawn on the north side of house.
3. **IWWC 22-004 - 253 Wolf Den Road - Map 17 Lot 32-3 – Pasay Development..**
Installation of driveway across wetlands to access house site in previously approved subdivision.

New Business:

1. **Map 18 Lot 19 Little Dipper Farm dock on Bush Hill Pond. Installation of a new dock.**
2. **129 Creamery Brook Road – Map 32 Lot 121-2 - Courtney Cross. New run-in shed for cows.**
3. **IWWC 22-005 143 South Street – Map 40 Lot 88-11 – Loni Decelles.** Construction of horse barn within upland review area. Clearing for horse turn out within upland review area. Selective clearing and fencing within wetland.

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary:

Adjourn:

Richard Oliverson, Chairman

Brooklyn Inland Wetlands Commission
Regular Meeting Minutes
Tuesday August 9, 2022
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.

Call to Order: 6:00 pm

Jean Bolin ran the ZOOM meeting.

Roll Call: Richard Oliverson, Demian Sorrentino, Adam Brindamour, Jason Burgess, James Paquin, Adam Tucker absent with notice.

Staff Present: Margaret Washburn, Jean Bolin

Seating of Alternates: None

Public Commentary: None

Additions to Agenda: None

Approval of Minutes:

1. Regular Meeting Minutes: June 14, 2022 - Accepted as written.

Public Hearings:

1. None.

Old Business:

1. **061422B – 170 South Street – Map 40 Lot 11 – Jeff Fontaine.** Construction of 6,000 sq ft storage/maintenance building with septic system, well, driveway, utility service, drainage, and site grading.

Paul Terwilliger of PC Survey Associates represented the applicant. Mr. Terwilliger explained the 6,000 sq ft storage building would be used for driving range equipment, and possible overflow storage for the restaurant if needed. He stated that roof drainage would include a gutter collection system that would drain to the north, 50 feet away from wetlands and outside the 125 foot regulated area. On the south side there will be a stone collection trench with a perforated pipe. The pipe will tie into drainage on the other side of the building towards the level spreader.

Richard Oliverson asked Mr. Terwilliger if the stockpile would be temporary and if there was any other possible location for it. Mr. Terwilliger replied that it would be temporary and that there was not any other location for the stockpile.

James Paquin made a motion to approve with standard conditions. Jason Burgess seconded the motion. Approved 6-0.

2. **IWWC 22-002 – 104 Elliott Road - Map 18 Lot 10 – Ken Phillips.** Dredge 100 ft x 50 ft pond on northwestern section of property. All dredging material will be used to level potholes in lawn and taper an embankment on the lawn on the north side of house.

Ken Phillips spoke on his own behalf. Mr. Phillips explained he has a york rake and plans to pull out black sludge and lily pads in his 100 ft x 50 ft pond.

Margaret Washburn stated that she had met with Mr. Phillips previously and that this is no longer a Show Cause Hearing because Mr. Phillips submitted a new application the day of that last meeting. Ms. Washburn explained that since the application was submitted the day of the last meeting that it can only be received, and not decided on at this meeting.

James Paquin made a motion to have the application approved as a duly authorized agent approval. Adam Brindamour seconded the motion. Approved 6-0

Ms. Washburn confirmed that in 15 days she will issue duly authorized approval.

3. **IWWC 22-001 – Louise Berry Drive – Shane Pollock and Erin F. Mancuso. Modification of 020921A: Shane Pollock and Fran Mancuso, Applicants/Owners; Louise Berry Drive, Map 33, Lot 19, R-30 Zone; Construction of 51 Single Family Condominium Units with activity in the upland review area.**

Normand Thibeault of KEA represented Shane Pollock. Mr. Thibeault explained that prior plans showed one stormwater basin but have revised to show several changes. The plans have been revised for two stormwater basins instead of the original one stormwater basin. A community dumpster area and a community mailbox kiosk near the entrance were also added to the plans, instead of at individual addresses. The number of units was reduced from 51 units to 50.

Mr. Thibeault also stated that there would be an eight-foot swale with scattered rocks and vegetation to slow the flow. Mr. Thibeault also stated that he will submit a cross section of the basins. The rain garden has been removed. He stated that he will submit another revised plan with notes pertaining to the drainage report, and other revisions, by August 29th.

Adam Brindamour stated that the commission need complete plans before a decision can be made.

James Paquin made a motion to continue this application at the next regular scheduled meeting. Adam Brindamour seconded the motion.

New Business: Opened at 6:45 pm

1. **IWWC 22-003 – 156 Darby Road – Map 36 Lot 49 – Joseph Kettelle.** Trying to control invasive knotweed to maintain landscaping. Canadian hemlocks, weeping cherry, native dogwood/viburnum. Wants to be able to mow the area.

Joseph Kettelle was present. Richard Oliverson asked if the silt fence was in. Mr. Kettelle stated that he had installed 50 ft of silt fence; he did not have any hay bales in place.

Mr. Oliverson directed Mr. Kettelle to use grass seed and chopped hay mulch.

James Paquin made a motion to have the application approved as a duly authorized agent approval. Adam Brindamour seconded the motion. Approved 6-0

Ms. Washburn confirmed that in 15 days she will issue duly authorized approval.

2. **14 Hugh Drive - Map 36 Lot 31 – Gary Emond.** Show Cause Hearing for constructing a garage in the Upland Review Area with no wetlands permit and no sediment controls.

Gary and Lori Emond were present.

James Paquin stated that he didn't think a wetlands delineation was necessary. Mr. Paquin recommended that Mr. Emond submit an Inland Wetlands application for the shed; the sketch should be drawn on a GIS map showing wetlands, contours and to scale.

Ms. Washburn stated that no permits would be approved until we receive a B100 approval letter from NDDH.

Mr. Emond asked if he could add a 4-foot wide gravel walkway and electricity to the shed. Mr. Oliverson told him to indicate those items, along with where he will place the loam that is removed for the walkway.

Ms. Washburn instructed Mr. Emond to submit the wetlands application and sketch by September 6th. She also stated that she will revise the Order.

3. **159 Day Street – Map 42 Lot 43 – Spiro and Christa Haveles.** Show Cause Hearing for brush hogging a shrub swamp with no wetlands permit.

Margaret Washburn will rescind the cease and desist order; no action was necessary. The original cease and desist order was issued in error.

4. **253 Wolf Den - Map 17 Lot 32-3 – Pasay Development.** Installation of driveway across wetlands to access house site on previously approved subdivision.

Paul Terwilliger of PC Survey Associates represented Pasay Development. Mr. Terwilliger discussed that the subdivision and driveway were approved back in the 2000's, but the driveway was shifted and not constructed where specified on plans.

Mr. Oliverson asked if there is a shared driveway. Mr. Terwilliger stated that the driveways are not shared; there are two parallel driveways.

Mr. Paquin clarified that the application is considered received at the meeting; no decision can be made. Demian Sorrentino made a motion to continue to the next regularly scheduled meeting. Adam Brindamour seconded the motion.

Communications:

1. Wetlands Agent Monthly Report.

Ms. Washburn stated that she had received a complaint from Jake Kausch regarding 411 Church, stating that he suspects two neighbors are dumping yard waste into wetlands at 411 Church Street.

Mr. Oliverson stated that Mr. Kausch needs get photos or video of who is dumping and contact Tom Rukstela at the Highway Department if the debris is on the road.

2. Budget Update.

Public Commentary:

No other public comments.

Adjourn: A motion was made by James Paquin to adjourn at 7:30 p.m. Jason Burgess seconded the motion. No discussion. All in favor. The motion passed unanimously.

Richard Oliverson, Chairman

Killingly Engineering Associates

Civil Engineering & Surveying

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



TOWN OF BROOKLYN
CONNECTICUT

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. MARCUSO 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. MARCUSO
Address 116 PARSON ROAD, COLCHESTER, CT 06415
Phone 860-603-2250 Fax _____

Property location/Address LOUISE BRADY DRIVE
Map # 33 Lot # 19 Zone R-30 Total Acres 13.997 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? N/A

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

No

REQUIREMENTS

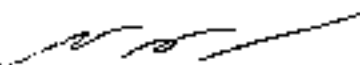
- Application Fee \$ 50.00 State Fee (\$60.00) 60.00
- Completion of DEP Reporting Form
- Compliance with the Inland Wetlands & Watercourses Regulations
- Three (30) copies of all materials required shall be submitted
- Pre application meeting with the Wetlands Agent is recommended to examine the scope 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
75 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 Peltola Date 7-5-22

Owner:  Shane J Peltola Date 7-5-22

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



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): SHARLA POLLOCK
- 8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): LOUISE BRAY 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): 7 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

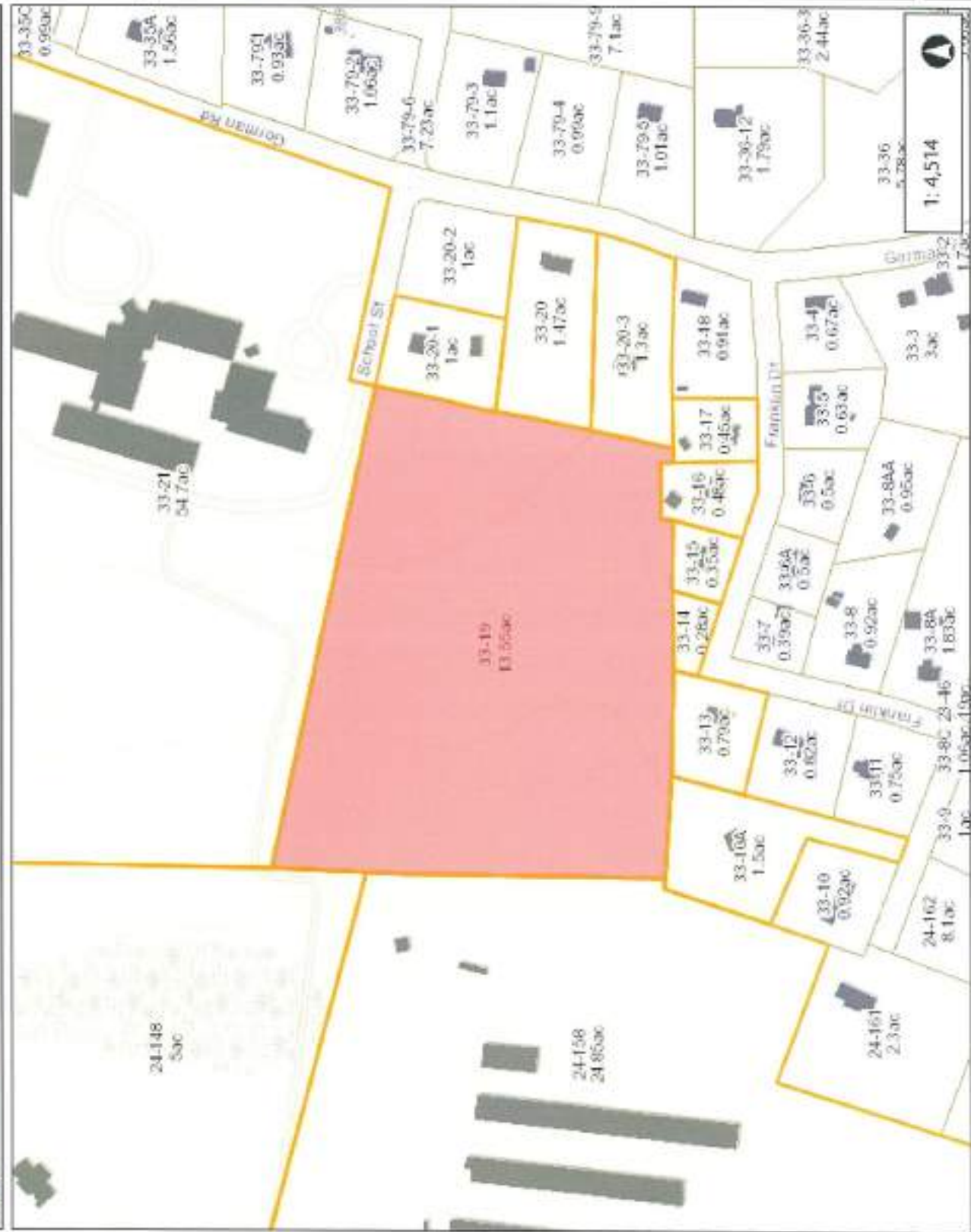


Necog GIS Site



- Legend**
- Town
 - Buildings 2012
 - Parcels

Notes
Pollack



1:4,514

0.1 Miles



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 visible. THIS MAP IS NOT TO BE USED FOR NAVIGATION



necog

Necog GIS Site

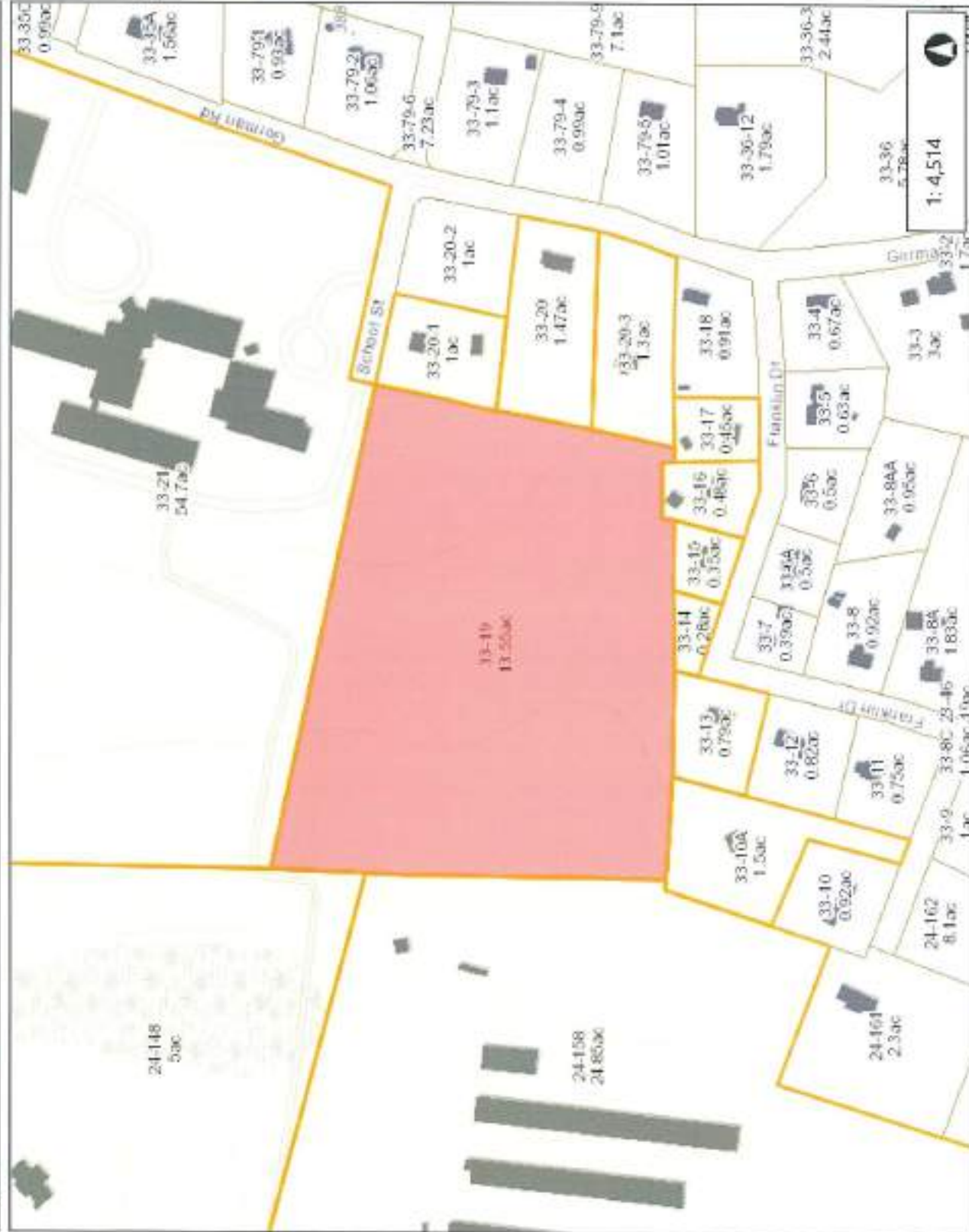


Legend

- Town
- Buildings 2012
- Parcels

Notes

Fullsize



1:4,514



0.1 Miles

0.07

0

0

0.1

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

WGS, 1984, Web, Mercator, Auxiliary, Sphere
 © Latitude Geographics Group Ltd.

171 GORMAN RD
BROOKLYN CT 06234

279 MAIN ST
HAMPTON CT 06247

3E FRANKLIN DR
BROOKLYN CT 06234

P O BOX 351
BROOKLYN CT 06234-1935

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

151 MACKIN DR
GRISWOLD CT 06351

178 GORMAN RD
BROOKLYN CT 06234

44 GANFERRINY 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.

FOR THIS REMAINING AREA THAT WAS HEAVILY LOGGED AND IS NOT BEING DEVELOPED, (+/- 1 ACRE), I WOULD RECOMMEND 250 TREES, AS THIS IS TYPICAL STOCKING PER ACRE FOR HEALTHY WHITE PINE STANDS.

REGARDING TREE SPECIES FOR SCREENING BETWEEN THE UNITS, I WOULD RECOMMEND GREEN GIANT ARBORVITAE, (THUJA PLICATA). THESE TREES ARE EVERGREEN, DEER RESISTANT, AND ARE ONE OF THE FASTEST GROWING PRIVACY TREES. THEY WILL GROW APPROX. 3 TO 5 FEET PER YEAR AND WILL REACH HEIGHTS OF 60 FEET. THEY THRIVE IN A WIDE RANGE OF SOILS AND LIKE FULL SUN.

THEY SHOULD BE PLANTED IN STAGGERED ROWS APPROX. 4 TO 6 FEET SPACING.

AS WITH ANY PLANTINGS, THE PINES AND ARBORVITAE 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 ~
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.

FOR THIS REMAINING AREA THAT WAS HEAVILY LOGGED AND IS NOT BEING DEVELOPED, (+/- 1 ACRE), I WOULD RECOMMEND 250 TREES, AS THIS IS TYPICAL STOCKING PER ACRE FOR HEALTHY WHITE PINE STANDS.

REGARDING TREE SPECIES FOR SCREENING BETWEEN THE UNITS, I WOULD RECOMMEND GREEN GIANT ARBORVITAE, (THUJA PLICATA). THESE TREES ARE EVERGREEN, DEER RESISTANT, AND ARE ONE OF THE FASTEST GROWING PRIVACY TREES. THEY WILL GROW APPROX. 3 TO 5 FEET PER YEAR AND WILL REACH HEIGHTS OF 60 FEET. THEY THRIVE IN A WIDE RANGE OF SOILS AND LIKE FULL SUN.

THEY SHOULD BE PLANTED IN STAGGERED ROWS APPROX. 4 TO 6 FEET SPACING.

AS WITH ANY PLANTINGS, THE PINES AND ARBORVITAE 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.

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



MAP LEGEND

 Area of Interest (AOI)	 C
 Area of Interest (AOI)	 C/D
Soils	 D
Soil Rating Polygons	 Not rated or not available
 A	Water Features
 A/D	 Streams and Canals
 B	Transportation
 B/D	 Rails
 C	 Interstate Highways
 C/D	 US Routes
 D	 Major Roads
 Not rated or not available	 Local Roads
Soil Rating Lines	Background
 A	 Aerial Photography
 A/D	
 B	
 B/D	
 C	
 C/D	
 D	
 Not rated or not available	
Soil Rating Points	
 A	
 A/D	
 B	
 B/D	

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 Date: 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 ACI	Percent of ACI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	3.1	27.8%
S4B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	3.4%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	D	4.7	42.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	D	2.6	25.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	0.1	0.7%
701H	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*

7/5/2022
Date

PROPOSED MULTI-FAMILY CONDOMINIUM DEVELOPMENT

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

PREPARED FOR:
SHANE POLLOCK

TABLE OF ZONING REGULATIONS		
	ZONE - R-50*	
Lot Area	SCALED	PROPOSED
	20,000 sq. ft.	13,697 sqm
Front Yard Setback	50'	15.24'
Side Yard Setback	20'	6.10'
Rear Yard Setback	50'	15.24'
Building Height	30' Max.	<28'
Lot Percentage	110%	54.31%
Building Separation	40' min.	40'-118'

DETAILED: 1 unit per acre, 5,000 sq. ft. / 13,697 sq. ft. = 367,529 sq. ft. - 117 units max
50 units proposed

EXEMPTED: 2 spaces per unit required - 100 required
1 garage space + 1 storage space per unit for 40 units = 56 spaces
1 garage space + 2 storage spaces per accessible units = 8 spaces
+ 20 additional spaces = 140 spaces total

*Multi-family development in accordance with Section 6.6 ZONING - R-50

GENERAL NOTES:

1. Ownership of the stormwater basin and outfall system shall be the contractor's obligation. The State of Connecticut will not be responsible for the basin.
2. There shall be no parking along the main access roadway or side drive. Appropriate signage shall be installed accordingly.
3. The site shall be graded prior to installing the foundation and concrete. The contractor shall be responsible for obtaining all necessary permits and for obtaining all necessary approvals from the local authority having jurisdiction. The contractor shall be responsible for obtaining all necessary approvals from the local authority having jurisdiction. The contractor shall be responsible for obtaining all necessary approvals from the local authority having jurisdiction.
4. The temporary easement shall be established by the contractor prior to the start of construction. The contractor shall be responsible for obtaining all necessary permits and for obtaining all necessary approvals from the local authority having jurisdiction. The contractor shall be responsible for obtaining all necessary approvals from the local authority having jurisdiction.
5. Easements shall be shown and letters shall be provided accordingly by 6/20 and 10/1 for the 50' of the basin. It is hereby acknowledged that the contractor shall be responsible for obtaining all necessary permits and for obtaining all necessary approvals from the local authority having jurisdiction. The contractor shall be responsible for obtaining all necessary approvals from the local authority having jurisdiction.
6. The Homeowner's Association shall be responsible for maintenance of the stormwater basin and its outfall in perpetuity.
7. The construction of the temporary easement shall begin and end on or before April 15 and September 15 to allow for vegetation to be planted and maintained in the basin prior to the start of construction. The contractor shall be responsible for obtaining all necessary permits and for obtaining all necessary approvals from the local authority having jurisdiction. The contractor shall be responsible for obtaining all necessary approvals from the local authority having jurisdiction.

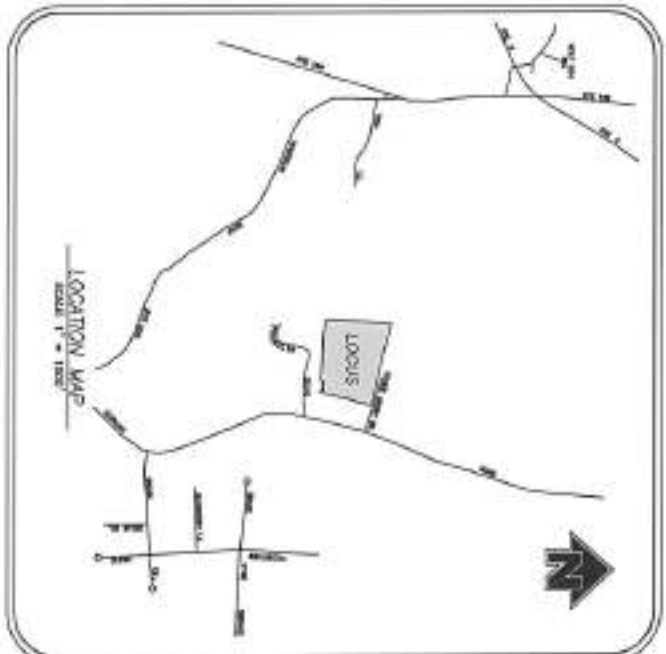
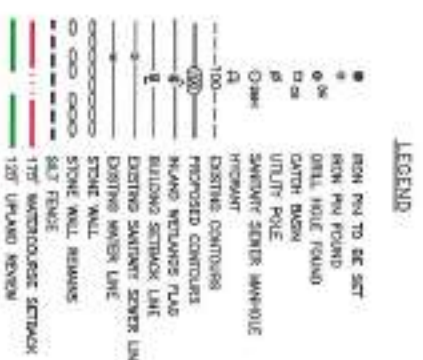
APPROVED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

CHAIRMAN: _____ DATE: _____

OPERATION DATE: _____

ENDORSED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

CHAIRMAN: _____ DATE: _____



INDEX TO DRAWINGS

TITLE	SHEET NO.
CORNER SHEET	1 OF 16
PROPERTY SURVEY	2 OF 16
ESSENTIAL MAP	3 OF 16
SITE PLAN	4 OF 16
LAYOUT & LANDSCAPING PLAN	5 OF 16
EROSION CONTROL AND UTILITIES PLAN	6 OF 16
ROAD PROFILE	7 OF 16
PHASING PLAN No. 1	8 OF 16
PHASING PLAN No. 2	9 OF 16
PHASING PLAN No. 3	10 OF 16
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DETAIL SHEET 1	13 OF 16
DETAIL SHEET 2	14 OF 16
DETAIL SHEET 3	15 OF 16
DETAIL SHEET 4	16 OF 16
PROXIMITY PLAN	1 OF 1

**FOR REVIEW ONLY
NOT FOR CONSTRUCTION**

REVISIONS

DATE	DESCRIPTION
01/14/2020	PREP & SUBMITTAL
02/10/2020	FOR REVIEW
03/10/2020	LOCAL AGENCY COMMENTS
03/20/2020	PREP & SUBMITTAL
04/10/2020	FOR REVIEW
04/20/2020	CONTRACT REVIEW & COMMENTS
05/10/2020	FINAL PLAN / LOG
05/20/2020	FOR REVIEW

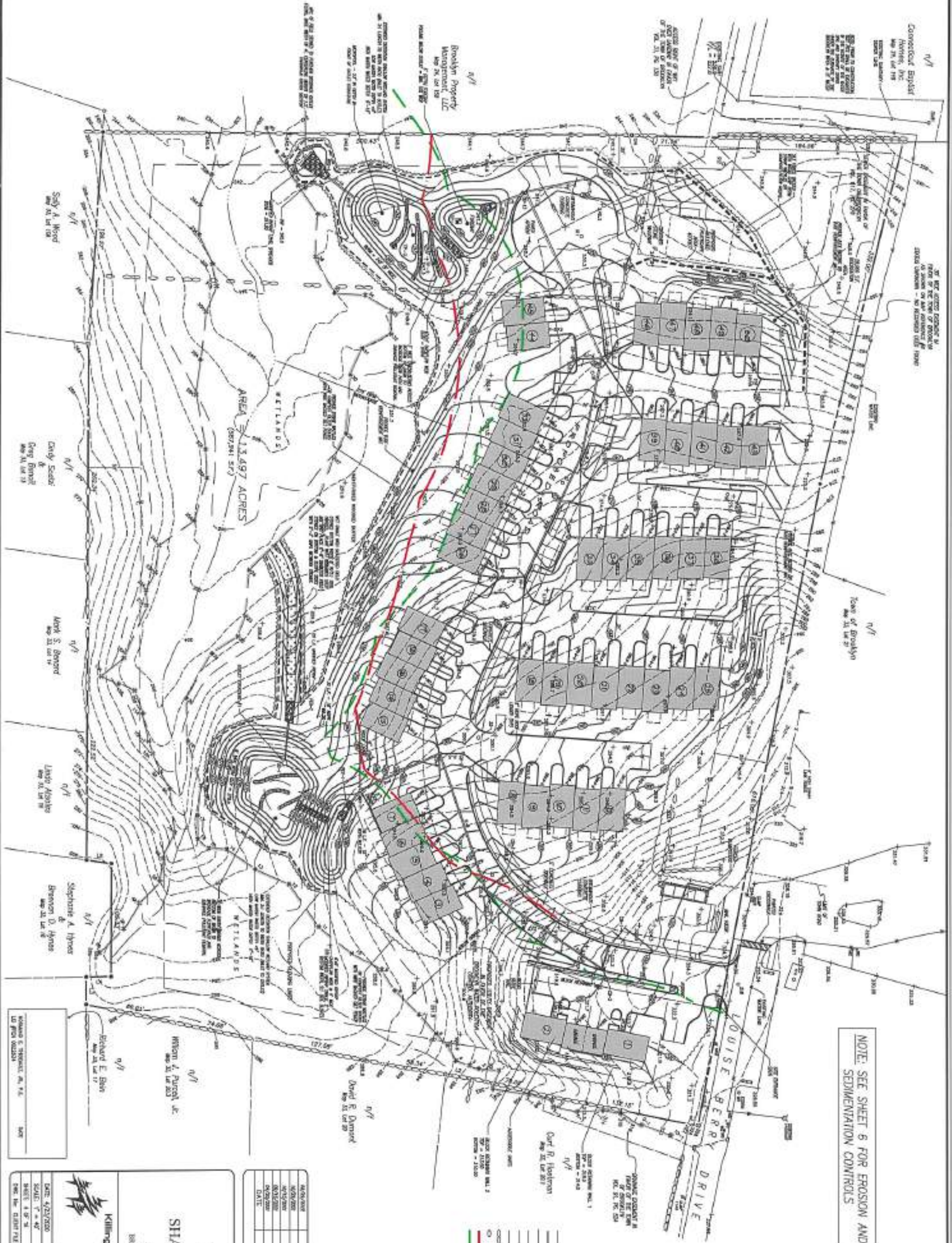
Killingly Engineering Associates
Civil Engineering & Surveying

117 Thomas Road
Killingly, Connecticut 06241
Phone: 860-439-2222
www.killinglyengineering.com

April 23, 2020

KILLINGLY ENGINEERING ASSOCIATES, INC. P.L.L.C. No. 22004 ONY

RECEIVED
AUG 30 2022



NOTE: SEE SHEET 6 FOR EROSION AND SEDIMENTATION CONTROLS



LEGEND

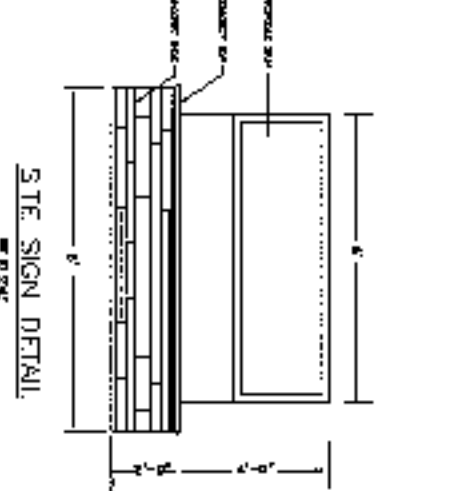
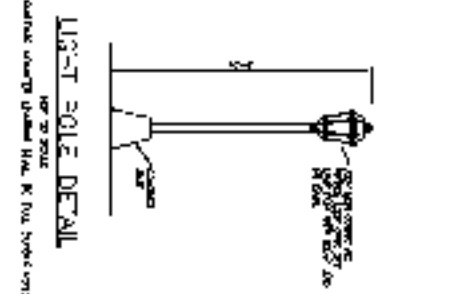
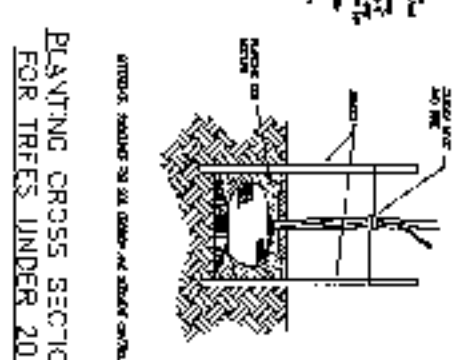
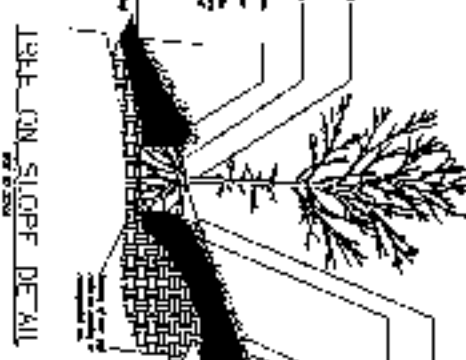
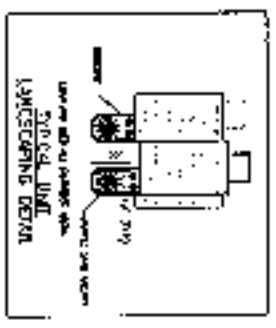
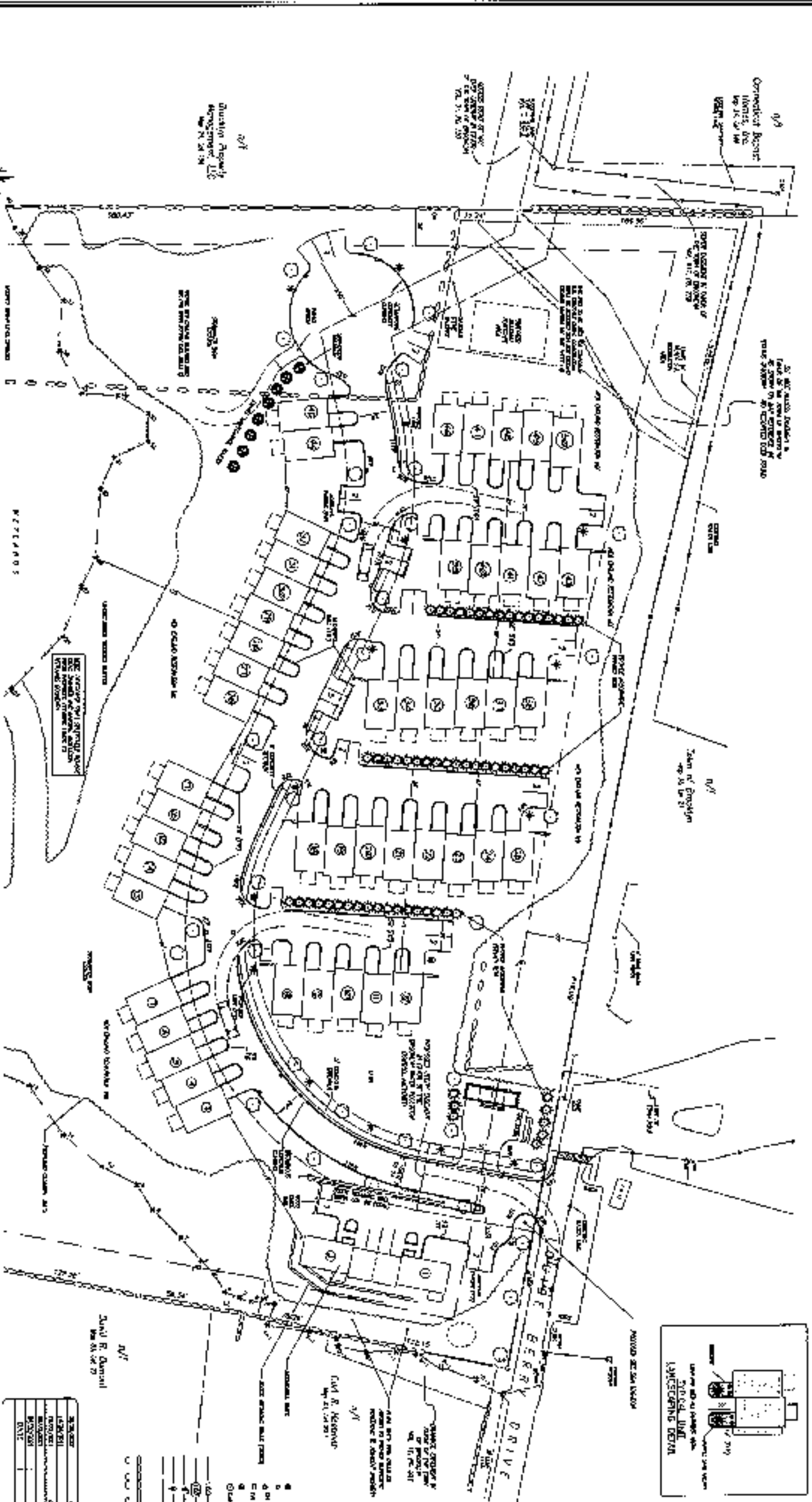
- ROW PAV TO BE SET
- ROW PAV FOUND
- BELL HOLE FOUND
- DITCH BASH
- UTILITY POLE
- SWIMWAY SWAGE MANHOLE
- PRECAST CONCRETE
- PAVED CONTROLS
- BOUNDARY WITH TPO
- EXISTING STAKEBACK LINE
- EXISTING SWAGWAY STAKEBACK LINE
- EXISTING WITH LINE
- STONE WALL
- STONE WALL ROWWAYS
- 12" WOODPILE STAKEBACK
- 12" UPWARD REVIEW

NO.	DESCRIPTION	DATE

SITE PLAN
 PREPARED FOR
SHANE POLLOCK
 LEAH'S BERRY DRIVE
 BROOKLYN, CONNECTICUT

Killingly Engineering Associates
 Civil Engineering & Surveying
 1115 North Main Street
 Killingly, CT 06242
 Phone: 860.735.2700
 Fax: 860.735.2701
 www.killinglyeng.com

DATE: 4/23/2010	SCALE: 1" = 40'	DATE: 4/23/2010
SHEET: 1 OF 3	SCALE: 1" = 40'	DATE: 4/23/2010
PROJECT: 100-100000000	SCALE: 1" = 40'	DATE: 4/23/2010
PROJECT: 100-100000000	SCALE: 1" = 40'	DATE: 4/23/2010



LANDSCAPE SCHEDULE

ITEM NO.	DESCRIPTION	QTY	UNIT
101	1" x 12" x 12" PINE	200	EA
102	2" x 12" x 12" PINE	100	EA
103	3" x 12" x 12" PINE	50	EA
104	4" x 12" x 12" PINE	25	EA
105	5" x 12" x 12" PINE	10	EA
106	6" x 12" x 12" PINE	5	EA
107	7" x 12" x 12" PINE	2	EA
108	8" x 12" x 12" PINE	1	EA
109	9" x 12" x 12" PINE	1	EA
110	10" x 12" x 12" PINE	1	EA
111	11" x 12" x 12" PINE	1	EA
112	12" x 12" x 12" PINE	1	EA

REVISIONS

NO.	DATE	DESCRIPTION
1	10/1/00	ISSUED FOR PERMITS
2	10/15/00	REVISED PER COMMENTS
3	10/20/00	REVISED PER COMMENTS
4	10/25/00	REVISED PER COMMENTS
5	11/1/00	REVISED PER COMMENTS

LANDSCAPE ARCHITECTURE PLAN

PREPARED FOR

SHANE POLLOCK

LANDSCAPE ARCHITECT

SHANE POLLOCK

1444 W. 10th St. Suite 100
Oklahoma City, Oklahoma 73106
Phone: (405) 233-1111
Fax: (405) 233-1112
www.shanepollock.com

SHANE POLLOCK
LANDSCAPE ARCHITECT

DATE: 10/1/00

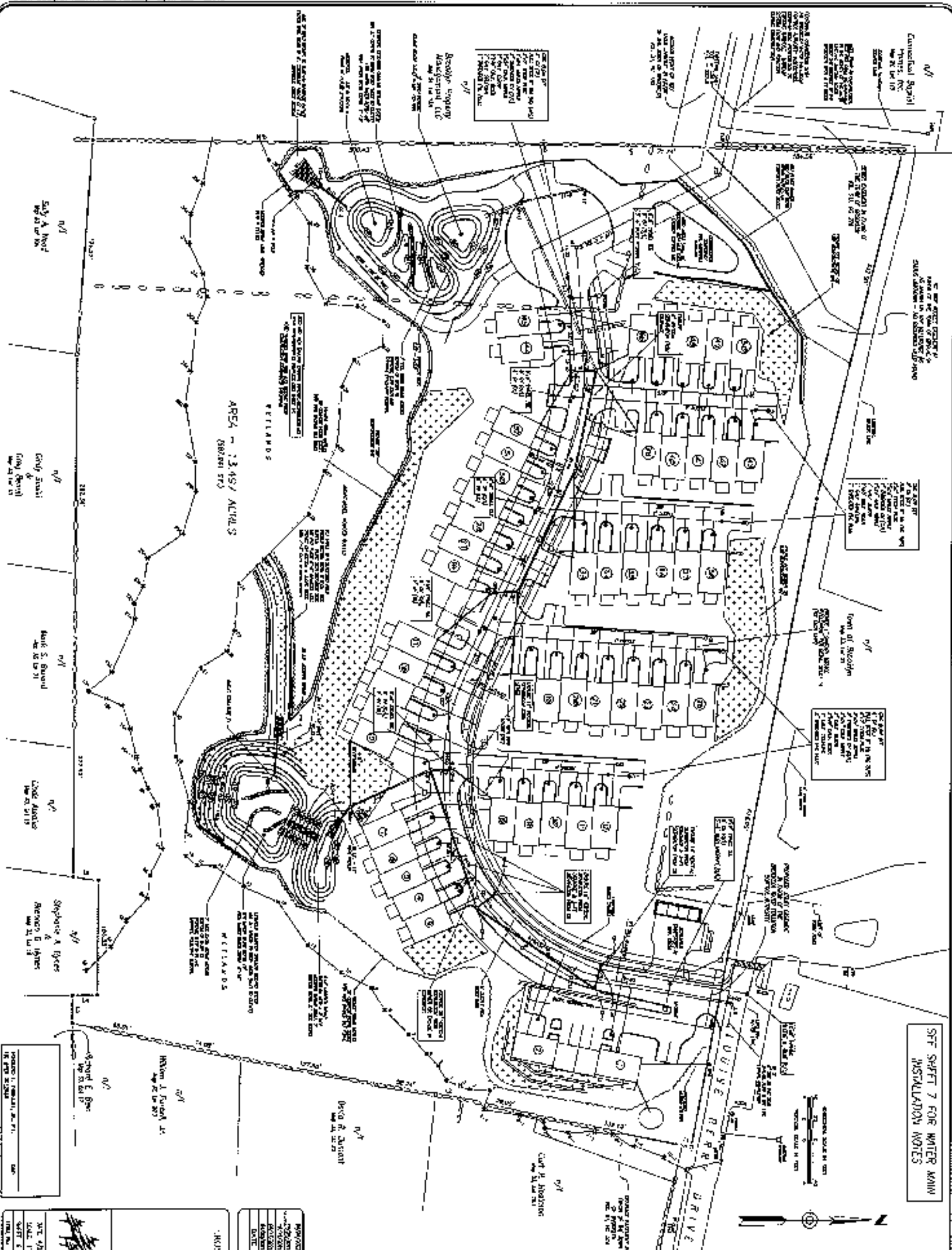
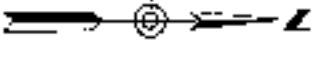
SCALE: AS SHOWN

PROJECT: SHANE POLLOCK

DATE: 10/1/00

**SFF SHEET 7 FOR WATER MAIN
INSTALLATION NOTES**

GENERAL SCALE 1" = 20'



- GENERAL NOTES:**
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF CHARLOTTE WATER MAIN SPECIFICATIONS AND THE NORTH CAROLINA WATER MAIN SPECIFICATIONS.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHARLOTTE AND THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION.
 3. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.
 4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES.
 6. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDING OF ALL WORK PERFORMED.
 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INSURANCE AND BONDING.
 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHARLOTTE AND THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION.
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHARLOTTE AND THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION.
 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHARLOTTE AND THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CONSTRUCTION.

