

## **Gabriel E. Senior, P.C.**

**Engineers Planners Surveyors**

90 N Central Park Avenue

Hartsdale, NY 10530

Tel: (914) 422-0070

E-Mail: Eliot@gesenor.com



### **MEMORANDUM**

**TO:** Town of North Castle  
**FROM:** Eliot Senior P.E. L.S.  
**SUBJECT:** 1 Guion Lane  
**DATE:** August 7, 2023

#### **GENERAL COMMENTS**

1. The proposed pool patio is within the yard setback. The plan needs to be corrected or a variance obtained from the Town Zoning Board of Appeals.

***Plans indicate correct setback requirements for pool and patio setbacks.***

2. A driveway profile is provided on Sheet SW-4. The profile should provide the K Value at each vertical curve and the applicant should explain the design volume he is trying to obtain for the curves. Vertical curve at Station 4 + 70 ± appears to provide limited sight line over the crest. A much larger vertical curve seems appropriate.

***Vertical curve has been made larger to provide better sight line distance over curve.***

3. The applicant needs to provide additional detail with respect to grading and drainage around the residence, pool patio and rear patio. It is extremely difficult to read the plans. Therefore, in an effort to avoid mistakes, please improve the legibility of the proposed contours, spot grades and stormwater piping.

***Plan has been increased in scale and adjusted to make more readable***

4. Please confirm the proposed stormwater treatment system provides adequate setbacks to off-site septic and wells.

***All setbacks have been achieved and are shown.***

5. Please provide spot grades within the auto court outside the garage. The grading should be coordinated with the driveway profile. The location of the drain on the driveway profile

appears different than the location on the plan. Please also provide dimensions of the auto court onto the plans.

***Grading and spot elevations are shown. Dimensions have also been added.***

6. It is extremely important that overflow discharge from the proposed infiltration system will not impact adjacent neighboring properties. Please detail the discharge, energy dissipators, flow spreaders, etc., required to mitigate the discharge.

***Both systems are designed for 100 year storm. Rear yard system has an insignificant amount (0.09 cfs) which will be handled by a level spreader. Sediment dike to be installed during construction.***

7. Please explain where the infiltration basin detail shown on Sheet D-1 is proposed on the drainage plan.

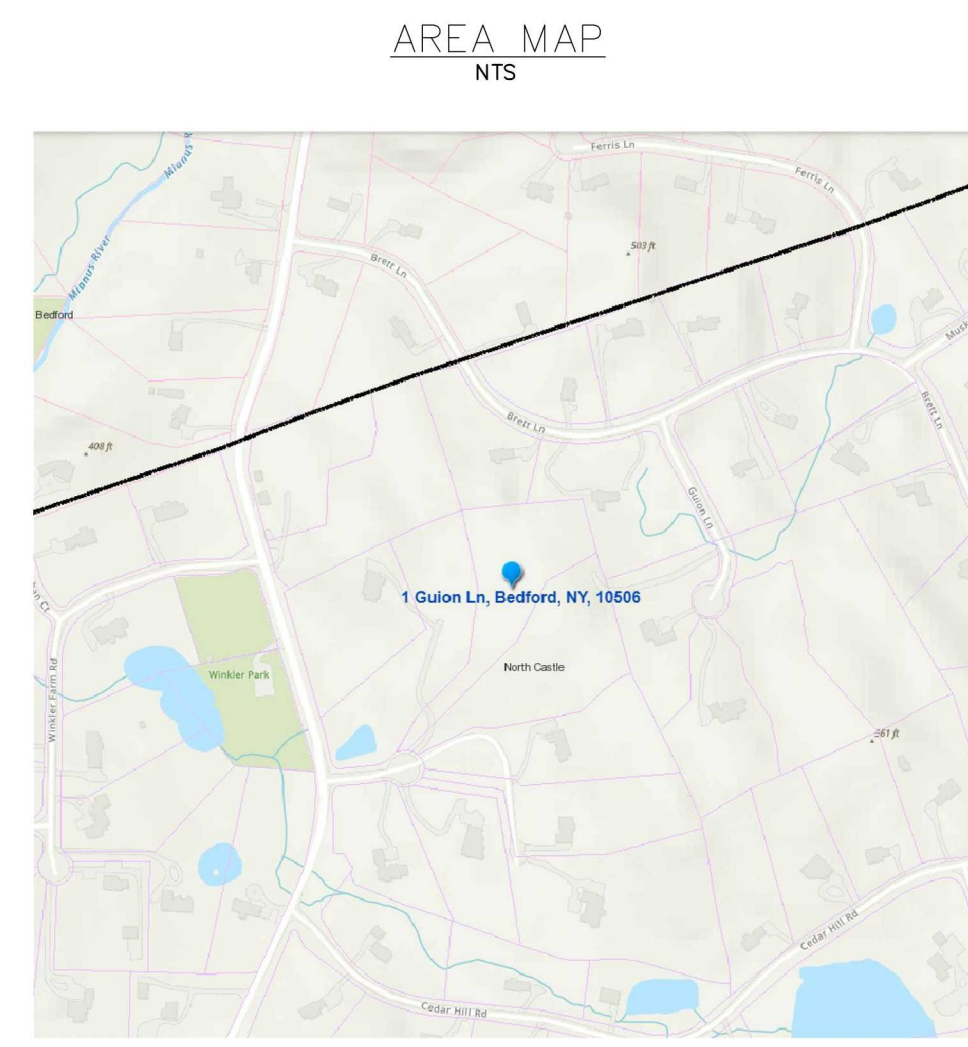
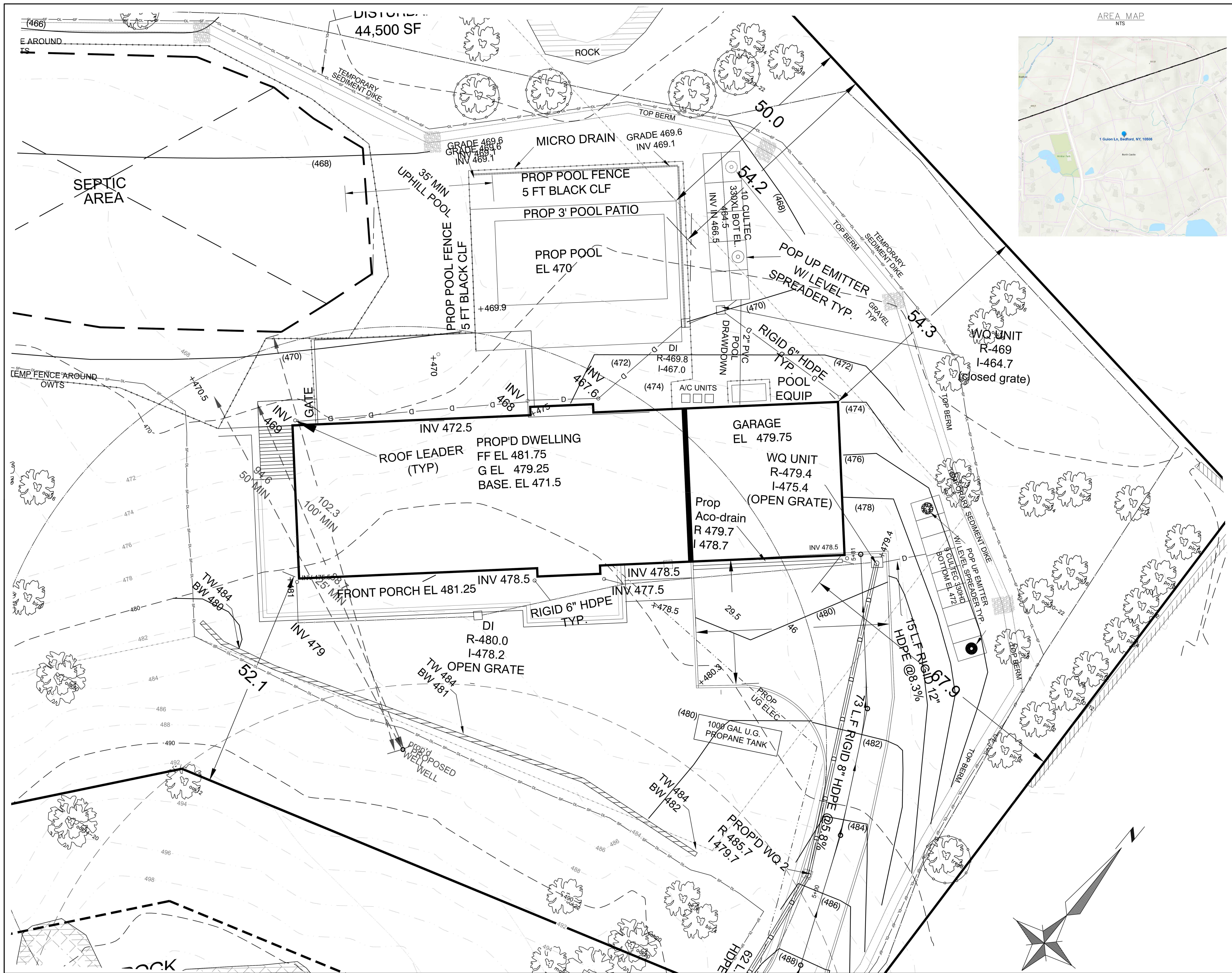
***Detail removed.***

8. Please confirm separation to impervious soil layer on the Cultec cross sections. Also, provide inverts for the inlets and overflow, as well as accurate existing and finished grades. It appears the Cultec system in front of the house is proposed within fill.

***Cross section revised for proper depiction. Deep multiple test pits have been done on site. For septic investigation. No evidence of groundwater or rock has been found.***

9. The applicant will need to prepare a Stormwater Pollution Prevention Plan (SWPPP) for the project. The SWPPP will need to comply with the New York State Stormwater Regulations and address water quantity, as well as mitigation of the 100-year storm event.

***Notice of intent to be filed prior to building permit. Currently meets all requirements***



PROJECT NO: R026976

ZONING DISTRICT: R-2A  
 FIRE DISTRICT: BANKSVILLE FIRE DEPARTMENT  
 SCHOOL DISTRICT: BYRAM HILLS SCHOOL DISTRICT  
 WATERSHED: INLAND LONG ISLAND SOUND BASIN

1 GUION LANE - S/B/L 95.01/2/10.3 - ZONING TABLE		
	Permitted (FT)	Proposed
Zone: R-2A	87,120	125,645.3
Lot Area (SF)	87,120	125,645.3
Net Lot Area (SF)	150	N/A
Street Frontage (DRIVEWAY EASEMENT)	150	252
Lot Width	150	252
Lot Depth	150	400
Front Yard	50	85.6
Side Yard	30	67.4
Rear Yard	50	696.1
Building Height	30	30
Max Building Coverage (%)	8%	2.7%
Max Driveway Gradient (%)	14%	14.0%
Max Gross Land Coverage	16515.4	10741

PROPERTY IS AT THE DEAD END OF GUION LANE

- LEGEND**
- UTILITY POLE
  - SIGN POST
  - HYDRANT
  - WATER VALVE
  - GAS VALVE
  - GUY WIRES
  - TELE. MANHOLE
  - SILT FENCE / AREA OF DISTURBANCE & CHAIN LINK FENCE (AS REQ'D BY MUNICIPALITY)
  - SEWER MANHOLE
  - WATER MANHOLE
  - ELECTRIC MANHOLE
  - DRAIN MANHOLE
  - MANHOLE
  - ELECTRIC BOX
  - EXISTING GRADE (102)
  - PROPOSED GRADE
  - 14 TREE
  - TREE TO BE REMOVED
  - PERC TEST
  - TEST PIT

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED: \_\_\_\_\_

DATE: \_\_\_\_\_  
 CHRISTOPHER CARTHY, CHAIRMAN  
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION: \_\_\_\_\_

DATE: \_\_\_\_\_  
 JOSEPH M. CERMELE, P.E.  
 KELLARD SESSIONS CONSULTING  
 CONSULTING TOWN ENGINEERS

**SITE PLAN ENLARGED**

OWNER: Bedford Single Family LLC  
 373 Saw Mill River Rd.  
 Millwood, NY 10546

PROPERTY ADDRESS: 1 GUION LANE  
 BEDFORD, NY 10506


TAX MAP #: Sec. 95.01 Block 2 Lot No. 10.3

LOCATED IN THE TOWN OF NORTH CASTLE WESTCHESTER COUNTY, NEW YORK

Map is filed in the Westchester County Clerk's office, Division of Land Records, on May 16, 2022 as P.O. Map number 26976.

**GABRIEL E. SENOR, P.C.**  
 CONSULTING ENGINEER • LAND SURVEYORS  
 90 NORTH CENTRAL PARK AVE., HARTSDALE, NEW YORK, 10530  
 (914) 422-0070 FAX 422-3009

1	AUG 7, 2023	SGA
REVISED 02/21/2022 COMMENTS PER RESOLUTION		
REVISIONS		
UNAUTHORIZED ALTERATION OR ADDITIONS TO THIS MAP IS A VIOLATION OF SECTION 7209 SUB-SECTION 2, OF THE NEW YORK STATE EDUCATION LAW.		