REVISIONS:

NO.	DATE	DESCRIPTION
1	08/15/2004	ISSUED FOR PERMITTING
2	08/20/2004	REVISED TO SHOW PERMITTING CHANGES
3	09/01/2004	REVISED TO SHOW PERMITTING CHANGES
4	09/15/2004	REVISED TO SHOW PERMITTING CHANGES
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9	12/01/2004	REVISED TO SHOW PERMITTING CHANGES
10	12/15/2004	REVISED TO SHOW PERMITTING CHANGES

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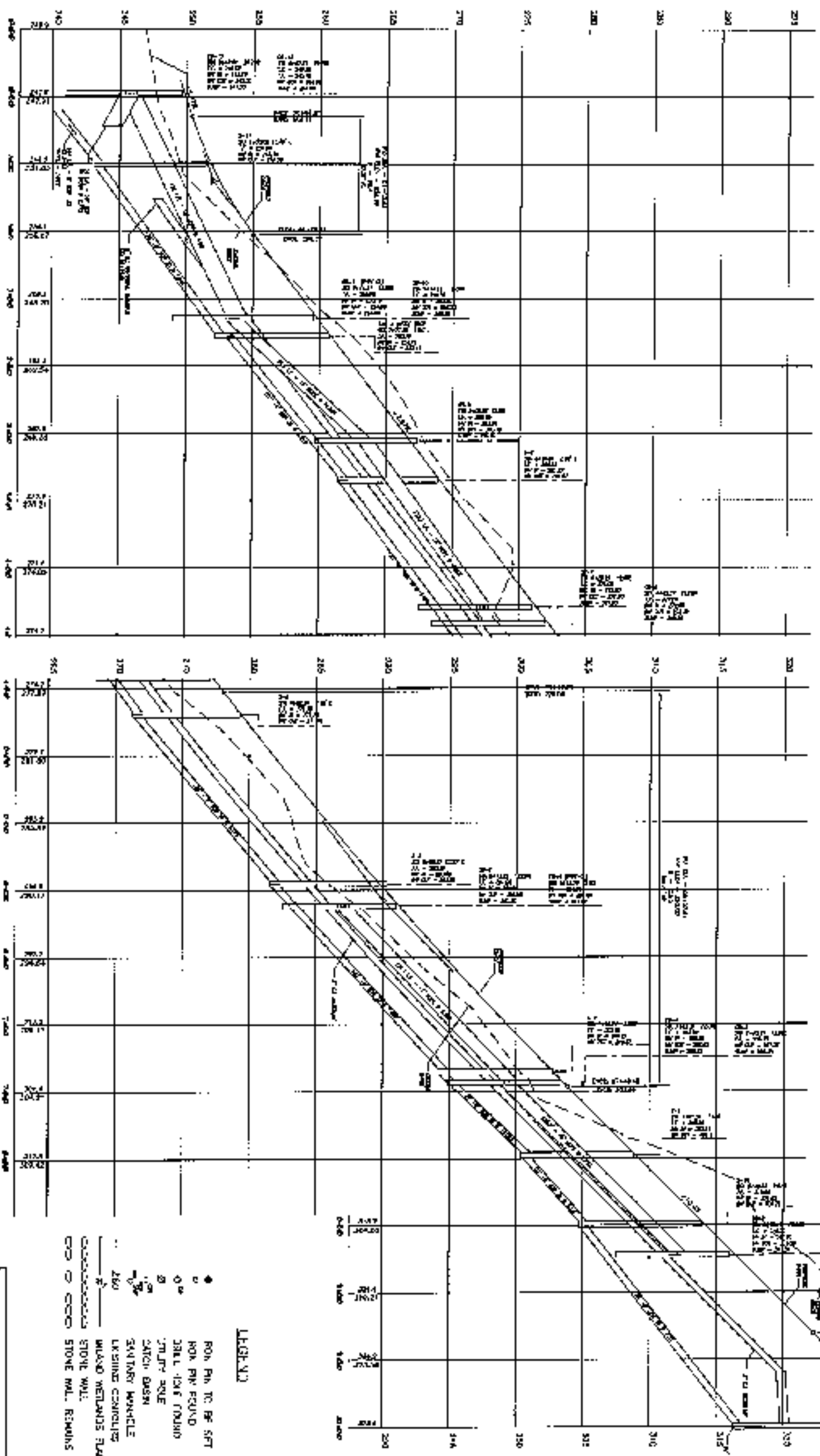
SHANE POJLOCK
PREPARED FOR
LORD, BIRNEY & BIRNEY
ENGINEERS, ARCHITECTS & PLANNERS

Killingly Engineering Associates
Civil Engineering & Surveying
11111 E. 11th St.
Charlotte, NC 28215
Tel: 704.531.1111
Fax: 704.531.1112

NO.	DATE	DESCRIPTION
1	08/15/2004	ISSUED FOR PERMITTING
2	08/20/2004	REVISED TO SHOW PERMITTING CHANGES
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9	12/01/2004	REVISED TO SHOW PERMITTING CHANGES
10	12/15/2004	REVISED TO SHOW PERMITTING CHANGES

STATION	MARK	DATE	MARKER	MATERIAL
100	100	10/15	10'	WOOD
101	101	10/15	10'	WOOD
102	102	10/15	10'	WOOD
103	103	10/15	10'	WOOD
104	104	10/15	10'	WOOD
105	105	10/15	10'	WOOD
106	106	10/15	10'	WOOD
107	107	10/15	10'	WOOD
108	108	10/15	10'	WOOD
109	109	10/15	10'	WOOD
110	110	10/15	10'	WOOD
111	111	10/15	10'	WOOD
112	112	10/15	10'	WOOD
113	113	10/15	10'	WOOD
114	114	10/15	10'	WOOD
115	115	10/15	10'	WOOD
116	116	10/15	10'	WOOD
117	117	10/15	10'	WOOD
118	118	10/15	10'	WOOD
119	119	10/15	10'	WOOD
120	120	10/15	10'	WOOD

STATION	MARK	DATE	MARKER	MATERIAL
121	121	10/15	10'	WOOD
122	122	10/15	10'	WOOD
123	123	10/15	10'	WOOD
124	124	10/15	10'	WOOD
125	125	10/15	10'	WOOD
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129	129	10/15	10'	WOOD
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131	131	10/15	10'	WOOD
132	132	10/15	10'	WOOD
133	133	10/15	10'	WOOD
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136	136	10/15	10'	WOOD
137	137	10/15	10'	WOOD
138	138	10/15	10'	WOOD
139	139	10/15	10'	WOOD
140	140	10/15	10'	WOOD



LEGEND

- R.O.M. P.N. TO BE SFT
- R.O.M. P.N. FOUND
- BELL (SFT FOUND)
- TUFF SOLE
- SAND BASH
- SANDY MOUND
- L.S. CONCRETE
- WOOD WELANDS FLAG
- STONE WALL REMAINS

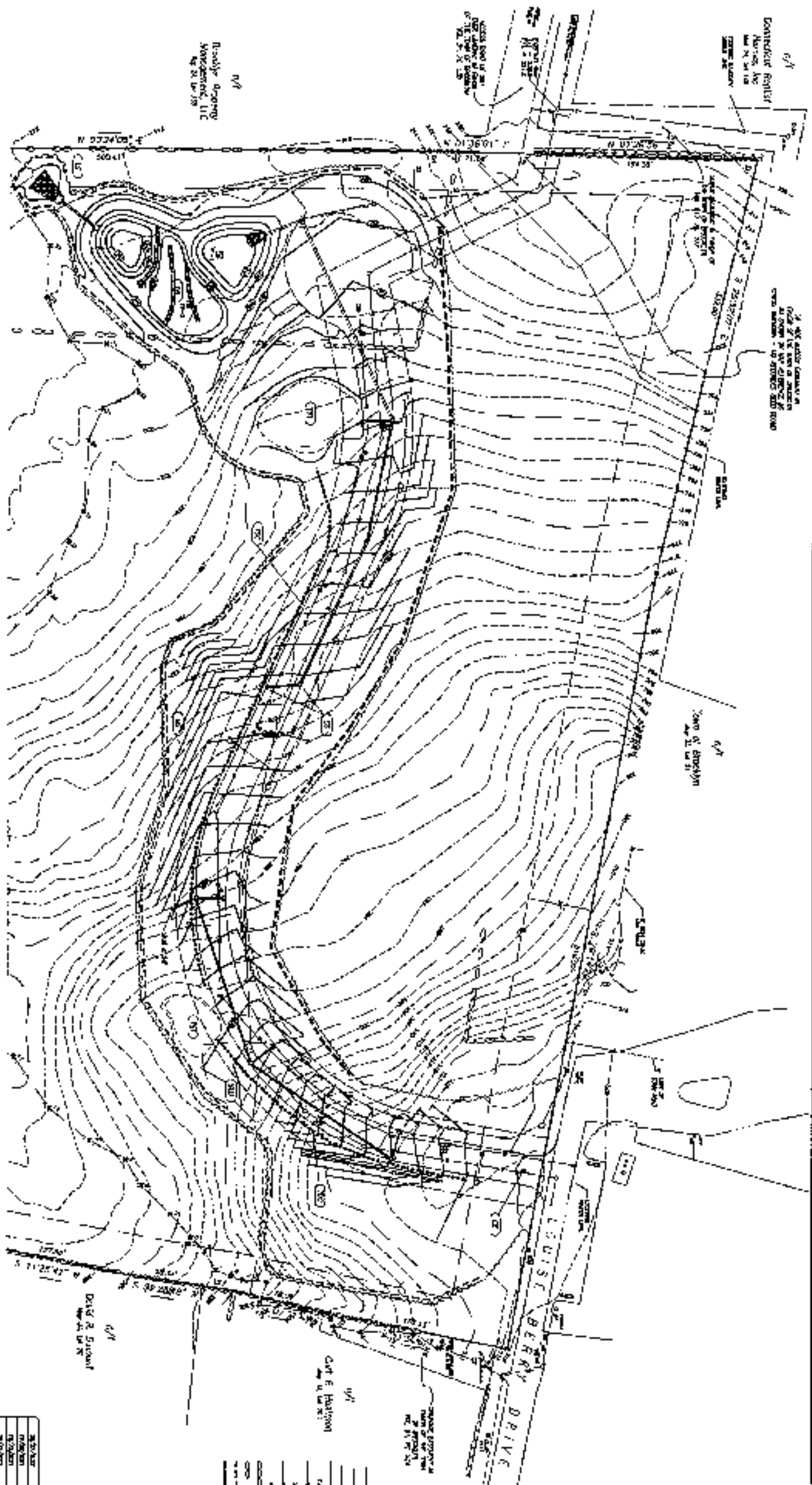
APPROVED & DRAWN BY: [Signature]
DATE: 10/15/10

SHANF POLLACK
 CIVIL ENGINEER
 3000 N. WASHINGTON
 KILLBUCK, OHIO 44130
 (440) 938-2343

Killbuck Engineering Associates
 Civil Engineering & Surveying
 11111 Killbuck Road
 Killbuck, Ohio 44130
 (440) 938-2343

DATE: 10/15/10
 SCALE: 1" = 40'
 SHEET: 1 OF 1
 PROJECT: [Project Name]

NO.	REVISION	DATE
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2	REVISED PER COMMENTS	10/20/10
3	REVISED PER COMMENTS	10/25/10
4	REVISED PER COMMENTS	11/05/10
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280	REVISED PER COMMENTS	07/05/18
281	REVISED PER COMMENTS	07/15/18



SYMBOL	DESCRIPTION
(20)	Subdivision of property front of gross acreage system to existing and existing systems and with a new system for city and state. The same shall be shown in the plan.
(21)	Spot height of ground by reference to a datum level and given in feet.
(22)	Contour lines and elevations shown with a contour interval of 5 feet or other contour interval of 10 feet or other system as indicated on the plan.
(23)	Proposed or existing structure consisting of a building, bridge, dam, or other structure.
(24)	Proposed or existing structure consisting of a dam, or other structure.
(25)	Proposed or existing structure consisting of a dam, or other structure.
(26)	Proposed or existing structure consisting of a dam, or other structure.
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(49)	Proposed or existing structure consisting of a dam, or other structure.
(50)	Proposed or existing structure consisting of a dam, or other structure.

SHANE POLLOCK

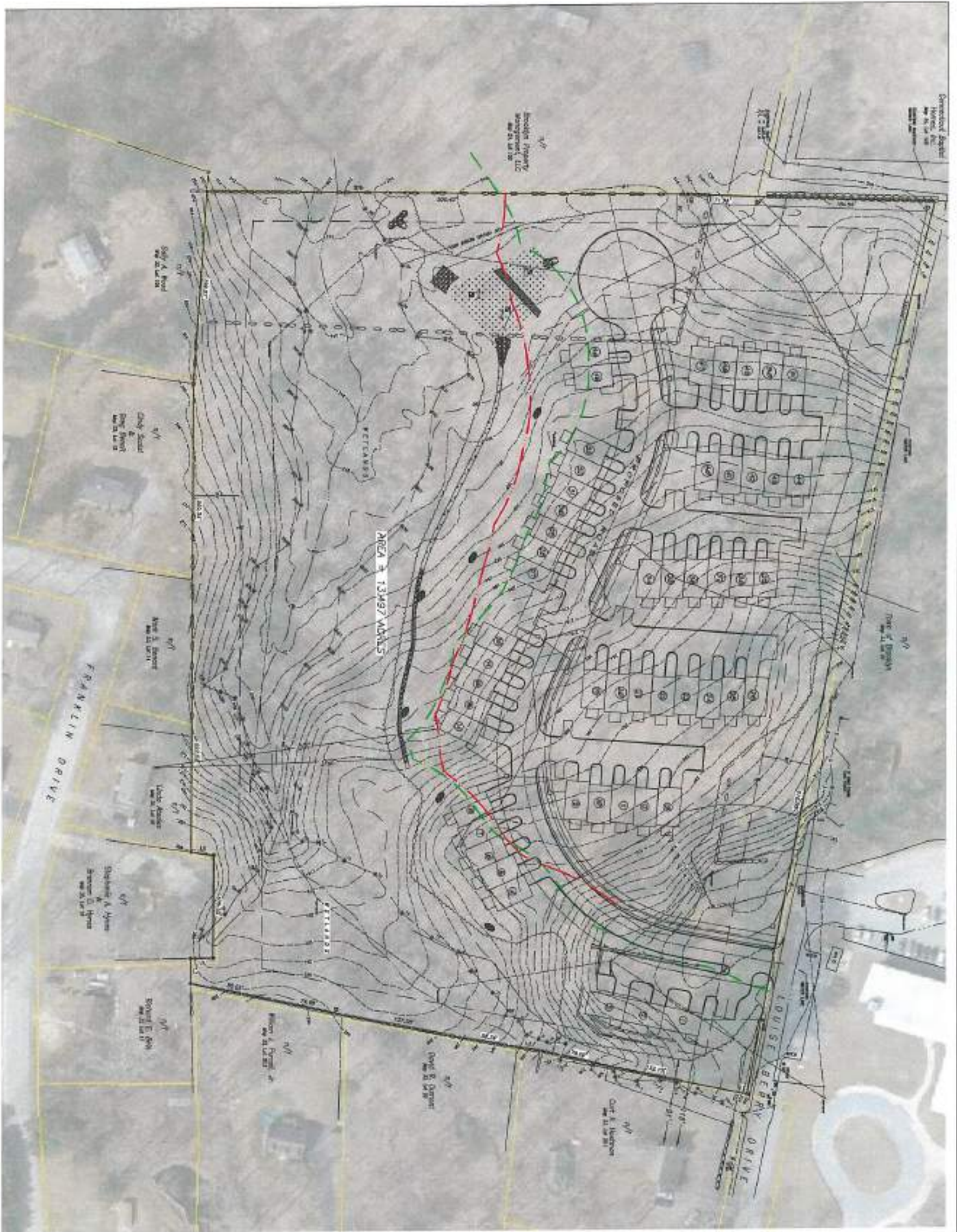
LOUISIANA DRIVE
DIRECTIONAL CONSTRUCTION

READING PLAN - PHASE I
24-7-2010 FOR

Kallidly Engineering Associates
Civil Engineering & Surveying

1001 E. 10th St.
Tulsa, Oklahoma 74103
Phone: (918) 438-1111
Fax: (918) 438-1112
www.kallidly.com

DATE: 01/10/10	DESIGN: SHP
SCALE: 1" = 50'	DATE: 01/10/10
DRAWN: SHP	CHECKED: SHP
PROJECT: 24-7-2010	DATE: 01/10/10
PROJECT: 24-7-2010	DATE: 01/10/10



ISSUED: 8/20/2013
 DRAWN BY: [Name]
 CHECKED BY: [Name]

DATE	DESCRIPTION

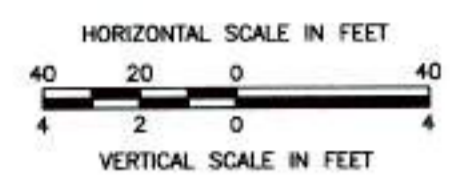
SHANE POLLOCK
 LOUISE BERRY DRIVE
 BRIDGEMAN, CONNECTICUT

Keillngy Engineering Associates
 Civil Engineering & Surveying

1000 Main Street
 Bridgeport, CT 06610
 Phone: (203) 366-1111
 Fax: (203) 366-1112
 www.keillngy.com

DATE: 11/23/2010
 SCALE: 1" = 50'
 SHEET: 1 OF 1
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 DATE: 08/20/13
 SHEET NO.: 010114

Town of Brooklyn
Map 33, Lot 21



COORDINATE CONNECTION WITH THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY INSPECTORS. CORE-4- SEAL PENETRATION TO EXISTING MANHOLE. MAINTAIN SYSTEM FLOW AND FUNCTION DURING CONSTRUCTION.

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

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

DATE	DESCRIPTION

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

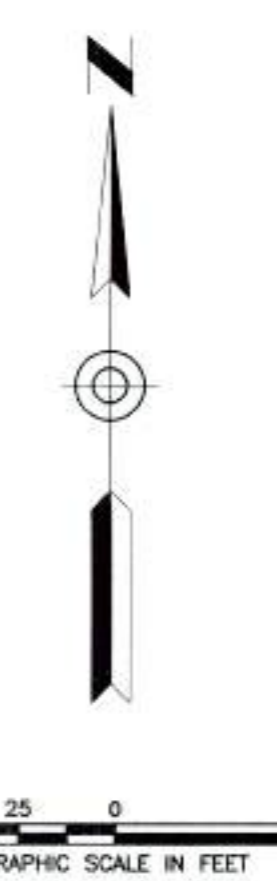
DATE: 4/23/2020	DRAWN: ONE
SCALE: 1" = 40'	DESIGN: NET
SHEET: -5-OF-9- 2 of 2	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 20014

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

K:\20014\Drawings\17_000\DWG.dwg Aug 30, 2022 - 11:29 PM



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'



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

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

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

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
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

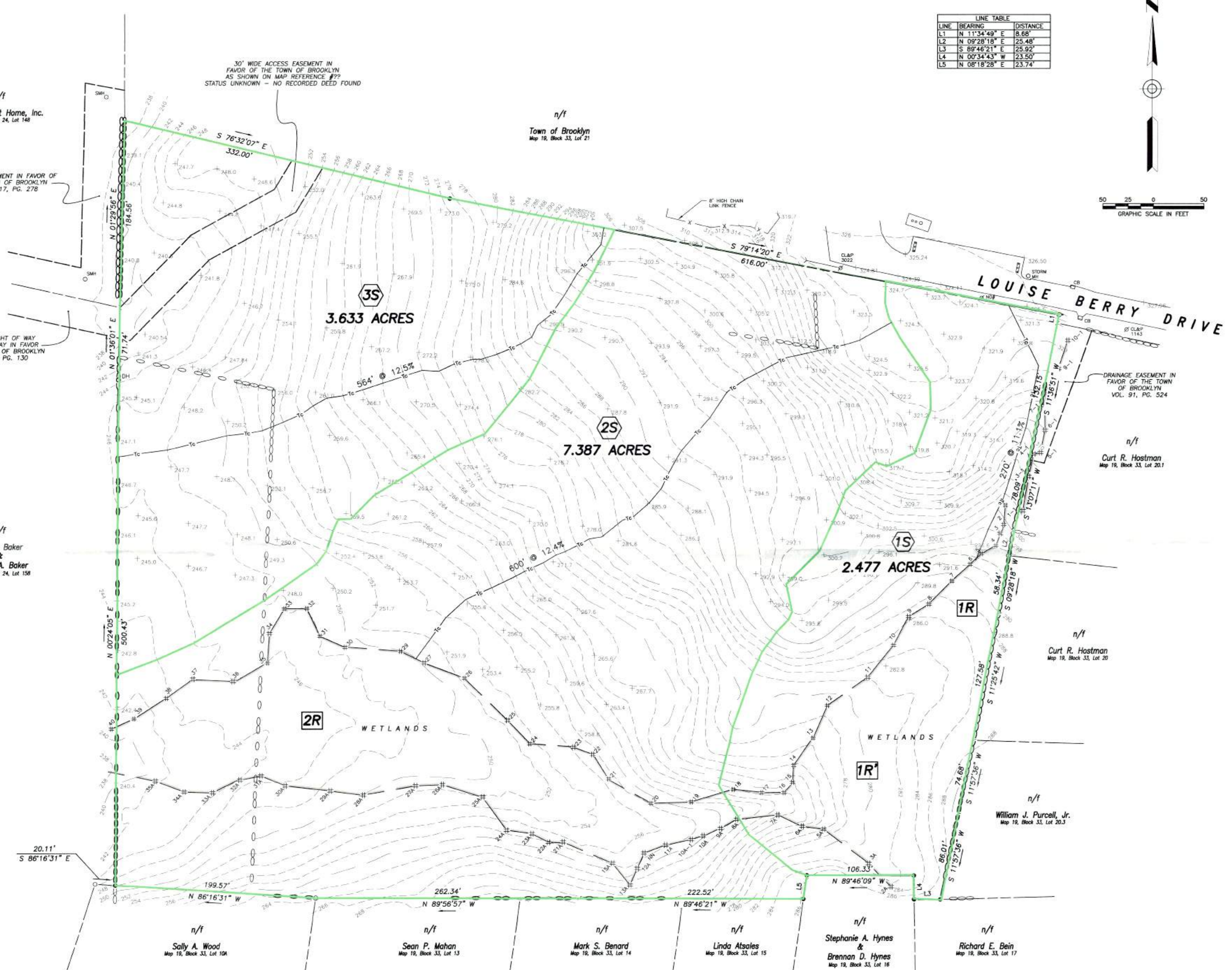
n/f
Linda Altsales
Map 19, Block 33, Lot 15

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
- ^{DH} DRILL HOLE FOUND
- ⊗ UTILITY POLE
- ^{CB} CATCH BASIN
- ^{SMH} SANITARY MANHOLE
- EXISTING CONTOURS
- INLAND WETLANDS FLAG
- ⊖ STONE WALL
- ⊖ STONE WALL REMAINS



DATE	DESCRIPTION
08/24/2020	PER TOWN REVIEW
	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 06240
(860) 779-7399
www.killinglyengineering.com

DATE: 4/23/2020 DRAWN: NEBY
SCALE: 1" = 50' DESIGN: NET
SHEET: 1 OF 2 CHK BY: ---
DWG. No: CLIENT FILE JOB No: 20014

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



8/30/2022

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



Introduction

Shane Pollock & Erin F Mancuso have submitted a proposal to the Town 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 400' 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. Existing and Propose Peak Runoff Rates

Design Storm	Depth (in)	Existing Peak	Proposed Peak	Difference
2-Year	3.37	3.7 CFS	3.5 CFS	-0.2 CFS
5-Year	4.28	8.6 CFS	6.9 CFS	-1.7 CFS
10-Year	5.04	13.5 CFS	11.4 CFS	-2.1 CFS
25-Year	6.08	20.7 CFS	18.5 CFS	-2.2 CFS
50-Year	6.85	26.5 CFS	23.3 CFS	-3.2 CFS
100-Year	7.68	33.5 CFS	30.1 CFS	-3.4 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 "C".

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. Whenever 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)

$$WQV = (I^*) (R) (A) / 12$$

$$R = 0.05 + 0.009(I) \quad I = \% \text{ Impervious} = 32.67\%$$

$$R = 0.05 + 0.009(32.67) = 0.344$$

$$A = 1.383 \text{ acres}$$

$$WQV = (1^*) (0.344) (1.383) / 12 = 0.04 \text{ ac-ft} = 1,728 \text{ c.f.}$$

3,023 c.f. provided to elevation 285.0

Basin 2 Water Quality Volume

$$WQV = (I^*) (R) (A) / 12$$

$$R = 0.05 + 0.009(I) \quad I = \% \text{ Impervious} = 43.44\%$$

$$R = 0.05 + 0.009(43.44) = 0.391$$

$$A = 4.169 \text{ acres}$$

$$WQV = (1^*) (0.391) (4.169) / 12 = 0.317 \text{ ac-ft} = 13,771 \text{ c.f.}$$

9,375 c.f. provided in forebay & 5,200 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 1.5" 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 "clean" 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

Existing Conditions

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Louise Berry Drive
Type III 24-hr 2-year Rainfall=3.37"
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Summary for Subcatchment 1S: Drainage Area 1

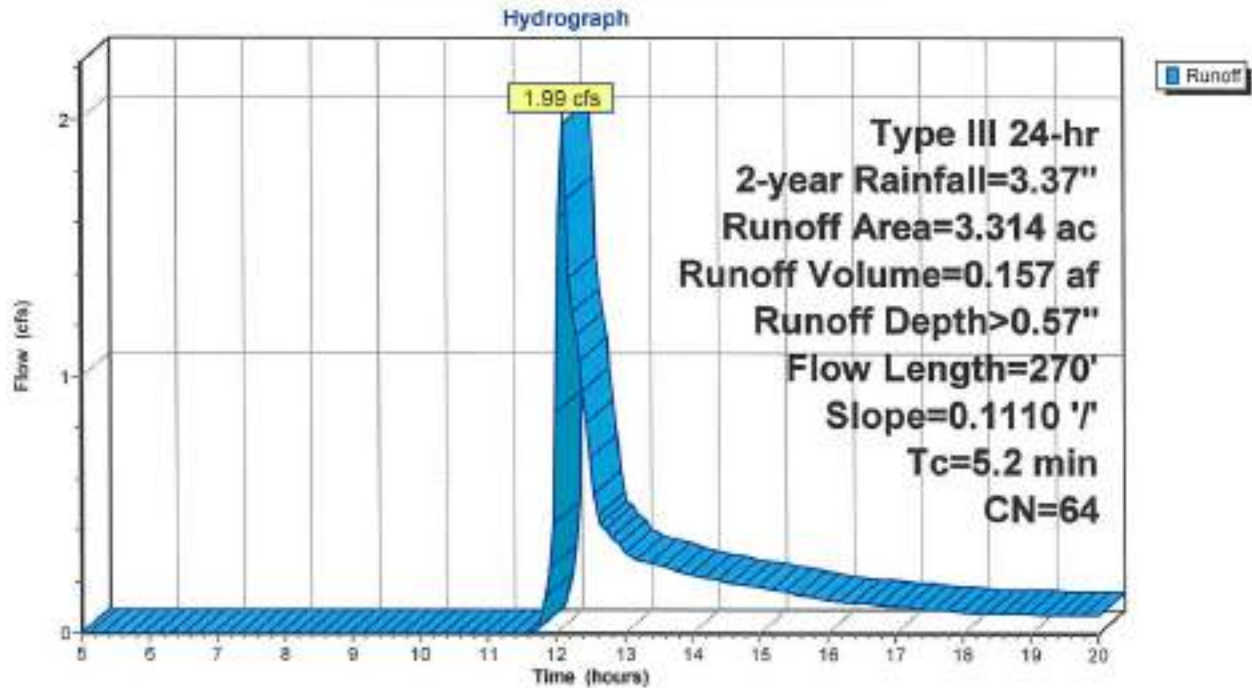
Runoff = 1.99 cfs @ 12.10 hrs, Volume= 0.157 af, Depth> 0.57"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Type III 24-hr 2-year Rainfall=3.37"
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Summary for Subcatchment 2S: Drainage Area 2

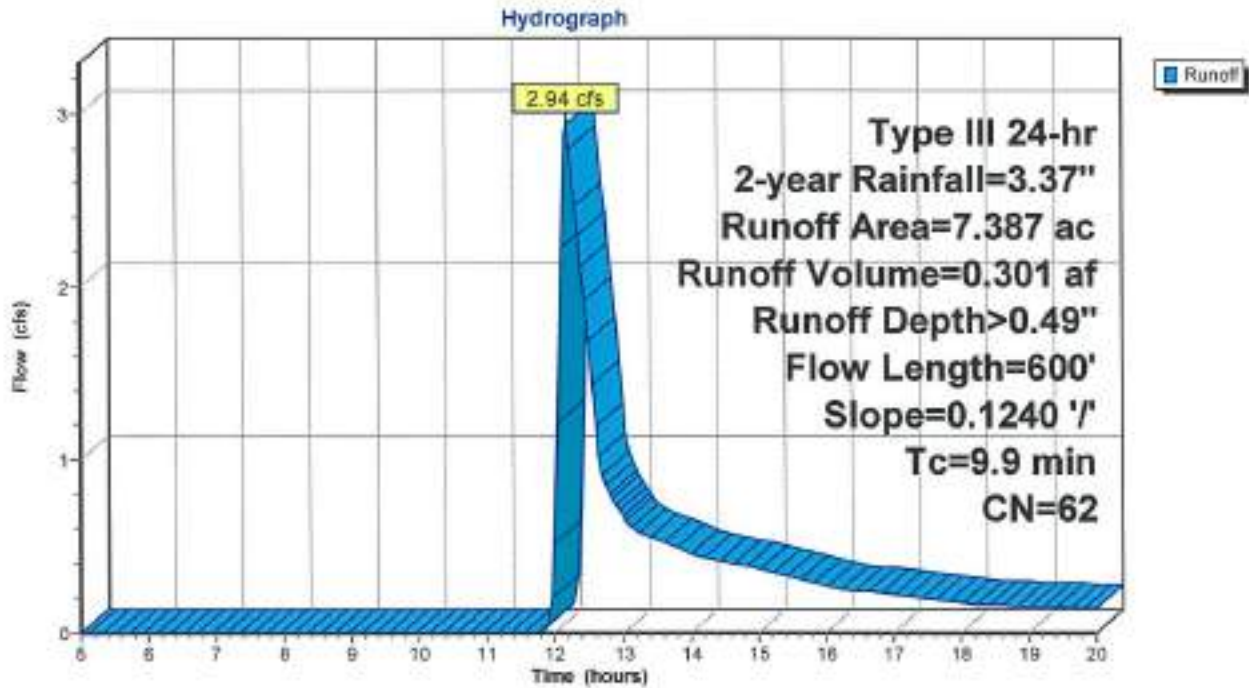
Runoff = 2.94 cfs @ 12.18 hrs, Volume= 0.301 af, Depth> 0.49"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 2-year Rainfall=3.37"
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Summary for Subcatchment 3S: Off Site West