SCALE: 1"=20'

DATE: MAY 18, 2023

DRAWN BY: GC  
CHECKED BY: ES

DWG NO. SW-1

PROPERTY IS AT THE DEAD END OF GUION LANE

**LEGEND**

○ UTILITY POLE	⊙ SEWER MANHOLE
⊙ SIGN POST	⊙ WATER MANHOLE
⊙ HYDRANT	⊙ ELECTRIC MANHOLE
⊙ WATER VALVE	⊙ DRAIN MANHOLE
⊙ GAS VALVE	⊙ MANHOLE
⊙ LIGHT POLE	⊙ ELECTRIC BOX
⊙ GUY WIRES	--- 102 --- EXISTING GRADE (102)
⊙ TELE. MANHOLE	--- PROPOSED GRADE
SF --- SF --- SF --- SILT FENCE / AREA OF DISTURBANCE & CHAIN LINK FENCE (AS REQ'D BY MUNICIPALITY)	⊙ 14 TREE SIZE TREE TO BE REMOVED
PT PERC TEST	
TP TEST PIT	
--- 484 --- EXIST CONTOUR	
--- (484) --- PROP CONTOUR	

ZONING DISTRICT: R-2A  
 FIRE DISTRICT: BANKSVILLE FIRE DEPARTMENT  
 SCHOOL DISTRICT: BYRAM HILLS SCHOOL DISTRICT  
 WATERSHED: INLAND LONG ISLAND SOUND BASIN

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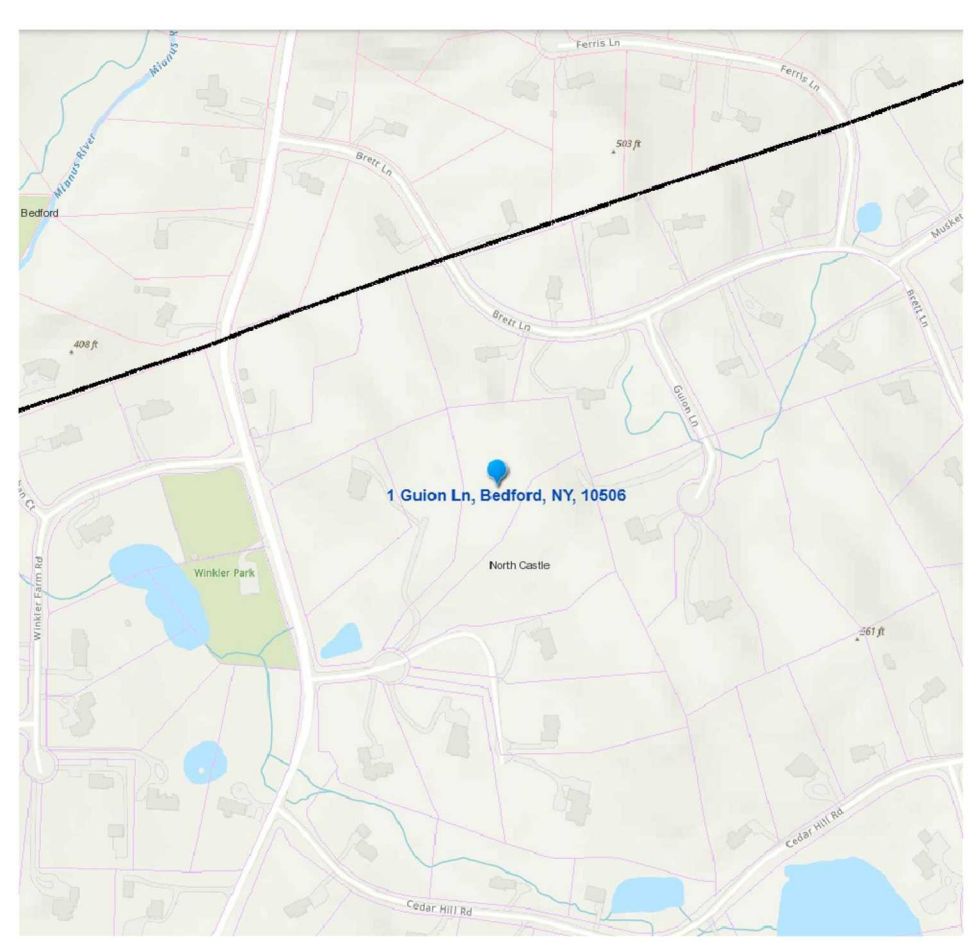
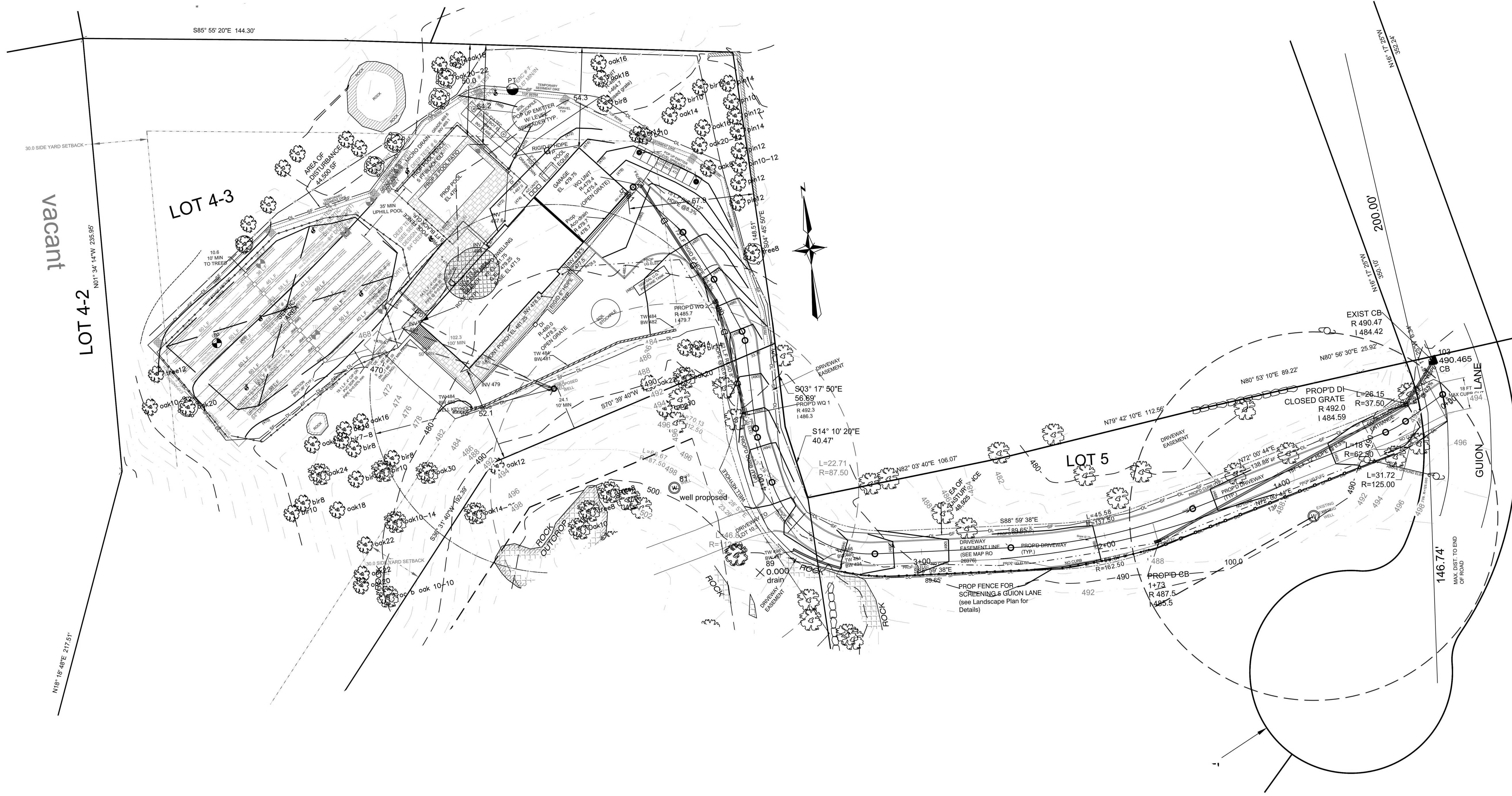
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1 AUG 7, 2023 SGA

REVISIONS  
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SCALE: 1"=40'  
 DATE: MAY 18, 2023  
 DRAWN BY: GC CHECKED BY: ES  
 DWG NO.: SW-2





- LEGEND**
- UTILITY POLE
  - SIGN POST
  - ⊕ HYDRANT
  - ⊕ WATER VALVE
  - ⊕ GAS VALVE
  - ⊕ LIGHT POLE
  - ⊕ GUY WIRES
  - ⊕ TELE. MANHOLE
  - ⊕ SEWER MANHOLE
  - ⊕ WATER MANHOLE
  - ⊕ ELECTRIC MANHOLE
  - ⊕ DRAIN MANHOLE
  - ⊕ MANHOLE
  - ⊕ ELECTRIC BOX
  - 102 --- EXISTING GRADE
  - (102) --- PROPOSED GRADE
  - ⊕ 14 TREE SIZE
  - ⊕ TREE TO BE REMOVED
- PERC TEST  $\frac{PT}{\circ}$
- TEST PIT  $\frac{TP}{\circ}$
- 484 --- EXIST CONTOUR
- (484) --- PROP CONTOUR

PROPERTY IS AT THE DEAD END OF GUION LANE

**\*\*SEE SHEET SEP-1 FOR EXISTING CONDITIONS AND TREE REMOVALS AND SHEET SEP-3 FOR A VIEW OF THE ENTIRE PROPERTY AND PROPOSED DRIVEWAY\*\***

ZONING DISTRICT: R-2A  
 FIRE DISTRICT: BANKSVILLE FIRE DEPARTMENT  
 SCHOOL DISTRICT: BYRAM HILLS SCHOOL DISTRICT  
 WATERSHED: INLAND LONG ISLAND SOUND BASIN

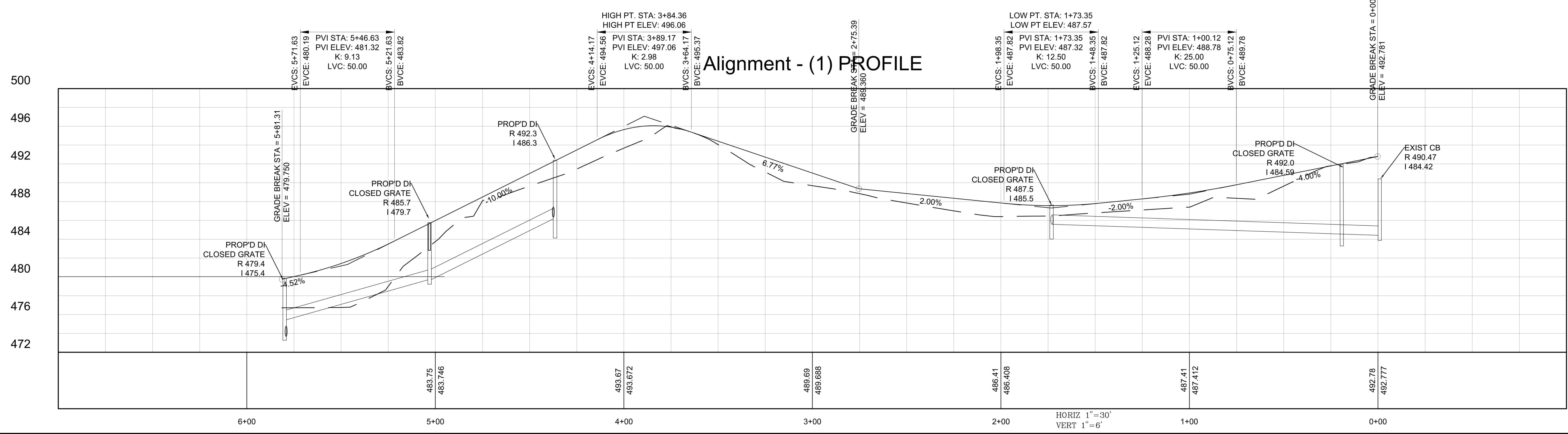
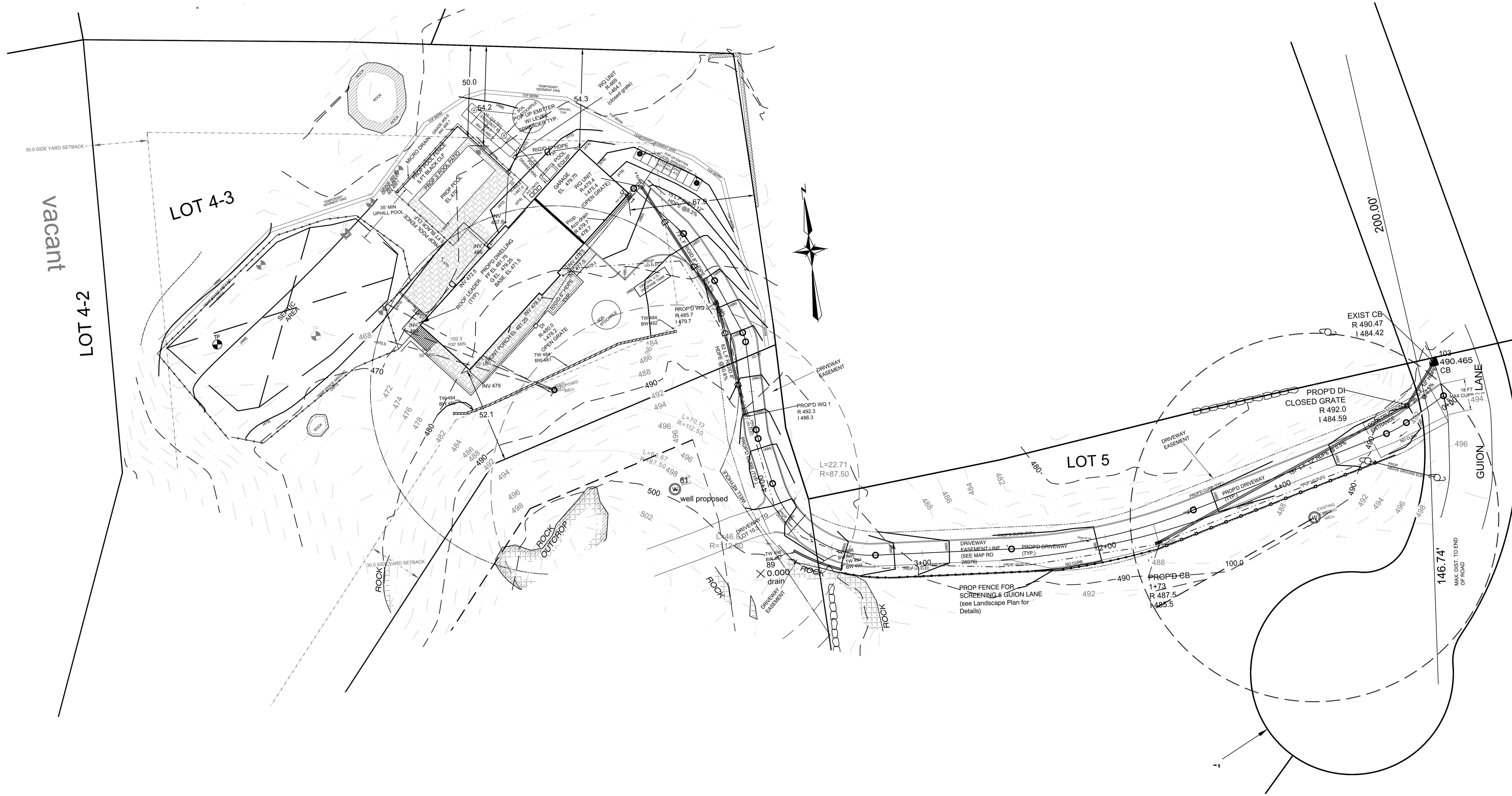
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ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION: \_\_\_\_\_ DATE: \_\_\_\_\_

JOSEPH M. CERMELE, P.E.  
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 CONSULTING TOWN ENGINEERS

NO	DATE	DESC	BY
1	AUG 7, 2023	SGA	



**DRIVEWAY GRADING  
 DRIVEWAY PROFILE  
 DRIVEWAY SIGHT DISTANCE**

PROPERTY ADDRESS: 1 GUION LANE  
 BEDFORD, NY 10506

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 CONSULTING ENGINEER & LAND SURVEYORS  
 90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
 • (914) 422-0070 FAX 422-3009

SCALE: 1" = 30'

DATE: MAY 18, 2023

DRAWN BY: GC. CHECKED BY: ES.