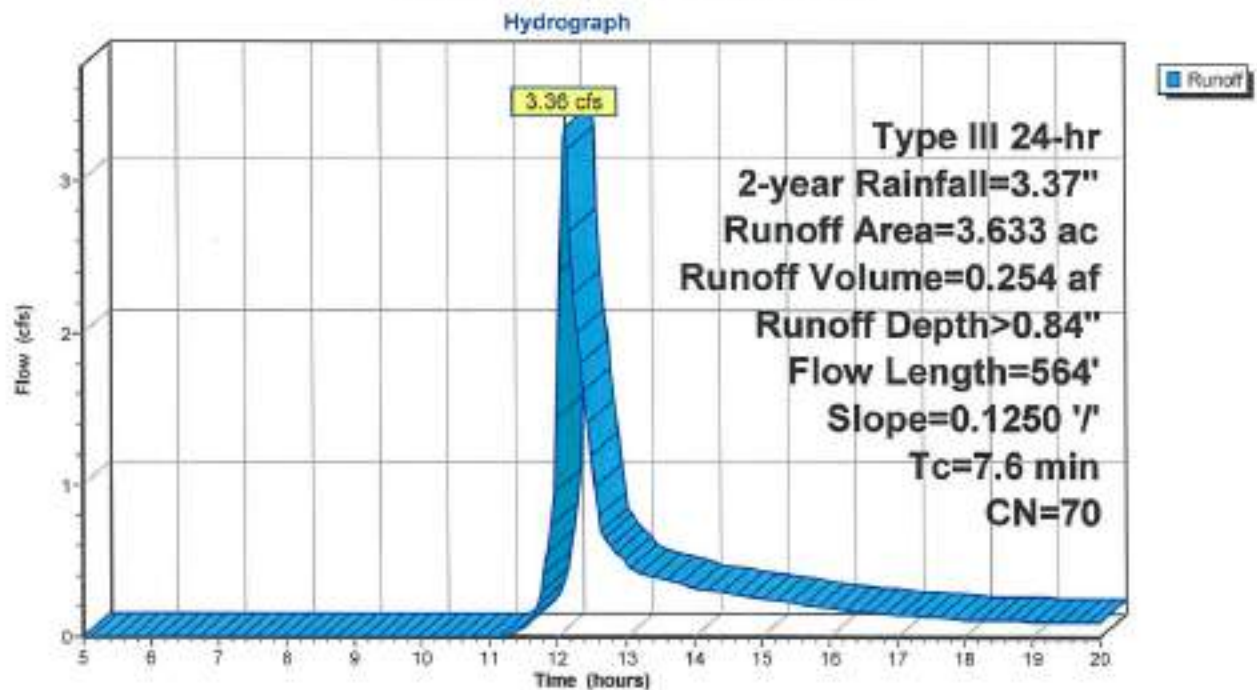
Runoff = 3.36 cfs @ 12.12 hrs, Volume= 0.254 af, Depth> 0.84"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Louise Berry Drive
Type III 24-hr 2-year Rainfall=3.37"
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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

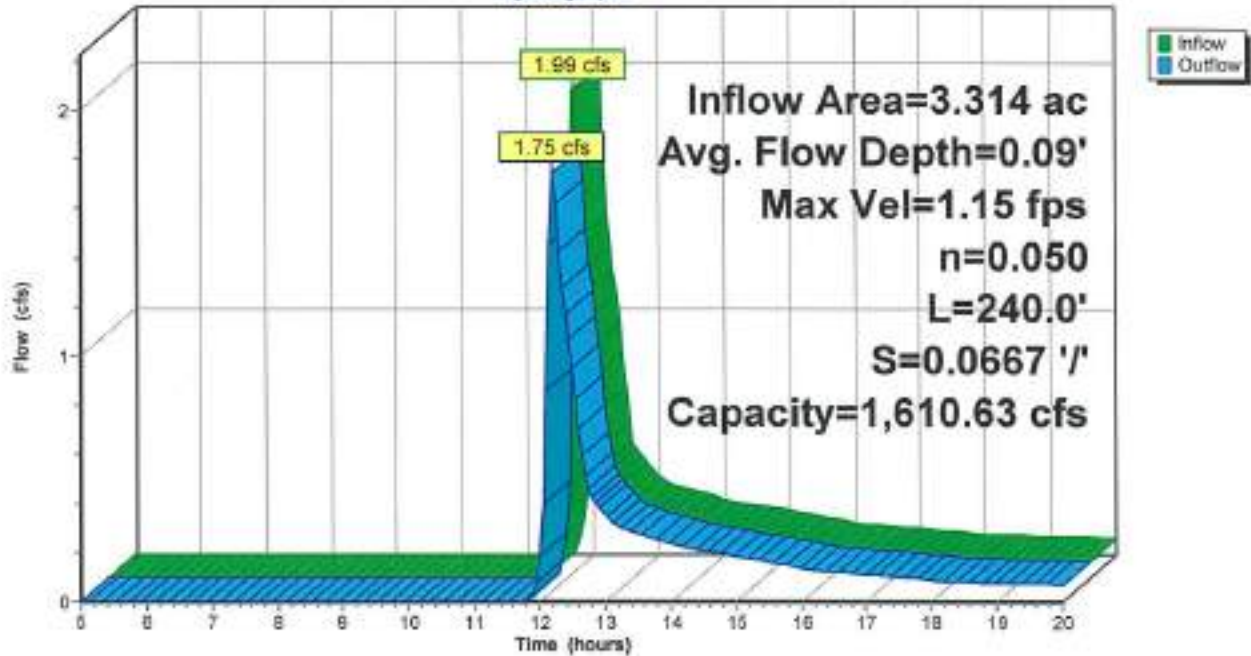
Peak Storage= 371 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

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'



Reach 1R: Wetland Section 1

Hydrograph



Existing Conditions

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Type III 24-hr 2-year Rainfall=3.37"
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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

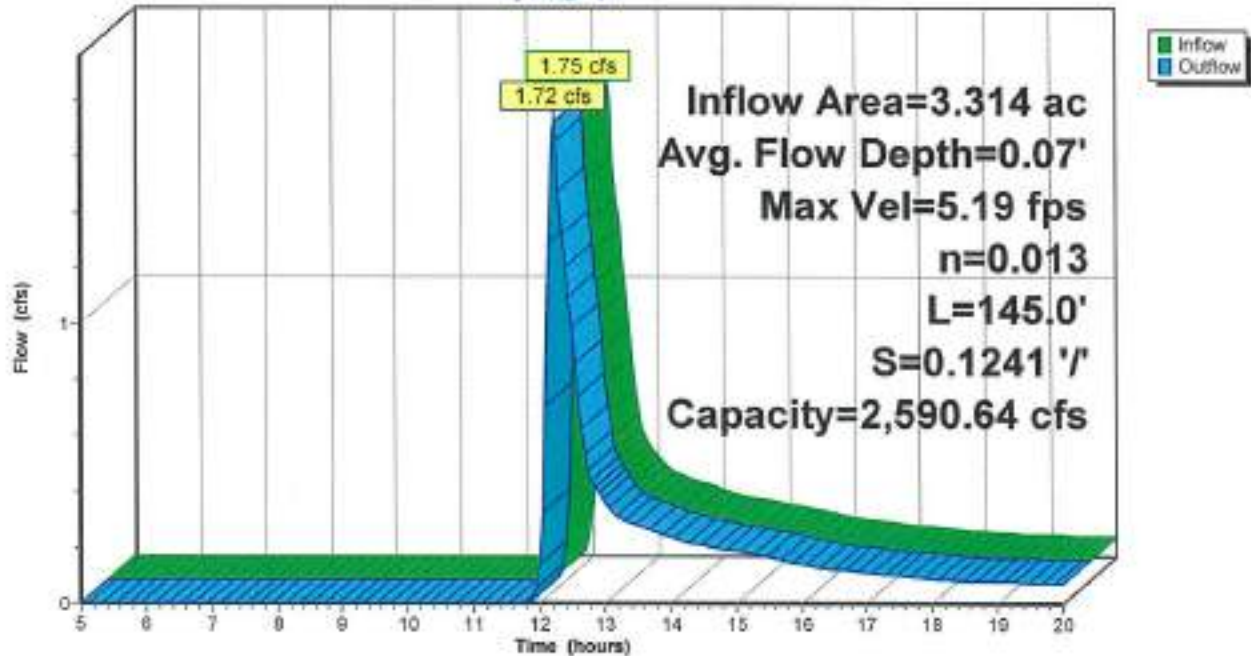
Peak Storage= 49 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

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'



Reach 1R': Wetland Section 2

Hydrograph



Existing Conditions

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Type III 24-hr 2-year Rainfall=3.37"
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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

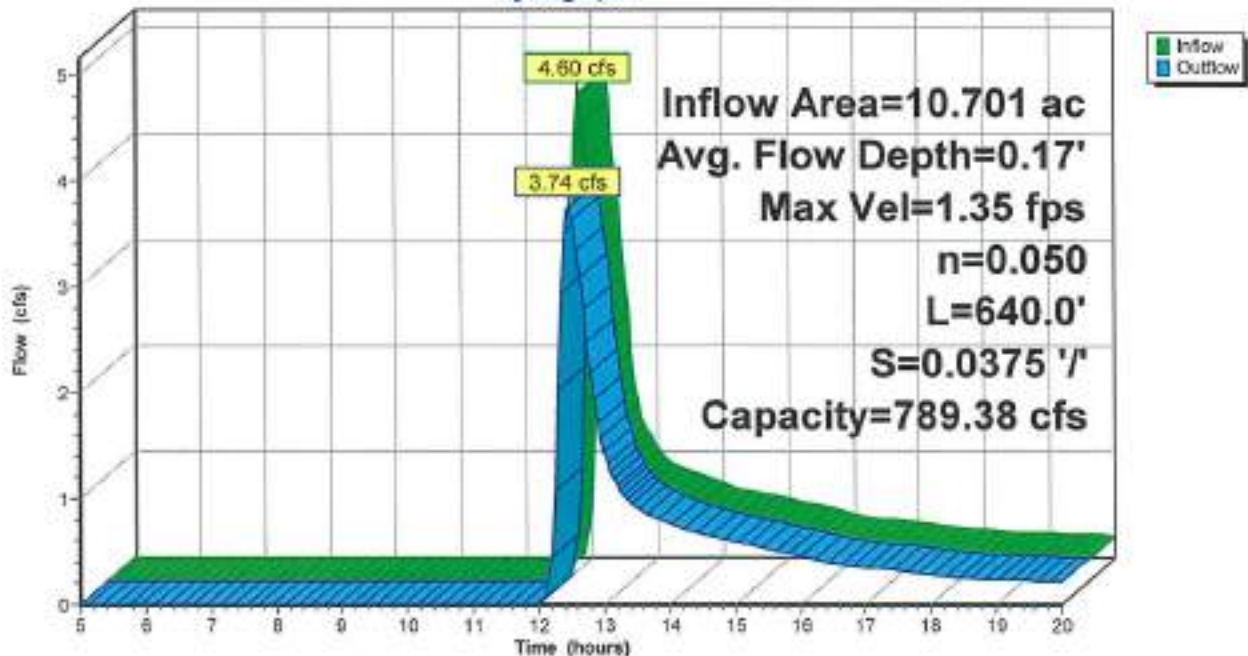
Peak Storage= 1,783 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

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'



Reach 2R: Peak off Site

Hydrograph



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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Summary for Subcatchment 1S: Drainage Area 1

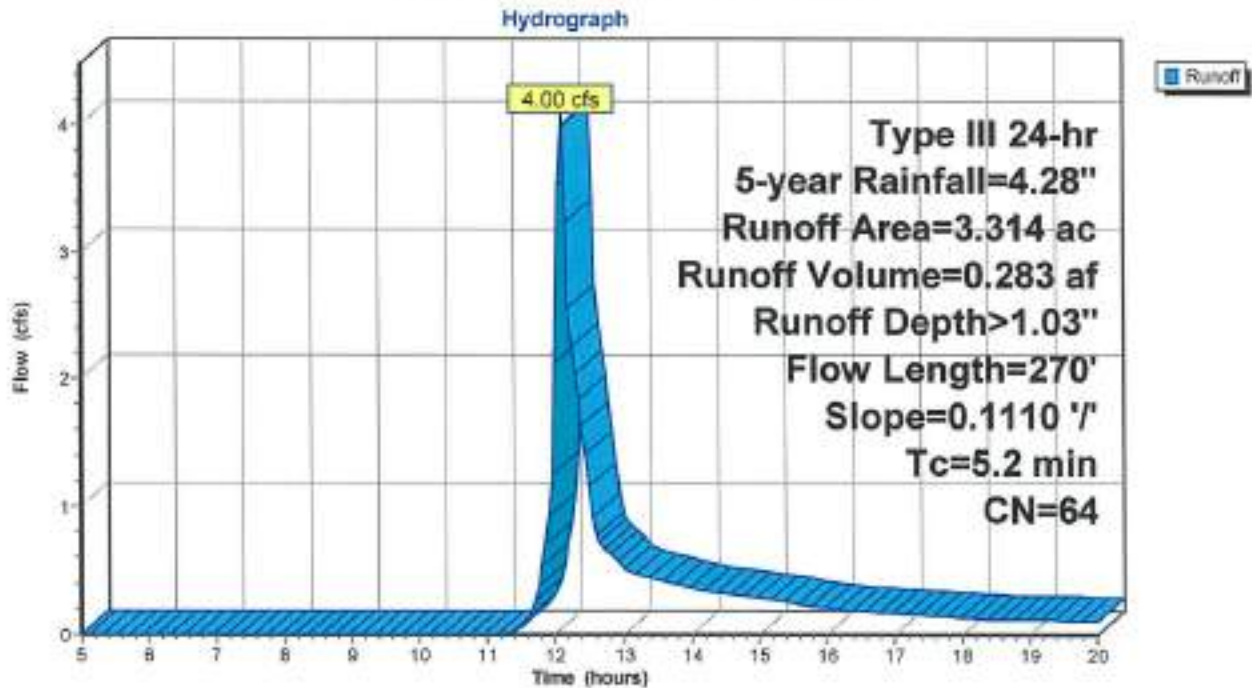
Runoff = 4.00 cfs @ 12.09 hrs, Volume= 0.283 af, Depth> 1.03"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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Summary for Subcatchment 2S: Drainage Area 2

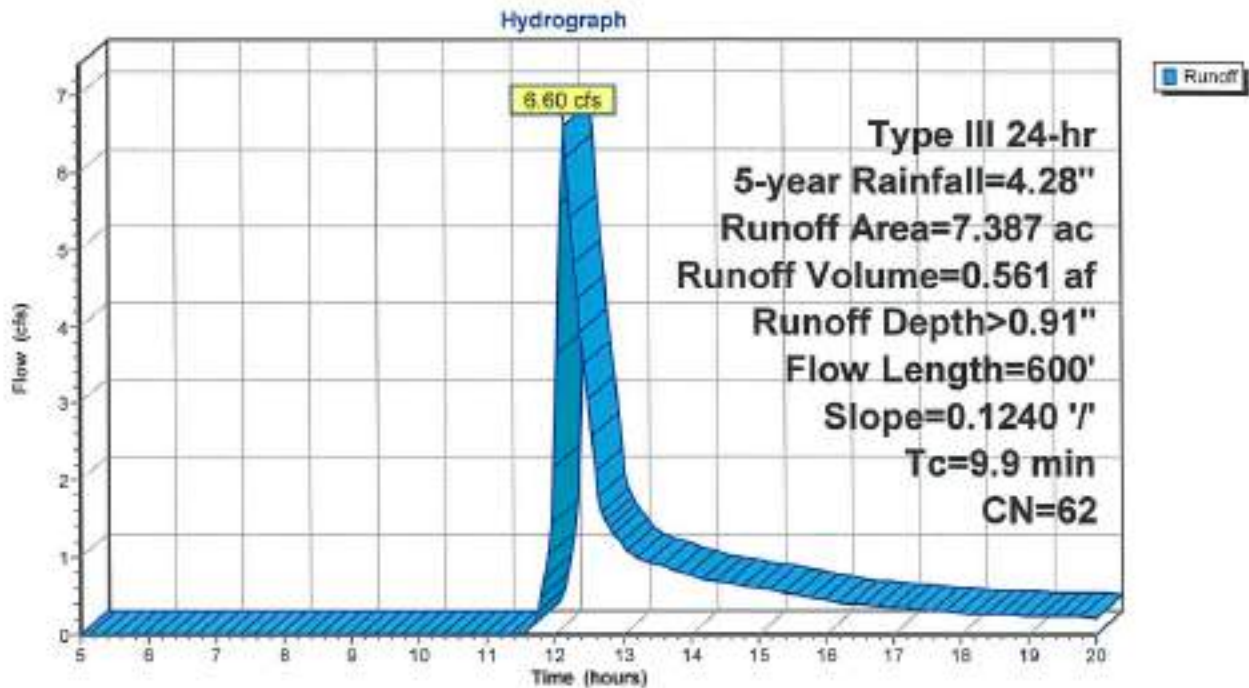
Runoff = 6.60 cfs @ 12.16 hrs, Volume= 0.561 af, Depth> 0.91"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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Summary for Subcatchment 3S: Off Site West

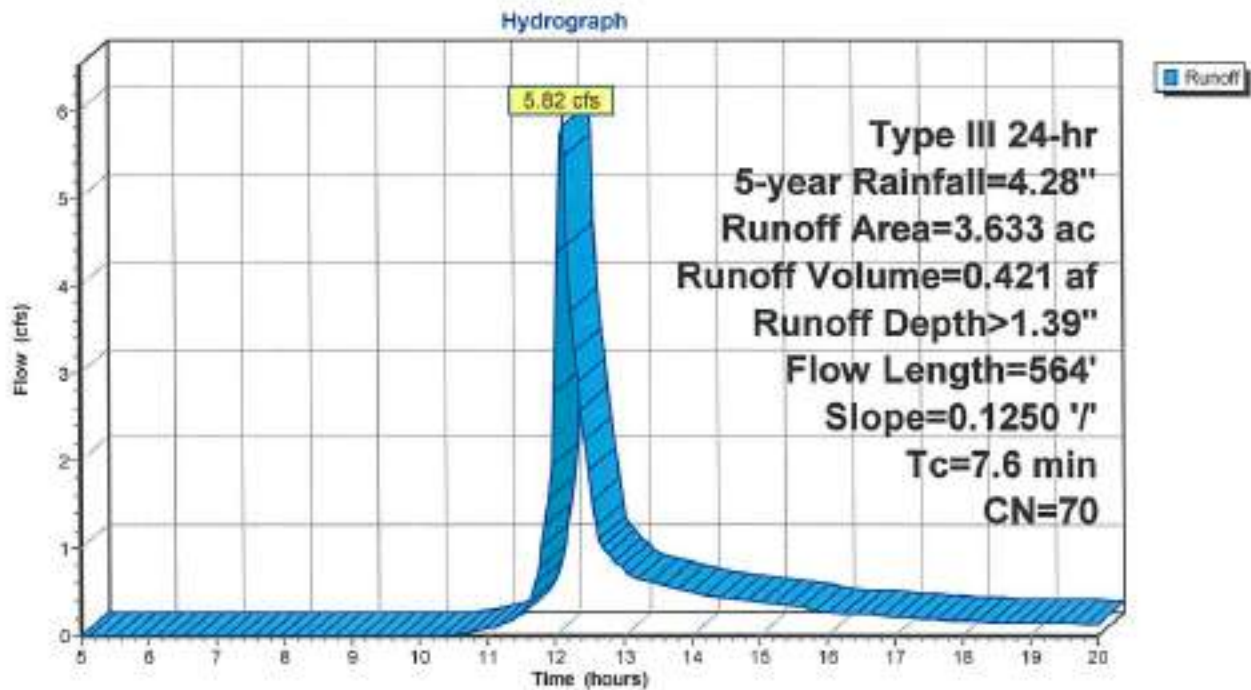
Runoff = 5.82 cfs @ 12.12 hrs, Volume= 0.421 af, Depth> 1.39"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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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

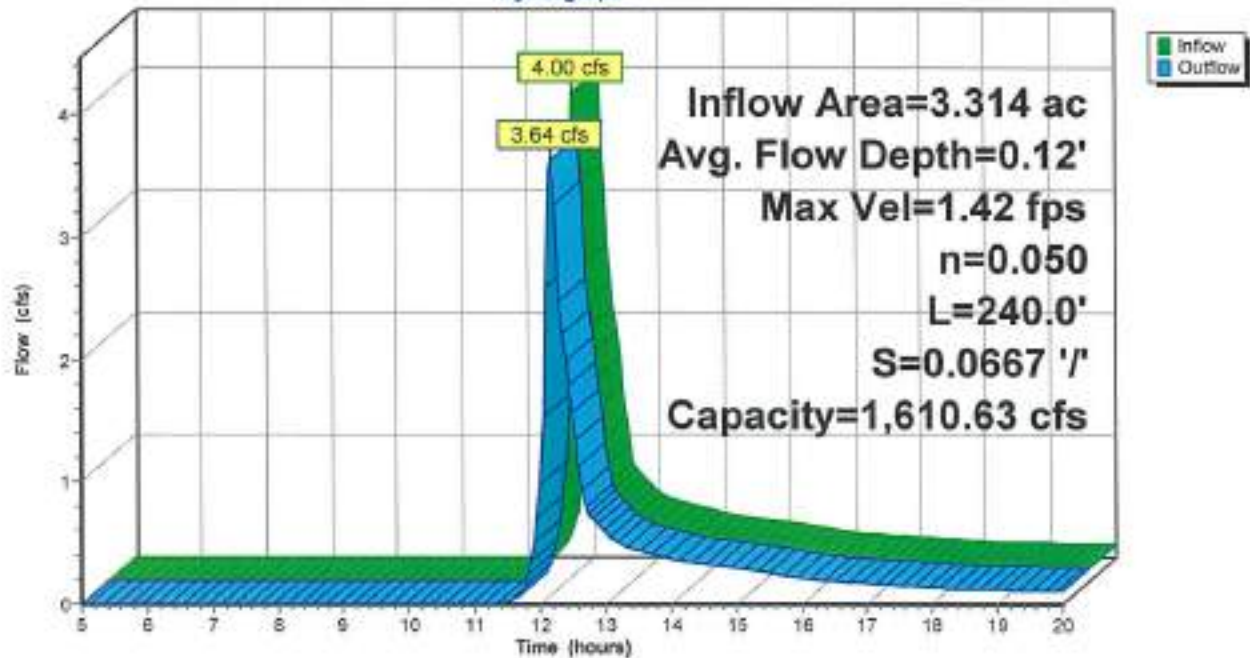
Peak Storage= 616 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

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'



Reach 1R: Wetland Section 1

Hydrograph



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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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

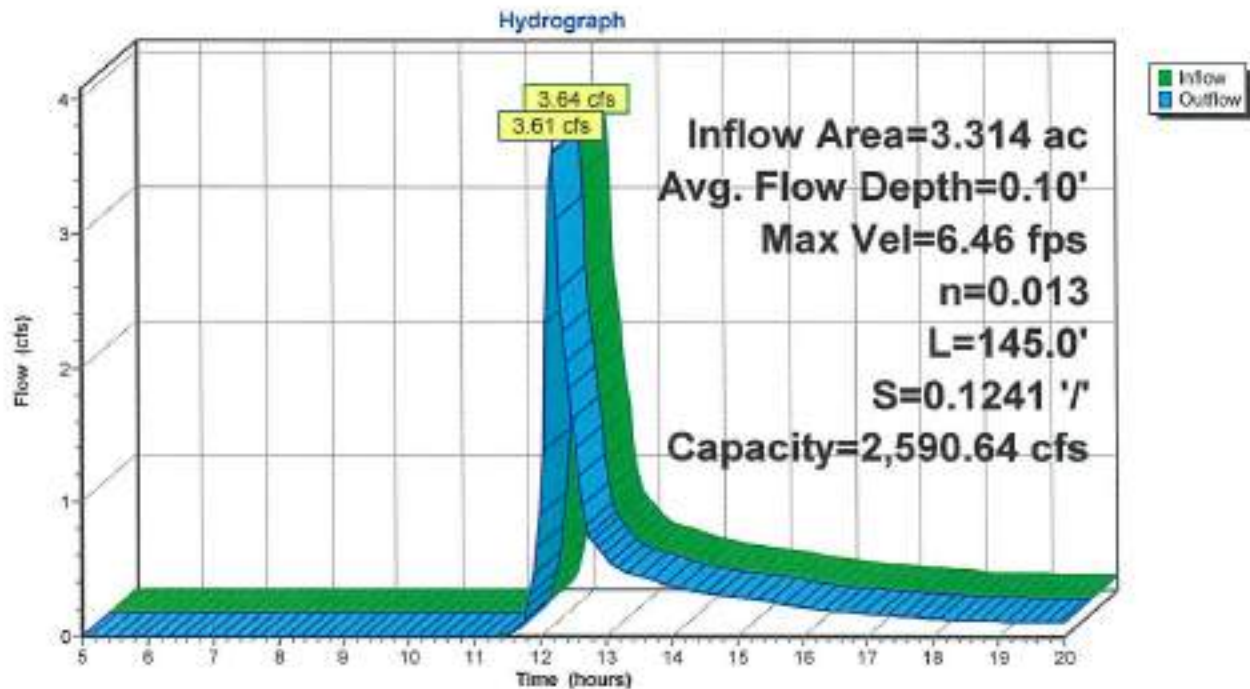
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.46 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 0.8 min

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'



Reach 1R': Wetland Section 2



Existing Conditions

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Type III 24-hr 5-year Rainfall=4.28"
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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

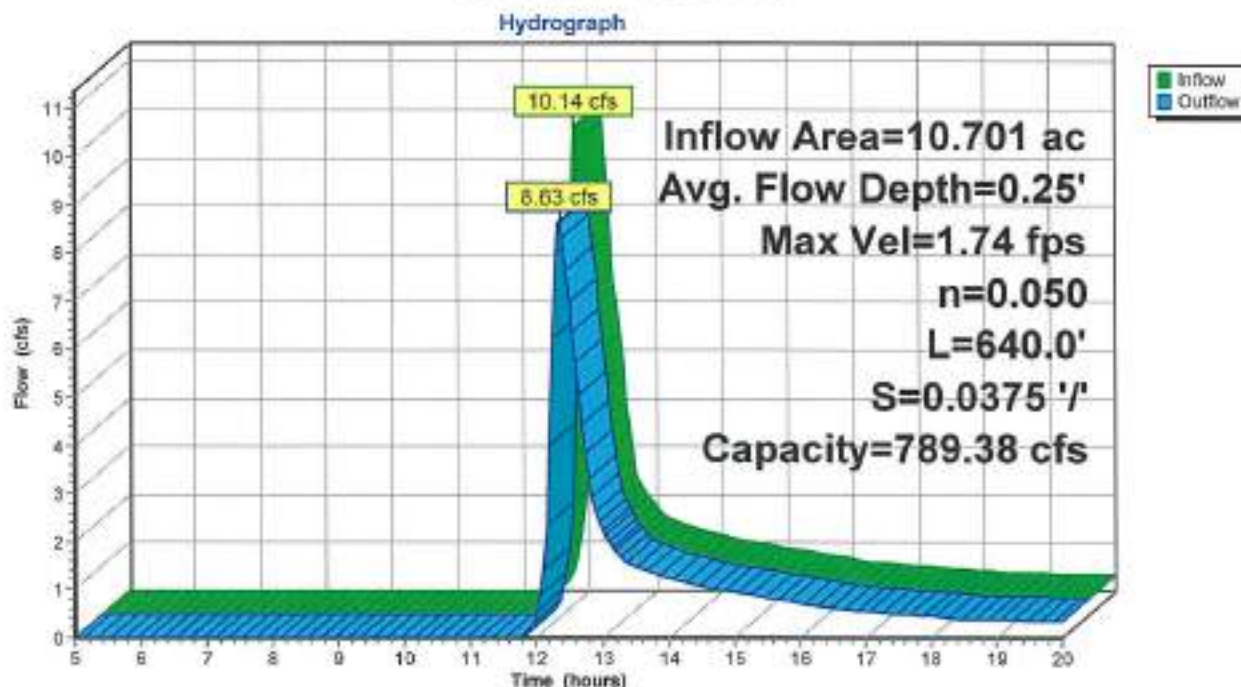
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 12.6 min

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'



Reach 2R: Peak off Site



Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"

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Summary for Subcatchment 1S: Drainage Area 1

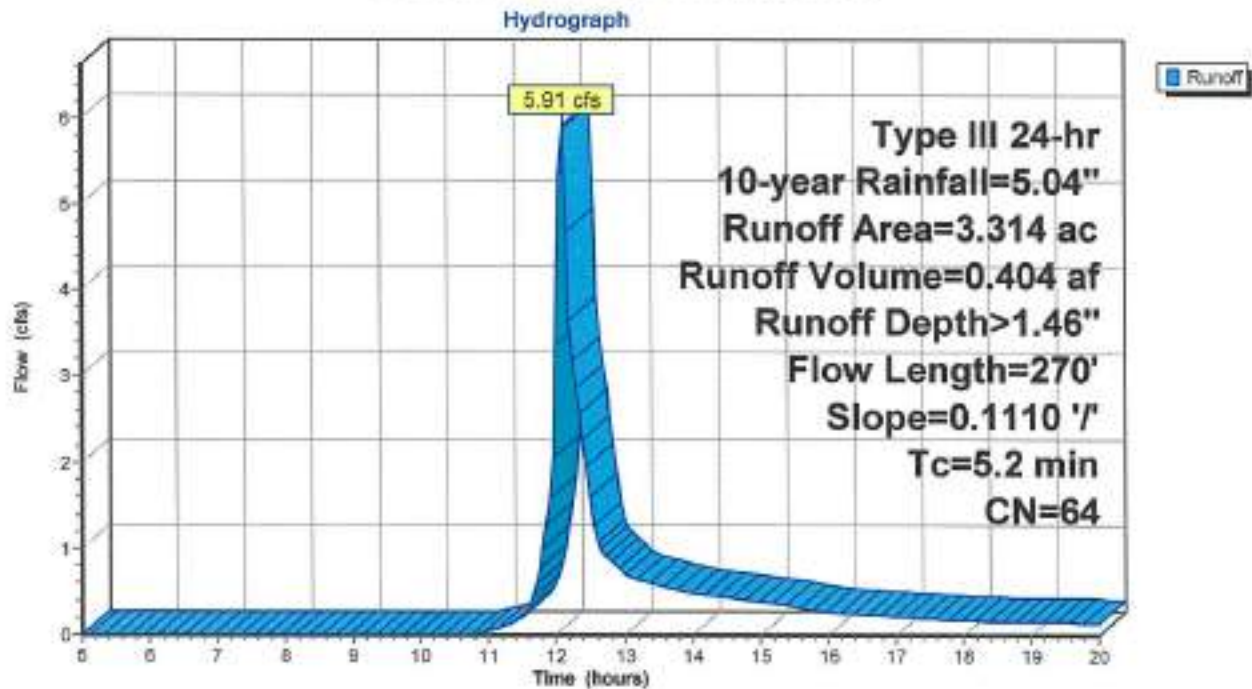
Runoff = 5.91 cfs @ 12.09 hrs, Volume= 0.404 af, Depth> 1.46"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"
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Summary for Subcatchment 2S: Drainage Area 2

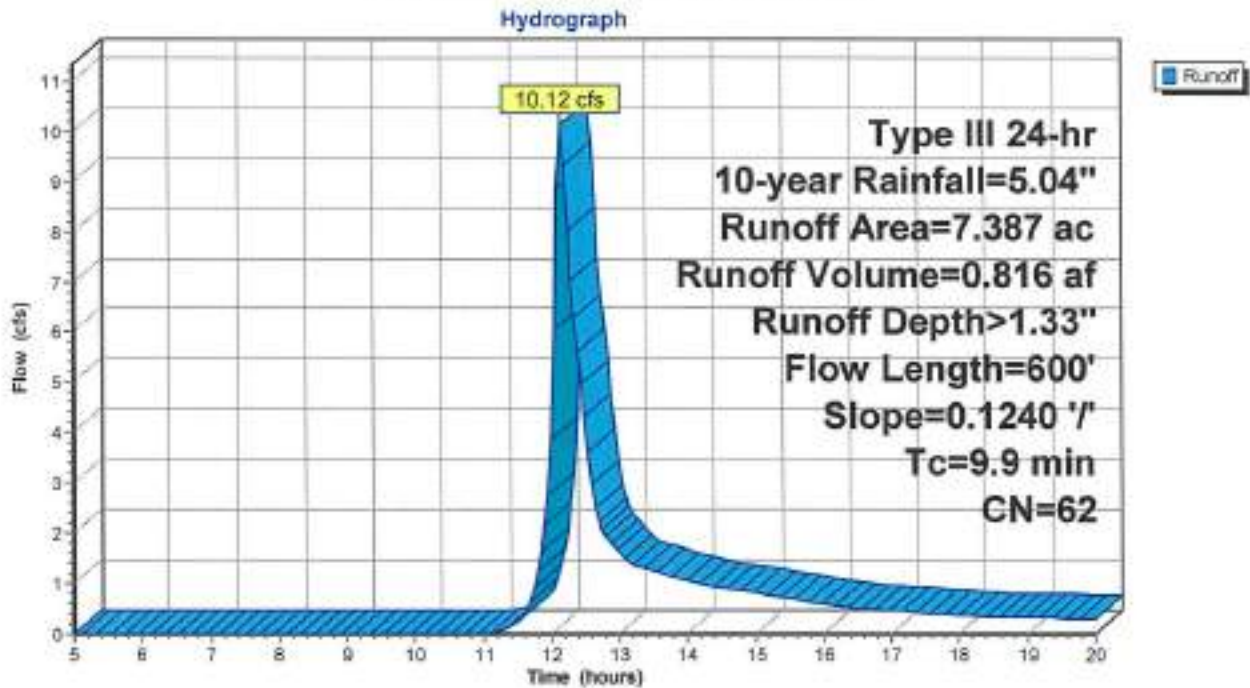
Runoff = 10.12 cfs @ 12.16 hrs, Volume= 0.816 af, Depth> 1.33"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"
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Summary for Subcatchment 3S: Off Site West

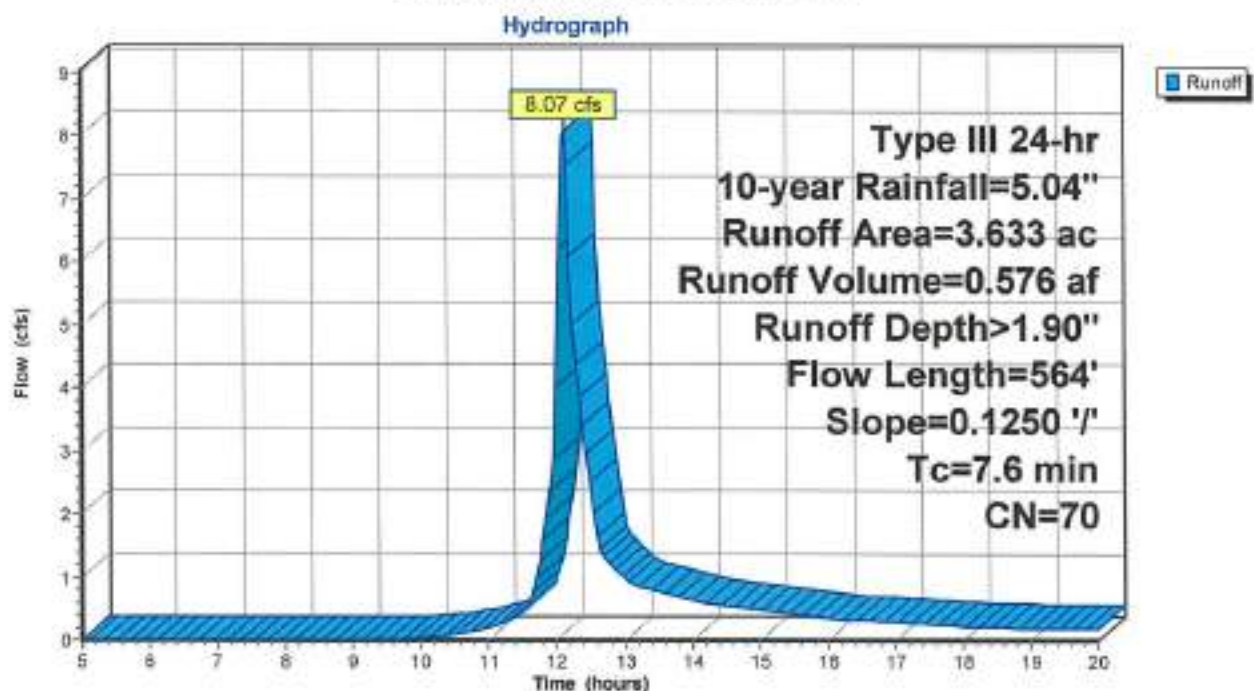
Runoff = 8.07 cfs @ 12.12 hrs, Volume= 0.576 af, Depth> 1.90"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"
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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

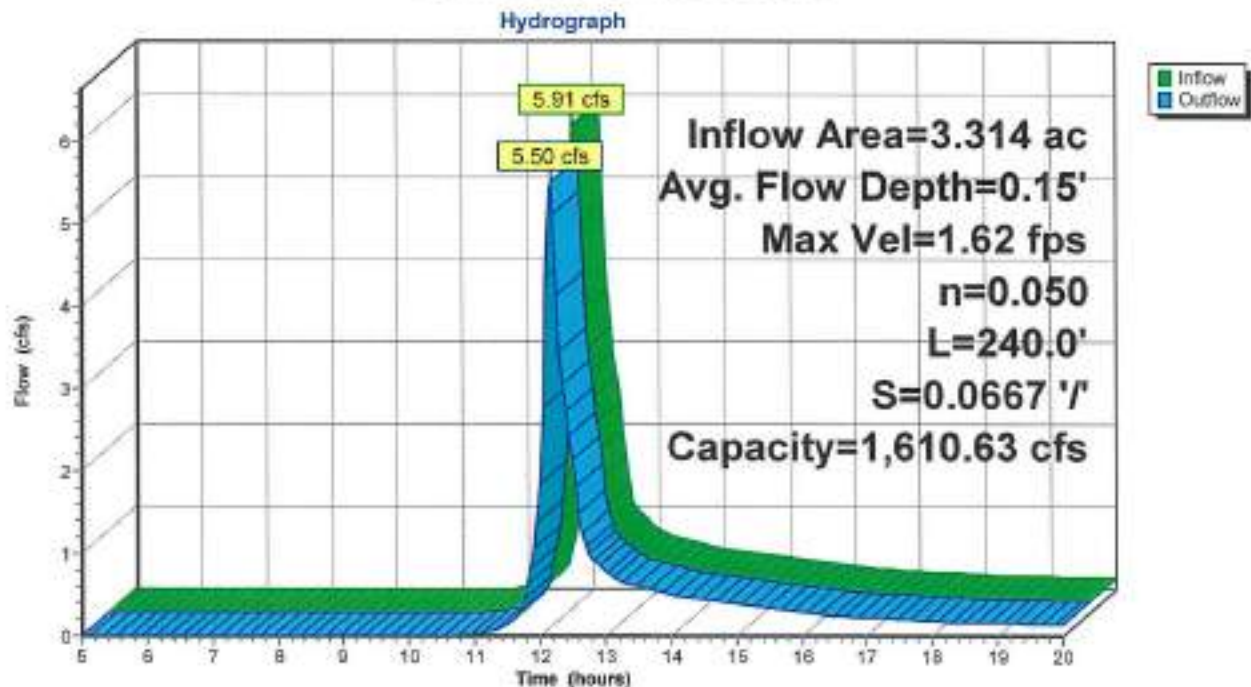
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.62 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 5.6 min