SW-4

PROJECT NO R026976

PROPERTY IS AT THE DEAD END OF GUION LANE

- LEGEND**
- UTILITY POLE
  - SIGN POST
  - HYDRANT
  - WATER VALVE
  - GAS VALVE
  - LIGHT POLE
  - GUY WIRES
  - TELE. MANHOLE
  - SILT FENCE / AREA OF DISTURBANCE & CHAIN LINK FENCE (AS REQ'D BY MUNICIPALITY)
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**EXISTING CONDITIONS TREE REMOVALS PLANTING**  
 OWNER: Bedford Single Family LLC  
 373 Saw Mill River Rd.  
 Millwood, NY 10546

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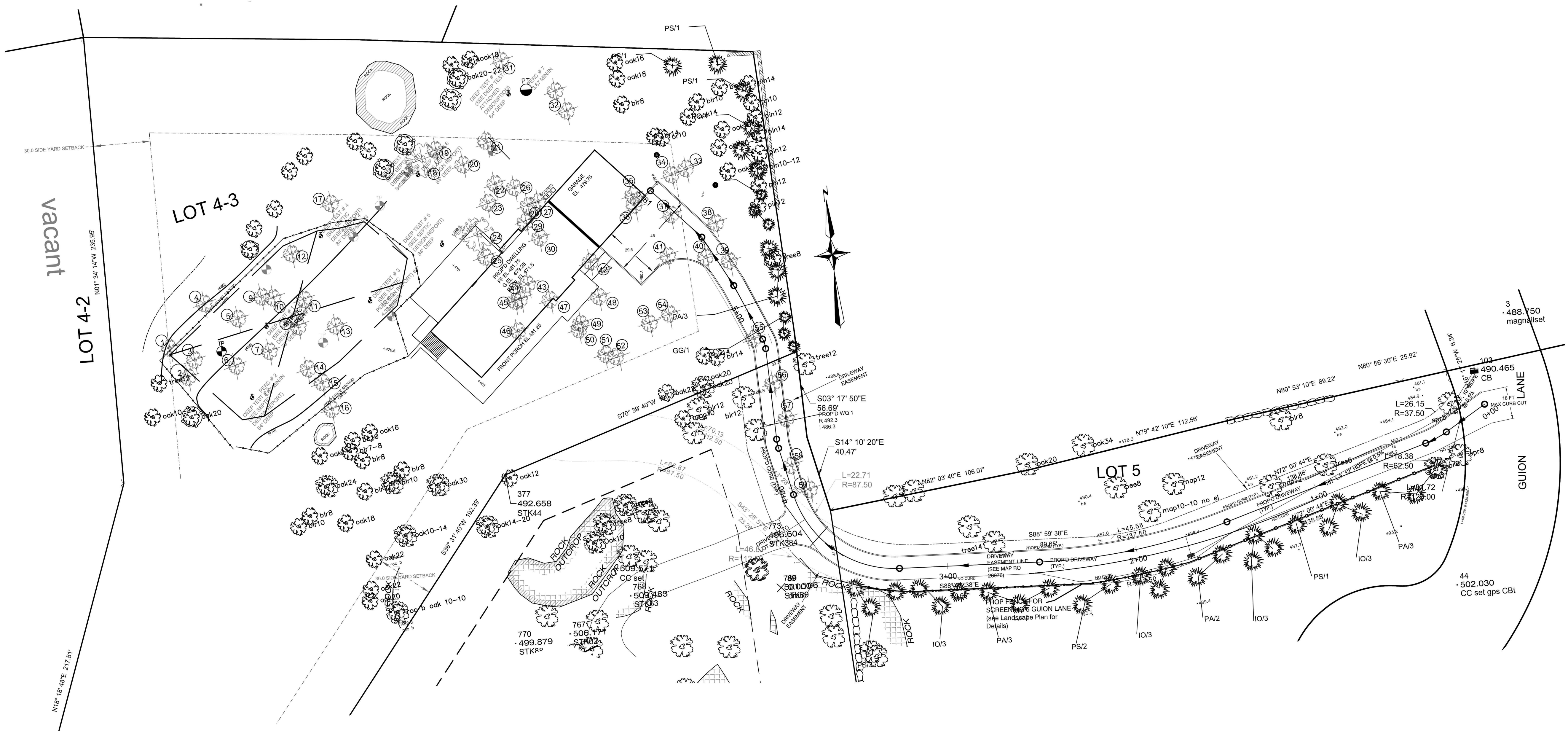


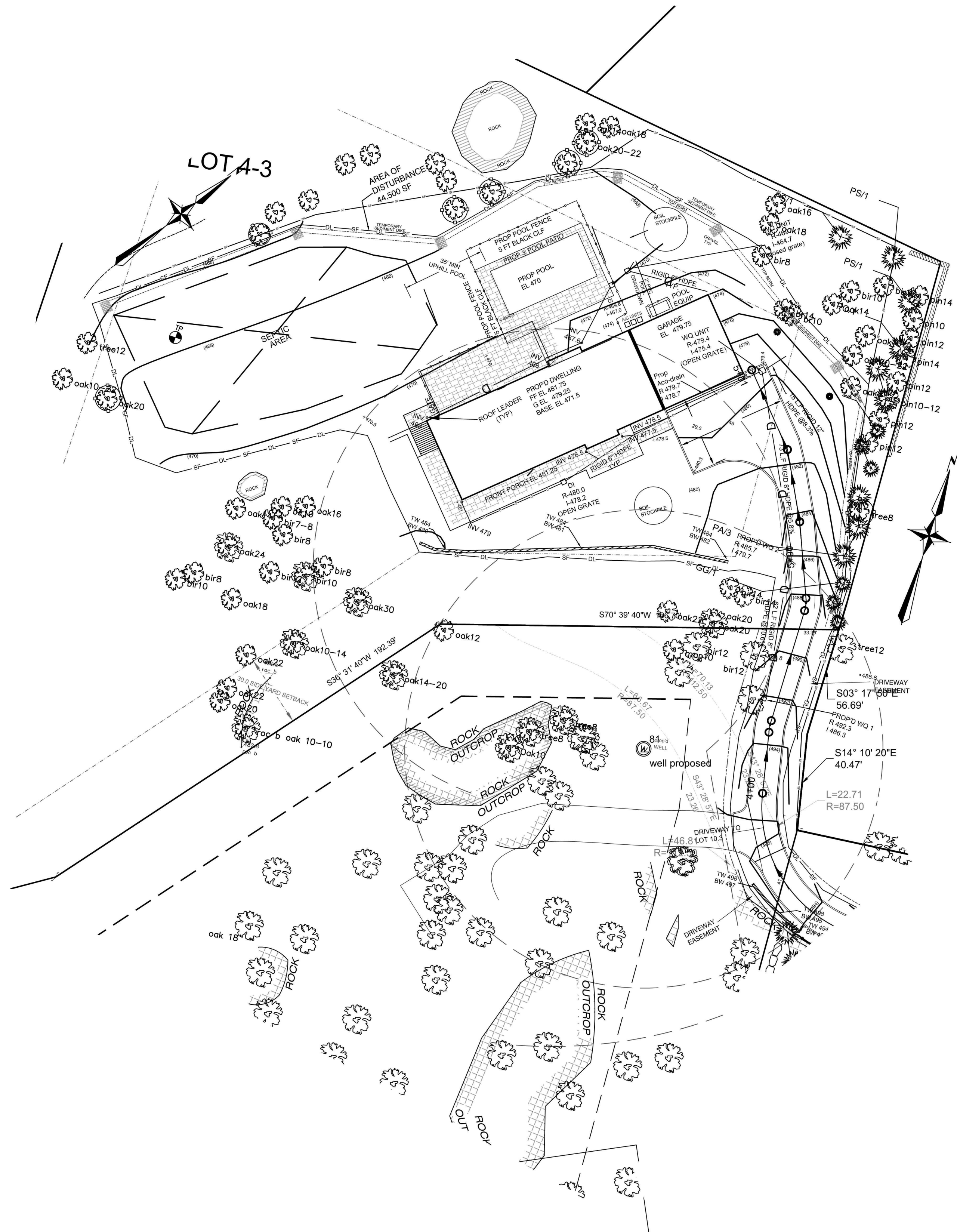
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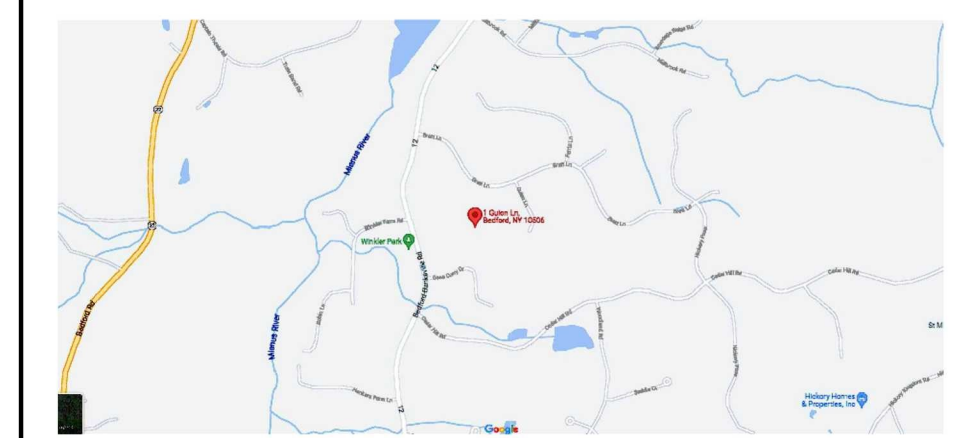
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PROJECT NO R026976

AREA MAP  
NTS



ZONING DISTRICT: R-2A  
 FIRE DISTRICT: BANKSVILLE FIRE  
 DEPARTMENT  
 SCHOOL DISTRICT: BYRAM HILLS SCHOOL DISTRICT  
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 SOUND BASIN

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 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION: \_\_\_\_\_ DATE: \_\_\_\_\_  
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TEMPORARY EROSION CONTROL