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'



Reach 1R: Wetland Section 1



Existing Conditions

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Louise Berry Drive
Type III 24-hr 10-year Rainfall=5.04"

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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

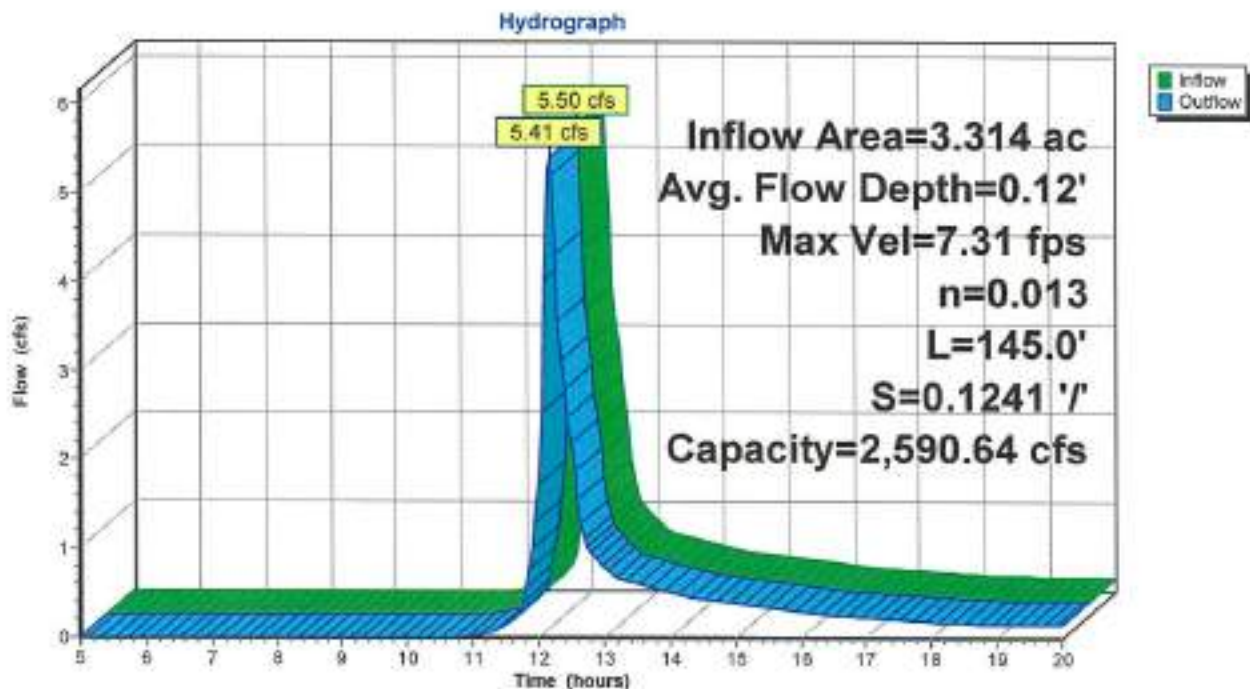
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.31 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.28 fps, Avg. Travel Time= 0.7 min

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'



Reach 1R': Wetland Section 2



Existing Conditions

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Louise Berry Drive
Type III 24-hr 10-year Rainfall=5.04"

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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

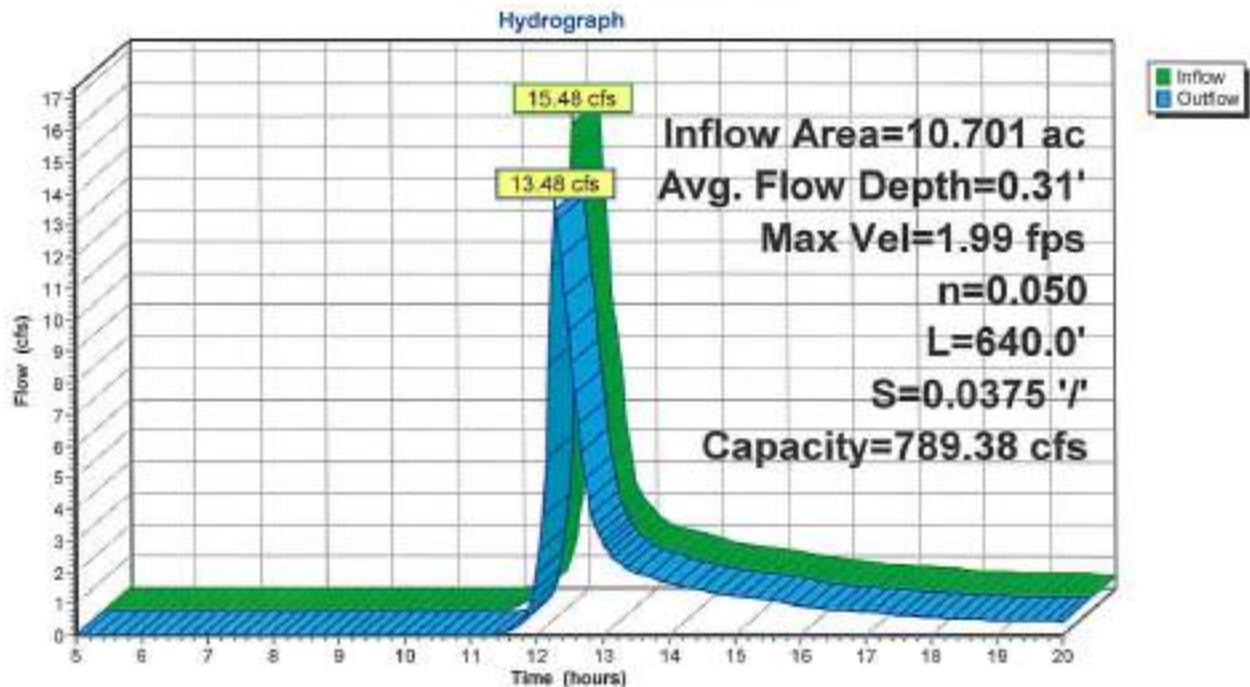
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.99 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.91 fps, Avg. Travel Time= 11.7 min

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'



Reach 2R: Peak off Site



Existing Conditions

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Louise Berry Drive
Type III 24-hr 25-year Rainfall=6.08"
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Summary for Subcatchment 1S: Drainage Area 1

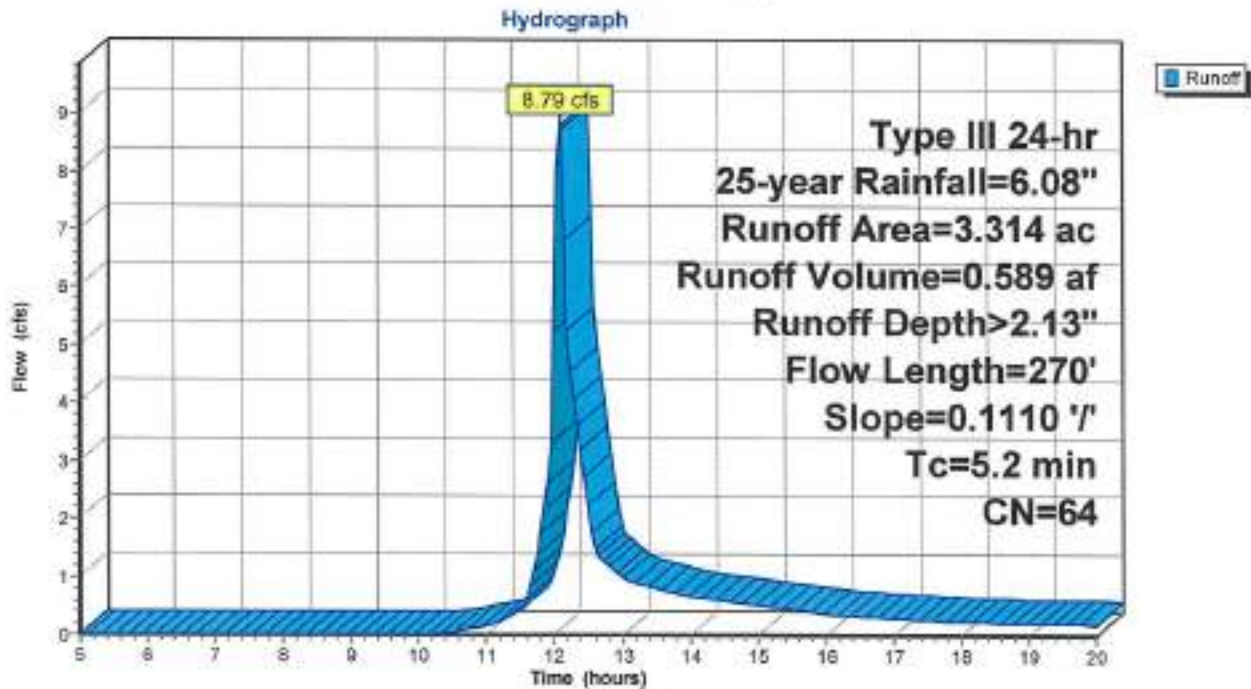
Runoff = 8.79 cfs @ 12.09 hrs, Volume= 0.589 af, Depth> 2.13"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Louise Berry Drive
Type III 24-hr 25-year Rainfall=6.08"
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Summary for Subcatchment 2S: Drainage Area 2

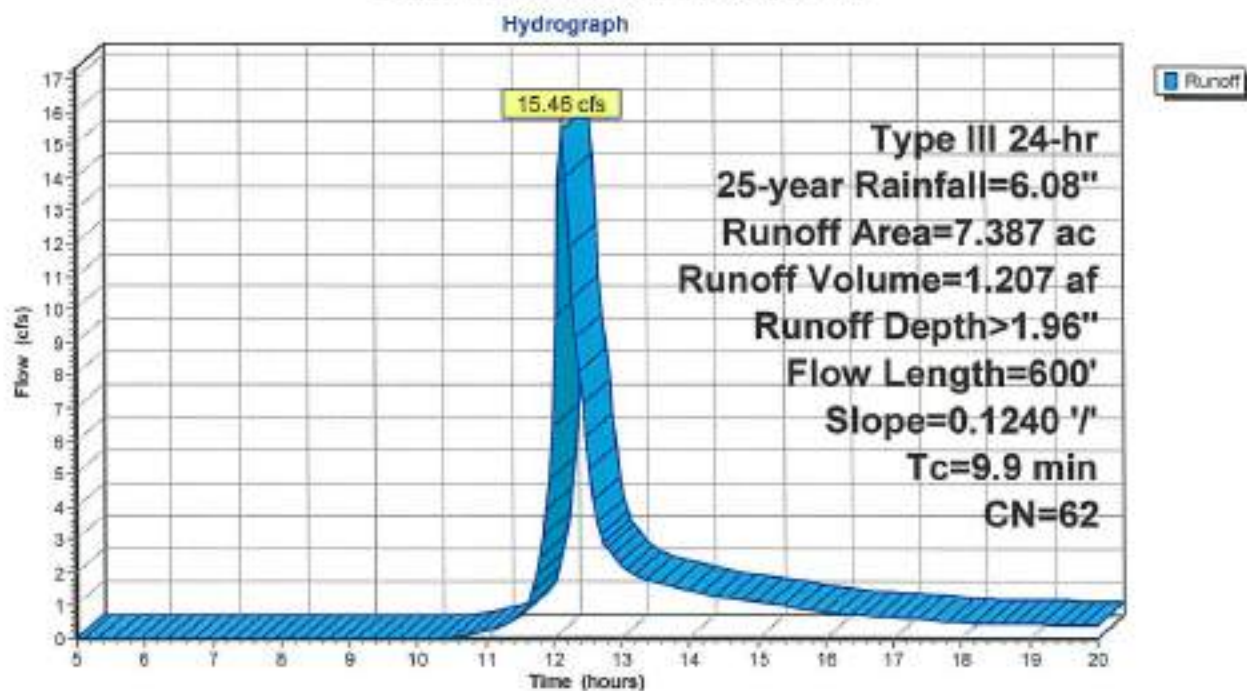
Runoff = 15.46 cfs @ 12.15 hrs, Volume= 1.207 af, Depth> 1.96"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 25-year Rainfall=6.08"
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Summary for Subcatchment 3S: Off Site West

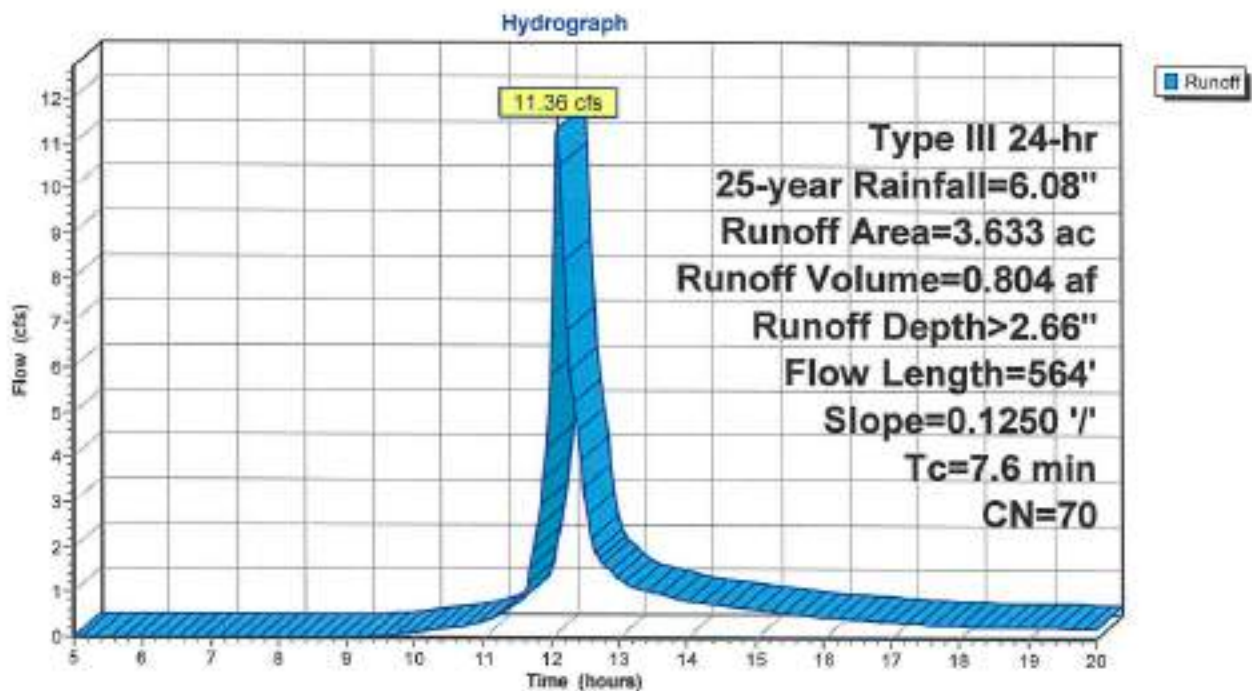
Runoff = 11.36 cfs @ 12.11 hrs, Volume= 0.804 af, Depth> 2.66"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Louise Berry Drive
Type III 24-hr 25-year Rainfall=6.08"

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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

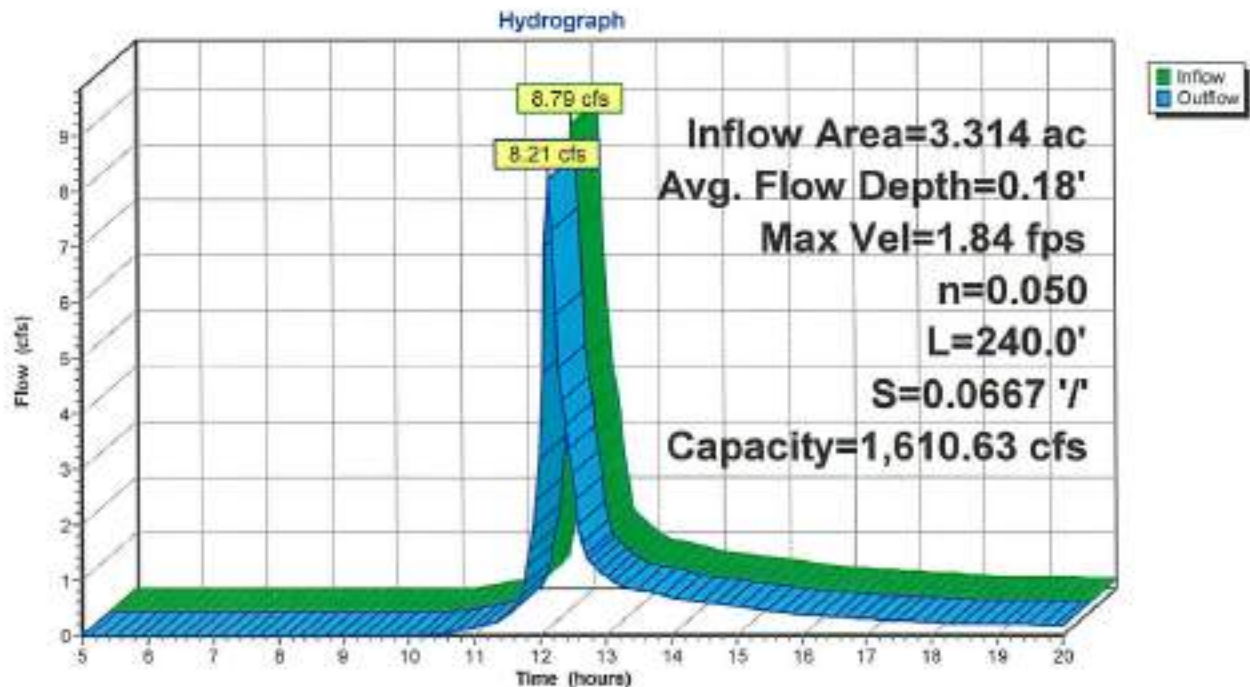
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 5.2 min

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'



Reach 1R: Wetland Section 1



Existing Conditions

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Type III 24-hr 25-year Rainfall=6.08"
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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

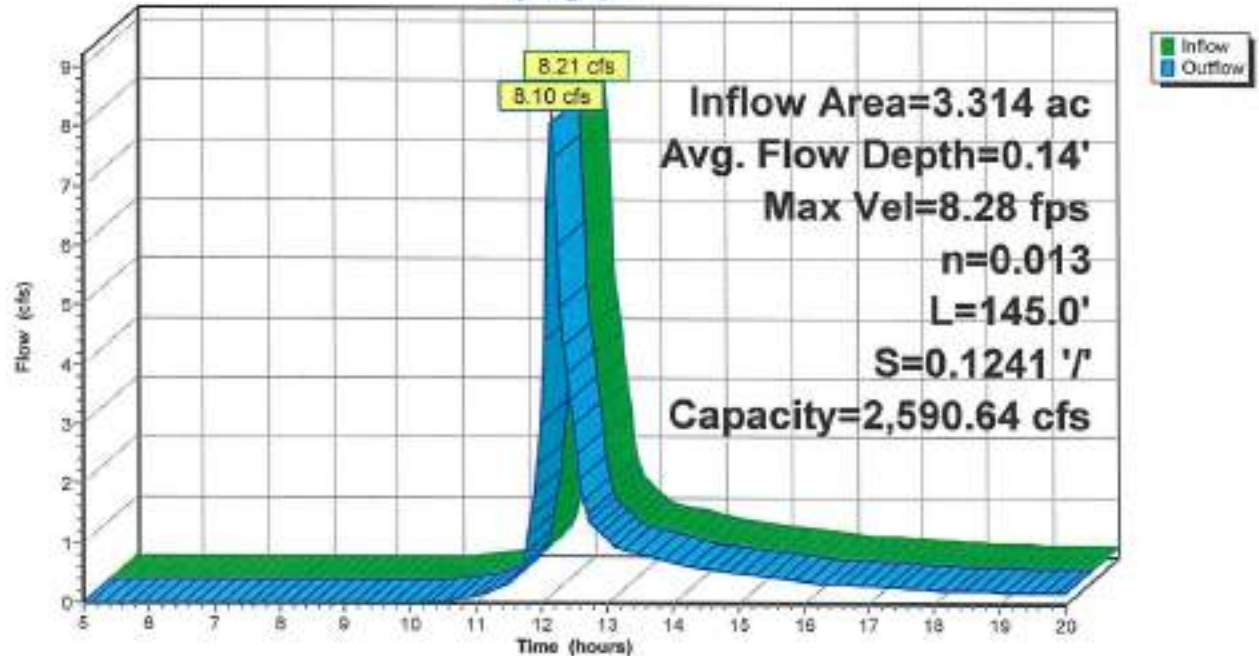
Peak Storage= 143 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

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'



Reach 1R': Wetland Section 2

Hydrograph



Existing Conditions

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Type III 24-hr 25-year Rainfall=6.08"
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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

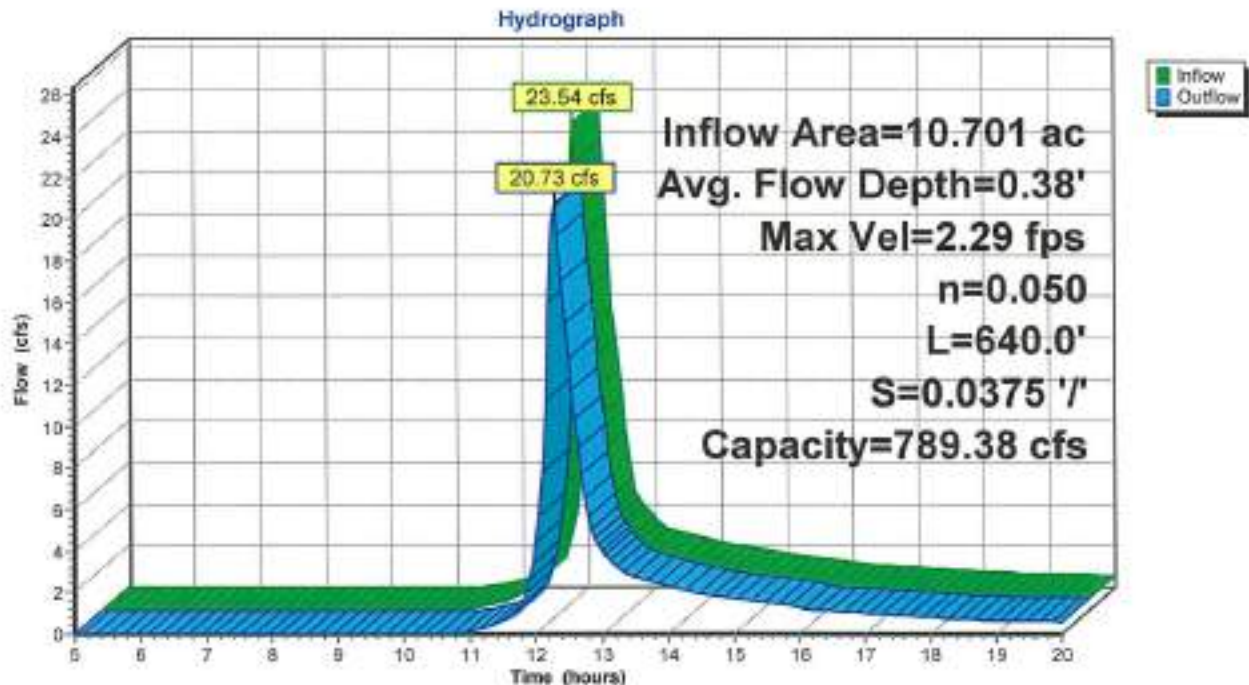
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.29 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 10.9 min

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'



Reach 2R: Peak off Site



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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Summary for Subcatchment 1S: Drainage Area 1

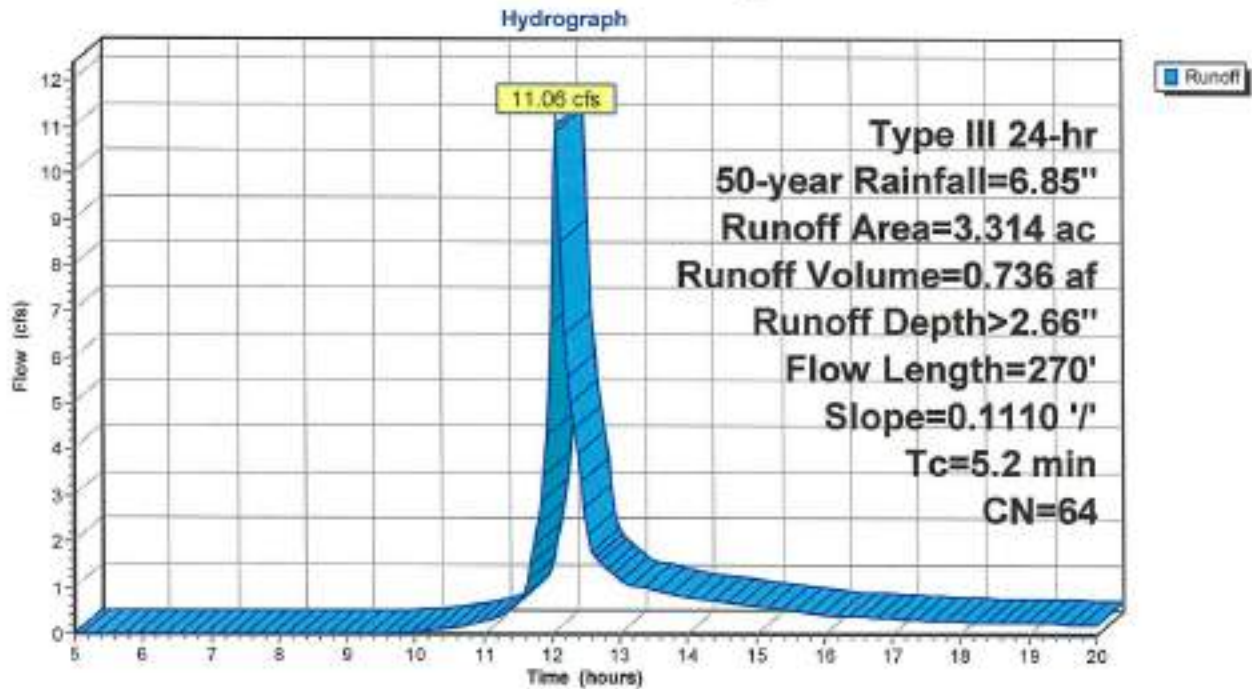
Runoff = 11.06 cfs @ 12.09 hrs, Volume= 0.736 af, Depth> 2.66"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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Summary for Subcatchment 2S: Drainage Area 2

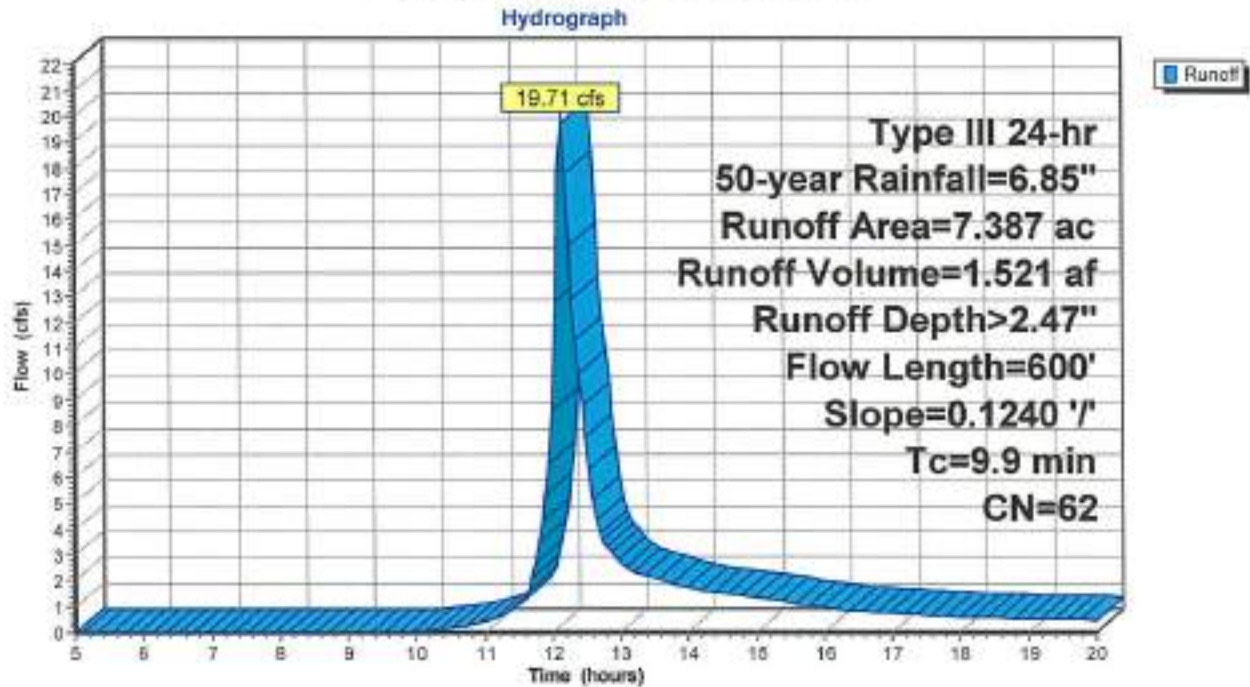
Runoff = 19.71 cfs @ 12.15 hrs, Volume= 1.521 af, Depth> 2.47"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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Summary for Subcatchment 3S: Off Site West

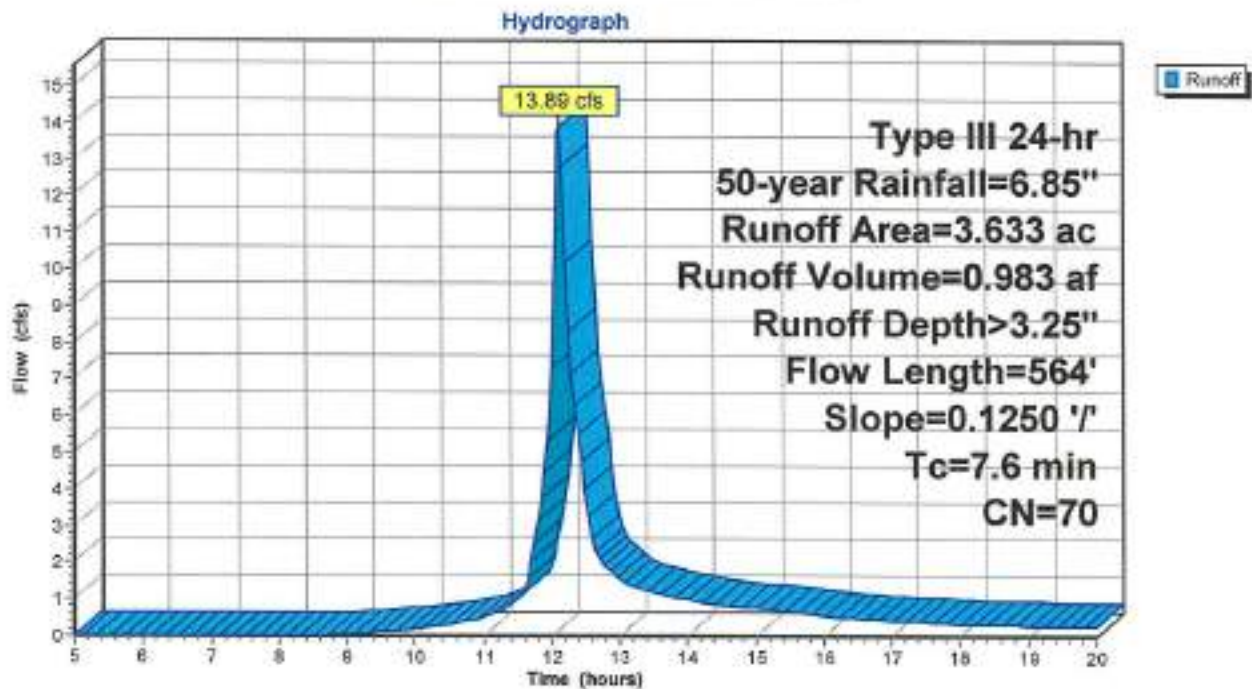
Runoff = 13.89 cfs @ 12.11 hrs, Volume= 0.983 af, Depth> 3.25"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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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

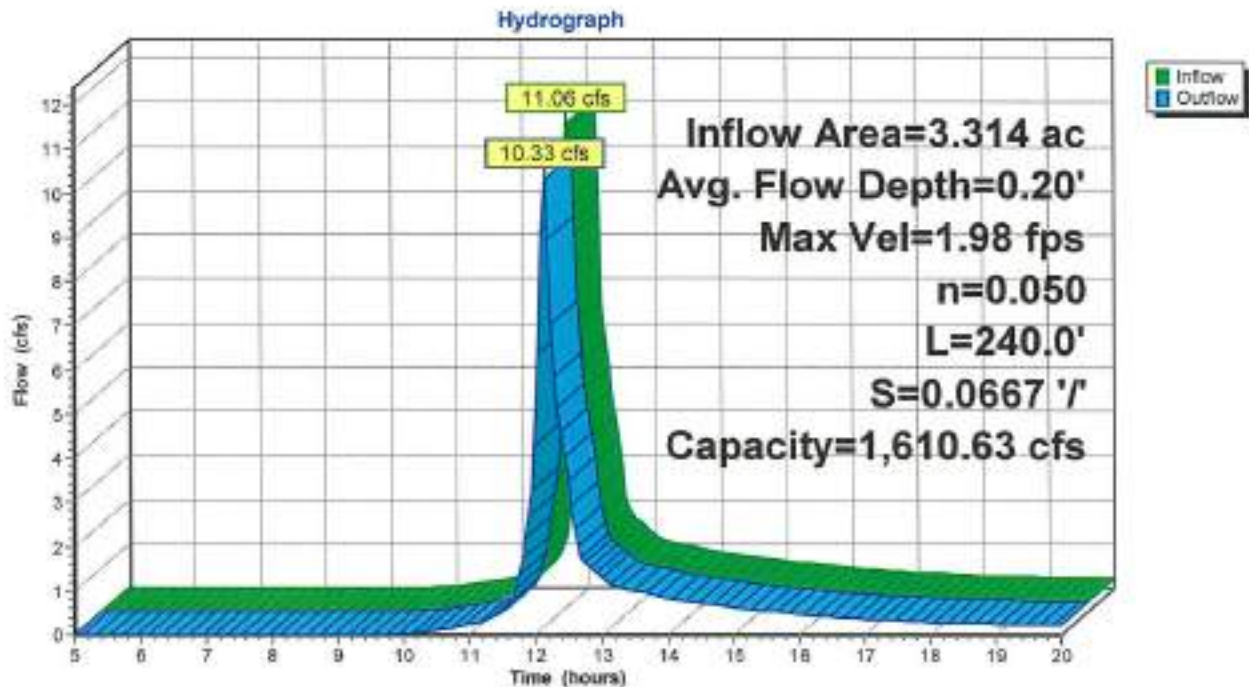
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 5.0 min

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'



Reach 1R: Wetland Section 1



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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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

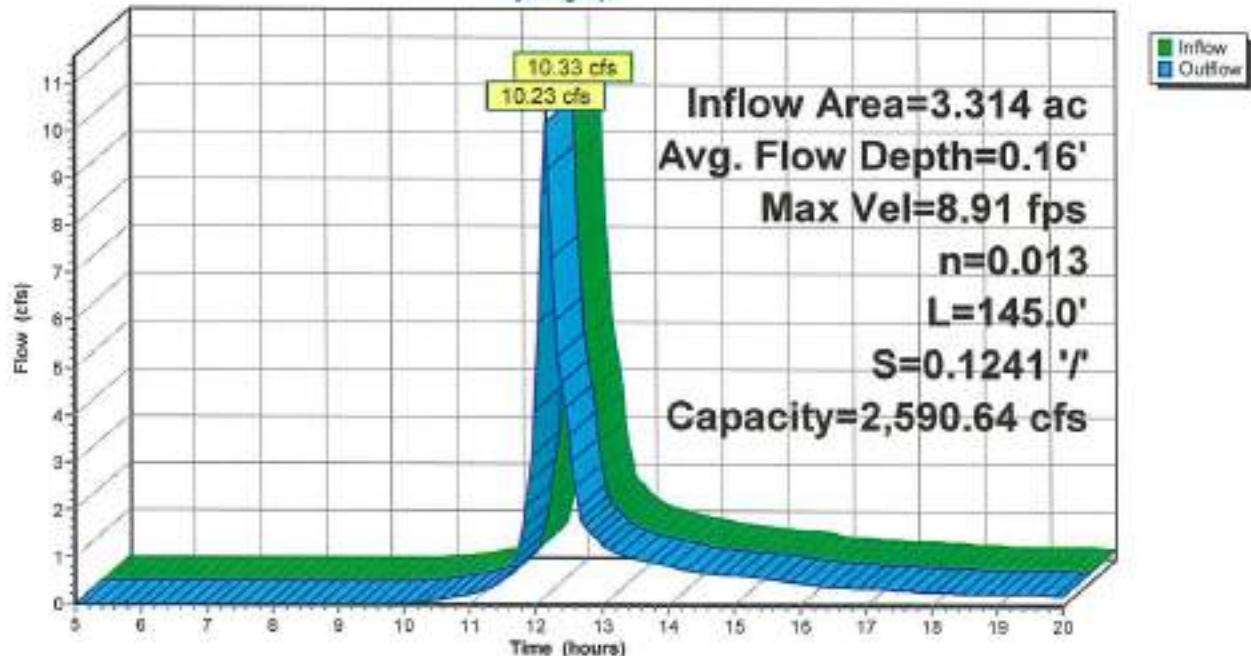
Peak Storage= 168 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

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'



Reach 1R': Wetland Section 2

Hydrograph



Existing Conditions

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Type III 24-hr 50-year Rainfall=6.85"
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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

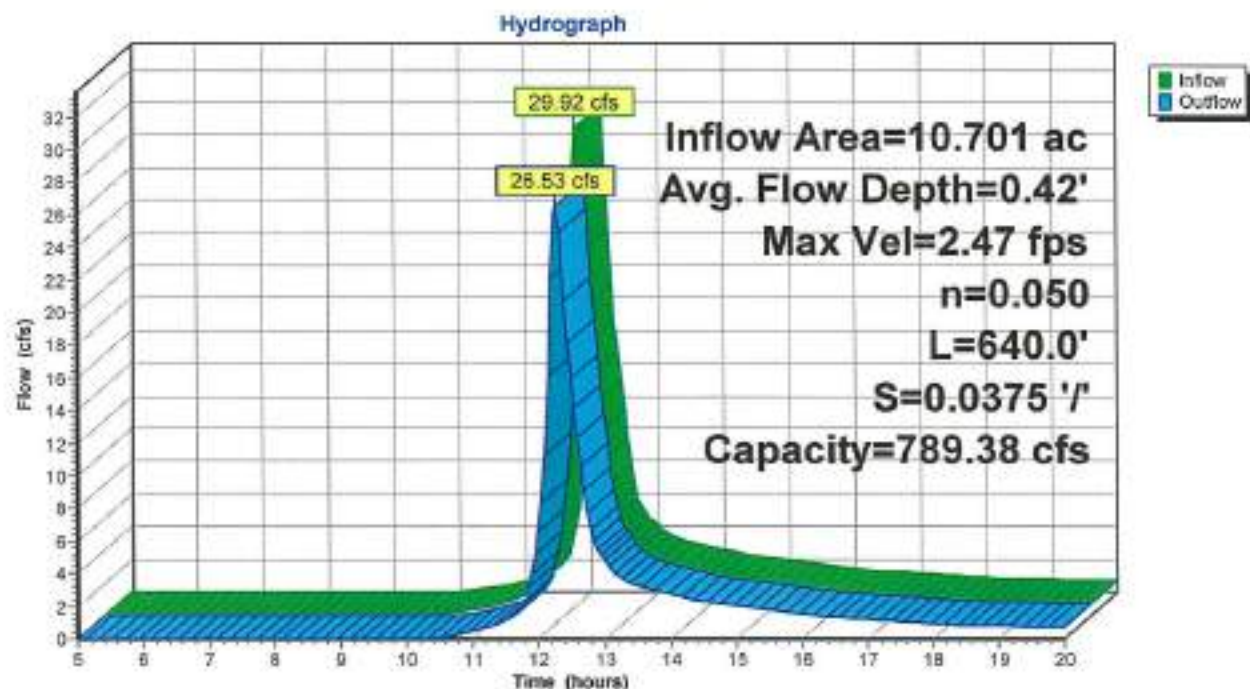
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 1.03 fps, Avg. Travel Time= 10.4 min

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'



Reach 2R: Peak off Site



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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Summary for Subcatchment 1S: Drainage Area 1

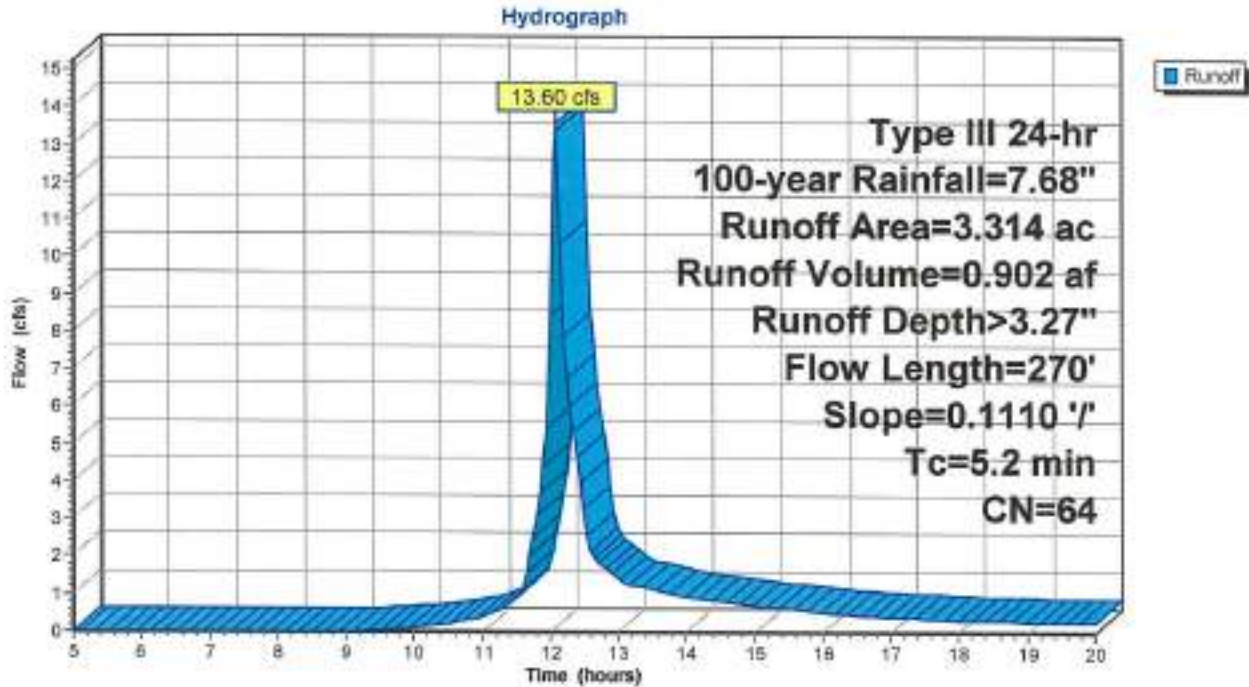
Runoff = 13.60 cfs @ 12.08 hrs, Volume= 0.902 af, Depth> 3.27"

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

Subcatchment 1S: Drainage Area 1



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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Summary for Subcatchment 2S: Drainage Area 2

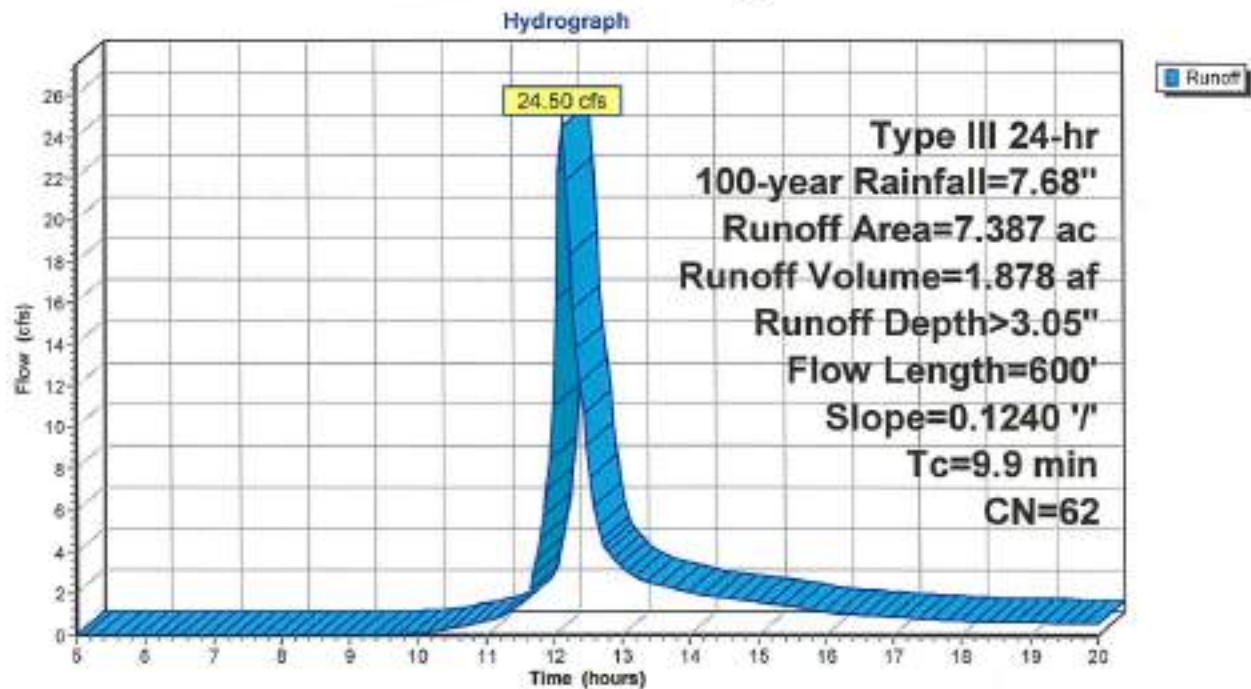
Runoff = 24.50 cfs @ 12.15 hrs, Volume= 1.878 af, Depth> 3.05"

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

Subcatchment 2S: Drainage Area 2



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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Summary for Subcatchment 3S: Off Site West

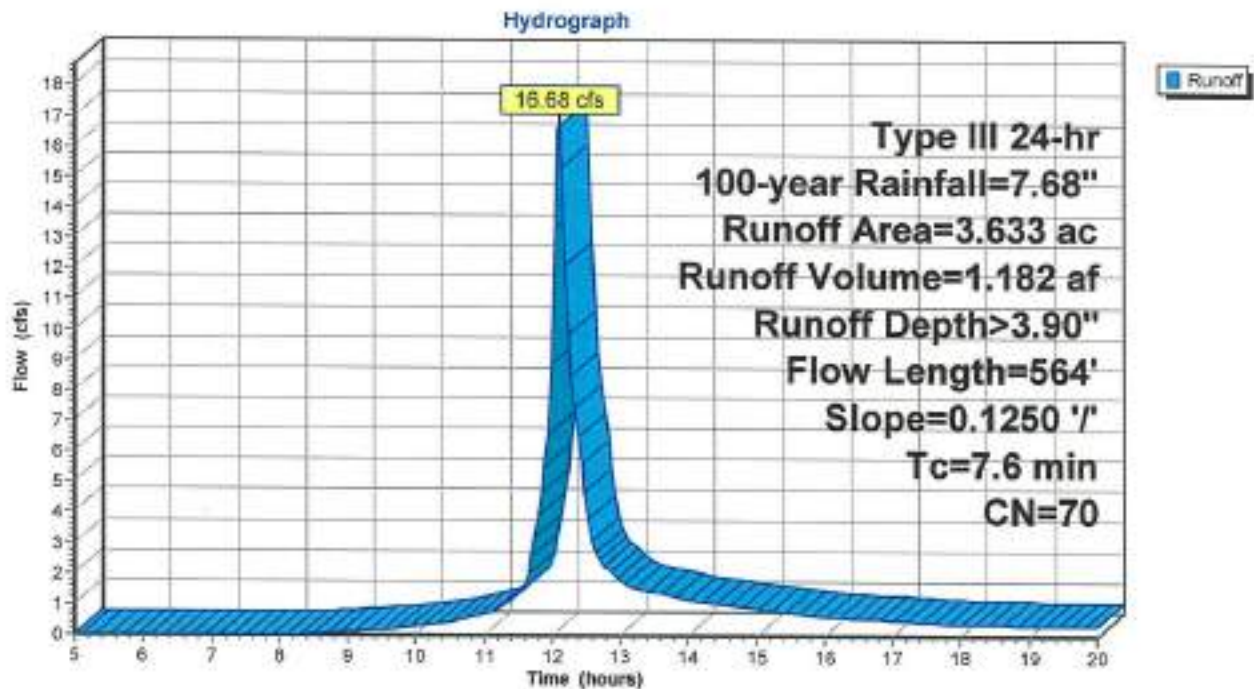
Runoff = 16.68 cfs @ 12.11 hrs, Volume= 1.182 af, Depth> 3.90"

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

Subcatchment 3S: Off Site West



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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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

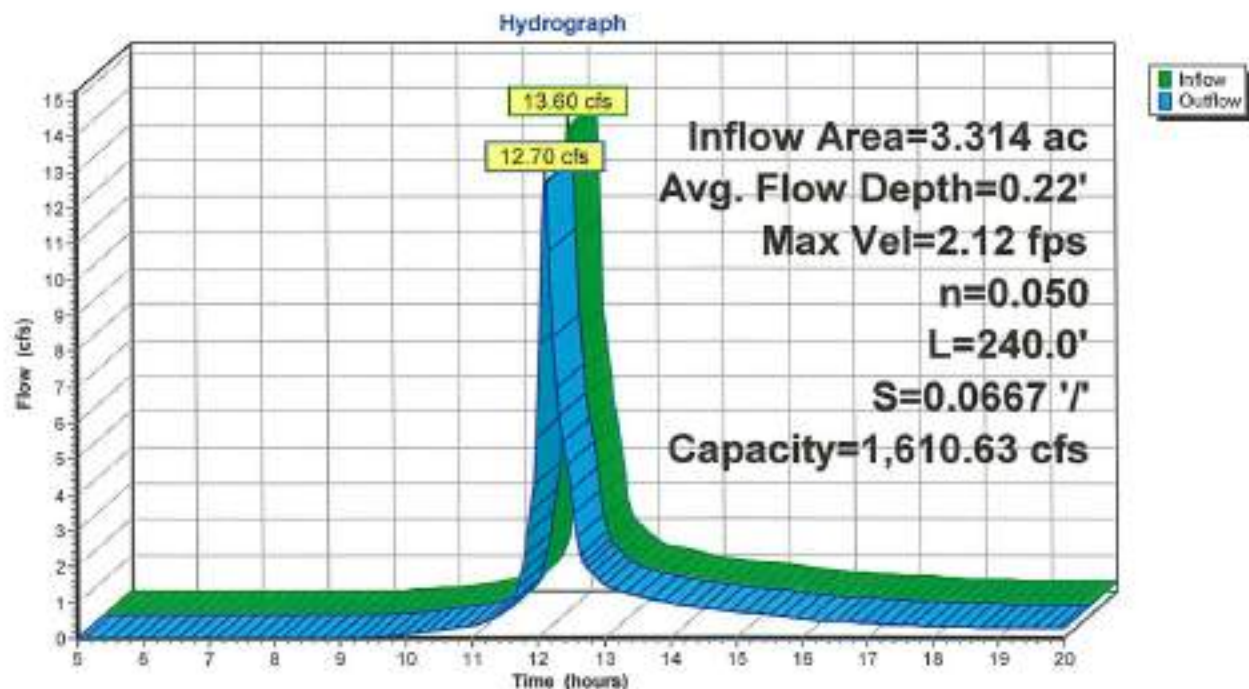
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.12 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 4.8 min

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'



Reach 1R: Wetland Section 1



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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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

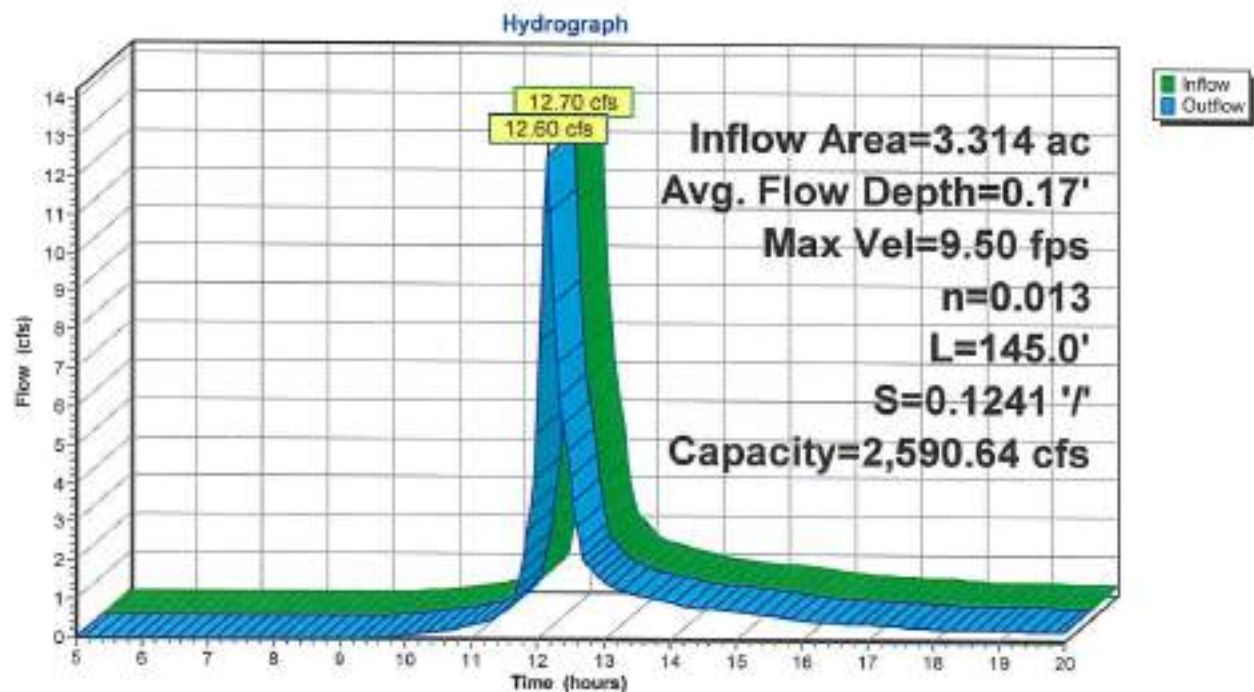
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.50 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.85 fps, Avg. Travel Time= 0.6 min

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'



Reach 1R: Wetland Section 2



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.68"
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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

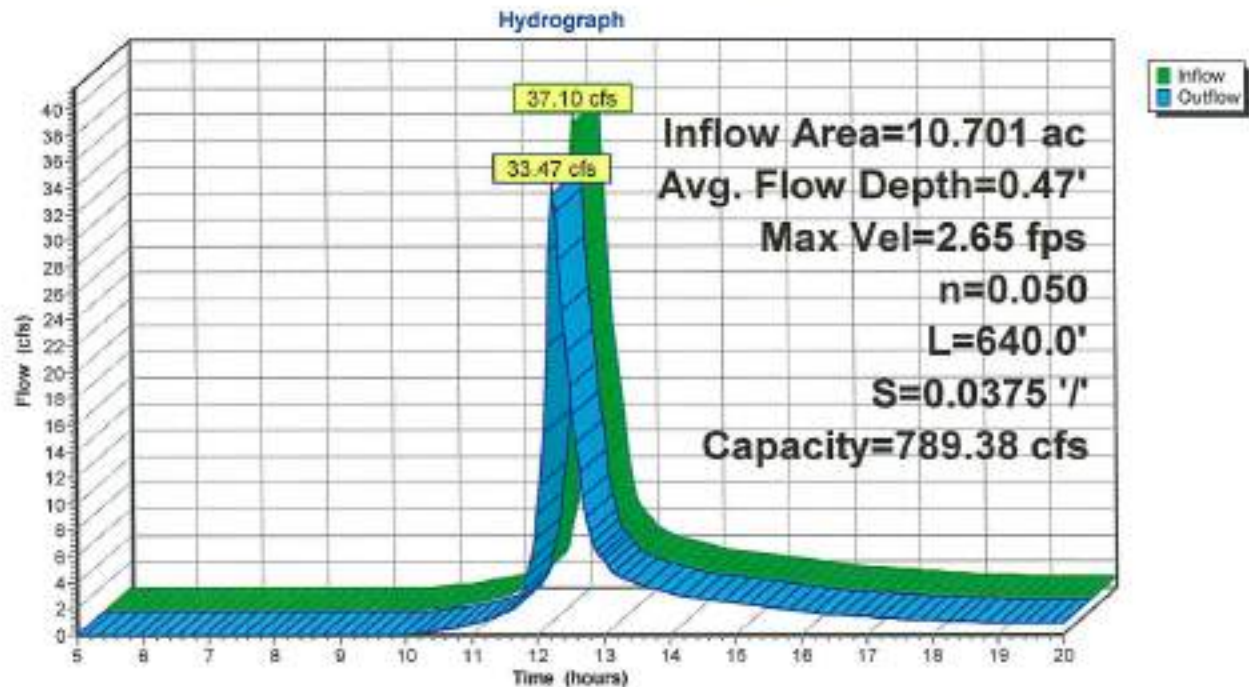
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 9.9 min

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'



Reach 2R: Peak off Site



PROPOSED CONDITIONS

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Type III 24-hr 2-year Rainfall=3.37"

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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"

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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	59	Weighted Average
74,864		95.40% 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> 1.58"

Runoff by SCS TR-20 method, UII=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	180	0.0310	3.57		Shallow Concentrated Flow, Tc-4b Paved Kv= 20.3 fps
5.7	255	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, UII=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

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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		58.67% Pervious Area
30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0130	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	88	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	2.20		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

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 Type III 24-hr 2-year Rainfall=3.37"
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Tc (min)	Length (feet)	Slope (%/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	88	Roof & Pavement
716	74	>75% Grass cover, Good, HSG B/D
13,011	87	Weighted Average
716		5.00% Pervious Area
12,295		84.50% Impervious Area

Tc (min)	Length (feet)	Slope (%/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 = 2.89 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
93,853	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (%/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 = 0.35 cfs @ 12.07 hrs. Volume= 0.026 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"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	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
3.2	145	0.1100	0.76		Lag/CN Method, Tc-9

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.15 cfs @ 12.35 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 = 0.26 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"

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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=0S

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= 108.7 sf, Capacity= 1,056.58 cfs

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



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 = 3.40 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

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Type III 24-hr 2-year Rainfall=3.37"

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85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds

Length= 712.0' Slope= 0.0478 1'

Inlet Invert= 272.00', Outlet Invert= 238.00'



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 1' Top Width= 12.00'

Length= 165.0' Slope= 0.0970 1'

Inlet Invert= 270.00', Outlet Invert= 254.00'



Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 0.59" for 2-year event
Inflow = 3.48 cfs @ 12.51 hrs, Volume= 0.578 af
Outflow = 3.48 cfs @ 12.51 hrs, Volume= 0.578 af, Atten= 0%, Lag= 0.0 min

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

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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

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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 1' 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 1' 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= 100.0' CPP, square edge headwall Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 1' 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)

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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, Kc= 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 = 3.618 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= 248.82' @ 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, Kc= 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=248.75' (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 > 1.35" for 2-year event
 Inflow = 8.64 cfs @ 12.06 hrs, Volume= 0.468 af
 Outflow = 0.29 cfs @ 16.20 hrs, Volume= 0.115 af, Atten= 97%, Lag= 248.7 min
 Primary = 0.29 cfs @ 16.20 hrs, Volume= 0.115 af

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

Peak Elev= 245.90' @ 16.20 hrs Surf.Area= 5,464 sf Storage= 15,897 cf

Plug-Flow detention time= 303.1 min calculated for 0.115 af (24% of inflow)

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Center-of-Mass det. time= 209.7 min (1,025.3 - 815.6)

Volume	Invert	Avail. Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	4,602	11,374
245.50	5,230	2,489	13,863
246.00	5,523	2,888	16,551
248.00	10,874	16,397	32,948

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	18.0" Round Culvert L= 32.0' CPP, square edge headwall, Kc= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.01567 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= 0.800 Limited to weir flow at low heads
#4	Device 1	247.00'	6.0" x 12.0" Horiz. Orifice/Grate C= 0.800 Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 16.20 hrs HW=245.90' (Free Discharge)

- 1=Culvert (Passes 0.23 cfs of 0.29 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.29 cfs @ 2.15 hrs)
- 3=Orifice/Grate (Controls 0.00 cfs)
- 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 = 8.29 cfs @ 12.06 hrs, Volume= 0.443 af, Atten= 6%, Lag= 1.5 min
 Primary = 0.29 cfs @ 12.06 hrs, Volume= 0.443 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 245.53' @ 12.06 hrs Surf.Area= 2,203 sf Storage= 5,739 cf

Plug-Flow detention time= 85.6 min calculated for 0.441 af (80% of inflow)
 Center-of-Mass det. time= 33.1 min (814.2 - 781.1)

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

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,086	0	0
244.00	1,678	2,774	2,774
246.00	2,385	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	8.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.69 2.70 2.70 2.64 2.53 2.64 2.64 2.63

Primary OutFlow Max=8.02 cfs @ 12.06 hrs HW=245.52' (Free Discharge)

↑1=Broad-Crested Rectangular Weir (Weir Controls 8.02 cfs @ 1.94 fps)

Summary for Pond P-1: Forebay

Inflow Area =	1.235 ac. 37.50% Impervious. Inflow Depth > 1.65" for 2-year event
Inflow =	2.25 cfs @ 12.06 hrs, Volume= 0.165 af
Outflow =	1.08 cfs @ 12.31 hrs, Volume= 0.095 af, Atten= 52%, Leg= 14.8 min
Primary =	1.08 cfs @ 12.31 hrs, Volume= 0.095 af

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

Peak Elev= 285.15' @ 12.31 hrs Surf.Area= 1,801 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 (853.5 - 750.8)

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

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	1,585	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 2.65 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)

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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= 53.2 min (846.0 - 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	3,205	5,670	5,670
275.00	4,225	7,520	13,190
276.00	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= 0.0967' Cc= 0.900 n= 0.012, Flow Area= 1.77 sq'
#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	Device 1	276.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#5	Device 1	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)

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 Type III 24-hr 5-year Rainfall=4.27"

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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 r=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"

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Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,014	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	3.27		Sheet Flow, Tc-2a 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
24,730	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= 0.328 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"

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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

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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 = 0.71 cfs @ 12.06 hrs, Volume= 0.047 af, Depth= 1.02"

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"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	Weighted Average
22,063		91.93% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	145	0.1100	0.76		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	0.76		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"

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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

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					Direct Entry, To-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= 0.184 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= 0.0750 %
Inlet Invert= 294.00', Outlet Invert= 272.00'



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= 880.78 cfs

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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'



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'



Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 1.17" for 5-year event
Inflow = 6.90 cfs @ 12.46 hrs, Volume= 1.147 af
Outflow = 6.90 cfs @ 12.46 hrs, Volume= 1.147 af, Atten= 0%, Lag= 0.0 min

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

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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 Star-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'	16.0" Round Culvert L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 296.95' S= 0.0975' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.56 cfs @ 12.13 hrs HW=311.84' (Free Discharge)

↑1=Culvert (Inlet Controls 0.56 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 Star-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' / 285.60' 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 Star-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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Peak Elev= 287.98' @ 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, Kc= 0.500 Inlet / Outlet Invert= 286.50' / 286.70' 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 = 1.803 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, Kc= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0888 /' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.14 cfs @ 12.04 hrs HW=273.89' (Free Discharge)

↑1=Culvert (Inlet Controls 5.14 cfs @ 4.16 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.224 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, Kc= 0.500 Inlet / Outlet Invert= 263.60' / 263.10' 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)

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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= 247.65' @ 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 > 2.06" for 5-year event
Inflow = 12.43 cfs @ 12.06 hrs, Volume= 0.717 af
Outflow = 0.70 cfs @ 14.25 hrs, Volume= 0.335 af, Atten= 94%, Lag= 131.6 min
Primary = 0.70 cfs @ 14.25 hrs, Volume= 0.335 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.54' @ 14.25 hrs Surf.Area= 6,971 sf Storage= 19,931 c'

Plug-Flow detention time= 234.0 min calculated for 0.335 af (47% of inflow)

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Center-of-Mass det. time= 153.5 min (956.6 - 803.2)

Volume	Invert	Avail. Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	4,602	11,374
245.50	5,230	2,489	13,863
246.00	5,523	2,668	16,551
248.00	10,874	15,397	32,948

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=0.68 cfs @ 14.25 hrs HW=246.54' (=Free Discharge)

- 1=Culvert (Passes 0.68 cfs of 15.44 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.60 cfs @ 4.39 fps)
- 3=Orifice/Grate (Weir Controls 0.08 cfs @ 0.66 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 = 11.72 cfs @ 12.06 hrs, Volume= 0.670 af, Atten= 5%, Lag= 1.4 min
 Primary = 11.72 cfs @ 12.06 hrs, Volume= 0.670 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 245.67' @ 12.06 hrs Surf. Area= 2,251 sf Storage= 6,052 cf

Plug-Flow detention time= 70.0 min, calculated for 0.870 af (88% of inflow)
 Center-of-Mass det. time= 27.7 min (801.6 - 773.9)

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

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Elevation (feet)	Surf Area (sq-ft)	Inc.Store (cubic-feet)	Cum Store (cubic-feet)
242.00	1,086	0	0
244.00	1,679	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device #1	Routing Primary	Invert 245.00'	Outlet Devices
			8.0' long x 24.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.50 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=11.41 cfs @ 12.06 hrs HW=245.66' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 11.41 cfs @ 2.17 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, Atcn= 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= 1,626 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 (528.6 / 782.6)

Volume #1	Invert 282.00'	Avail.Storage 4,711 cf	Storage Description
			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	1,612	1,689	4,711

Device #1	Routing Primary	Invert 285.00'	Outlet Devices
			8.0' long x 8.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.50 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 2.65 2.65 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)

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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= 3,017 sf Storage= 3.636 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	7,523	13,190
278.00	5,250	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= 0.800
#4	Device 1	276.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#5	Device 1	277.00'	18.0" Horiz. Orifice/Grate C= 3.600 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)

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 Type III 24-hr 10-year Rainfall=5.02"

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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= 3.36"

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
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 Pavcu Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 3.23 cfs @ 12.16 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"

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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		96.48% 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 ips
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 6.89 cfs @ 12.03 hrs, Volume= 0.412 af, Depth= 3.89"

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"

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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		51.20% Pervious Area
13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	1.80	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

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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	87	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= 0.506 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
83,653	80	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 = 1.05 cfs @ 12.06 hrs, Volume= 0.067 af, Depth> 1.45"

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 10-year Rainfall=5.02"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	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
3.2	145	0.1100	0.76		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	0.76		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"

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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= 1,056.56 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'



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= 12.9 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

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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'



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'



Summary for Reach 9R: Peak off Site

Inflow Area =	11.815 ac, 19.68% Impervious, Inflow Depth > 1.69" for 10-year event
Inflow =	11.35 cfs @ 12.43 hrs, Volume= 1.668 af
Outflow =	11.35 cfs @ 12.43 hrs, Volume= 1.668 af, Atten= 0%, Lag= 0.0 min

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

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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= 298.51' @ 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' / 285.60' S= 0.0934' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.77 cfs @ 12.03 hrs HW=298.50' (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

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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= 0.0088 /' 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 =	6.68 cfs @ 12.03 hrs, Volume= 0.412 af
Outflow =	6.68 cfs @ 12.03 hrs, Volume= 0.412 af, Atten= 0%, Lag= 0.0 min
Primary =	6.68 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, 44.88% 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	263.00'	15.0" Round Culvert L= 100.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.00' / 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)

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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= 259.37' @ 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=258.22' (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 > 2.68" for 10-year event
 Inflow = 15.65 cfs @ 12.06 hrs, Volume= 0.932 af
 Outflow = 2.08 cfs @ 12.62 hrs, Volume= 0.539 af, Atten= 87%, Lag= 33.5 min
 Primary = 2.08 cfs @ 12.62 hrs, Volume= 0.539 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 246.83' @ 12.62 hrs Surf Area= 7,748 sf Storage= 22,069 cf

Plug-Flow detention time= 180.3 min calculated for 0.537 af (50% of inflow)

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Center-of-Mass det. time= 106.9 min (902.9 - 796.1)

Volume	Invert	Avail. Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	4,802	11,574
245.50	5,230	2,489	13,863
246.00	5,523	2,688	16,551
248.00	10,874	16,397	32,948

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=2.08 cfs @ 12.62 hrs HW=246.83' (Free Discharge)

- ↑ 1=Culvert (Passes 2.08 cfs of 16.10 cfs potential flow)
- | 2=Orifice/Grate (Orifice Controls 0.70 cfs @ 5.10 fps)
- | 3=Orifice/Grate (Orifice Controls 1.39 cfs @ 2.77 fps)
- | 4=Orifice/Grate (Controls 0.00 cfs)

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 = 14.60 cfs @ 12.05 hrs. Volume= 0.866 af, Atten= 5%, Lag= 1.3 min
 Primary = 14.50 cfs @ 12.05 hrs. Volume= 0.866 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 245.78' @ 12.05 hrs Surf. Area= 2,290 sf Storage= 6,307 cf

Plug-Flow detention time= 60.7 min calculated for 0.866 af (89% of inflow)
 Center-of-Mass det. time= 25.3 min (794.5 - 769.1)

Volume	Invert	Avail. Storage	Storage Description
#1	242.00'	6,307 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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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	245.00'	8.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.69 2.70 2.70 2.54 2.63 2.64 2.54 2.63

Primary OutFlow Max=14.25 cfs @ 12.06 hrs HW=245.77' (Free Discharge)

↑1=Broad-Crested Rectangular Weir (Weir Controls 14.25 cfs @ 2.32 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 af Storage= 3,564 cf

Plug-Flow detention time= 96.6 min calculated for 0.232 af (77% of inflow)
 Center-of-Mass det. time= 33.8 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 2.34 2.64 2.64 2.65 2.65 2.66 2.65 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)

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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 @ 12.68 hrs. Volume= 0.285 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, d= 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' CPF, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 1/ S Cc= 0.600 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= 0.800
#4	Device 1	276.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#5	Device 1	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)

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Type III 24-hr 25-year Rainfall=6.05"

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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.059 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= 3.97"

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"

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Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG E
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=4s Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		Shallow Concentrated Flow, Tc=4b Paved Kv= 20.3 ips
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"

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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 = 3.56 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	99	Paved surfaces & roof
14,147	74	>75% Grass cover, Good, HSG C
27,597	85	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
1.9	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= 0.382 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

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 Type III 24-hr 25-year Rainfall=6.05"
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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= 0.849 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	80	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 = 1.57 cfs @ 12.06 hrs, Volume= 0.097 af, Depth> 2.11"

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"

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Type III 24-hr 25-year Rainfall=6.05"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	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
3.2	145	0.1100	0.76		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, LH=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, LH=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= 0.062 af, Depth= 2.82"

Runoff by SCS TR-20 method, LH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

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 Type III 24-hr 25-year Rainfall=6.05"
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Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG D
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 @ 12.28 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= 0.0756 %
 Inlet Invert= 294.00', Outlet Invert= 272.00'

**Summary for Reach 2R: Wetland Swale**

Inflow Area = 7.646 ac, 5.73% 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= 6%, 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 = 0.93 fps, Avg. Travel Time= 13.9 min

Peak Storage= 4,545 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

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



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 'f' Top Width= 12.00'
 Length= 165.0' Slope= 0.0970 'f'
 Inlet Invert= 270.00', Outlet Invert= 254.00'



Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 2.46" for 25-year event
 Inflow = 18.47 cfs @ 12.38 hrs, Volume= 2.418 af
 Outflow = 18.47 cfs @ 12.38 hrs, Volume= 2.418 af, Atten= 0%, Lag= 0.0 min

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

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Summary for Pond 1P: CB_1-2

Inflow Area = 0.187 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, Kc= 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, Kc= 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

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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' / 295.70' 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 @ 6.66 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 4.00' 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= 267.90'

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)

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Type III 24-hr 25-year Rainfall=6.05"

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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, 48.63% 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= 96.0' 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 > 3.56" for 25-year event
 Inflow = 20.27 cfs @ 12.06 hrs, Volume= 1.238 af
 Outflow = 4.63 cfs @ 12.46 hrs, Volume= 0.828 af, Atten= 77%, Lag= 24.0 min
 Primary = 4.63 cfs @ 12.46 hrs, Volume= 0.828 af

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

Peak Elev= 247.39' @ 12.46 hrs Surf.Area= 9,244 sf Storage= 26,821 cf

Plug-Flow detention time= 145.3 min calculated for 0.828 af (47% of Inflow)

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Center-of-Mass det. time= 78.2 min (866.6 - 788.4)

Volume	Invert	Avail. Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	4,602	11,374
245.50	5,230	2,489	13,863
246.00	5,523	2,688	16,551
248.00	10,874	16,397	32,948

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	18.0" Round Culvert L= 32.0' CPP, square edge headwall, Kc= 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'	6.0" 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=4.63 cfs @ 12.46 hrs HW=247.39' (Free Discharge)

1=Culvert (Passes 4.63 cfs of 17.31 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.85 cfs @ 6.24 fps)
 3=Orifice/Grate (Orifice Controls 2.27 cfs @ 4.54 fps)
 4=Orifice/Grate (Orifice Controls 1.50 cfs @ 3.01 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.618 ac, 48.83% Impervious, Inflow Depth > 4.14' for 25-year event
 Inflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af
 Outflow = 18.70 cfs @ 12.06 hrs, Volume= 1.141 af, Atten= 4%, Lag= 1.3 min
 Primary = 18.70 cfs @ 12.06 hrs, Volume= 1.141 af

Routing by Stor-Ind method, Time Spar= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 245.92' @ 12.06 hrs Surf. Area= 2,339 sf Storage= 6,638 cf

Plug-Flow detention time= 53.0 min calculated for 1.141 af (91% of inflow)
 Center-of-Mass det. time= 22.9 min (788.7 - 763.7)

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

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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
245.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	8.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=18.31 cfs @ 12.06 hrs HW=245.91' (Free Discharge)
 ↑ 1=Broad-Crested Rectangular Weir (Weir Controls 18.31 cfs @ 2.51 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, Arten= 0%, 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= 1,653 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 (Rocalc)

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	1,848	3,023
285.00	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 2.65 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)

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Summary for Pond P-2: Stormwater Pond

Inflow Area = 1,383 ac, 32.67% Impervious, Inflow Depth > 3.18" for 25-year event:
 Inflow = 5.87 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 (803.3 - 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= 0.0637' 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	Device 1	276.00'	12.0' W x 6.0' H Vert. Orifice/Grate C= 0.600
#5	Device 1	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 I:W=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)

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 Type III 24-hr 50-year Rainfall=6.85"
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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.03 cfs @ 12.13 hrs, Volume= 0.061 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"