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 Millwood, NY 10546


PROPERTY ADDRESS: 1 GUION LANE  
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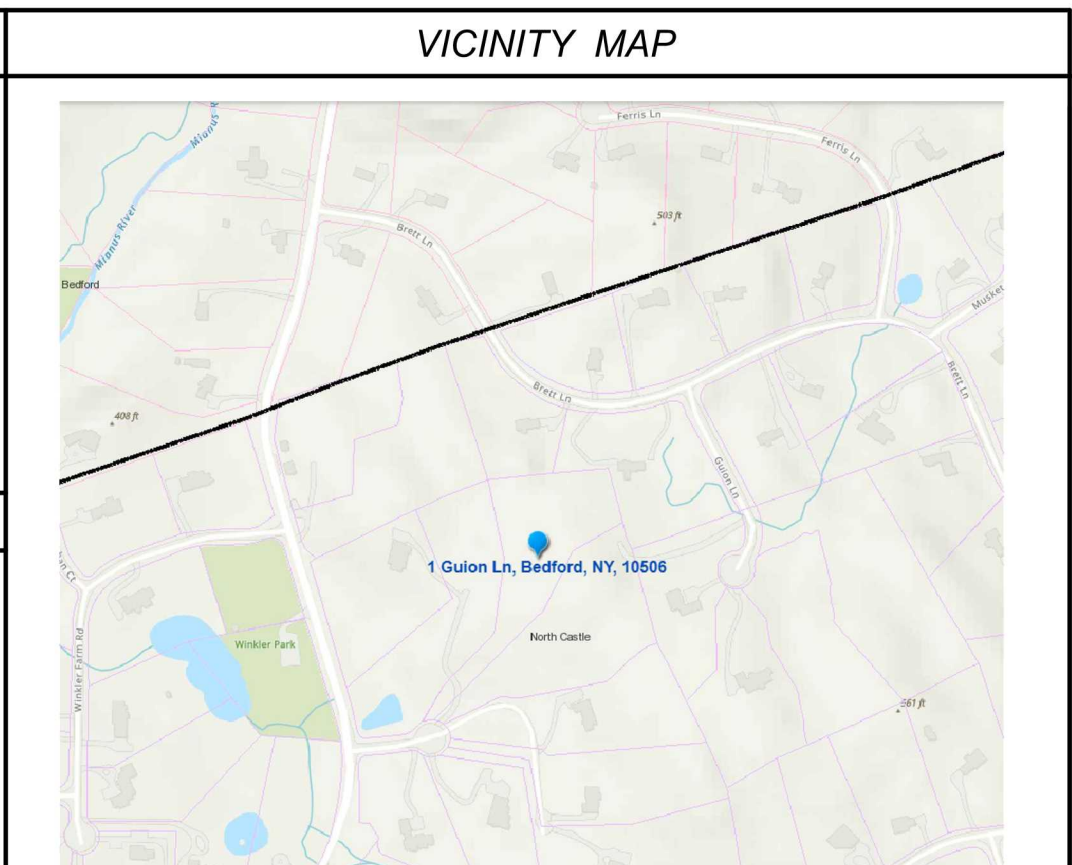
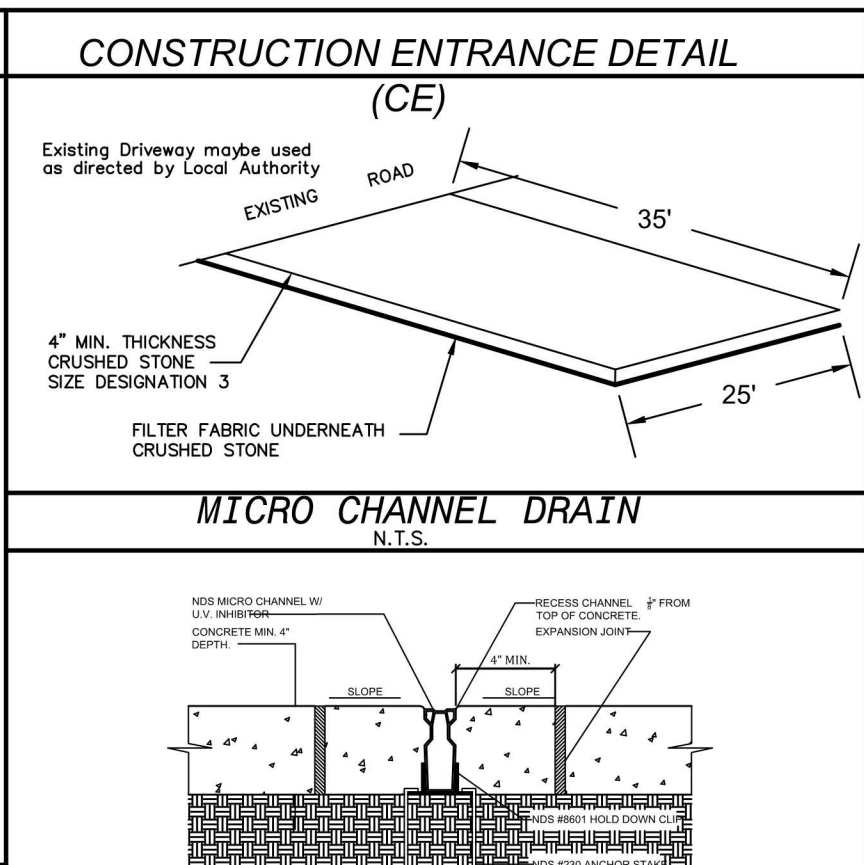
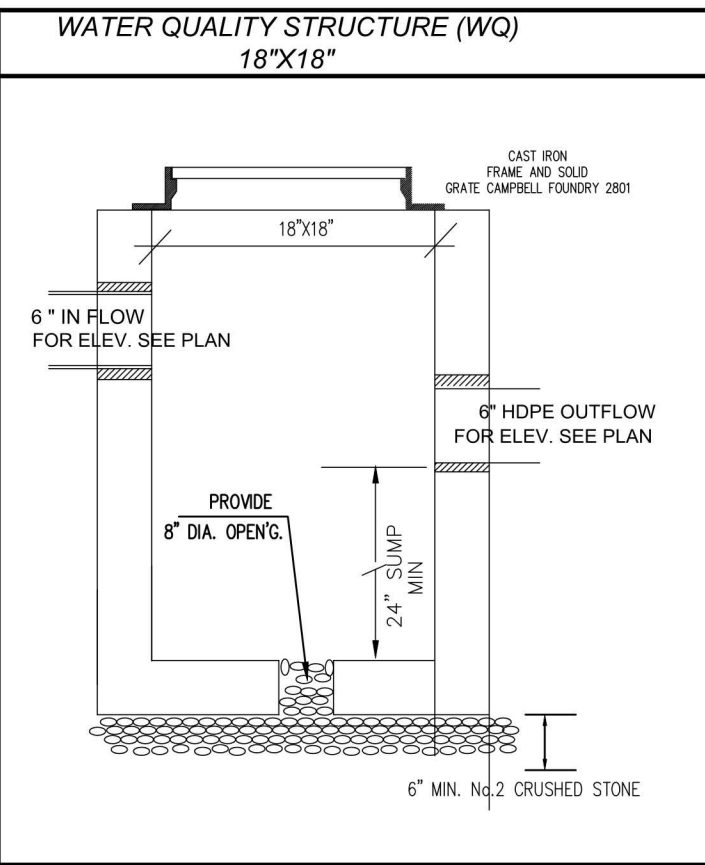
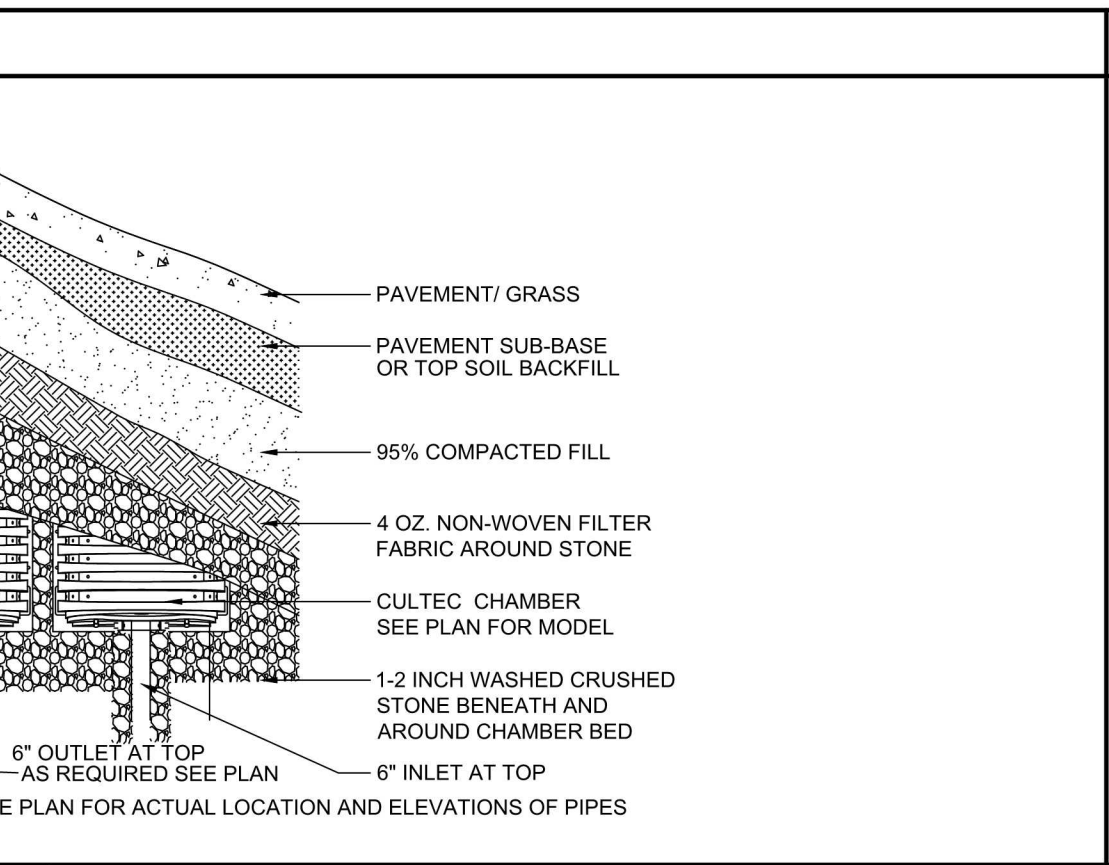
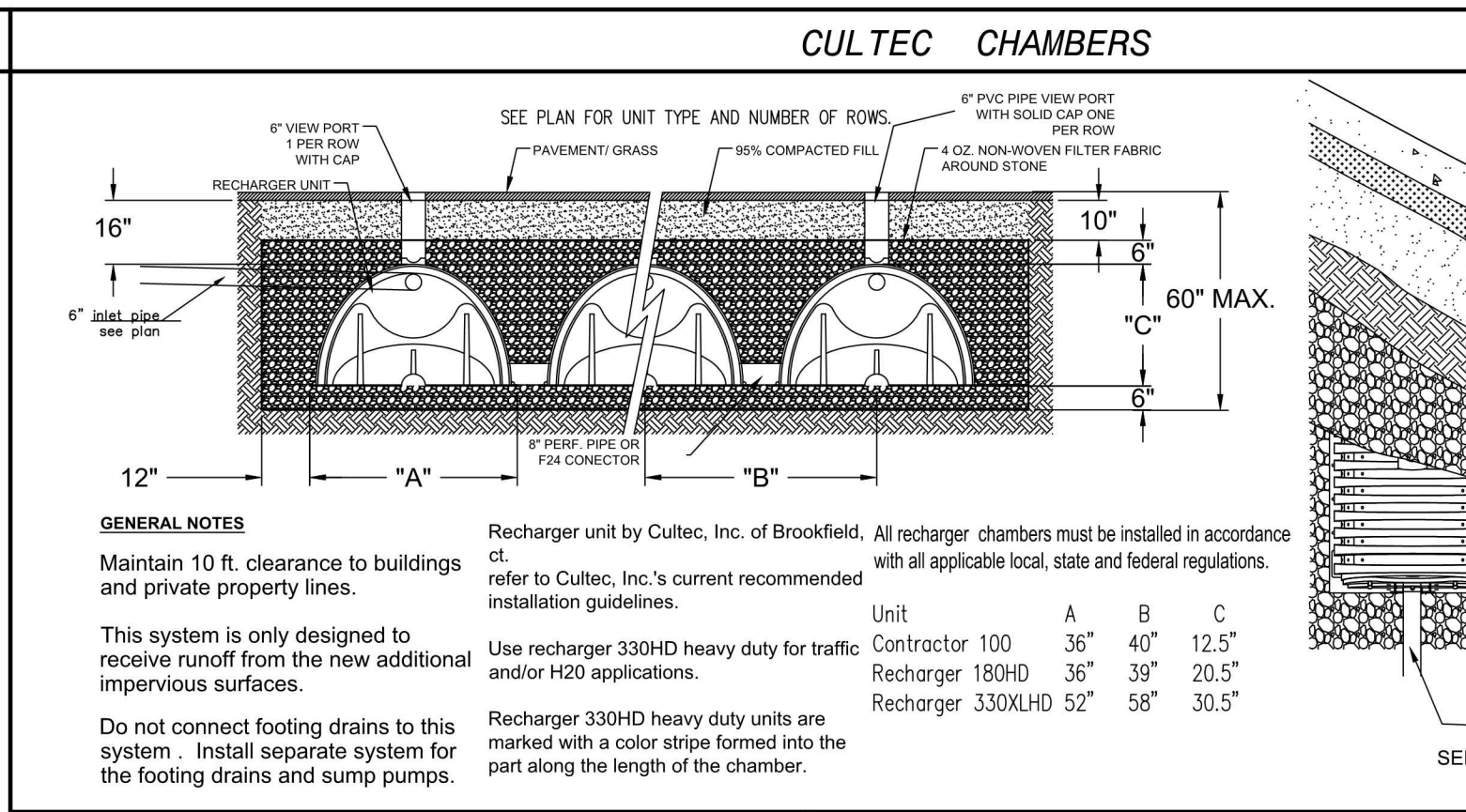
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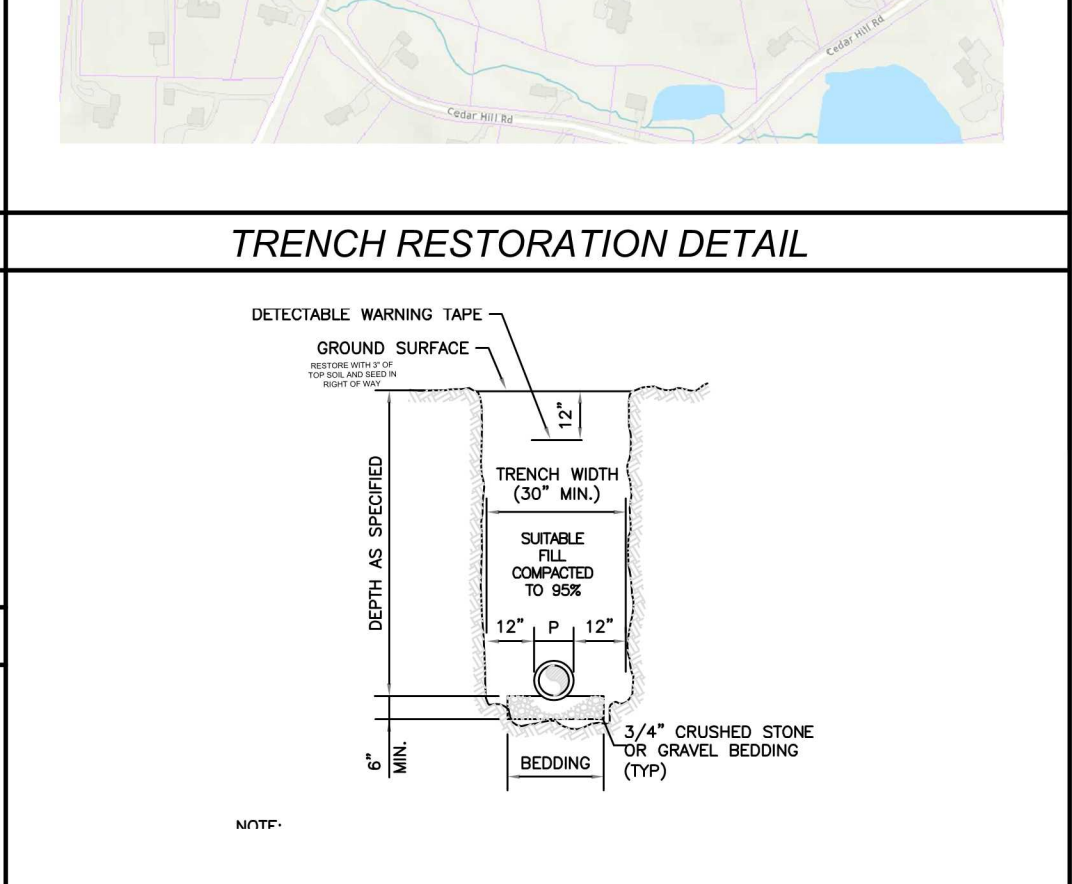
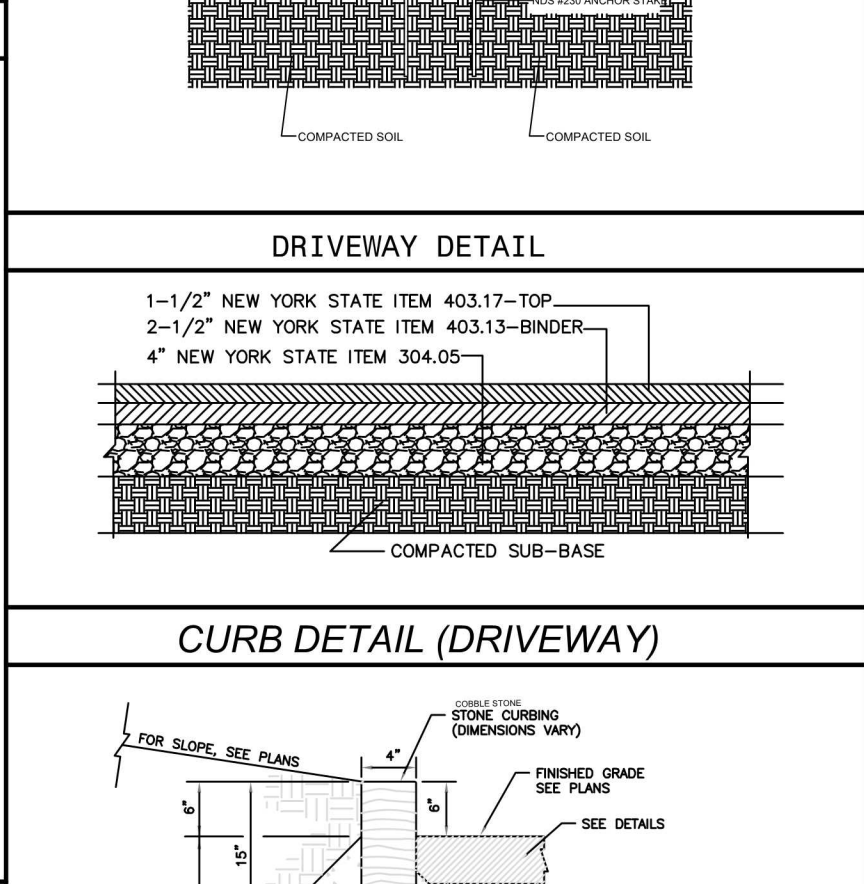
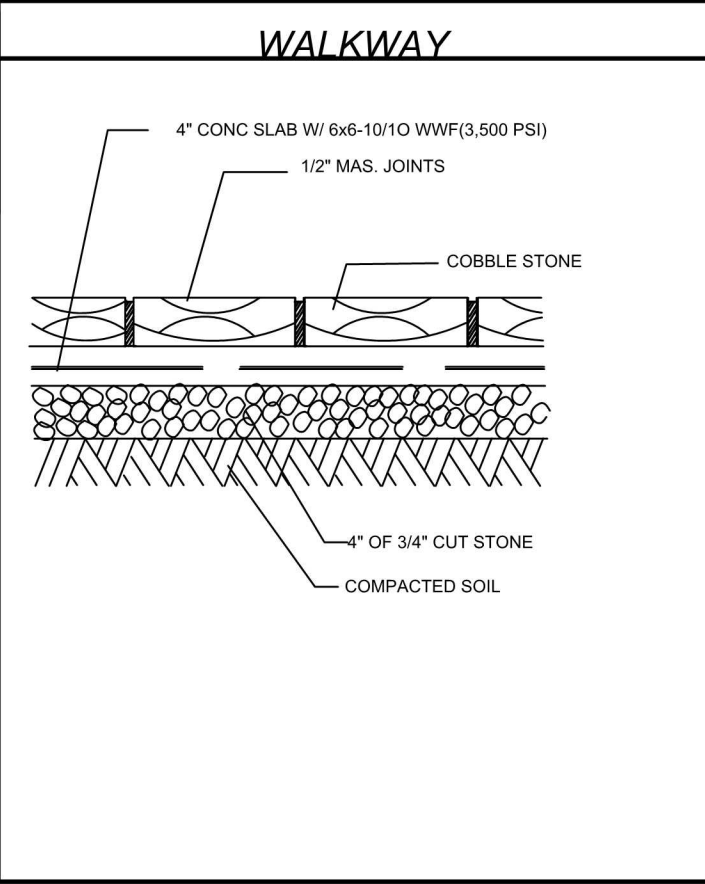
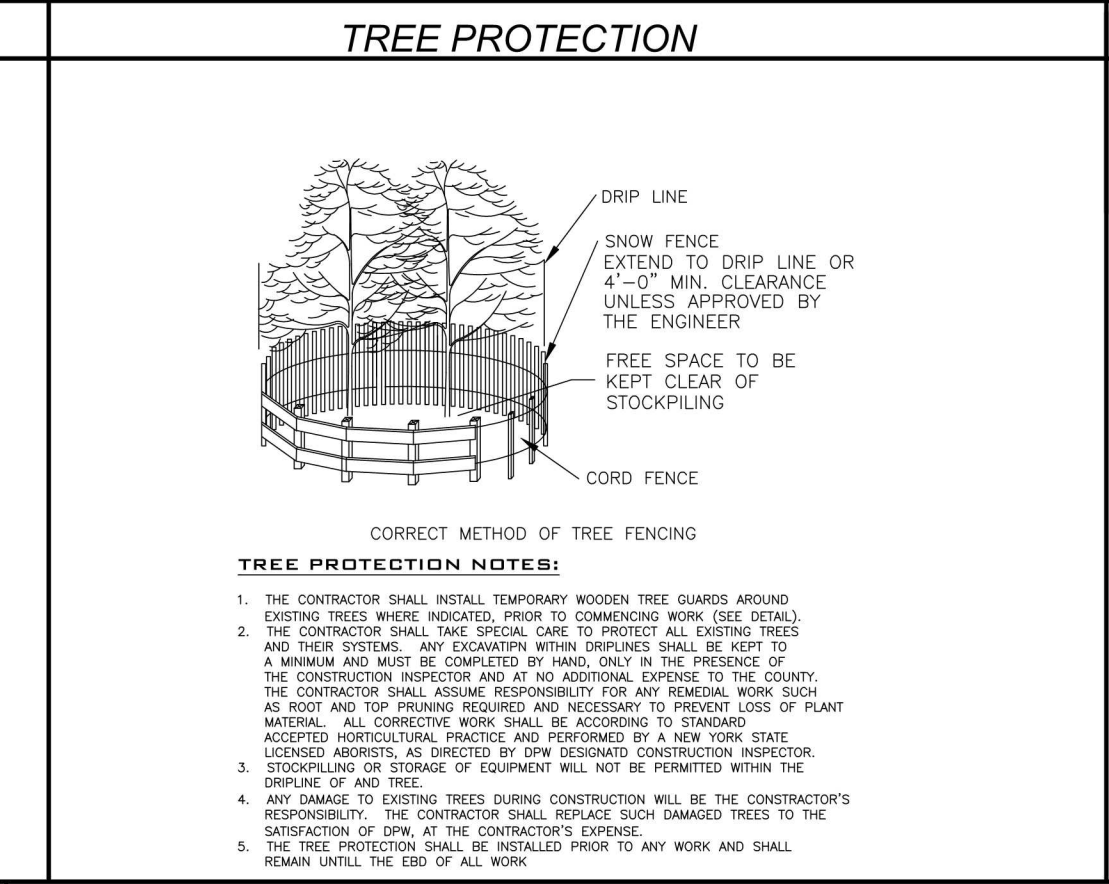
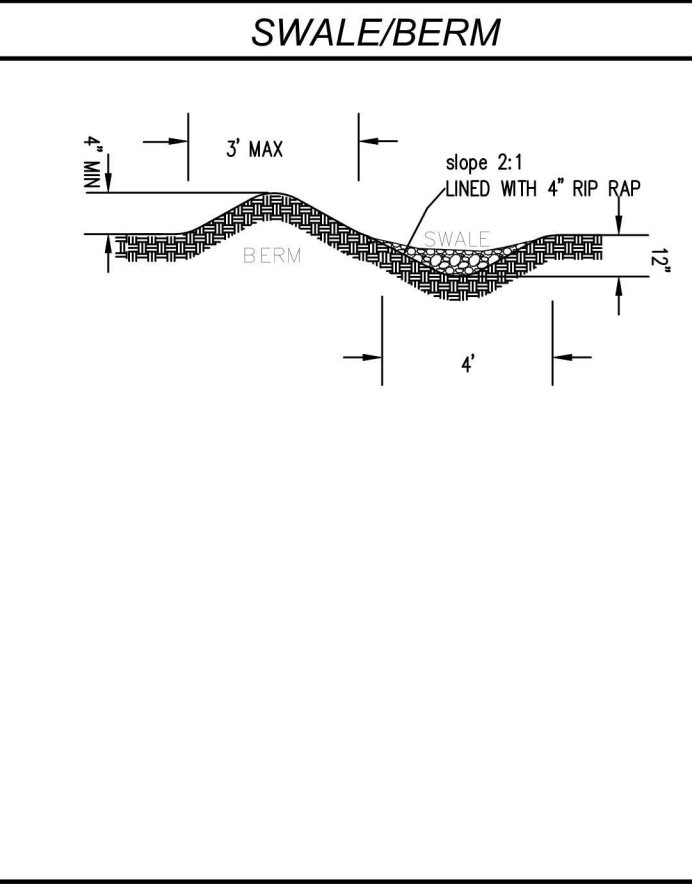
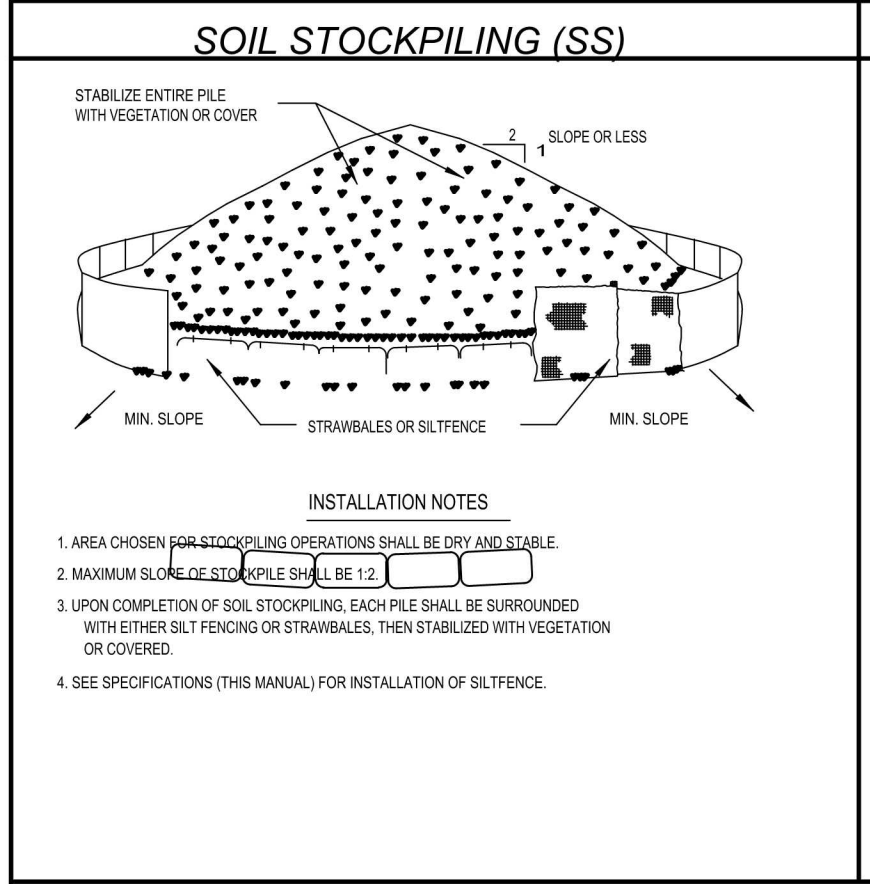
DWG NO. IB-1