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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		95.49% 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 = 3.09 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 = 9.56 cfs @ 12.03 hrs, Volume= 0.628 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"

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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

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0520	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 = 1.99 cfs @ 12.06 hrs, Volume= 0.122 af, Depth= 2.67"

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 50-year Rainfall=6.85"

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Type III 24-hr 50-year Rainfall=6.85"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	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
3.2	145	0.1100	0.78		Lag/CN Method, Tc=9

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.58 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
5,661	74	>75% Grass cover, Good, HSG C
5,661		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"

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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 'f'
 Inlet Invert= 294.00', Outlet Invert= 272.00'



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

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85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 1'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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 1' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 1'
Inlet Invert= 270.00', Outlet Invert= 254.00'



Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.07" for 50-year event
Inflow = 23.30 cfs @ 12.37 hrs, Volume= 3.022 af
Outflow = 23.30 cfs @ 12.37 hrs, Volume= 3.022 af, Atten= 0%, Lag= 0.0 min

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

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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=311.58' (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 > 5.03" 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= 299.57' @ 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

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Peak Elev= 288.03' @ 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= 0.0696 / 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)

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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 > 4.26" for 50-year event
 Inflow = 23.87 cfs @ 12.36 hrs, Volume= 1.480 af
 Outflow = 5.90 cfs @ 12.43 hrs, Volume= 1.059 af, Atten= 76%, Lag= 22.5 min
 Primary = 5.90 cfs @ 12.43 hrs, Volume= 1.059 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 247.82' @ 12.43 hrs Surf.Area= 10,393 sf Storage= 31,034 cf

Plug-Flow detention time= 129.8 min calculated for 1.056 af (71% of inflow)

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Center-of-Mass det. time= 68.3 min (851.8 - 763.5)

Volume	Invert	Avail. Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	4,502	11,374
245.50	5,230	2,489	13,863
246.00	5,523	2,088	16,551
248.00	10,874	16,397	32,948

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	18.0" Round Culvert L= 32.0' CPP, square edge headwal., 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=5.89 cfs @ 12.43 hrs HW=247.82' (Free Discharge)

- 1=Culvert (Passes 5.89 cfs of 18.19 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.95 cfs @ 6.99 fps)
- 3=Orifice/Grate (Orifice Controls 2.76 cfs @ 5.53 fps)
- 4=Orifice/Grate (Orifice Controls 2.18 cfs @ 4.35 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 = 21.88 cfs @ 12.06 hrs. Volume= 1,358 af, Aten= 4%, Lag= 1.2 min
 Primary = 21.88 cfs @ 12.03 hrs. Volume= 1,358 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 246.03' @ 12.06 hrs Surf Area= 2,375 sf Storage= 6,879 cf

Plug-Flow detent on time= 48.0 min calculated for 1,358 af (93% of inflow)
 Center-of-Mass det. time= 21.4 min (781.7 - 760.2)

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

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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	245.00'	8.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=21.46 cfs @ 12.06 hrs HW=246.01' (Free Discharge)

↳1=Broad-Crested Rectangular Weir (Weir Controls 21.46 cfs @ 2.65 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	1,555	1,348	3,023
286.00	1,812	1,699	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 2.68 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)

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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 (Resalt)

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= 0.0687 ' Cc= 0.900 nr= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	4.0" Vert. Orifice/Grate C= 3.600
#3	Device 1	275.00'	6.0" Vert. Orifice/Grate C= 3.600
#4	Device 1	276.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#5	Device 1	277.00'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low loads

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 (Critical Controls 0.67 cfs @ 7.73 fps)
- 3=Orifice/Grate (Orifice Controls 0.16 cfs @ 1.69 fps)
- 4=Orifice/Grate (Controls 0.03 cfs)
- 5=Orifice/Grate (Controls 0.00 cfs)

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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 II 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"

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Area (sf)	CN	Description
28,320	73	Woods, Fair, HSG C
21,500	56	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		66.49% 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"

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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		58.67% 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= 5.86'

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 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 II 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

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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, LH=SCS, Weighted CN, Time Span= 5.00-20.00 hrs, dt= 0.35 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, LH=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	0.19		Sheet Flow, Tc=8 Woods, Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 2.43 cfs @ 12.05 hrs, Volume= 0.149 af, Depth= 3.24"

Runoff by SCS TR-20 method, LH=SCS, Weighted CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-year Rainfall=7.64"

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Area (sf)	CN	Description
22,063	61	>75% Grass cover, Good, HSG B
1,920	98	Roofs, HSG C
23,983	64	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
3.2	145	0.1100	0.76		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, LH=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	0.76		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"

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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 'f'
 Inlet Invert= 294.00', Outlet Invert= 272.00'



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

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85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 1'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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 1' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 1'
Inlet Invert= 270.00', Outlet Invert= 254.00'



Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.70" for 100-year event
Inflow = 30.04 cfs @ 12.31 hrs, Volume= 3.643 af
Outflow = 30.04 cfs @ 12.31 hrs, Volume= 3.643 af, Atten= 0%, Lag= 0.0 min

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

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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= 3.0 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= 318.00'

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' / 298.85' S= 0.0975 /' Co= 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' / 285.60' S= 0.0934 /' Co= 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 @ 12.05 hrs, Volume= 0.486 af
 Outflow = 6.32 cfs @ 12.05 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.32 cfs @ 12.05 hrs, Volume= 0.486 af

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

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Peak Elev= 288.26' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.50'	15.0" Round Culvert L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 288.50' / 285.70' S= 0.0099 1' 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= 0.0683 1' 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 1' 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)

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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 = 4.168 ac, 43.44% Impervious, Inflow Depth > 4.96" for 100-year event
Inflow = 27.45 cfs @ 12.05 hrs, Volume= 1.723 af
Outflow = 12.54 cfs @ 12.22 hrs, Volume= 1.292 af, Atten= 53%, Lag= 9.6 min
Primary = 12.54 cfs @ 12.22 hrs, Volume= 1.292 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 252.10' @ 12.21 hrs Surf.Area= 10.874 sf Storage= 32,943 cf

Plug-Flow detention time= 118.8 min calculated for 1.288 af (75% of inflow)

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Center-of-Mass det. time= 61.2 min (840.5 - 779.3)

Volume	Invert	Avail Storage	Storage Description
#1	240.00'	32,948 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	4,480	5,372	6,772
245.00	4,724	1,602	11,374
245.50	5,230	2,489	13,863
245.00	5,523	2,688	16,551
248.00	10,874	16,397	32,948

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= 0.01567 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'	8.0" x 12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	8.0" x 12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.12 cfs @ 12.22 hrs HW=251.54' (Free Discharge)

- 1=Culvert (Passes 12.12 cfs of 24.50 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 1.59 cfs @ 11.63 fps)
- 3=Orifice/Grate (Orifice Controls 5.41 cfs @ 10.91 fps)
- 4=Orifice/Grate (Orifice Controls 5.13 cfs @ 10.26 fps)

Summary for Pond FB: Forebay

Inflow Area = 3,619 sq, 48.83% Impervious Inflow Depth > 5.58" for 100-year event:
 Inflow = 25.85 cfs @ 12.03 hrs, Volume= 1,683 af
 Outflow = 25.03 cfs @ 12.05 hrs, Volume= 1,574 af, Atten= 3% Lag= 1.2 min
 Primary = 25.03 cfs @ 12.05 hrs, Volume= 1,574 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 246.12' @ 12.05 hrs Surf Area= 2,412 sf Storage= 7,106 cf

Plug-Flow detention time= 44.0 min calculated for 1,574 af (94% of inflow)
 Center-of-Mass det. time= 20.1 min (777.4 - 757.3)

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

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,676	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	245.00'	8.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.50 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=24.62 cfs @ 12.05 hrs HW=246.11' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 24.62 cfs @ 2.78 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 = 5.87 cfs @ 12.08 hrs, Volume= 0.464 af, Atten= 3%, Lag= 1.4 min
 Primary = 5.87 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= 285.47' @ 12.08 hrs Surf.Area= 1,683 sf Storage= 3,738 cf

Plug-Flow detention time= 71.1 min calculated for 0.464 af (87% of inflow)
 Center-of-Mass det time= 30.3 min (794.8 - 754.3)

Volume	Invert	Avg'l 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	1,676	1,676
285.00	1,585	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 2.66 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)

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Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.87% 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 af 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 - 782.9)

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
276.00	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= 0.0687 ' C= 0.800 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	Device 1	276.00'	12.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#5	Device 1	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 Parovic, Michael St. Laurent, Carl Tynyak, Dale Unruh, Brian White

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_ &_aerials

PF tabular

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 (0.690-1.02)	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 (3.21-5.10)	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)	4.26 (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 (2.47-4.05)	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 (8.82-19.9)
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 (8.59-19.0)	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 (7.58-14.7)	11.8 (8.06-16.7)	13.9 (9.17-20.2)	16.7 (10.1-23.2)
7-day	4.34	5.21	6.63	7.81	9.43	10.5	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)

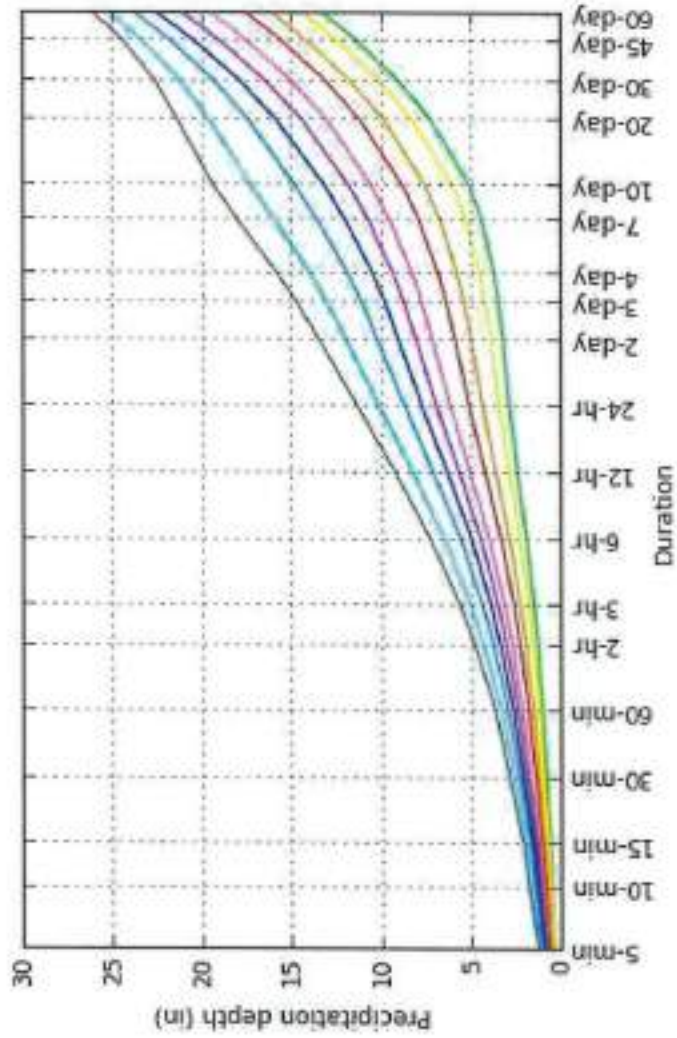
† Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parentheses are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average 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.

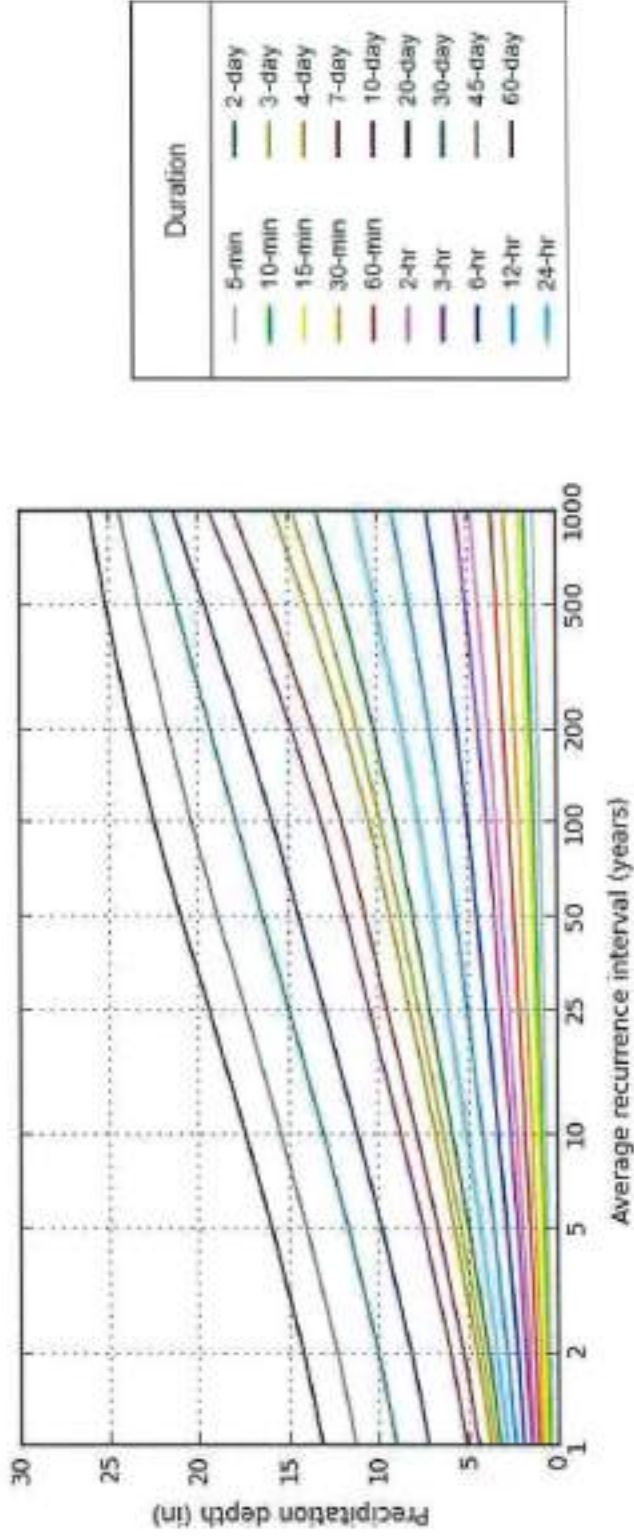
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 41.7827°, Longitude: -71.9363°





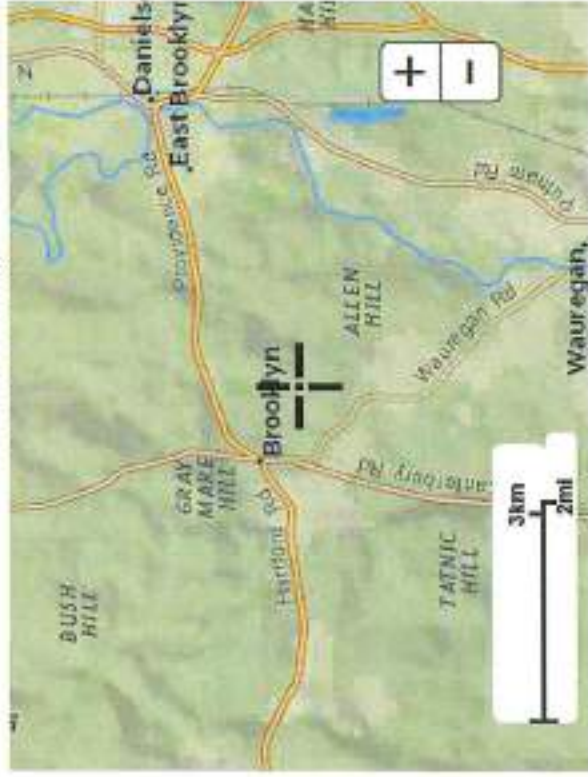
NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Tue Dec 8 14:02:09 2020

[Back to Top](#)

Maps & aeriels

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

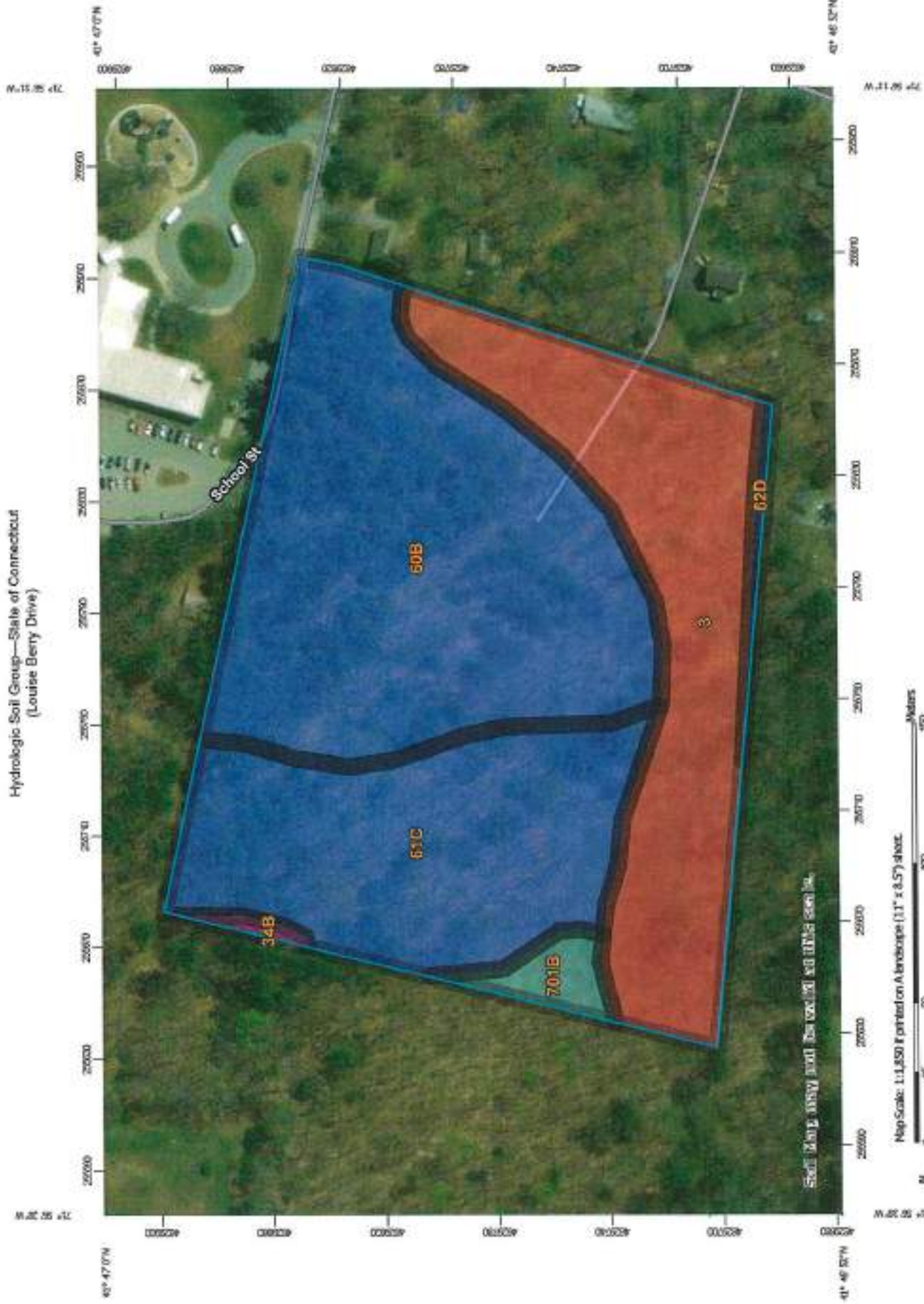


[Back to Top](#)

Preseason Frequency Data Server
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HUDSC.Querations@noaa.gov

[Disclaimer](#)

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



MAP LEGEND

Area of Interest (AOI)	C
Area of Interest (AOI)	C/D
Soils	D
Soil Rating Polygons	Not rated or not available
A	Water Features
A/D	Streams and Canals
B	Transportation
B/D	Rails
C	Interstate Highways
C/D	US Routes
D	Major Roads
Not rated or not available	Local Roads
Soil Rating Lines	Background
A	Aerial Photography
A/D	
B	
B/D	
C	
C/D	
D	
Not rated or not available	
Soil Rating Points	
A	
A/D	
B	
B/D	

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.

Enlarge/zoom 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 Date: 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	27.9%
34B	Merimec fine sandy loam, 3 to 8 percent slopes	A	6.0	0.4%
60B	Canlon and Charlton fine sandy loams, 3 to 8 percent slopes	B	4.7	42.9%
61C	Canlon and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	2.9	26.0%
62D	Canlon and Charlton fine sandy loams, *5 to 35 percent slopes, extremely stony	B	0.1	0.7%
731 B	Amigrel 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

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN REVIEW PERTAINING TO PROPOSED 50-UNIT MULTI-FAMILY DEVELOPMENT (ASSESSOR'S MAP 38, LOT 22) LOUISE BERRY DRIVE BROOKLYN, CT (September 12, 2022)

The comments contained herein pertain to my review of plans, consisting of sixteen (16) sheets, entitled "Proposed Multi-Family Condominium Development, Louise Berry Drive, Brooklyn, Connecticut, Prepared for Shane Pollock," prepared by Killingly Engineering Associates (KEA), dated April 23, 2020 with latest revision date of August 29, 2022.

Sheet 8 thru 12 of 16 – Phasing Plans

1. There is no indication when the roadway pavement will be installed in any of the phasing plans.
2. The sidewalk is not shown in any of the phasing plans.
3. Tree planting is not shown in any of the phasing plans.
4. Street lighting is not shown in any of the phasing plans.
5. On-street parking is not shown in any of the phasing plans.
6. Road centerline is not shown in any of the phasing plans.
7. Stockpile areas are not shown in any of the phasing plans.
8. Proposed contour lines shown in Phase Plans 2,3, & 5 are inconsistent with that depicted in the Phase 1 plan.
9. A detailed written description is needed in the plan set describing what is to be constructed in each phase of development (1 thru 5) and also to serve as a guide (checklist) for town staff inspecting and accounting for progress of work completed.

Sheet 13 of 16 – Detail Sheet 1

10. Note 22 under "Development Schedule / Sequence of Operations, it states that the final 1 ½" course of pavement will not be installed until the final structure in the development is completed. This is not satisfactory since it could be years before the final structure is completed and degradation of

the initial and even subsequent 1 ½" courses of pavement is likely to occur. Therefore, the final course of pavement must be applied to protect the initial layer as each phase is completed.

11. Hay bales used in the "Haybale Installation at Catch Basin" and "Pumping Outlet Basin" details are unacceptable. Hay bales are too porous as compared to a silt/compost sock. Replace the hay bales with an appropriate size silt/compost sock for more positive protection against sediment transport.

NOTE: Due to time constraints, the comments contained herein are based upon a partial review of the plans. However, I will continue reviewing the plans and drainage calculations prior to this development being evaluated by the Brooklyn Planning and Zoning Commission.

Syl Pauley, Jr., P.E. (digitally signed)

By: _____
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONNECTICUT

Date 7-10-02

Application # IWWC 02-002

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Kenneth Phillips MAILING ADDRESS 104 Elliot Rd Brooklyn Ct
APPLICANT'S INTEREST IN PROPERTY OWNER PHONE 860 725 0388 EMAIL Kenph90@msn.com

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS Same EMAIL _____

ENGINEER/SURVEYOR (IF ANY) _____

ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS 104 Elliot Rd
MAP # 13 LOT # 10 ZONE RA TOTAL ACRES 7.3 ACRES OF WETLANDS ON PROPERTY approx 3.5

PURPOSE AND DESCRIPTION OF THE ACTIVITY dredge 100' x 50' pond on North western section of property. All dredging material will be used to level pot holes in lawn and taper an embankment on lawn on south side of house.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED 0 CUBIC YDS SQ FT _____

EXCAVATION PROPOSED dredge CUBIC YDS 18 SQ FT _____

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE OFF SITE _____

TOTAL REGULATED AREA ALTERED: SQ FT 5,000 ACRES 0.11

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): Herbicideing the lily pads and other aquatic vegetation would result in depleting the oxygen when the roots and lily pads decay.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY N/A SQ FT N/A ACRES N/A

IS PARCEL LOCATED WITHIN 500 FT OF AN ADJOINING TOWN? NO IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? NO

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION(S) ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: Kenneth E Phillips DATE 7-10-02

OWNER: Kenneth E Phillips DATE 7-10-02



REQUIREMENTS

APPLICATION FEE \$ 150.00 STATE FEE (\$50.00) \$ 60.00

COMPLETION OF CTD EEP REPORTING FORM

ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

COMPLIANCE WITH THE CONNECTICUT 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 ADJUTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION.

APPLICATION TO STATE OF CONNECTICUT DEPT
INLAND WATER RESOURCES DIVISION
796 Elm St.
HARTFORD, CT 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 WASHINGTON ROAD
CONCORD, MA 01742
1-800-343-4783

STAFF USE ONLY:

DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

PERMIT REQUIRED:

AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

CHAIR, BROOKLYN IWWC

WETLANDS OFFICER

AUTHORIZED BY IWWC

SIGNIFICANT ACTIVITY/PUBLIC HEARING

NO PERMIT REQUIRED

OUTSIDE OF UPLAND REVIEW AREA

NO IMPACT

CHAIR, BROOKLYN IWWC

WETLANDS OFFICER

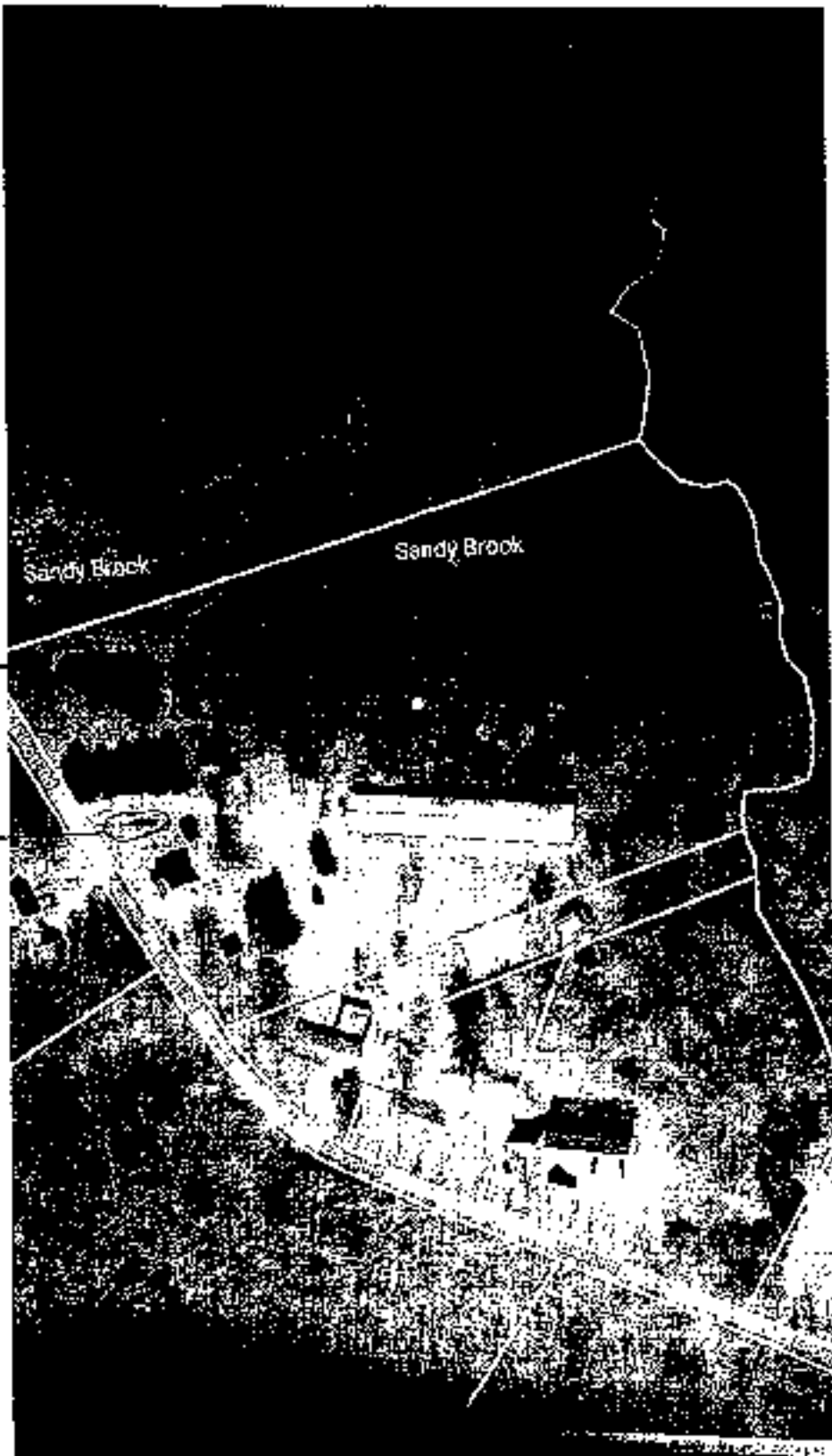
TIMBER HARVEST

Sandy Brook

Sandy Brook

Pond to be
dredged

Spoils
to be spread
in uplands.





Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street - 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (enter one year and month). Year 2022 Month _____
- ACTION TAKEN (enter one code letter) _____
- WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM

(type name) Margaret Washburn

(signature) Margaret Washburn



PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

- TOWN IN WHICH THE ACTION IS OCCURRING (type name): Brooklyn
Does this project cross municipal boundaries (check one)? Yes _____ No X
If Yes, list the other town(s) in which the action is occurring (type name(s)): N/A
- LOCATION (see directions for website information): USGS Quad Map Name Danielson or Quad Number: _____
Sub-regional Drainage Basin Number: 3711
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): Ken Phillips
- NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 104 Elliott Road
Briefly describe the action/project/activity (check and type information): Temporary ✓ Permanent _____
Description: dredging a 50 ft x 100 ft pond
- ACTIVITY PURPOSE CODE (enter one code letter): L
- ACTIVITY TYPE CODE(S) (enter up to four code numbers): 11
- WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated).
Wetlands: 0 acres Open Water Body: 0.11 acres Stream: 0 linear feet
- UPLAND AREA ALTERED (type in acres as indicated): 0.03 acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0.11 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO



TOWN OF BROOKLYN

Land Use Department
69 South Main Street • Suite 22
BROOKLYN, CONNECTICUT 06234
860-779-3411 Ext. 12

Ken Phillips
104 Elliott Road
Brooklyn, CT 06234

August 17, 2022

Dear Mr. Phillips,

Thank you for attending the Wetlands Commission (IWWC) meeting on 8/9.

Thank you, also, for applying for your permit.

At the 8/9 IWWC meeting, the Commission members told me to issue a Duly Authorized Agent Approval for work in a pond. Ponds are defined as watercourses in our regulations.

Please refer to Section 12.1 of the Regulations, below.

I am not authorized to issue approvals for new applications proposing work in wetlands or watercourses. Only the Commission (the Agency) can issue such approvals.

12 .1 The Commission delegates to its duly authorized agent the authority to **approve or extend a license for an activity that is not located in a wetland or watercourse** in accordance with CGS 22a-42a.(c)(2), subject to the limitations of this regulation, when such agent finds that the conduct of such activity would result in no greater than a minimal impact on any wetland or watercourse. **The designated agent is not authorized to act under CGS 22a-42a.(c)(2) until and unless the chairman of the wetlands agency has conducted a pre-application review to confirm that no agency review or action is required and has made a determination in writing that the agent shall be authorized to so act with respect to the specific request presented.** Requests for such approval shall be made on a form provided by the Commission and shall contain the information listed under Section 7.5 of these regulations and any other information the agent may reasonably require. The agent shall not be authorized to act if there is any change to the proposal after the chairman has made a determination. In the event of any

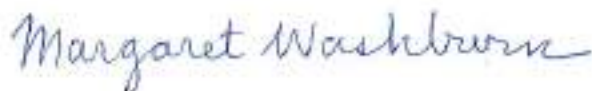
change, the matter shall be referred back to the chairman for further review and action. In the event that the Chairman is unavailable to conduct the pre-application review and determination as provided herein, the Chairman may designate another member of the agency to act in the Chairman's place, with the same authority as provided to the Chairman. Notwithstanding the provisions for receipt and processing applications prescribed in Sections 8, 9 and 11 of these regulations, such agent may approve or extend such an activity at any time.

Since I am not authorized to issue approvals for work in wetlands or watercourses this application will have to be on the agenda for the next regularly scheduled meeting. I apologize for the delay.

The draft agenda for the September 13 meeting is attached.

Your cooperation is greatly appreciated.

Sincerely,



Margaret Washburn
Wetlands Enforcement Officer
69 South Main Street, Suite 23
Brooklyn, CT 06234
(860) 779-3411 ext. 31
Mon. – Thurs. 8:00 am – 3:30 pm
m.washburn@brooklynct.org

Brooklyn Inland Wetlands Commission
Regular Meeting Agenda
Tuesday, September 13, 2022
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.
DRAFT

In-Person: Clifford B. Green Meeting Center, Suite 24, 69 South Main Street, Brooklyn, CT		
Online: Click link below: https://us06web.zoom.us/j/82435574137	OR	Go to Zoom.us , click Sign In On the top right, click Join a Meeting Enter meeting ID: 824 3557 4137 Enter meeting password: 038430
Phone: Dial 1 646 558 8656 US Toll Enter meeting number: 824 3557 4137 Enter meeting password: 038430 You can bypass attendee number by pressing #		

Call to Order:

Roll Call:

Seating of Alternates:

Public Commentary:

Additions to Agenda:

Approval of Minutes: Correction of minutes from 8/9/22 meeting

061422B 170 South Street - written as "Approved 6-0", should be "Approved 5/0"

156 Darby - Joseph Kettelle - written as "Approved 6-0", should be "Approved 5/0"

253 Wolf Den – Pasay Development - written as "Approved 6-0", should be "Approved 5/0"

1. Regular Meeting Minutes

Public Hearings:

1. None.

Old Business:

1. **IWWC 22-002 – 104 Elliott Road - Map 18 Lot 10 – Ken Phillips.** Dredge 100' x 50' pond on northwestern section of property. All dredging material will be used to level pot holes in lawn and taper an embankment on the lawn on the north side of house.

2.

New Business:

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary:

Adjourn:

Richard Oliverson, Chairman

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date 8/4/2022

Application # IWWC 22-004

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT PASAY DEVELOPMENT, LLC MAILING ADDRESS 162 MAIN STREET, DANIELSON, CT 06239
APPLICANT'S INTEREST IN PROPERTY OWNER PHONE 860 908 3906 EMAIL _____

PROPERTY OWNER IF DIFFERENT SAME PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) PC SURVEY ASSOCIATES / KILLINGLY ENGINEERING ASSOCIATES
ATTORNEY (IF ANY) ERNEST COTNOIR

PROPERTY LOCATION/ADDRESS WOLF DEN ROAD
MAP # 17 LOT # 32-3 ZONE RA TOTAL ACRES 6.33 AC. ACRES OF WETLANDS ON PROPERTY 1.9 AC.

PURPOSE AND DESCRIPTION OF THE ACTIVITY INSTALLATION OF DRIVEWAY ACROSS WETLAND TO ACCESS HOUSE SITE ON PREVIOUSLY APPROVED SUBDIVISION LOT

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED GRAVEL CUBIC YDS 70 SQ FT 730
EXCAVATION PROPOSED _____ CUBIC YDS 15 SQ FT 300
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE X OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT 6000 ACRES 0.14

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): PROPOSED PROPERTY LINE RELOCATION WITH ADJOINING LAND OWNER BUT ADJOINING LAND OWNER WAS NOT RECEPTIVE TO THE IDEA.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQFT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? NO IF YES, WHICH TOWN(S) _____
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? NO

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: Pasay Dev. LLC [Signature] member DATE 8/1/2022

OWNER: Pasay Dev. LLC [Signature] member DATE 8/1/2022

REQUIREMENTS

\$150 Town
50 NOA

APPLICATION FEE: \$1200 STATE FEE (\$60.00) paid # 11539 \$260⁰⁰ 8/3/21

COMPLETION OF CT DFFP REVISION FORM

ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

PRE APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

IF THE PROPOSED ACTIVITY IS DETERMINED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- o NAMES AND ADDRESSES OF ADJUTING PROPERTY OWNERS
- o ADDITIONAL INFORMATION AS CONTAINED IN NWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

.....
.....
.....

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEPT
INLAND WATER RESOURCES DIVISION
70 ELW. ST.
HARTFORD, CT. 06105
1-800-426-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-800-343-4739

STAFF USE ONLY:

DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE NWWC REGULATIONS SECTION 4)

PERMIT REQUIRED:

AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

CHAIR, BROOKLYN NWWC

WETLANDS OFFICER

AUTHORIZED BY NWWC

SIGNIFICANT ACTIVITY/PUBLIC HEARING

NO PERMIT REQUIRED

OUTSIDE OF UPLAND REVIEW AREA

NO IMPACT

CHAIR, BROOKLYN NWWC

WETLANDS OFFICER

LIMBER HARVEST



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Complete, print, **sign**, and mail this form in accordance with the instructions on pages 2 and 3.

PART I: To Be Completed By The Municipal Inland Wetlands Agency Only

1. DATE ACTION WAS TAKEN (use drop-down box): Year Month
2. ACTION TAKEN (use drop-down box):
3. WAS A PUBLIC HEARING HELD? (select one only) Yes No
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(print): _____ (signature) _____

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

5. TOWN IN WHICH THE ACTION IS OCCURRING: BROOKLYN
Does this project cross municipal boundaries? (select one only) Yes No
If Yes, list the other town(s) in which the action is occurring:
6. LOCATION: [USGS Quad Map Name](#) (see hyperlink): DANIELSON
[Quad Number](#) (see hyperlink): 43
Subregional Drainage [Basin Number](#) (see hyperlink): 3711
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER: PASAY DEVELOPMENT, LLC
8. NAME & ADDRESS/LOCATION OF PROJECT SITE: WOLF DEN ROAD, BROOKLYN, CT

Briefly describe the action/project/activity: Temporary Permanent

RESIDENTIAL DRIVEWAY WETLAND CROSSING

9. ACTIVITY PURPOSE CODE (Use drop-down box): B
10. ACTIVITY TYPE CODE(S) (Use drop-down box) 1 . 2 . 12 . 14
11. WETLAND / WATERCOURSE AREA ALTERED [must be provided in acres or linear feet as indicated]:
Wetlands: 0.02 acres Open Water Body: 0 acres Stream: 35 linear feet
12. UPLAND REVIEW AREA ALTERED [must be provided in acres]: 0.1 acres
13. AREA OF WETLANDS AND / OR WATERCOURSES RESTORED, ENHANCED OR CREATED: 0 acres
[must be provided in acres]

PART III: To Be Completed By The DEP

DATE RECEIVED: _____ DATE RETURNED TO DEP: _____
FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO



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

6/28/22

P.C. SURVEY ASSOC. LLC.
63 SNAKE MEADOW HILL RD.
KILLINGLY, CT. 06239

ATTN: MR. PAUL TERWILLIGER

RE: 253 WOLF DEN ROAD WETLAND DELINEATION

DEAR MR. TERWILLIGER,

AT YOUR REQUEST I HAVE DELINEATED THE INLAND WETLANDS AND WATERCOURSE ON THE ABOVE REFERENCED PROPERTY.

THESE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY AND THE DEFINITIONS OF WETLANDS AS FOUND IN THE CONNECTICUT STATUTES, CHAPTER 440, SECTION 22A-38.

FLUORESCENT PINK FLAGS WITH A CORRESPONDING LOCATION NUMBER DELINEATE THE BOUNDARY BETWEEN THE UPLAND SOILS AND THE INLAND WETLANDS/WATERCOURSE.

FLAG NUMBERS WF-1 THRU WF-19 DELINEATE THE NORTHERN PORTION OF THE BOUNDARY OF THE PALUSTRINE FORESTED WETLANDS AND WATERCOURSE LOCATED ALONG THE NORTHERN PROPERTY BOUNDARY.

IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING THE DELINEATION OR THIS REPORT, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

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

APPROVAL TO CONSTRUCT OR REPAIR SEWAGE DISPOSAL SYSTEM

NORTHEAST DISTRICT DEPARTMENT OF HEALTH
69 SOUTH MAIN STREET UNIT 4
BROOKLYN, CT
860-774-7350

Approval is hereby granted for the construction/repair of a sewage disposal system at the property described below:

FILE # 22000260

MAP #17 LOT #32-3

TOWN: BROOKLYN

INSTALLER: RONALD RACINE (SIG ON FILE)

STREET: 253 WOLF DEN ROAD

CT LIC #3990 EXPIRES: 07/31/2022

PROPERTY OWNER: PASAY DEVELOPMENT

APPRENTICE:

Residential: No. of Bedrooms: 3 Non-Residential: Design Flow: 0 Gallons Per Day (GPD)

INSTRUCTIONS FOR INSTALLER

1. Construction plot plan submitted and approved by this office must be adhered to.
2. This office must be contacted for approval if any change is going to be made in the system location, size or design, or any changes in house, well or property line locations.
3. Any *NEW* sewage disposal system must conform to *ALL* requirements of Section 19-13-BI03 of the CT Public Health Code.
4. *ALL* new construction to be under *DIRECT* supervision of a CT licensed installer under Section 20-341 of the CT General Statutes.
5. The installer is *RESPONSIBLE* for *VERIFYING LOCATIONS* of *PROPERTY LINES, WELLS,* and *BURIED UTILITY LINES* prior to construction.
6. Installer to notify N.D.D.H. 24 hours, in advance, prior to the start of construction.
7. Installer to have septic tank covers removed at the time of inspection.

SPECIFIC INSTRUCTIONS:

- Install per plot plan. (Drawn By: PC Survey Associates., Job #20055, Dated: 06/23/2021)
- CT licensed surveyor must stake house, well, benchmark, and septic system; offset stakes to include flow line or bottom of trench elevation.
- Install a 1,000-gallon two compartment septic tank with outlet baffle filter.
- Install 675 square feet of effective leaching area consisting of 1 65' row of 18" Eljen Mantis 536-8.
- Maximum depth into existing grade not to exceed 6 inches.
- A bottom of excavation inspection is required once the topsoil has been removed.
- A current sieve analysis of select fill material (within past 30 days) must be submitted to NDDH.
- Select fill is to be perced once in place.
- Installer to schedule and be present for final inspection with NDDH staff and have level set up so that elevations may be verified.
- Installer's as-built drawing (to include ties to the house) and completed checklist required.

GRANTED BY:


Donovan Moe

DATE ISSUED: 05/02/2022

ONE RENEWAL:

EXPIRES: 05/02/2023

EXPIRES:


Steve Knaut

THIS PERMIT IS VALID FOR A PERIOD OF ONE YEAR FROM DATE OF ISSUE. IN ACCORDANCE WITH THE CT PUBLIC HEALTH CODE SECTION 19-13-BI03e(F)(i). ONE RENEWAL IS POSSIBLE PROVIDED NDDH IS NOTIFIED PRIOR TO THE EXPIRATION DATE NOTED ABOVE. IF PERMIT EXPIRES, INSTALLERS ARE CHANGED, OR ANY OTHER DEVIATION FROM THE ORIGINAL PERMIT, A NEW APPLICATION MUST BE COMPLETED AND ALL APPLICABLE FEES MUST BE PAID.



NORTHEAST DISTRICT DEPARTMENT OF HEALTH

69 SOUTH MAIN STREET, UNIT 4, BROOKLYN, CT 06234
860-774-7350/Fax 860-774-1308 WWW.NDDH.ORG

May 02, 2022

Pasay Development, LLC.
162 Main Street
Danielson, CT 06239

SUBJECT: FILE #22000260 -- WOLF DEN ROAD #253, MAP #17, LOT #32-3, BROOKLYN, CT

Dear Pasay Development, LLC:

The subject plan (PC SURVEY ASSOCIATES LLC, JOB# 20055, PASAY DEVELOPMENT, DRAWN JUNE 2021) submitted on 04/14/2022 has been reviewed, as requested. Following completion of this review, it has been determined that the subject plan will meet the requirements of the Technical Standards for a 3-bedroom house based on the following:

1. CT licensed surveyor must stake house, benchmark, and septic system, offset stakes to include flow line or bottom of trench elevation.
2. Permanent benchmark to be set within 50 feet horizontally and 12 feet vertically of septic system.
3. A bottom of excavation inspection is required once the topsoil has been removed.
4. A current sieve analysis of select fill material (within past 30 days) must be submitted to the Northeast District Department of Health (NDDH).
5. Select fill is to be perced once in place.
6. An engineer/surveyor's As-Built drawing (to include ties to the house) is to be submitted following the final inspection and approval of installation by NDDH.
7. Installer to schedule and be present for the final inspection with NDDH staff. Level to be set up for verification of elevations OR an Engineer's As Built will be required.

This letter is NOT to be construed as an APPROVAL TO CONSTRUCT the septic system and DOES NOT indicate that the Northeast District Department of Health endorses approval for issuance of any building permit.

Prior to the start of construction of the septic system, you must apply for your Approval to Construct Permit and submit the applicable fees to this office. A set of the floor plans of your house must be submitted to NDDH for review. Your CT licensed installer must come in to this department to sign for the permit if we do not have his signature on file. Office hours are Mon - Thurs 8 am - 4 pm, Fri 8 am - Noon.

THE OWNER IS RESPONSIBLE TO SEEK PROPER AUTHORIZATION FROM ALL TOWN AGENCIES PRIOR TO START OF CONSTRUCTION.

Should you have any questions, please do not hesitate to contact this office.

Sincerely,

Donovan Moe, EHS
Environmental Health Specialist ~ NDDH

cc: Brooklyn Building Official; PC Survey Associates LLC, Ron Racine

REFERENCE IS MADE TO:

CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, MAY 2002.

DEVELOPMENT

PROPOSED DEVELOPMENT CONSISTS OF THE CONSTRUCTION OF A SINGLE FAMILY DWELLING WITH APPURTENANT SEPTIC SYSTEM, WELL, DRIVEWAY, UTILITIES AND SITE GRADING.

CONSTRUCTION SEQUENCE:

1. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES ALONG THE PROPOSED LIMITS OF DISTURBANCE.
2. PROVIDE ANTI TRACKING PAD AND TEMPORARY POWER TO THE SITE.
3. REMOVE AND STOCKPILE TOPSOIL AND INSTALL SEDIMENT BARRIER.
4. EXCAVATE FOUNDATION AND BEGIN HOUSE CONSTRUCTION.
5. INSTALL SEPTIC SYSTEM AND WELL.
6. INSTALL DRIVEWAY AND UTILITIES TO THE RESIDENCE.
7. LOAM, SEED & MULCH DISTURBED AREAS.
8. AFTER STABILIZATION OF DISTURBED AREAS, REMOVE EROSION AND SEDIMENT CONTROL.

GENERAL DEVELOPMENT PLAN

PRIOR TO THE COMMENCEMENT OF OPERATIONS IN ACCORDANCE WITH ANY PERMIT ISSUED BY THE TOWN OF BROOKLYN, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.

THE CONTRACTOR SHALL OBTAIN A SITE INSPECTION FROM THE TOWN OF BROOKLYN ZONING ENFORCEMENT OFFICER OR WETLANDS AGENT TO ENSURE THAT ALL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH THIS NARRATIVE. UPON APPROVAL WITH RESPECT TO THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES, THE CONTRACTOR MAY COMMENCE OPERATIONS PURSUANT TO THE PERMIT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE 'SILT FENCE INSTALLATION & MAINTENANCE' AND 'HAY BALE INSTALLATION & MAINTENANCE' SECTIONS OF THIS NARRATIVE.

ALL STRIPPING IS TO BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. TOPSOIL SHALL BE STOCKPILED SO THAT SLOPES DO NOT EXCEED 2 TO 1. THERE SHALL BE NO BURIAL OF STUMPS. A HAY BALE SEDIMENT BARRIER IS TO SURROUND EACH STOCKPILE AND A TEMPORARY VEGETATIVE COVER PROVIDED IF NECESSARY.

DUST CONTROL WILL BE ACCOMPLISHED BY SPRAYING WITH WATER.

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.

DURING THE STABILIZATION PERIOD, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN PROPER WORKING ORDER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL EROSION AND SEDIMENT CONTROL ON A TWICE-WEEKLY BASIS DURING THE STABILIZATION PERIOD AND AFTER EACH STORM EVENT. DURING THE STABILIZATION PERIOD WITH RESPECT TO THE SITE, ANY EROSION WHICH OCCURS WITHIN DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED, RESEEDING AND RE-ESTABLISHED.

ALL DISTURBED SLOPES SHALL BE STABILIZED WITHIN ONE SEASON (SPRING OR FALL) OF THE COMPLETION OF THE PROJECT BEFORE A CERTIFICATE OF COMPLIANCE WILL BE ISSUED.

ONCE STABILIZATION HAS BEEN COMPLETED AND APPROVED BY THE TOWN OF BROOKLYN ZONING ENFORCEMENT OFFICER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED BY THE CONTRACTOR.

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 FOOT 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, 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

A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENEED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. LIMESTONE AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW FREE FROM WEEDS AND COARSE MATTER SHALL BE USED AT A RATE OF 70-90 LBS. PER 1000 S.F. AS A TEMPORARY MULCH. APPLY A JUTE NETTING COVER TO SLOPES OF 3:1 OR GREATER SLOPE.

PERMANENT VEGETATIVE COVER

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATION AND FILL PLACEMENT HAS BEEN COMPLETED AND THE SLOPES ARE GRADED TO A SLOPE NO GREATER THAN 2 TO 1. PROVIDE SLOPE PROTECTION ON ALL CUT SLOPES. TOPSOIL WILL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS. APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO 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 S.F. WORK LIMESTONE INTO THE SOIL TO A DEPTH OF 4 INCHES. INSPECT SEEDBED BEFORE SEEDING. IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS. APPLY THE FOLLOWING GRASS SEED MIX:

SEED MIXTURE	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	20	0.45
CREeping RED FESCUE	20	0.45
PERENNIAL RYEGRASS	5	0.10
	45	1.00

THE RECOMMENDED SEEDING DATES ARE: APRIL 1 - JUNE 15 AND AUGUST 30 - OCTOBER 1

FOLLOWING SEEDING MULCH WITH WEED FREE STRAW AND APPLY A JUTE NETTING COVER TO AREAS OF 3:1 OR GREATER SLOPE

SEPTIC SYSTEM DESIGN CRITERIA

PERC RATE: 10-20 MINS/INCH
 NUMBER OF BEDROOMS: 3
 SEPTIC TANK: 1000 GALLON
 LEACHING AREA REQUIRED: 675 SQUARE FEET
 LEACHING AREA PROVIDED: 65 L.F. OF ELJEN MANTIS 536-8 LEACHING UNITS @ 11.0 S.F./L.F. = 715 SQ. FT. LEACHING AREA
 MOTTLING: 20", LEDGE: 54", WATER: N/A
 MLSS CALCULATION: SLOPE: 4:1-6%, RESTRICTIVE LAYER: 26" (HF=34)
 3 BEDROOMS (PF=1.5)
 PERC. RATE: 10-20 MIN./INCH (PF=1.25)
 MLSS = (HF)(PF)(PF) = 34 x 1.5 x 1.25 = 63.75 L.F.
 LSS PROVIDED: 65 L.F.
 MAXIMUM DEPTH INTO EXISTING GRADE: 6" (48" ABOVE LEDGE)

SPECIFICATIONS

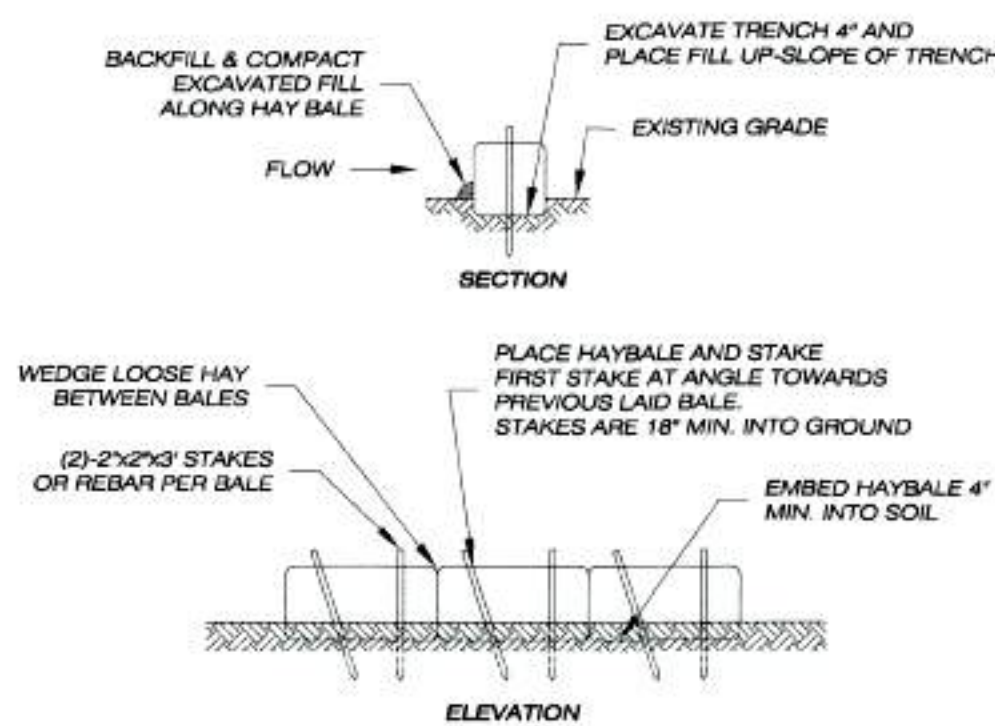
SEPTIC SYSTEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE "CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS".
 SEPTIC TANK: 1000 GALLON JOLLEY PRECAST, INC. OR EQUAL TWO-COMPARTMENT TANK WITH OUTLET FILTER. INSTALL RISERS OVER TANK CLEANOUTS IF COVER OVER TANK EXCEEDS 1'.
 DISTRIBUTION BOX: JOLLEY OR EQUAL 4 HOLE D-BOX
 HOUSE AND EFFLUENT SEWER PIPE: 4" PVC ASTM D 1785, ASTM D 2665, OR ASTM F 1780 SCHEDULE 40 WITH RUBBER COMPRESSION GASKETS OR PVC AWWA C-900 WITH RUBBER COMPRESSION GASKETS.

DISTRIBUTION: SINGLE ROW OF 13 ELJEN MANTIS 536-8 LEACHING UNITS INSTALLED TO MANUFACTURER'S SPECIFICATIONS.
 POLYLOK PIPE SEAL AS MANUFACTURED BY SUPERIOR SEPTIC TANKS (OR EQUAL) SHALL BE USED TO SEAL SEPTIC TANK AND D-BOX INLETS AND OUTLETS.
 BOTTOM OF TRENCHES TO BE LEVEL.
 ALL FILL SHALL BE CLEAN BANK RUN GRAVEL, MEETING THE FOLLOWING REQUIREMENTS OF THE CT DEPT. OF PUBLIC HEALTH:
 MAX. PERCENT GRAVEL (PLUS NO. 4 SIEVE MATERIAL) - 45%
 GRADATION ON FILL LESS GRAVEL:

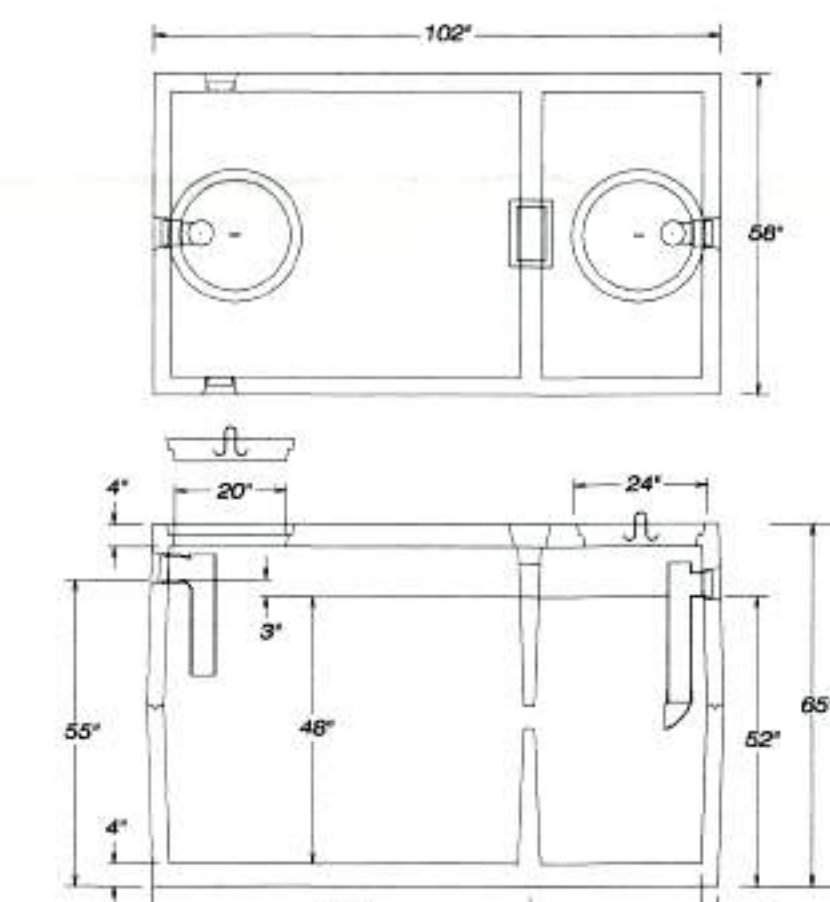
SIEVE NO.	DRY PERCENT PASSING	WET PERCENT PASSING
NO. 4	100	100
NO. 10	70-100	70-100
NO. 40	10-75	10-50
NO. 100	0-6	0-20
NO. 200	0-2.5	0-5

* PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%
 FILL MUST PERC AT A RATE EQUAL TO OR FASTER THAN THE UNDERLYING SOIL.

THE HOUSE, WELL, AND SEPTIC SYSTEM LOCATIONS SHALL BE STAKED IN THE FIELD BY A LAND SURVEYOR PRIOR TO THE START OF ANY CONSTRUCTION. THE SURVEYOR SHALL INSTALL A STABLE BENCHMARK DURING STAKEOUT IN AREA OF THE SYSTEM.



HAY BALE BARRIER DETAIL
NOT TO SCALE

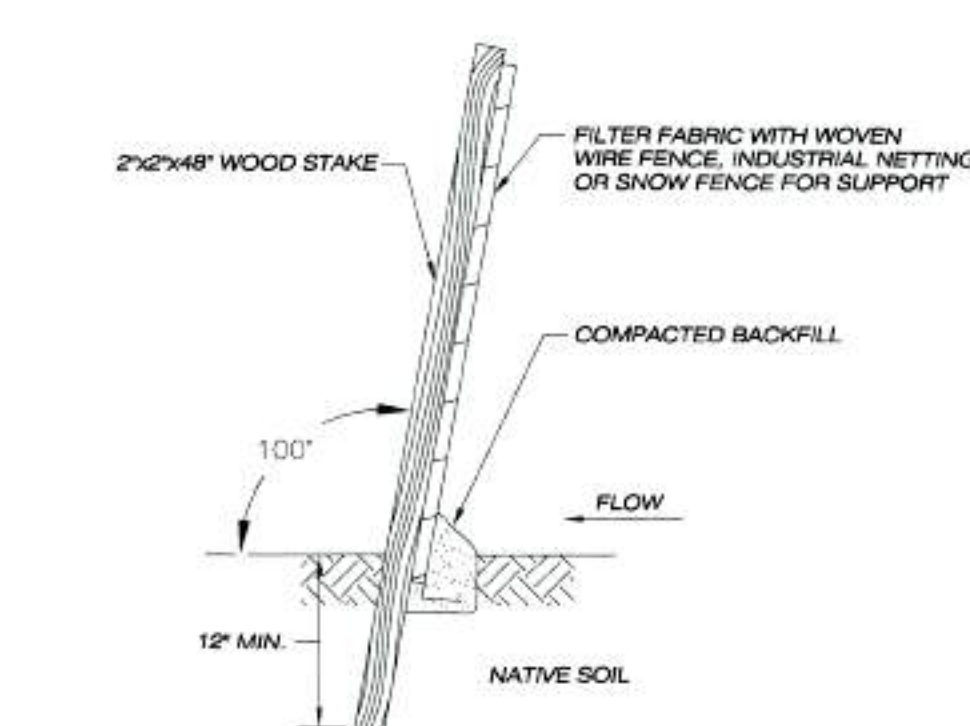


DESIGN NOTES
 1) JOINTS TO BE SEALED WITH BUTYL RUBBER SEALANT
 2) INLETS AND OUTLETS TO HAVE STATE-APPROVED SEALS.
 3) USE 8" HEAVY DUTY TOP IF SPECIFIED.
 4) MUST MEET ASTM C 1227-97A
 5) CONCRETE STRENGTH SHALL BE 5000 PSI MIN. 28 DAYS

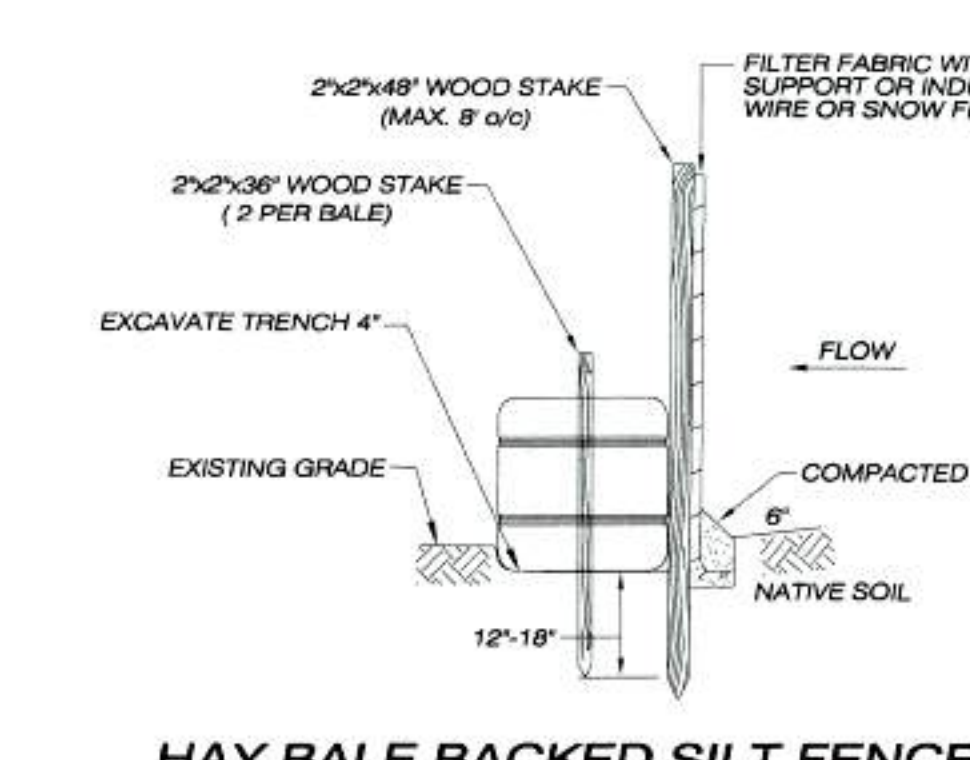
1000 GALLON TWO-COMPARTMENT SEPTIC TANK
N.T.S.

SEPTIC SAND SHALL MEET THE REQUIREMENTS OF ASTM C-33 WITH LESS THAN 10% PASSING A 100 SIEVE AND LESS THAN 5% PASSING A 200 SIEVE

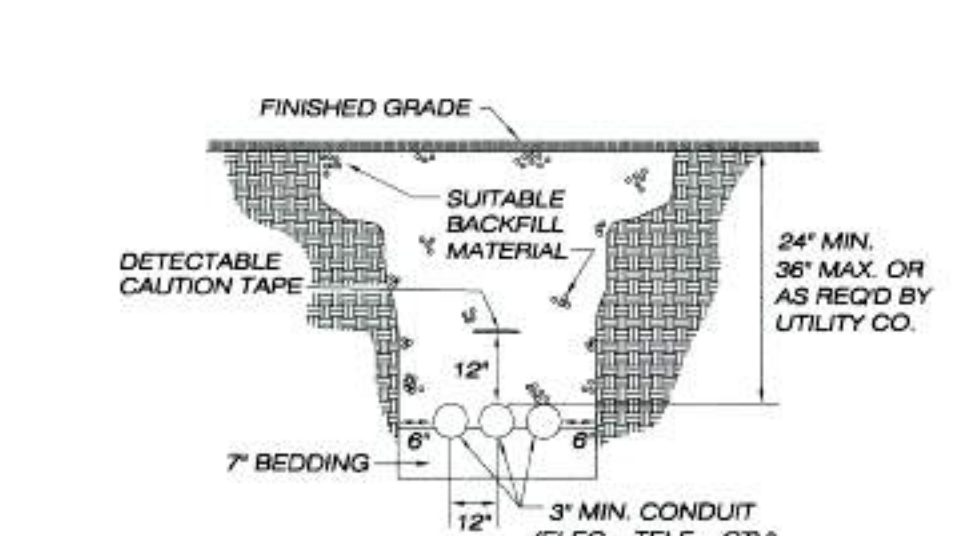
SIEVE SIZE	% PASSING
0.375	100
#4	95-100
#6	90-100
#16	60-85
#30	25-60
#60	10-30
#100	<10
#200	<5



SILT FENCE SECTION
NOT TO SCALE

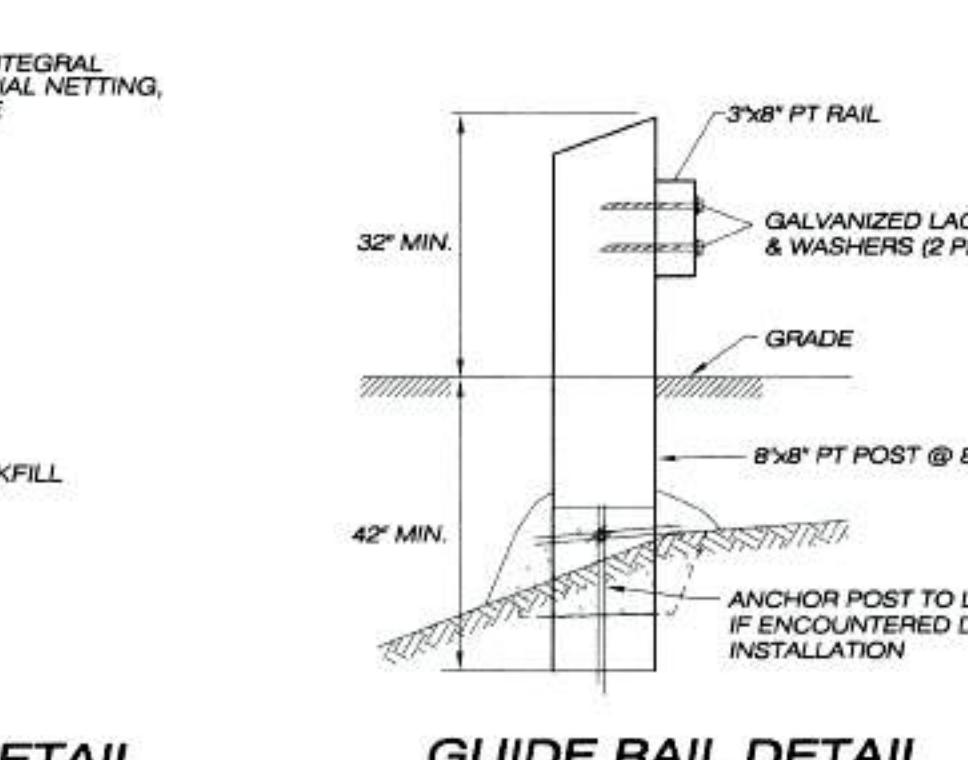


HAY BALE BACKED SILT FENCE DETAIL
NOT TO SCALE

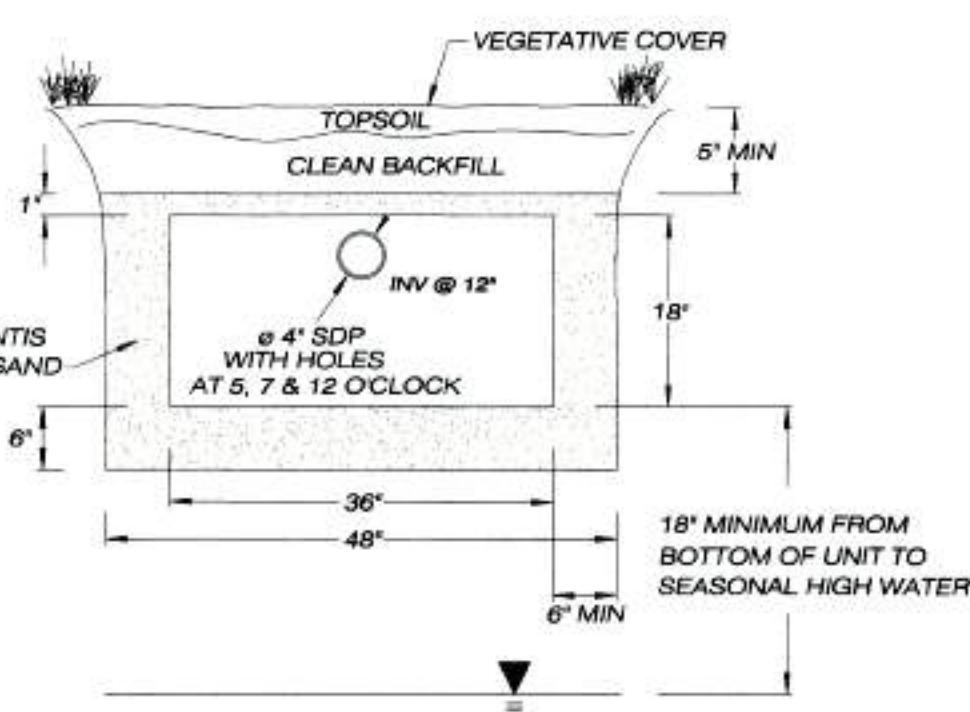


NOTES:
 1. OSHA STANDARDS REQUIRE THAT SPOILS BE PLACED 24" MIN. FROM EDGE OF TRENCH.
 2. SUITABLE BACKFILL SHALL NOT CONTAIN ASH, CINDER, SHELL, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" MAX. DIMENSION.
 3. FUEL OR WATER LINES SHALL BE NO CLOSER THAN 18" IN ANY DIRECTION.

UTILITY TRENCH DETAIL
NOT TO SCALE

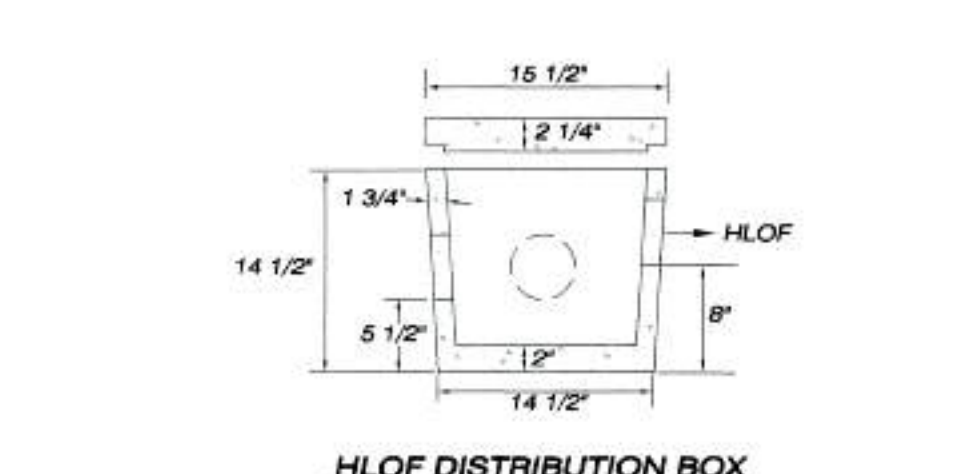


GUIDE RAIL DETAIL
NOT TO SCALE

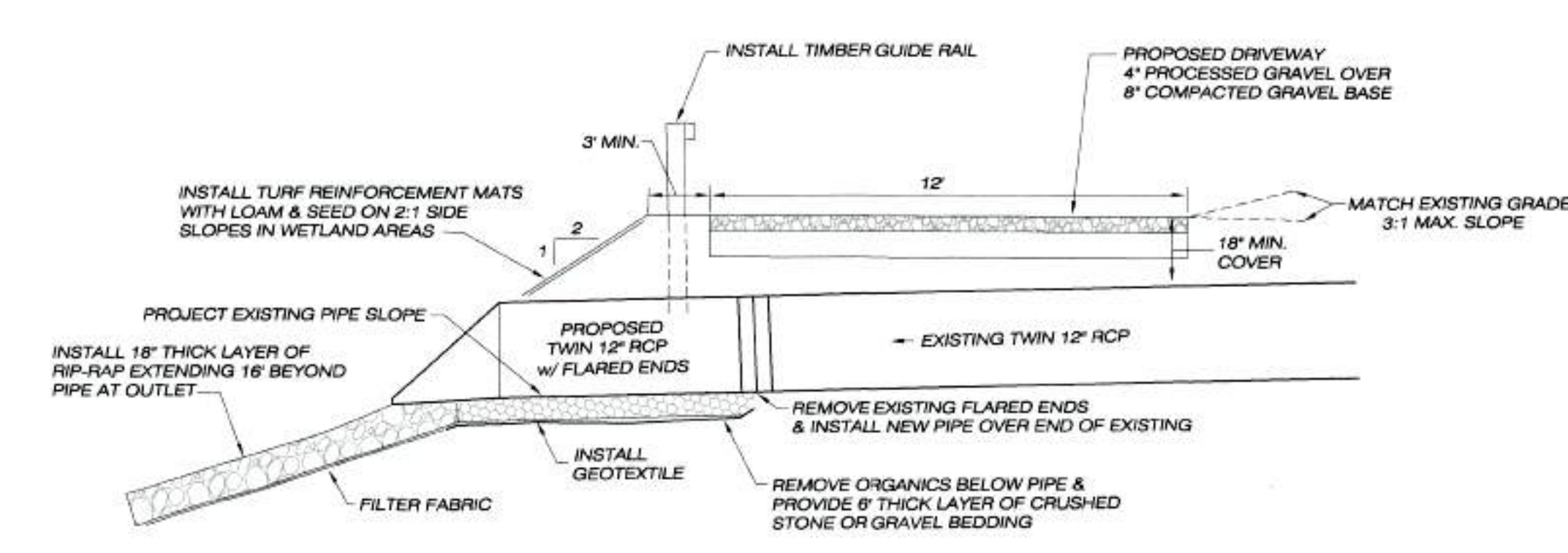


NOTE: VENTING REQUIRED WHEN MORE THAN 18" OF COVER AS MEASURED FROM THE TOP OF THE UNIT TO FINISHED GRADE

ELJEN MANTIS 536-8 TRENCH DETAIL
NOT TO SCALE



HLOF DISTRIBUTION BOX
N.T.S.



DRIVEWAY CROSSING DETAIL
NOT TO SCALE



Killingly Engineering Associates
 114 Westcott Road
 P.O. Box 221
 Dayville, Connecticut 06241
 860 779 7299
 Norman Thibeault, Jr., P.E. 8/3/2022
 NORMAN THIBEAULT, JR., P.E. No. 22834 DATE

COMPILATION MAP	
LOT 3	
EROSION & SEDIMENT CONTROL & CONSTRUCTION DETAILS	
PREPARED FOR PASAY DEVELOPMENT, LLC	
WOLF DEN ROAD BROOKLYN, CONNECTICUT	
DATE: JUNE 2021 SCALE: 1" = AS NOTED	
SHEET NO: 2 OF 2 REVISED: 6/9/2022	
JOB NO: 20055 F.B. NO: N/A DRAWN BY: P.A.T. MAP NO:	



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands

Zoning Enforcement

Blight Enforcement

SITE INSPECTION NUMBER

1 2 3 4 5

325 Wolf Den Rd

8/15/22

Address

Date

I met Keith Pasay, inspected and took photographs for the wetlands crossing application.