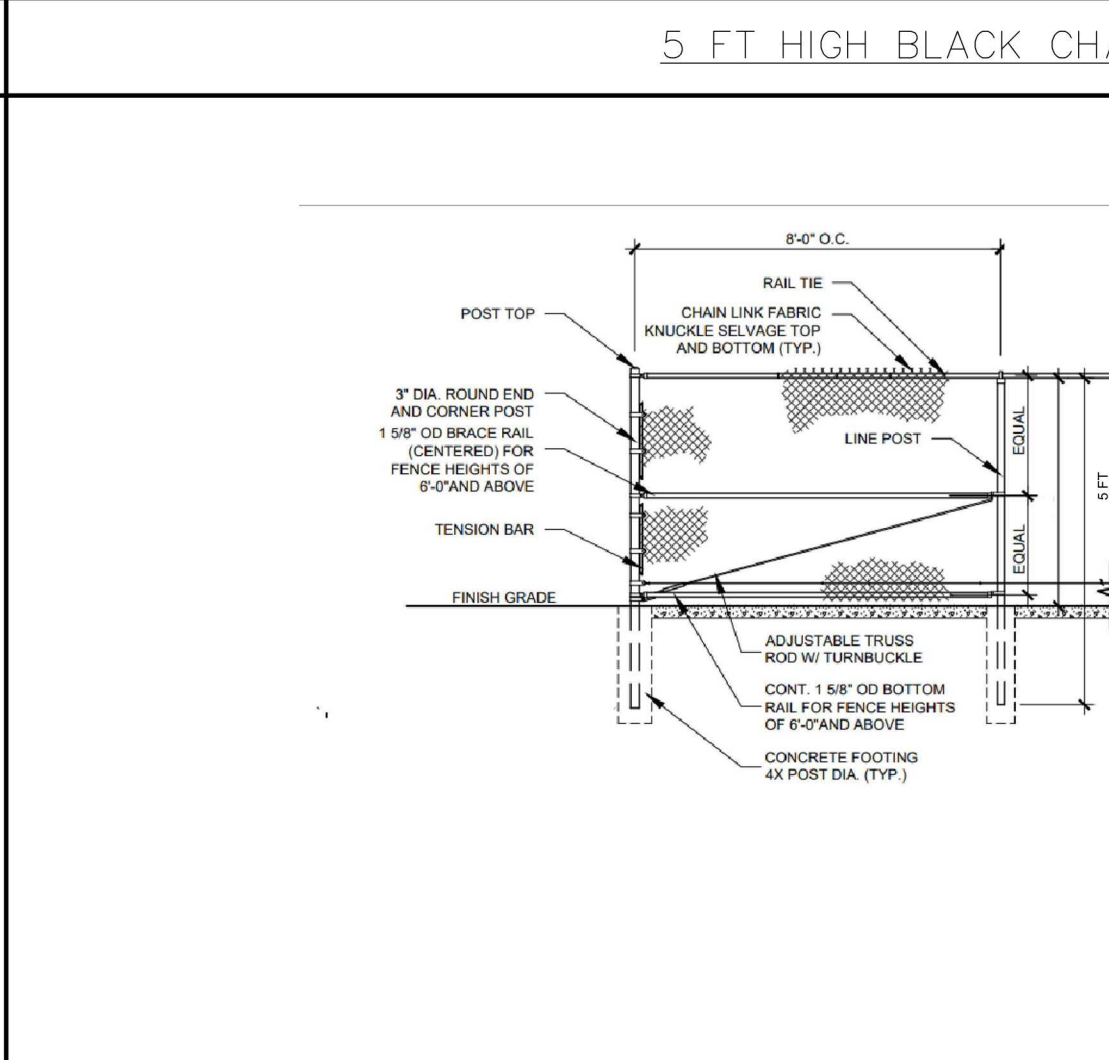
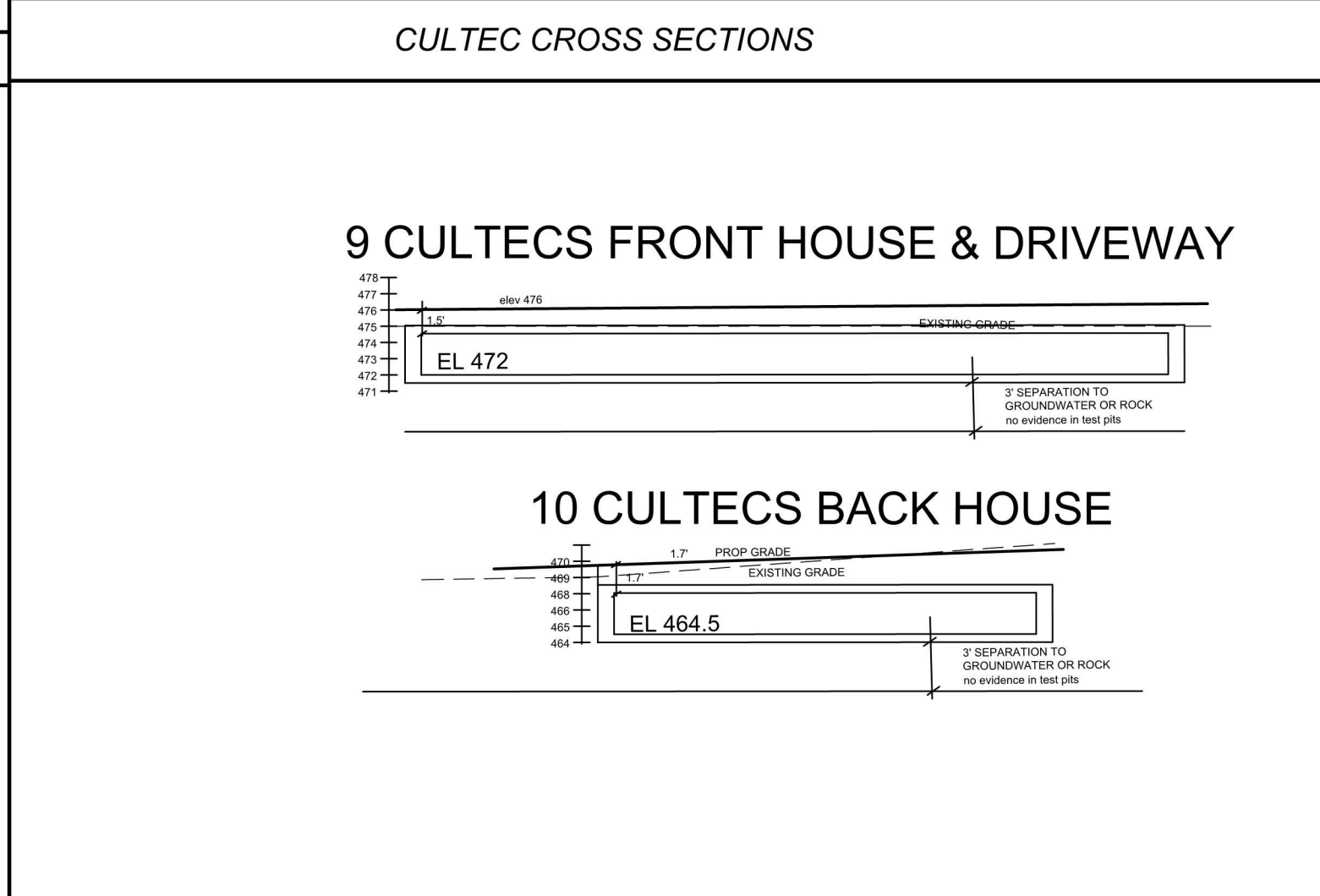
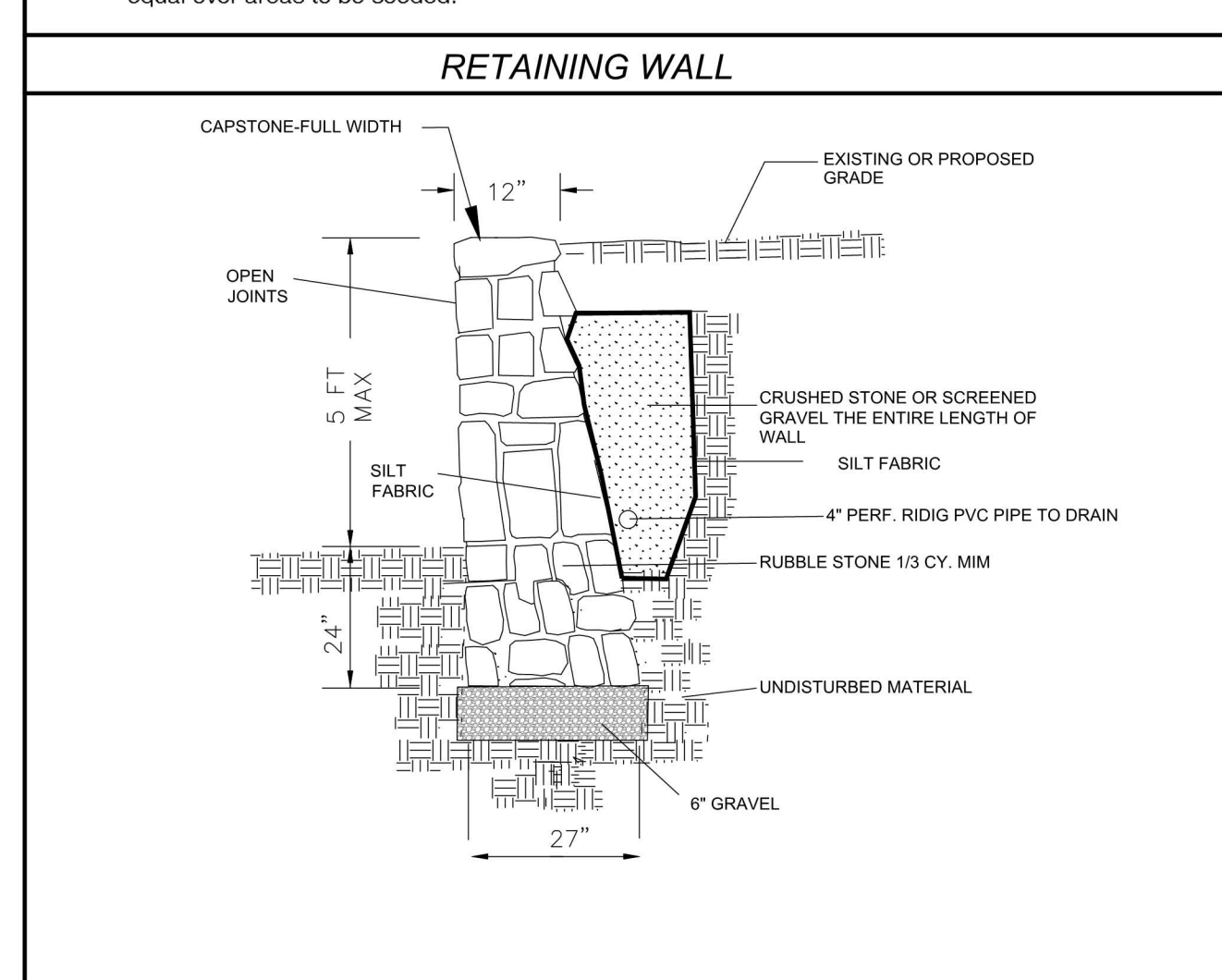
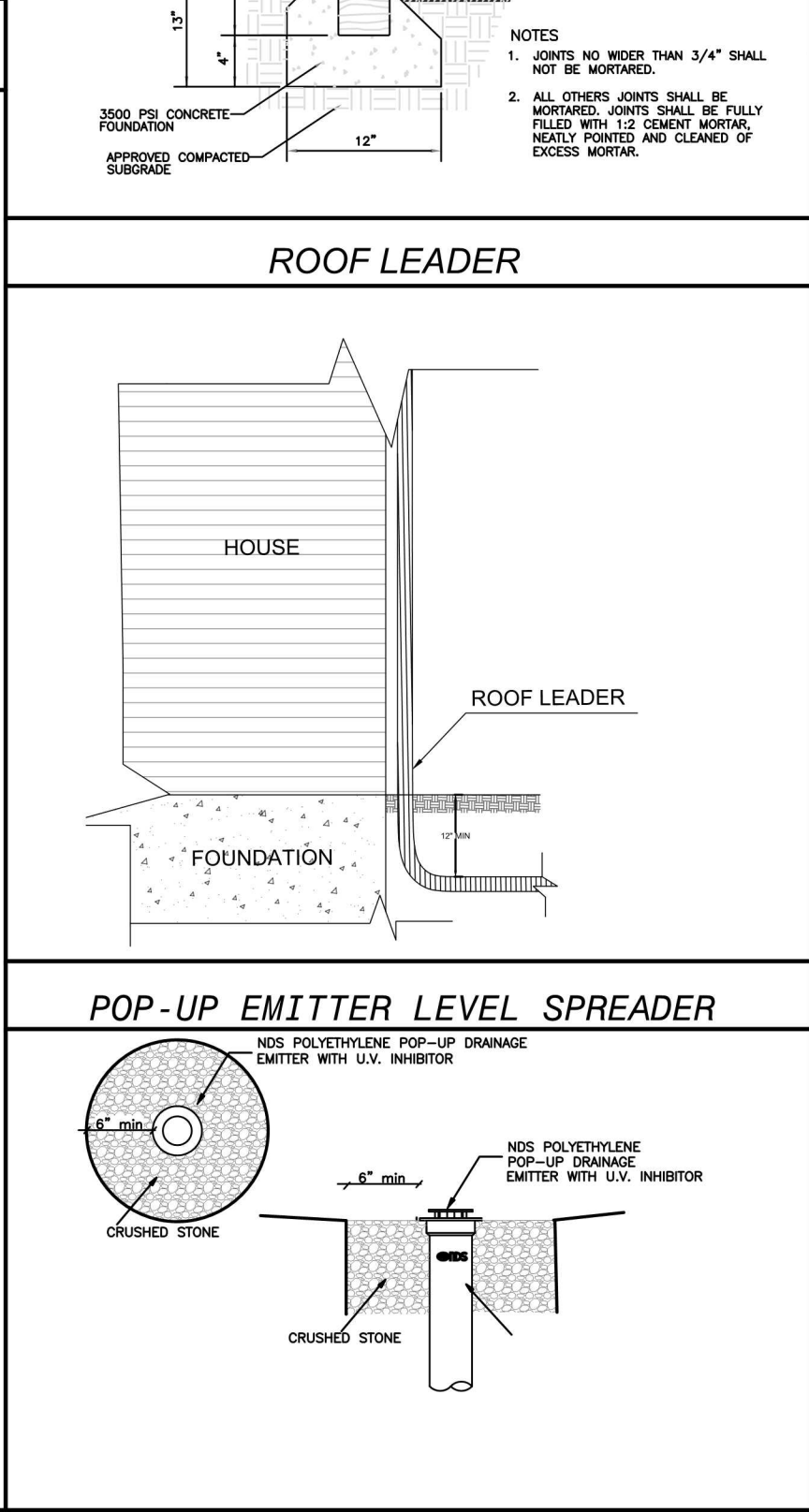
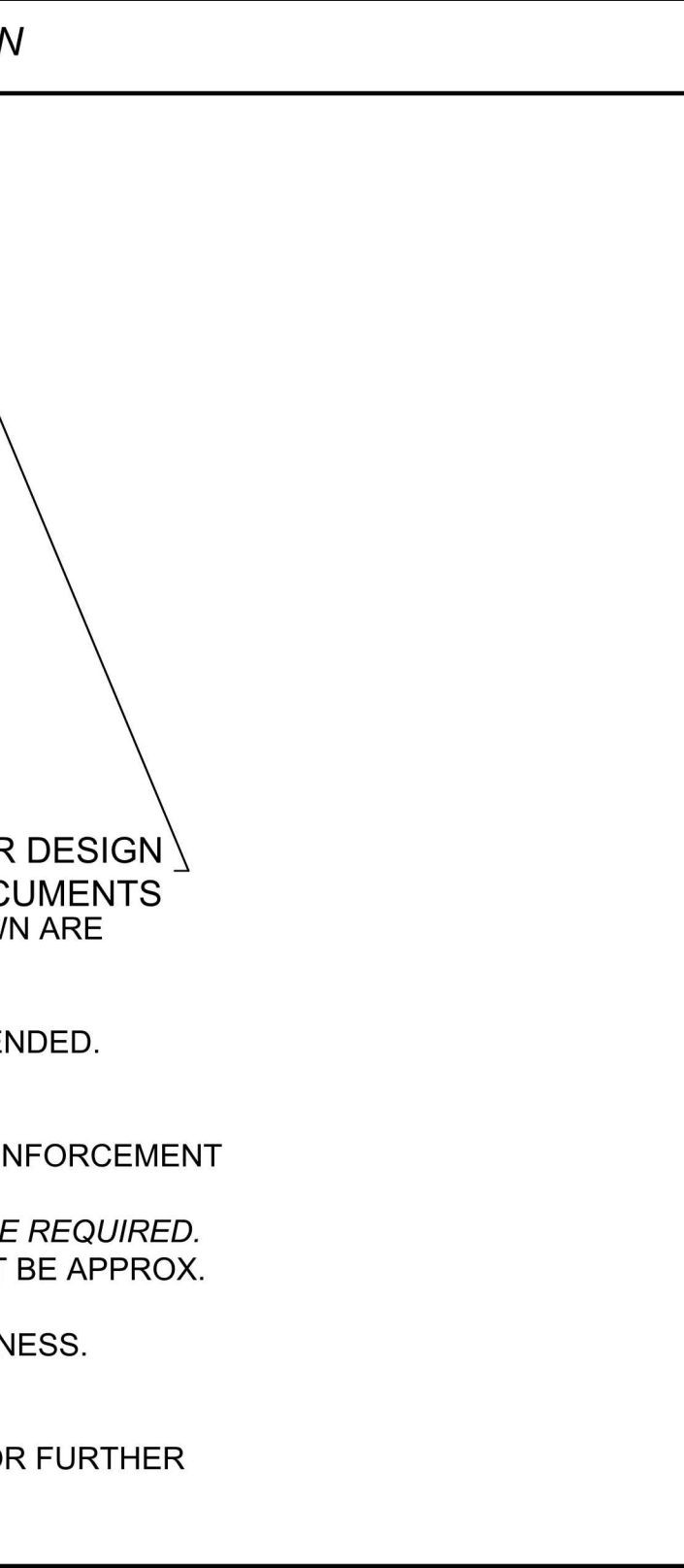
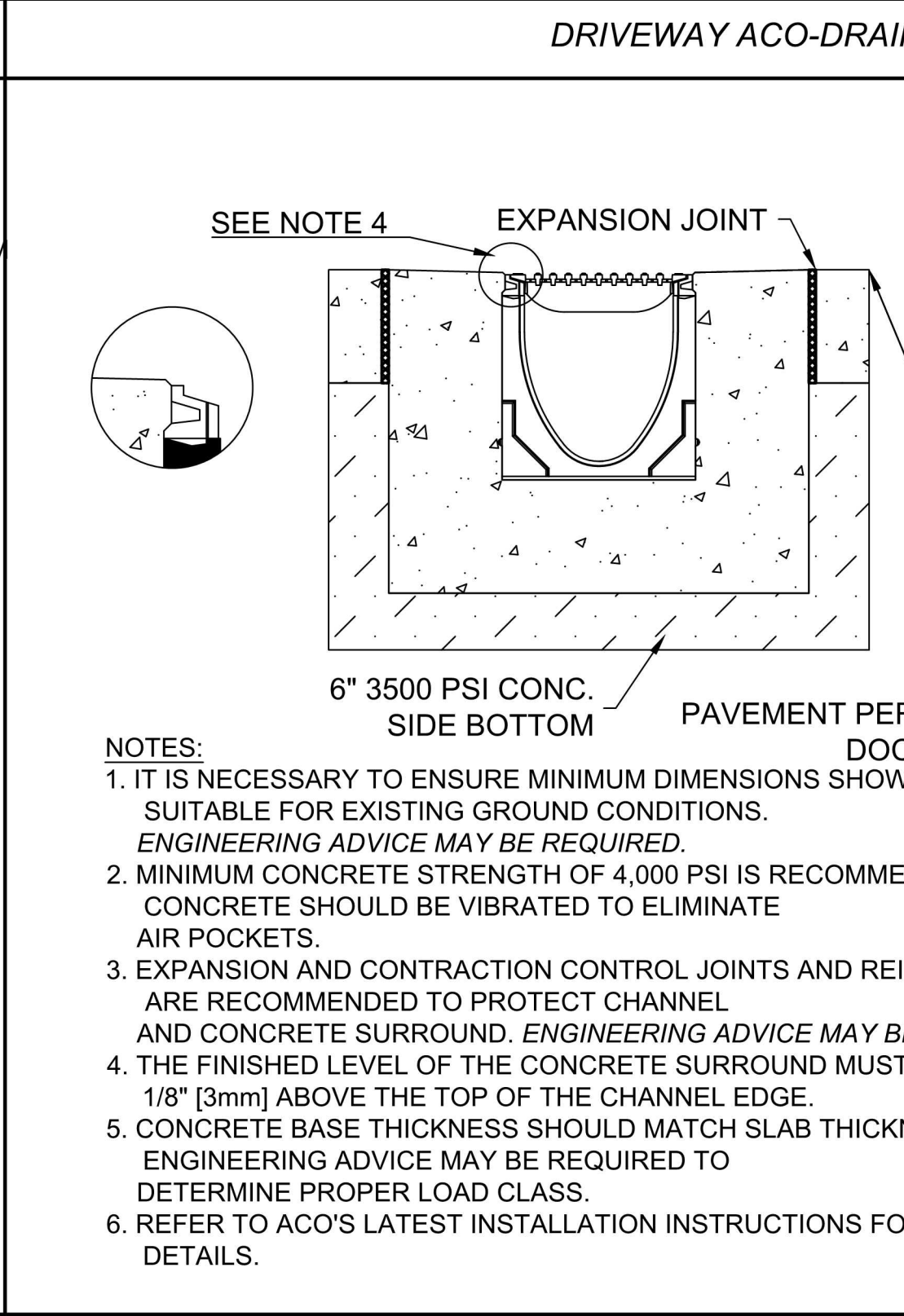
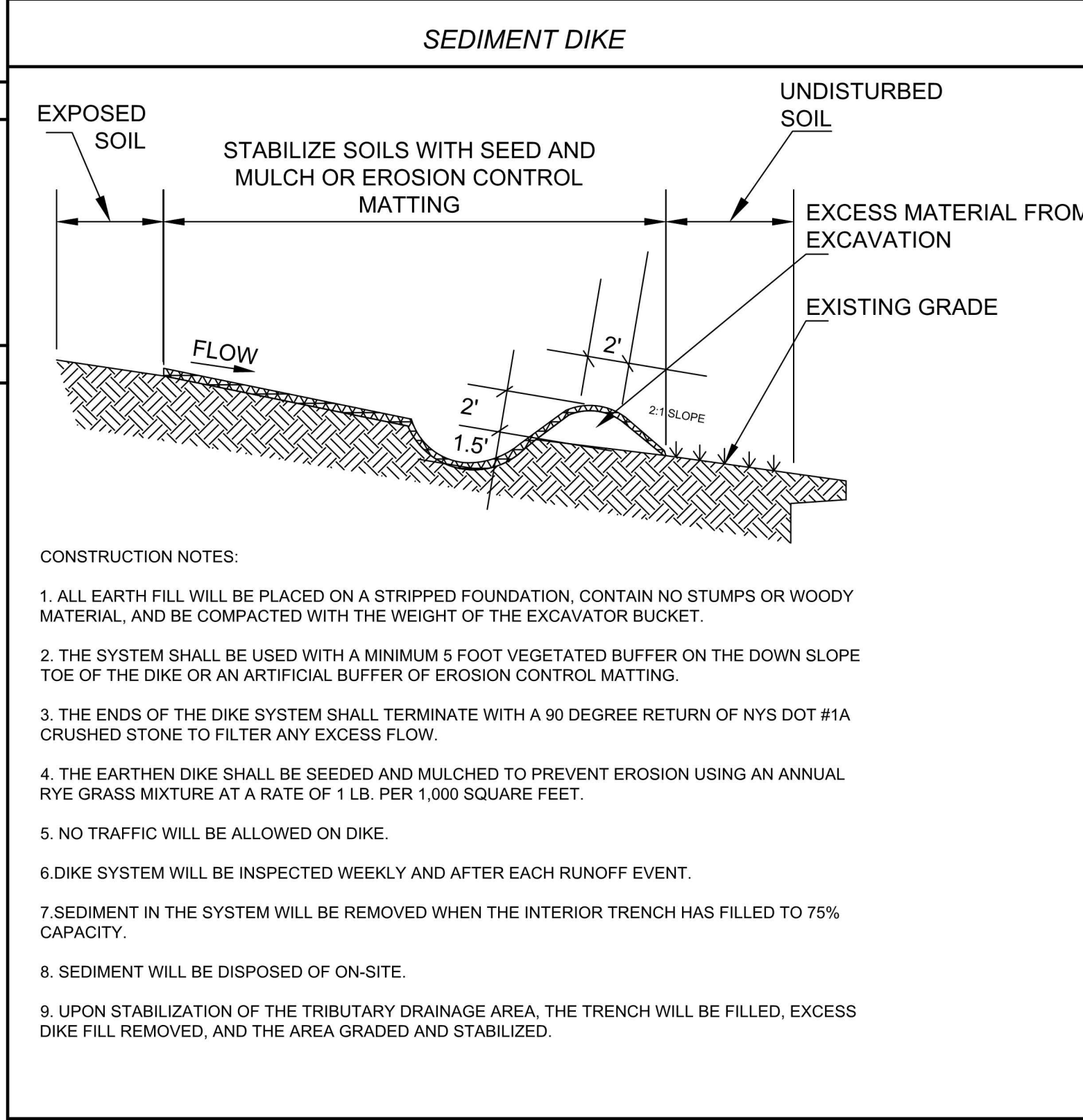
- GENERAL NOTES**
- Gabriel E. Senor, P.C. is not responsible for construction supervision unless retained under separate contract.
  - Gabriel E. Senor, P.C. must be notified prior to backfilling any storm water system for inspection if The Engineering Dept. will require a final letter of certification from the design engineer for the storm water approval, site work and drainage installation.
  - Any changes made to these plans shall be approved by Gabriel E. Senor, P.C. Any changes must be filed and approved by the appropriate Department as amendments.
  - Gabriel E. Senor, P.C. is not responsible for damages if changes are made and not approved as in item 1 above.
  - All conditions, locations, dimensions and elevations shall be verified by the Contractor or Owner and must report all discrepancies to the Design Engineer prior to the start of construction.
  - All work and materials shall comply with all applicable codes and standards, but not limited to the following: NYS Building Code, Local Zoning Code, ACI and AISC.
  - The Contractor is responsible for all construction means and methods to implement the designs shown.
  - Safety during construction is the responsibility of the Contractor and shall conform to all Local, State and Federal Agencies' requirements.
  - The Contractor shall apply for and receive all necessary permits to perform the work shown on these plans prior to the start of construction.
  - Final grading shall be sloped away from the building and foundations.
  - Final drainage piping on this plan is to be 6" Rigid HDPE ASTM F810-07 or better.
  - Unless noted, all drainage piping is not designed to accept footing drains. Refer to Architectural plans for footing drain design. Do not connect footing drains or sump pumps to this surface water drainage system.
  - If the drainage system is to be built in a filled area, the fill should be well drained material with a settling period of one to three months prior to the system installation. Additional percolations are required after the settling period and the system design will be revised as necessary.
  - Proposed Silt Fence to be installed along existing and proposed contours.
  - Orange Construction Fence to be installed along the limits of the proposed disturbance limits line.
  - Roof leaders to be connected to the drainage system with 6" rigid HDPE pipe at 2% min. slope or as shown.