There are no IWWC issues that are not addressed in the application.

This approval cannot be made by the Duty Authorized Agent, because work in wetlands is proposed.

Commission Representative

M. Washburn

Owner or Authorized Signature





September 7, 2022

Ms. Margaret Washburn
Wetlands Enforcement Officer
Town of Brooklyn, Connecticut
69 South Main Street, Suite 23
Brooklyn, CT 06234

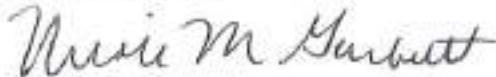
**Re: Application # IWWC 22-004 / Pasay Development, LLC
253 Wolf Den Road – Driveway Wetlands Crossing**

Dear Ms. Washburn:

Please present this letter to the Brooklyn IWC at your September meeting. My Name is Nicole M. Garbutt and I reside at and own 255 Wolf Den Road. My property abuts the applicant on the Western and Northern boundaries. The applicant and I are in a boundary dispute that is in litigation. Specifically, as it pertains to the Northern boundary where the applicant is proposing a driveway and wetland crossing.

For this reason, I would ask that the commission table this application until this matter has been litigated and all appeals exhausted. As such, it would probably be more appropriate for the applicant to withdraw their application and resubmit it once they have clear title. I am represented by Attorney Mark Shipman of Shipman, Shaiken, & Schwefel, LLC in West Hartford, CT.

Very truly yours,



Nicole M. Garbutt
255 Wolf Den Road
Brooklyn, CT 06234

Cc: M. Shipman, Esq.
File



SUMMONS - CIVIL

JD-CV-1 Rev. 2-22
C.G.S. §§ 31-34B, 31-34C, 31-34E, 31-35D, 32-45a, 32-48, 32-292
P.U. §§ 3-1 through 3-23, 6-1, 7-13

For information on ADA accommodations, contact a court clerk or go to: www.jud.ct.gov/ADA.

STATE OF CONNECTICUT SUPERIOR COURT www.jud.ct.gov



Instructions are on page 2.

- Select if amount, legal interest, or property in demand, not including interest and costs is LESS than \$2,500.
[X] Select if amount, legal interest, or property in demand, not including interest and costs, is \$2,500 or MORE
[X] Select if claiming other relief in addition to, or in place of, money or damages.

TO: Any proper officer

By authority of the State of Connecticut, you are hereby commanded to make due and legal service of this summons and attached complaint.

Address of court clerk (Number, Street, Town and Zip code) Telephone number of clerk Return Date (Must be a Tuesday)
155 Church Street, Putnam, CT 06260 (860) 928-7749 09/20/2022
[X] Judicial District G.A. At City/Town Case type code (See list on page 2)
[] Housing Session [] Number Putnam Major: P Minor: 90

For the plaintiff(s) enter the appearance of:

Name and address of attorney, law firm or plaintiff if self-represented (Number, Street, Town and Zip code) June Number (if attorney or law firm)
Ernest J. Cotnoir, PO Box 187, Putnam, CT 06260 305331
Telephone number Signature of plaintiff (if self-represented)
(860) 928-9684
The attorney or law firm appearing for the plaintiff, or the plaintiff if self-represented, agrees to accept papers (service) electronically in this case under Section 10-15 of the Connecticut Practice Book [] Yes [X] No
E-mail address for delivery of papers under Section 10-15 of the Connecticut Practice Book (if agreed)

Table with 2 columns: Parties and Name (Last, First, Middle initial) and address of each party (Number, Street, P.O. Box, town, state, zip, country, if not USA). Rows include Plaintiff Pasay Development, LLC, Additional Plaintiff, Defendant Garbutt, Nicole, and Additional Defendants.

Total number of plaintiffs: 1 Total number of defendants: 1 [] Form JD-CV-2 attached for additional parties

Notice to each defendant

- 1. You are being sued. This is a summons in a lawsuit. The complaint attached states the claims the plaintiff is making against you.
2. To receive further notices, you or your attorney must file an Appearance (form JU-CL-12) with the clerk at the address above. Generally, it must be filed on or before the second day after the Return Date. The Return Date is not a hearing date. You do not have to come to court on the Return Date unless you receive a separate notice telling you to appear.
3. If you or your attorney do not file an Appearance on time, a default judgment may be entered against you. You can get an Appearance form at the court address above, or on-line at https://jud.ct.gov/webforms/.
4. If you believe that you have insurance that may cover the claim being made against you in this lawsuit, you should immediately contact your insurance representative. Other actions you may take are described in the Connecticut Practice Book, which may be found in a Superior Court law library or on-line at https://www.jud.ct.gov/plibm.
5. If you have questions about the summons and complaint, you should talk to an attorney.
The court staff is not allowed to give advice on legal matters.

Date 07/29/2022 Signed (By and select proper box) [X] Commissioner of Superior Court Name of person signing Ernest J. Cotnoir Clerk

If this summons is signed by a Clerk:
a. The signing has been done so that the plaintiff(s) will not be denied access to the courts.
b. It is the responsibility of the plaintiff(s) to ensure that service is made in the manner provided by law.
c. The court staff is not permitted to give any legal advice in connection with any lawsuit.
d. The Clerk signing this summons at the request of the plaintiff(s) is not responsible in any way for any errors or omissions in the summons, any allegations contained in the complaint, or the service of the summons or complaint.
I certify I have read and understand the above: Signed (Self-represented plaintiff) Date
For Court Use Only
File Date
A TRUE AND ARTHESTED COPY
KATHLEEN DOHERTY STATE MARSHAL STATE OF CONNECTICUT
Circuit Number



Brooklyn Land Use Department

69 South Main Street
Brooklyn, CT 06234
(860) 779-3411 x 31

Inland Wetlands Zoning Enforcement Blight Enforcement

Little Dipper Farm

SITE INSPECTION NUMBER

Map 18 Lot 19
Address

1 2 3 4 5

9-1-22

Date

I met Arian Foldan, inspected + took photos.
The new dock is attached to T posts using
rocks inside PVC pipes. Arian wants to move
the dock 20-30 ft to the north where there is
a flat rock for the ramp to rest on.

Arian will send me a sketch showing how
the dock connections to the land will
triangulate.

I will put this dock project on the 9/13
agenda.

There don't appear to be any IWWC
issues. I will defer to the
Commission to decide whether any
permit is warranted.

Commission Representative M. Washburn

Owner or Authorized Signature _____



Margaret Washburn

From: Contact form at Brooklyn CT <cmsmailer@civicplus.com>
Sent: Wednesday, August 31, 2022 12:41 PM
To: Margaret Washburn
Subject: [Brooklyn CT] Little Dipper Docks (Sent by Arian Foldan, arian@littledipperfarm.org)

Hello mwashburn,

Arian Foldan (arian@littledipperfarm.org) has sent you a message via your contact form (<https://www.brooklynct.org/user/1173/contact>) at Brooklyn CT.

If you don't want to receive such e-mails, you can change your settings at <https://www.brooklynct.org/user/1173/edit>.

Message:

Hello Margaret,

Hope you're doing well. We had a question about a dock permit for the pond. I had looked into it a while back and couldn't find anything. I believe I also called, but I can't remember who I spoke to.

So, is there such a thing as a permit for a floating dock? The insurance underwriter called it a "commercial dock", but I think they may be mistaken since we don't charge people money to use the dock. It just exists on a commercial property. If there is a permit, then I'd like to get that going. If there's no requirement for that, I would need something in writing to present to the underwriter. Please let me know.

Thank you,
Arian Foldan

Thank you for getting back to me. Tomorrow at 1 is perfect. Here are your questions with answers:

Is this dock already in place or will it be a new dock?

- There is one dock that has been in place for many years. The dock in question has been installed as of a couple weeks ago.

What size will it be?

- One section is 6 feet wide and goes out 20 feet, then there is a 10 x 12 section at the end.

How will it be attached to the bank?

- Right now, we have T posts with rope inside PVC pipe. I would like to keep a simple attachment like that, but make it a little nicer for the future (maybe solid wood poles going from T posts to dock).

Will there be footings or pilings?

- The goal is to not have that. I think a triangulated connection to shore will be better.

Will it be pulled out in the winter, and if so, where will it be stored?

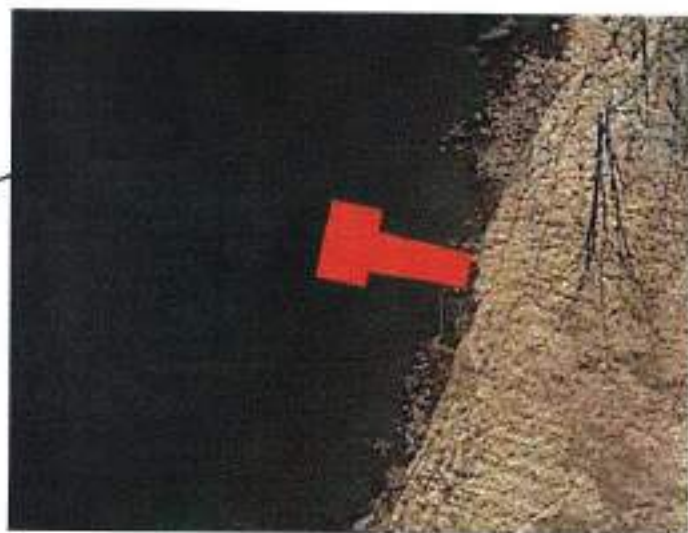
- I think, in general, it will not be pulled in the winter, but it might be pulled this winter in order to stain it.

Where will it be on the pond/bank? (A map would help.)

- See attached. That's the current location. I would like to move it a little bit north soon.

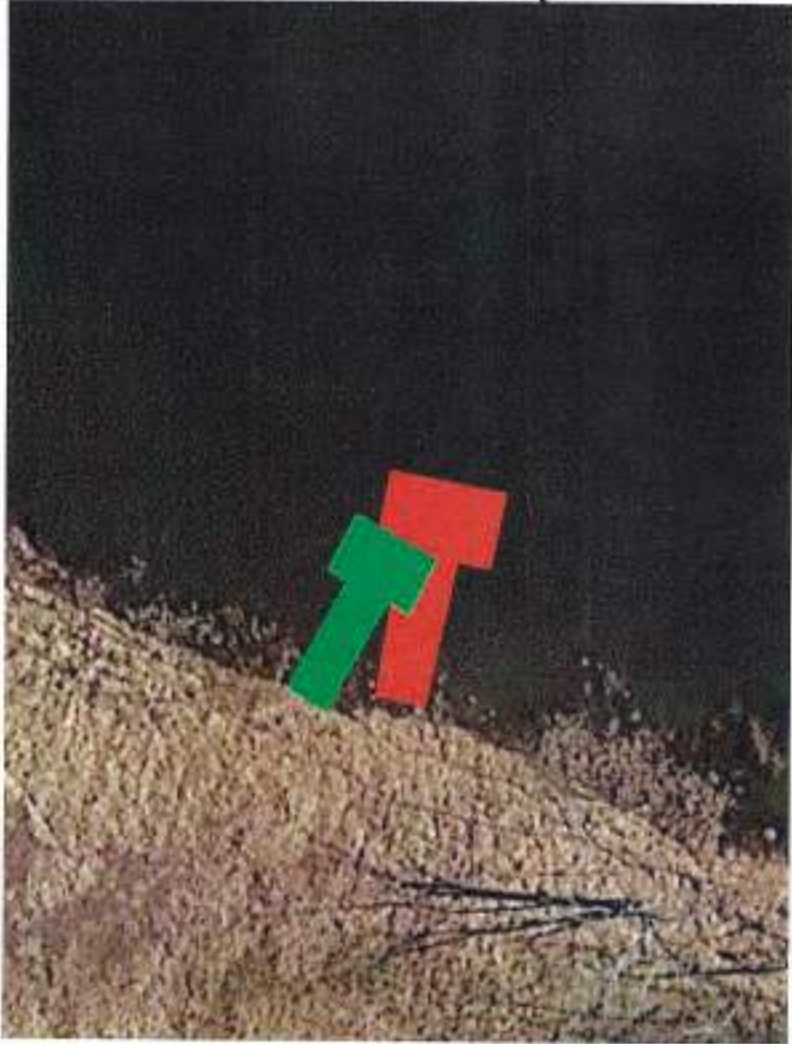
Will there be stairs to the dock?

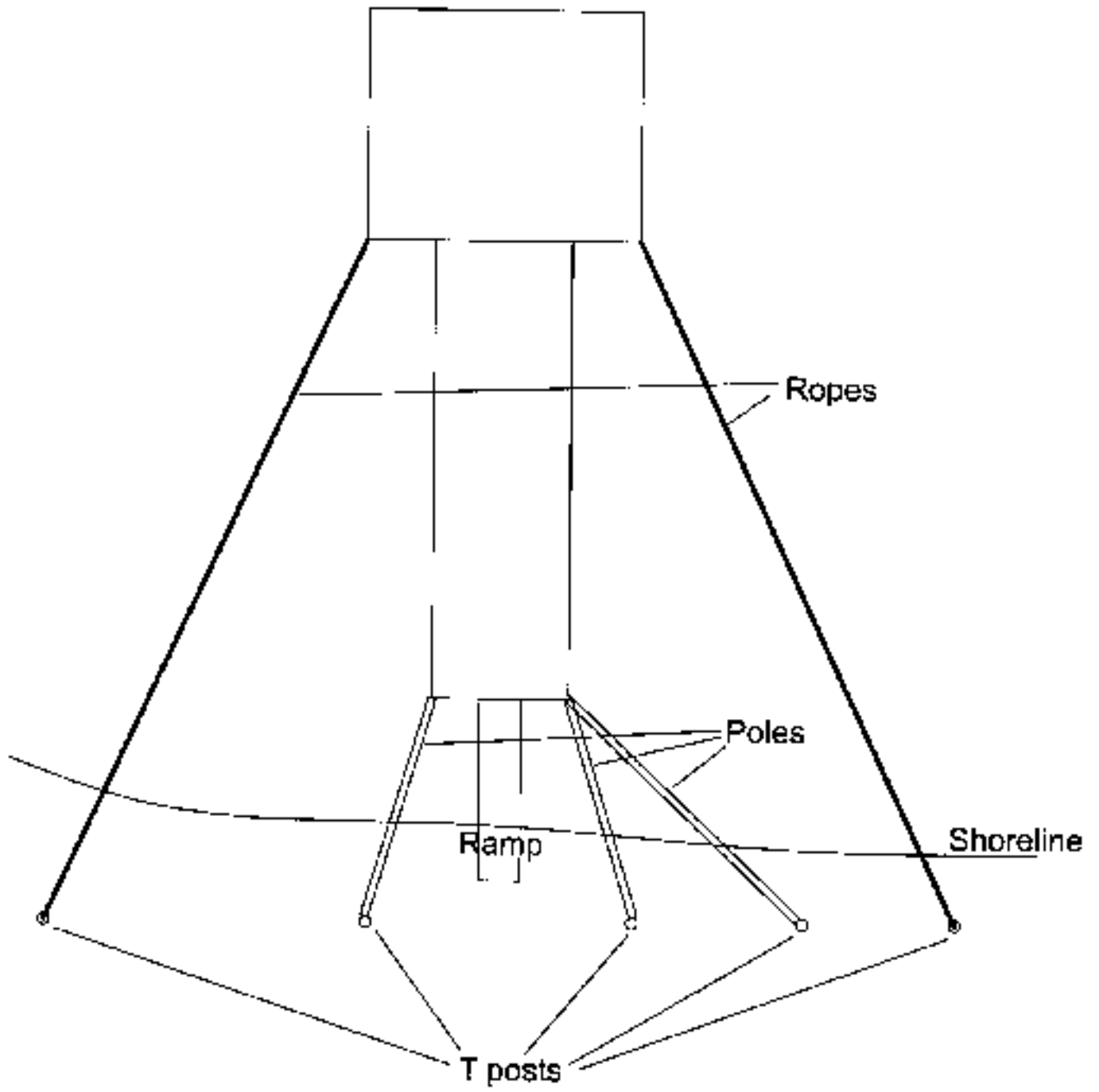
- No stairs. Just a ramp.

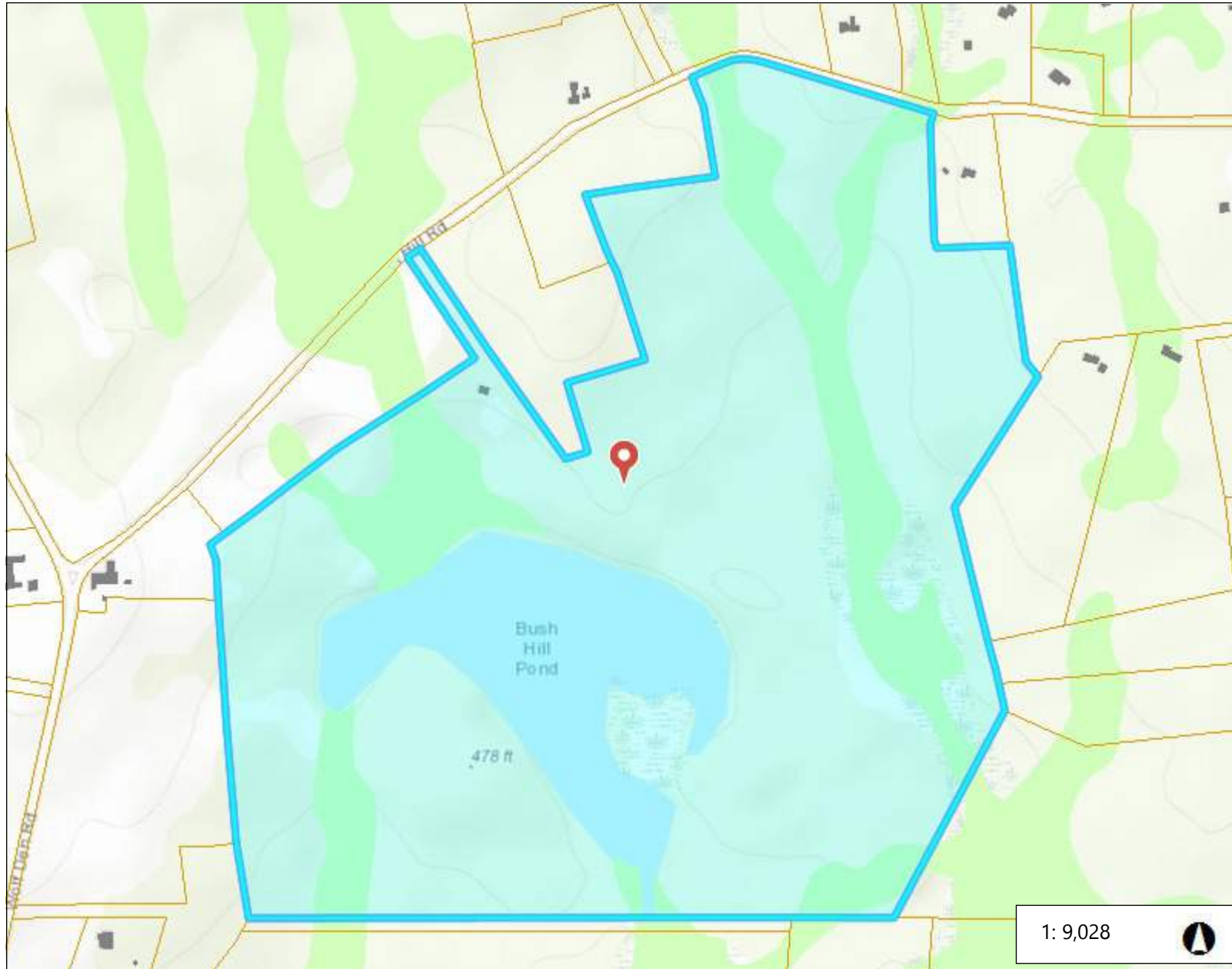




NOT TO SCALE







Legend

-  Town
-  Buildings 2012
-  Parcels
- Wetlands
 -  Alluvial and Floodplain Soils
 -  Poorly Drained and Very Poorly Drained Soils

1: 9,028



0.3 0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

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

Notes

Map 18 Lot 19

129 Creamery Brook Rd





INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date

Application #

Ink22-005

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT LONI DECELLES MAILING ADDRESS 143 SOUTH STREET, BROOKLYN, CT 06234
APPLICANT'S INTEREST IN PROPERTY OWNER PHONE 860 315 2625 EMAIL _____

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) PC SURVEY ASSOCIATES, LLC
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS 143 SOUTH STREET, BROOKLYN, CT 06234
MAP # 40 LOT # 88-11 ZONE RA TOTAL ACRES 3.22 ACRES OF WETLANDS ON PROPERTY 1.65

PURPOSE AND DESCRIPTION OF THE ACTIVITY CONSTRUCTION OF HORSE BARN WITHIN UPLAND REVIEW AREA,
CLEARING FOR HORSE TURN OUT WITHIN UPLAND REVIEW AREA
SELECTIVE CLEARING AND FENCING WITHIN WETLAND

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED N/A CUBIC YDS _____ SQ FT _____
EXCAVATION PROPOSED N/A CUBIC YDS _____ SQ FT _____
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE X OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT _____ ACRES 1

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): LOCATING BARN FURTHER TO THE SOUTH AND LIMITING TURNOUT AREA
TO OUTSIDE OF WETLAND WOULD LIMIT THE AREA FOR EXERCISING THE HORSES.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQFT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? NO IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? NO

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: [Signature] DATE 09/02/22

OWNER: [Signature] DATE 09/02/22

REQUIREMENTS

APPLICATION FEE \$ 150⁰⁰ STATE FEE (\$60.00) \$ 50 NOA

COMPLETION OF CT DEEP REPORTING FORM

ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

IF THE PROPOSED ACTIVITY IS DETERMINED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ADJUTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWVWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR MORE INFORMATION:

APPLICATOR: OFFICE OF CONNECTICUT DEEP
 WATERS/WATER RESOURCES DIVISION
 79 Elm St.
 HARTFORD, CT 06106
 1-860-476-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
 161 Windsor Road
 CONCORD, MA 01742
 1-850-343-4789

STAFF USE ONLY

EX-LABATORY BLINDING AND/OR RIGHT & NON-REGULATED USES (SEE IWVWC REGULATIONS SECTION 4)

PERMIT REQUIRED:

AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

CHAIR, BROOKLYN IWVWC

WETLANDS OFFICER

AUTHORIZED BY IWVWC

SIGNIFICANT ACTIVITY/PUBLIC HEARING

NO PERMIT REQUIRED

OUTSIDE OF UPLAND REVIEW AREA

NO IMPACT

CHAIR, BROOKLYN IWVWC

WETLANDS OFFICER

TIMBER HARVEST



CONSTRUCTION MANAGEMENT

March 24, 2003

Principal, Surveying & Mapping
CME/CPK

Principal, Surveying & Mapping
CME/CPK

GROUP DIRECTORS

Architecture

Principal, Architecture

Environmental Science
Senior Environmental Scientist

Hydrology &
Water Resources
Senior Hydrologist

Principal
Environmental Biologist
Senior Environmental Scientist

Structural Engineering
Senior Structural Engineer

Senior
Civil Engineer

Transportation
Senior Transportation Engineer
Civil

Charles Normandin, L.S.
PC Survey Associates, LLC
154 S. Main Street
Danielson, CT 06239

RE: CME/CPK Project No.: 2003072 Property on South Street, Brooklyn (Assessor's Lot 111), West of Brooklyn Country Club

Dear Mr. Normandin:

Ian Cole, CPSS, of our office delineated the wetlands at the above referenced site last week. The wetlands are located along the west side of a perennial stream that runs from north to south along the east side of the subject property to the Quinebaug River. The wetlands are wooded, and the soils within the wetlands are poorly drained and very poorly drained, and occur at the interface of glacial till soils and glacial outwash soils.

Consecutively numbered flags (1 through 40) represent the wetland limits as marked in the field.

Please feel free to contact Ian or myself if you have any questions.

Sincerely,

Michael G. Schaefer, CPSS
Director of Environmental Sciences



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street - 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
- ACTION TAKEN (enter one code letter): _____
- WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

- TOWN IN WHICH THE ACTION IS OCCURRING (type name): BROOKLYN
Does this project cross municipal boundaries (check one)? Yes _____ No X
If Yes, list the other town(s) in which the action is occurring (type name(s)): _____
- LOCATION (see directions for website information): USGS Quad Map Name: DANIELSON or Quad Number: 43
Subregional Drainage Basin Number: 3700
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): LONI DECELLES
- NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 143 SOUTH STREET, BROOKLYN, CT
Briefly describe the action/project/activity (check and type information): Temporary _____ Permanent X
Description: CONSTRUCTION OF BARN AND HORSE TURNOUT AREA
- ACTIVITY PURPOSE CODE (enter one code letter): G
- ACTIVITY TYPE CODE(S) (enter up to four code numbers): 1 2 3 12
- WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 0.25 acres Open Water Body: 0 acres Stream: 0 linear feet
- UPLAND AREA ALTERED (type in acres as indicated): 0.75 acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

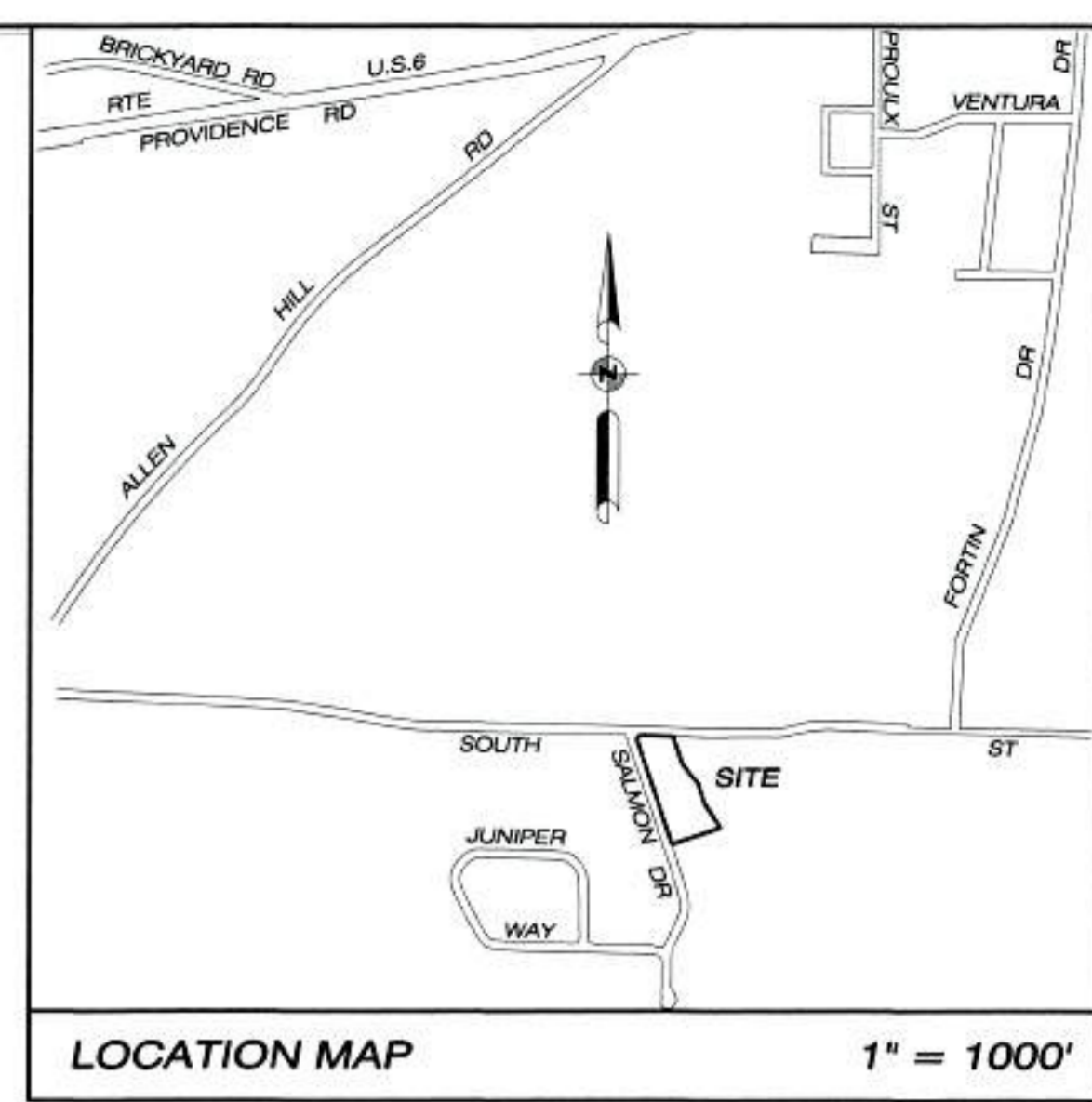
DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

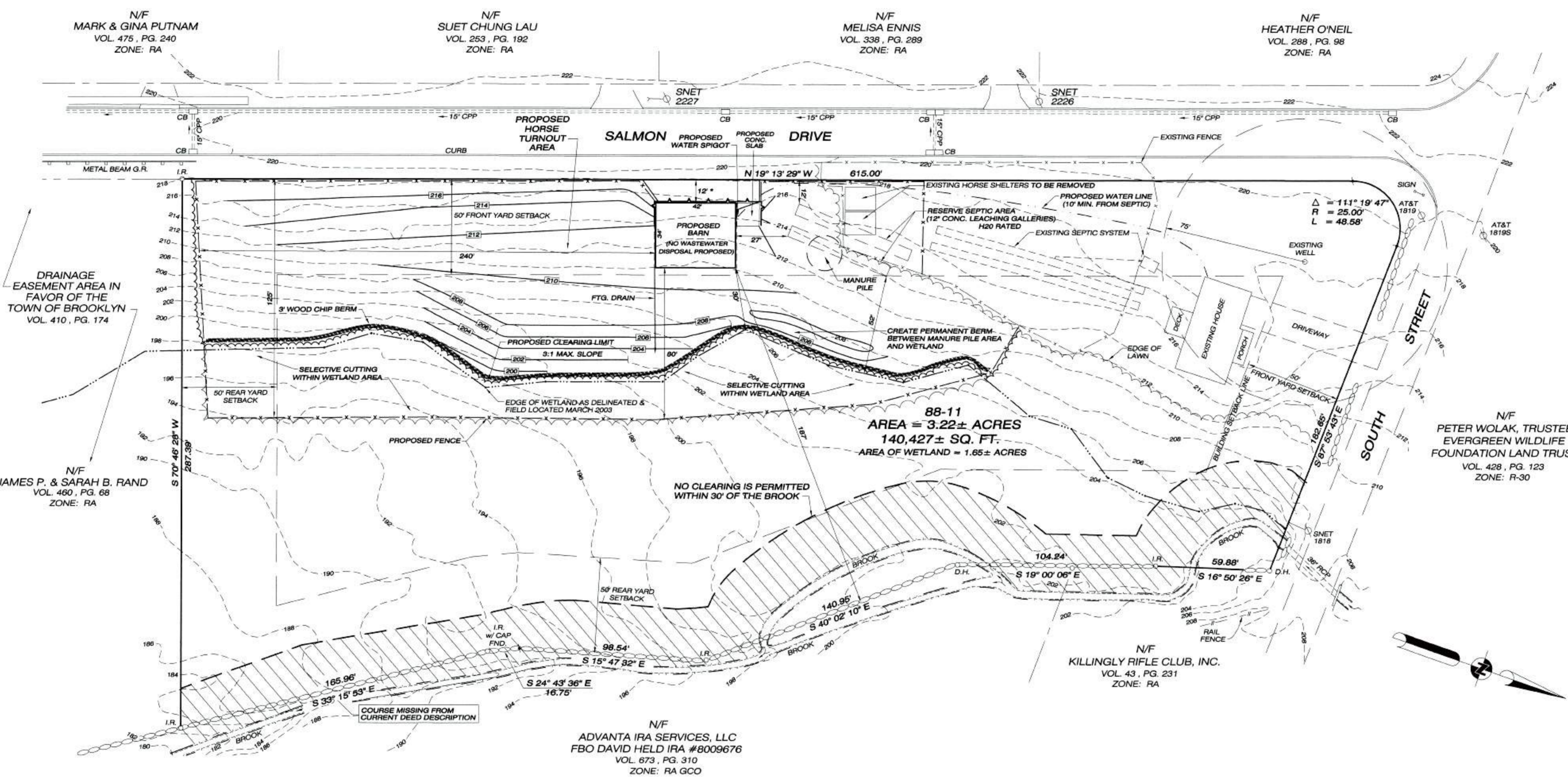
FORM CORRECTED / COMPLETED: YES NO

ZONE: RA	REQUIRED	EXISTING	PROPOSED
AREA	2 ACRES	3.22± ACRES	3.22± ACRES
FRONTAGE	150'	881'±	881'±
FRONT SETBACK	50'	50.3'	N/A
SIDE SETBACK	40'	N/A	N/A
REAR SETBACK	50'	>500'	160'
ACCESSORY BUILDING SETBACK	25' (SIDE/REAR) 50' (FRONT)	N/A	187'± 12' *

* INDICATES VARIANCE GRANTED



LOCATION MAP 1" = 1000'



- NOTES:
- THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - 'STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT', AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A ZONING LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS 'A2'. TOPOGRAPHIC FEATURES DEPICTED WERE TAKEN FROM NOAA LIDAR DATA AND CONFORM TO TOPOGRAPHIC ACCURACY CLASS '1-D'. CONTOUR INTERVAL = 2 FEET. VERTICAL DATUM = APPROX. NAVD88. THE PURPOSE OF THIS MAP AND SURVEY IS FOR USE IN THE PERMITTING PROCESS FOR A PROPOSED BARN.
 - REFERENCE MAPS:
 - SUBDIVISION MAP PREPARED FOR DONNA L. SALMON - SOUTH STREET, BROOKLYN, CT. - SCALE: 1"=20' - DATE: MARCH 2003 - SHEET 2 OF 2 - BY: PC SURVEY ASSOCIATES, LLC - REVISED 4/29/03
 - IMPROVEMENT LOCATION SURVEY - AS-BUILT SURVEY OF SALMON DRIVE PREPARED FOR BELMONT HOMES, LLC - SOUTH STREET & SALMON DRIVE, BROOKLYN, CONNECTICUT - SCALE: 1"=40' - DATE: SEPT. 2007 - SHEET 1 OF 1 - PC SURVEY ASSOCIATES, LLC
 - SUBJECT PROPERTY IS SHOWN AS MAP 40, LOT 88-11 OF THE BROOKLYN ASSESSOR'S RECORDS.
 - REFERENCE DEED: VOL. 687, PG. 105 OF THE BROOKLYN LAND RECORDS.
 - VARIANCE TO BARN SETBACK REQUIREMENT WAS APPROVED BY THE BROOKLYN ZONING BOARD OF APPEALS ON SEPTEMBER 1, 2022.

DRAINAGE EASEMENT AREA IN FAVOR OF THE TOWN OF BROOKLYN VOL. 410, PG. 174

N/F JAMES P. & SARAH B. RAND VOL. 460, PG. 68 ZONE: RA

N/F PETER WOLAK, TRUSTEE EVERGREEN WILDLIFE FOUNDATION LAND TRUST VOL. 428, PG. 123 ZONE: R-30

N/F KILLINGLY RIFLE CLUB, INC. VOL. 43, PG. 231 ZONE: RA

N/F ADVANTA IRA SERVICES, LLC FBO DAVID HELD IRA #8009676 VOL. 673, PG. 310 ZONE: RA GCO



- LEGEND
- STONE WALL
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EROSION CONTROL BARRIER

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

Paul A. Terwilliger
PAUL A. TERWILLIGER, L.S. NO. 70155
DATE: 9/2/2022

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE EMBOSSED SEAL OF THE LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

ZONING LOCATION SURVEY		
PLAN SHOWING PROPOSED BARN PREPARED FOR LONI A. DECELLES		
143 SOUTH STREET		83 SNAKE MEADOW RD KILLINGLY, CT 06239 860 774 6230 email: pcsurvey@snct.net
BROOKLYN, CONNECTICUT		
DATE: AUGUST 2022	SHEET NO: 1 OF 1	REVISED: 9/2/2022
SCALE: 1" = 30'		
JOB NO: 220XX	F.B. NO: 229	DRAWN BY: P.A.T. MAP NO:

TOWN OF BROOKLYN

Inland Wetlands Budget FY23

From Date: 8/1/2022

To Date: 8/31/2022

Fiscal Year: 2022 - 2023

Account Number	Description	Adj. Budget	Current	YTD	Balance	Encumbrance	Budget Bal	%Bud
1005.41.4163.51900	Inland Wetlands-Wages-Recording Secretary	\$1,200.00	\$0.00	\$0.00	\$1,200.00	\$0.00	\$1,200.00	100.00%
1005.41.4163.53020	Inland Wetlands-Legal Fees	\$3,500.00	\$0.00	\$0.00	\$3,500.00	\$0.00	\$3,500.00	100.00%
1005.41.4163.53200	Inland Wetlands-Professional Affiliations	\$65.00	\$0.00	\$0.00	\$65.00	\$0.00	\$65.00	100.00%
1005.41.4163.53400	Inland Wetlands-Professional Services	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55400	Inland Wetlands-Advertising & Legal Notices	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55500	Inland Wetlands-Printing & Publications	\$120.00	\$0.00	\$0.00	\$120.00	\$0.00	\$120.00	100.00%
Grand Total:		\$5,885.00	\$0.00	\$0.00	\$5,885.00	\$0.00	\$5,885.00	100.00%

End of Report