  - The Contractor and all Sub-Contractors must submit a "Contractor Certification Statement" as per section 294-8 of the NYS DEC "Stormwater Pollution Prevention Plan" manual prior to the start of construction.
  - If imported fill material is required, it shall be certified in writing by a New York State licensed Professional Engineer as non-contaminated, clean fill suitable for the intended use. Percolation tests shall be performed by the Design Engineer to demonstrate that the stormwater management practice will draw down the entire water quality volume within 48 hours. The results of the percolation test (s) shall be submitted to the Municipal Engineer for review and approval.
  - All proposed temporary seeding mixture shall be in accordance with the New York State Standards and Specifications for Urban Erosion Control, dated August 2005.
  - New sewer laterals are required for all new construction. Laterals must be extra heavy cast iron or ductile iron pipe or as directed by Municipal Engineer.
  - Connection permits are required from the Department of Public Works for Sewer, Water, and Storm Water System overflows.
  - All trenches in the Municipality Right of Way must be backfilled with controlled density fill (k-crete) or as directed by Municipal Engineer.
  - A street opening permit must be obtained from the Municipality, all work in the Right of Way and an inspection performed prior to back filling and final approvals.
  - Replace or re-lay stone curb as directed by Municipal Engineer.
  - A non-conversion agreement for the basement in Special Flood Hazard Zone must be signed and filed prior to the issuance of a C of O for properties subjected to flooding.
  - Curb cut permit is required from the Department of Public Works. Curb cut maximum width is 18 feet.
  - The contractor shall schedule with the Municipality a rough grading inspection prior to any framing of a building above the first floor braced deck. Excess soils of significance shall be removed and disposed of upon completion of the rough grading.
  - The structures for the storm water management system shall be installed at the earliest date possible when the structure's roof is complete. The contractor shall consult with the Municipality and schedule this work upon completion and inspection of the rough grading activities.
  - The contractor shall secure a Street Opening Permit with the Municipality for all work to take place on the right of way including construction of a new driveway apron, and installation of new service laterals.
  - If necessary, the Contractor shall secure a Tree Removal Permit with the Municipality prior to the commencement of construction activities.
  - Contractor required to provide Dig Safe NY ticket prior to issuance of permits.
  - The septic expansion area will not be cleared and graded at this time.



- POST CONSTRUCTION MAINTENANCE**
- POST CONSTRUCTION MAINTENANCE:
- Land Owner to visually inspect all stormwater structures for silt and debris during May and November of each year. Any silt and debris to be removed by jet vacuum at within 12" of lowest pipe in (min 24" sump required)
  - De-compaction of soils following construction is recommended. This will not only aid in the re-establishment of vegetation following construction, but will help to ensure that lawn areas is previous in the future.
  - Verification of the ownership of any tree designated to be removed near the property line prior to the tree removal.



- EROSION CONTROL NOTES**
- INSTALLATION & MAINTENANCE OF EROSION CONTROL
- CONSTRUCTION SCHEDULE NOTIFY APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 5 DAYS PRIOR TO START.
- EROSION CONTROL MEASURES
- Install all erosion control measures prior to start of construction.
  - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 Days prior to finish.
- INSPECTION BY MUNICIPALITY
- MAINTENANCE (TO BE PERFORMED DURING ALL PHASES OF CONSTRUCTION)
- After any rain causing runoff, Contractor to inspect silt fences, etc. and remove any excessive sediment and inspect stockpiles and correct and problems with seed establishment.
  - Inspections shall be documented in writing and submitted to the appropriate Municipal Agency having jurisdiction.
- STOCK PILING OF EXCAVATED MATERIAL
- Strip Topsoil and Stockpile.
  - Stockpile Excavation Subgrade.
  - Seed piles with 1 lb. total annual rye or remove from site within two days.
- INSPECTION BY MUNICIPALITY
- FINAL GRADING
- Removes unneeded subgrade from site.
  - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
- INSPECTION BY MUNICIPALITY
- LANDSCAPING
- Spread topsoil evenly over areas to be seeded. Hand rake level.
  - Broadcast 1 25lb. bag of Jonathan Green "Fastgrow" mix or equal over areas to be seeded.



**APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**CHRISTOPHER CARTHY, CHAIRMAN TOWN OF NORTH CASTLE PLANNING BOARD**

**ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:**

**DATE:** \_\_\_\_\_

**JOSEPH M. CERMELE, P.E. KELLARD SESSIONS CONSULTING CONSULTING TOWN ENGINEERS**

NO	DATE	DESC	BY
1	AUG 7, 2023	SGA	

**REVISIONS**

**STORMWATER & EROSION CONTROL SYSTEM DESIGN "STORMWATER DETAILS"**

PROPERTY ADDRESS: 1 GUION LANE BEDFORD, NY 10606

1 Guion Lane

TAX MAP #: Sec. 95.01 Block 2 Lot No. 10.3

LOCATED IN THE TOWN OF NORTH CASTLE WESTCHESTER COUNTY, NEW YORK

Map is filed in the Westchester County Clerk's office, Division of Land Records, on May 16, 2002 as P.O. Map number 26796.

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**GABRIEL E. SENOR, P.C.**  
CONSULTING ENGINEER LAND SURVEYORS  
90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
(914) 422-0070 FAX 422-3009

SCALE: NONE  
DATE: MAY 18, 2023  
DRAWN BY: SGA  
CHECKED BY: ES.

D-1

Drainage Report  
1 Guion Lane  
North Castle, New York



Eliot Senor P.E & L.S.  
May 19, 2023  
REVISED AUGUST 7, 2023

The analysis was performed utilizing the Soil Conservation Service (SCS) TR-20 and TR-55 methodologies. Rainfall intensity was utilized for 25 Year storm event at 6.41" and 100Year storm event at 9.2" for a 24 hour rainfall in Westchester County. The development is the construction of a single family residence with associated impervious areas. For purposes of calculations all excess surface stormwater generated by the impervious surfaces of the building and the driveway areas shall be stored in a drainage retention structures to be constructed on-site.

**25 &100 Year Storm**

The Soil Conservation Service's TR-20 method (a more accurate and precise calculation methodology than TR-55) as incorporated in the HydroCAD software was used to determine the capacity of cultec system post-development runoff rates of the building, driveway and pool decking areas.

Table Stormwater Cultec System

	Impervious Surface Area System	Required Number of Cultecs
Front Yard	6172	9 Cultecs
Rear Yard	6034	10 Cultecs

**Driveway Pipe Capacity**

Pipe flows from driveway to street drainage system were calculated for the 25- & 100-year storm.

Driveway Pipe Capacity

	157 L.F. 10" Hdpe Pipe	26 L.F. 10: Hdpe
25 year Storm	0.41" 49% Full	0.41" 49% Full
100 year Strom	0.52" 62% Full	0.52" 62% Full

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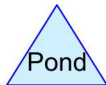
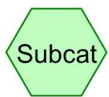
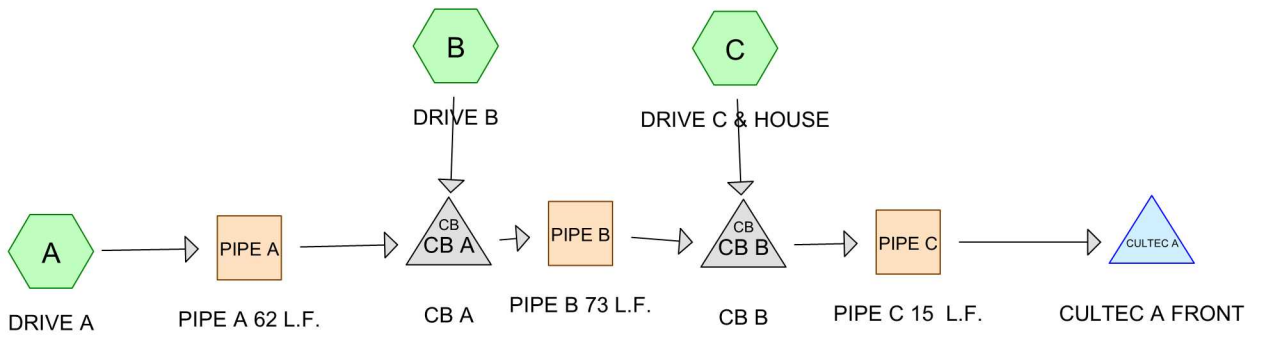
**Driveway Pipe Capacity**

Pipe flows from driveway to street drainage system were calculated for the 25- & 100-year storm.

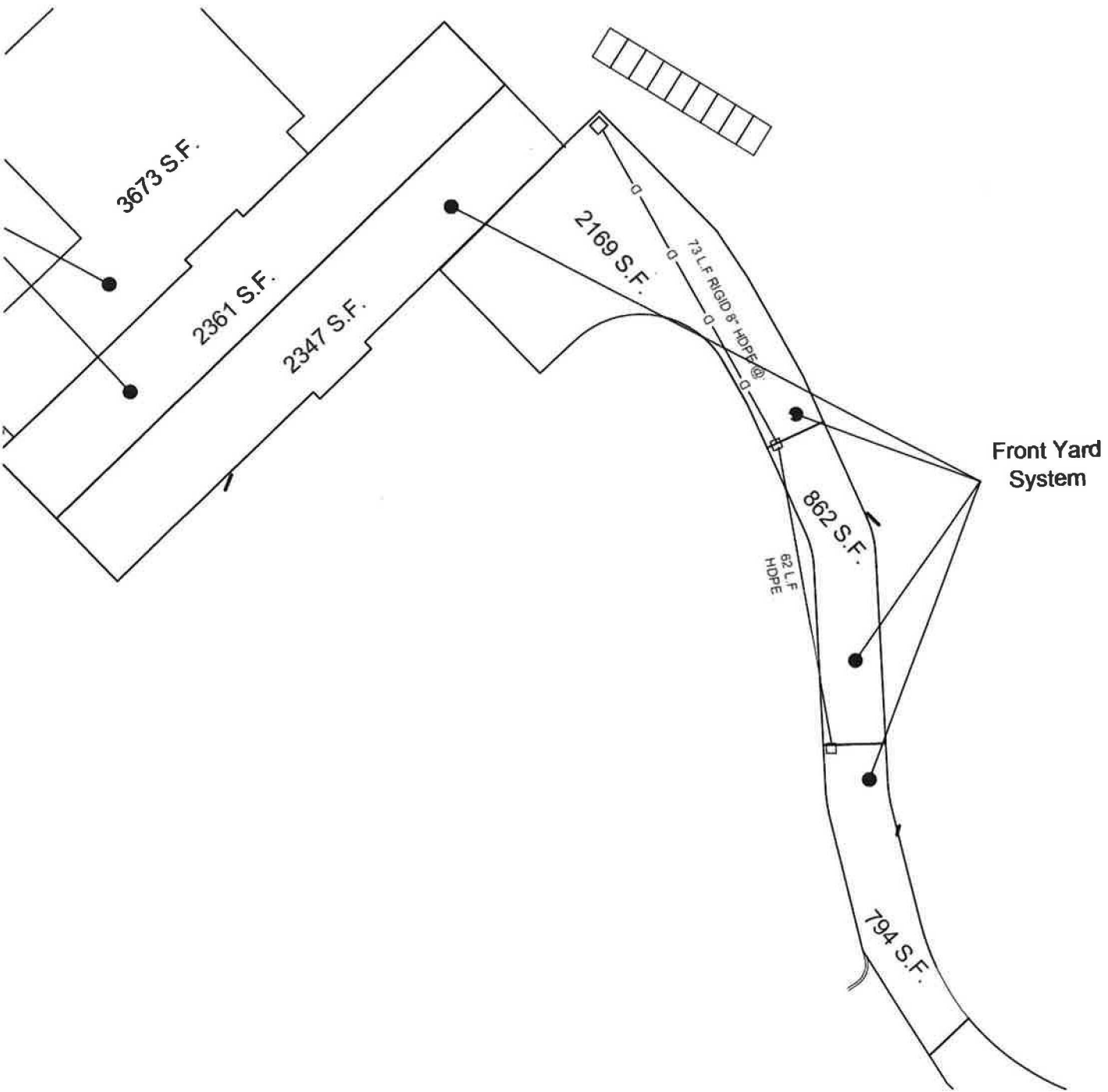
Driveway Pipe Capacity

	157 L.F. 10" Hdpe Pipe	26 L.F. 10: Hdpe
25 year Storm	0.41" 49% Full	0.41" 49% Full
100 year Strom	0.52" 62% Full	0.52" 62% Full

## Front Yard System



**Routing Diagram for 1 Guion**  
 Prepared by Gabriel E Senor PC  
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# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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Page 2

## Summary for Subcatchment A: DRIVE A

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 6.17"  
Routed to Reach PIPE A : PIPE A 62 L.F.

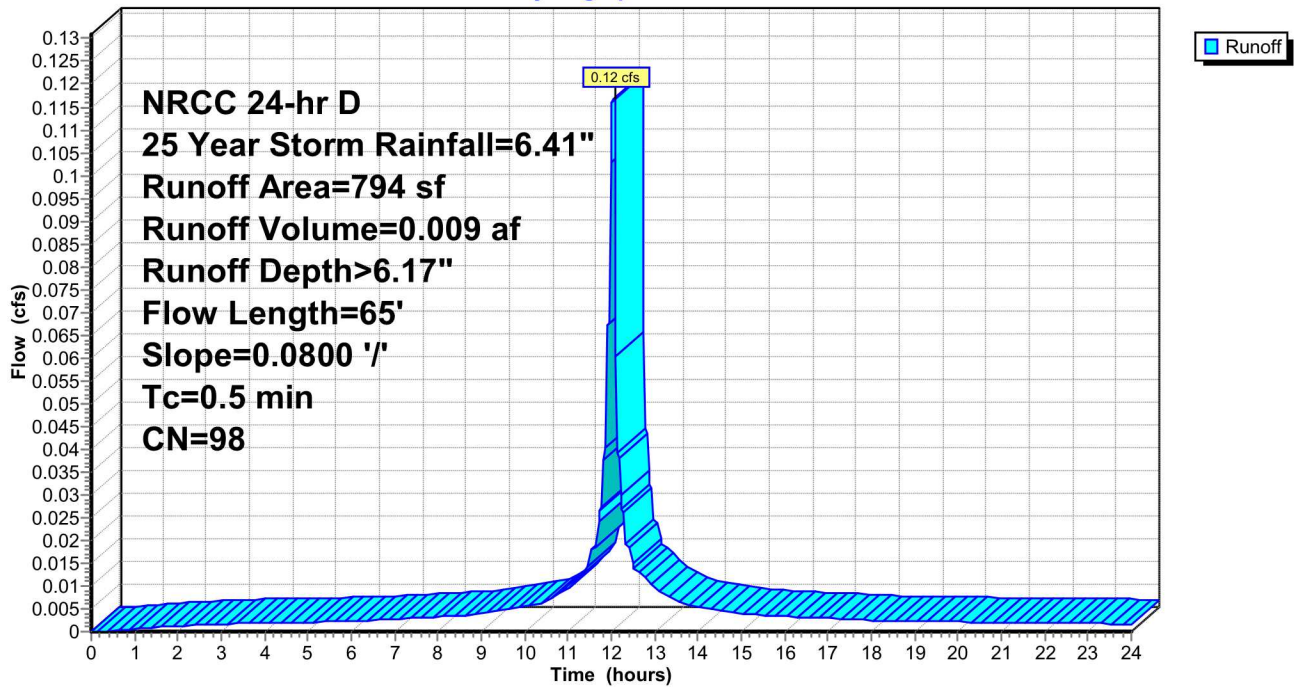
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Area (sf)	CN	Description
794	98	Paved parking, HSG B
794		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	65	0.0800	2.30		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment A: DRIVE A

Hydrograph





# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Hydrograph for Subcatchment A: DRIVE A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.09	0.01	0.00
1.50	0.14	0.03	0.00
2.00	0.19	0.07	0.00
2.50	0.25	0.10	0.00
3.00	0.30	0.14	0.00
3.50	0.36	0.19	0.00
4.00	0.41	0.24	0.00
4.50	0.47	0.29	0.00
5.00	0.53	0.35	0.00
5.50	0.60	0.41	0.00
6.00	0.66	0.47	0.00
6.50	0.73	0.53	0.00
7.00	0.81	0.60	0.00
7.50	0.89	0.68	0.00
8.00	0.98	0.77	0.00
8.50	1.07	0.86	0.00
9.00	1.18	0.96	0.00
9.50	1.30	1.08	0.00
10.00	1.44	1.22	0.01
10.50	1.60	1.38	0.01
11.00	1.82	1.60	0.01
11.50	2.15	1.92	0.01
12.00	3.07	2.84	<b>0.07</b>
12.50	4.26	4.03	<b>0.02</b>
13.00	4.59	4.35	0.01
13.50	4.81	4.57	0.01
14.00	4.97	4.74	0.01
14.50	5.11	4.88	0.00
15.00	5.23	5.00	0.00
15.50	5.34	5.10	0.00
16.00	5.43	5.20	0.00
16.50	5.52	5.28	0.00
17.00	5.60	5.37	0.00
17.50	5.68	5.44	0.00
18.00	5.75	5.51	0.00
18.50	5.81	5.58	0.00
19.00	5.88	5.64	0.00
19.50	5.94	5.70	0.00
20.00	6.00	5.76	0.00
20.50	6.05	5.82	0.00
21.00	6.11	5.87	0.00
21.50	6.16	5.93	0.00
22.00	6.22	5.98	0.00
22.50	6.27	6.03	0.00
23.00	6.32	6.08	0.00
23.50	6.36	6.13	0.00
24.00	<b>6.41</b>	<b>6.17</b>	0.00

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Summary for Subcatchment B: DRIVE B

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 6.17"

Routed to Pond CB A : CB A

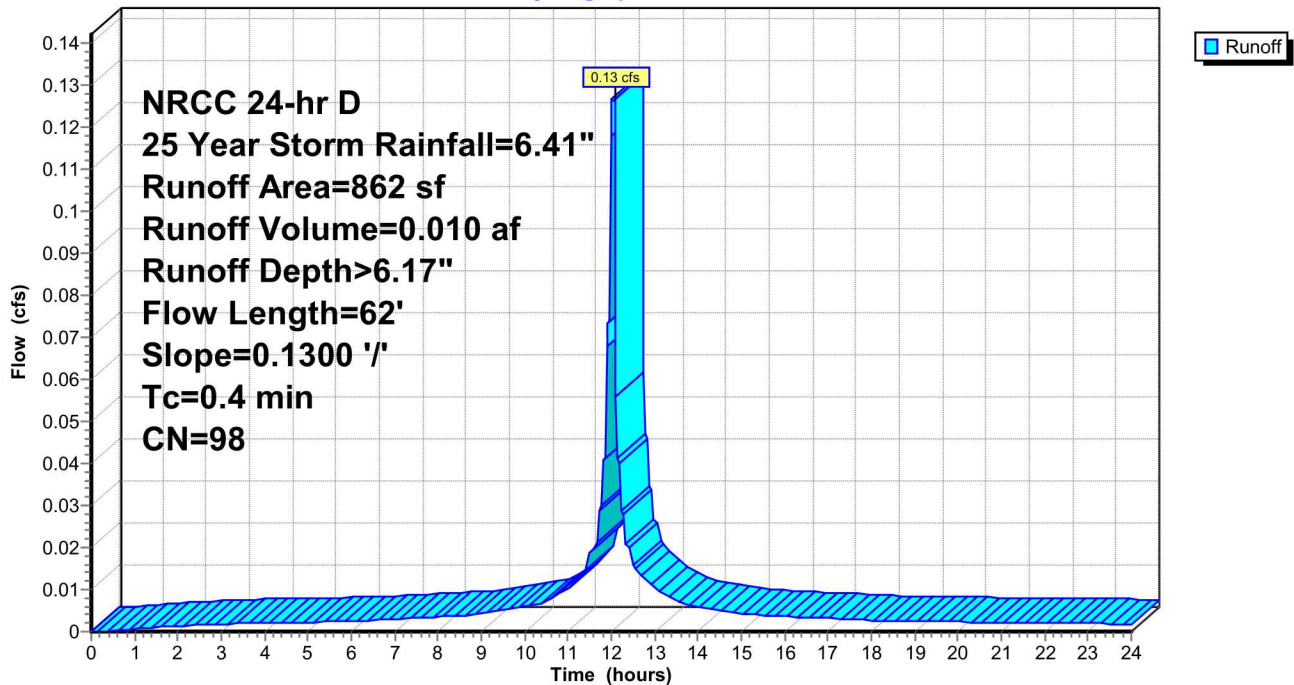
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Area (sf)	CN	Description
862	98	Paved parking, HSG B
862		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	62	0.1300	2.76		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment B: DRIVE B

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Subcatchment B: DRIVE B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.09	0.01	0.00
1.50	0.14	0.03	0.00
2.00	0.19	0.07	0.00
2.50	0.25	0.10	0.00
3.00	0.30	0.14	0.00
3.50	0.36	0.19	0.00
4.00	0.41	0.24	0.00
4.50	0.47	0.29	0.00
5.00	0.53	0.35	0.00
5.50	0.60	0.41	0.00
6.00	0.66	0.47	0.00
6.50	0.73	0.53	0.00
7.00	0.81	0.60	0.00
7.50	0.89	0.68	0.00
8.00	0.98	0.77	0.00
8.50	1.07	0.86	0.00
9.00	1.18	0.96	0.00
9.50	1.30	1.08	0.01
10.00	1.44	1.22	0.01
10.50	1.60	1.38	0.01
11.00	1.82	1.60	0.01
11.50	2.15	1.92	0.02
12.00	3.07	2.84	<b>0.08</b>
12.50	4.26	4.03	<b>0.02</b>
13.00	4.59	4.35	0.01
13.50	4.81	4.57	0.01
14.00	4.97	4.74	0.01
14.50	5.11	4.88	0.01
15.00	5.23	5.00	0.00
15.50	5.34	5.10	0.00
16.00	5.43	5.20	0.00
16.50	5.52	5.28	0.00
17.00	5.60	5.37	0.00
17.50	5.68	5.44	0.00
18.00	5.75	5.51	0.00
18.50	5.81	5.58	0.00
19.00	5.88	5.64	0.00
19.50	5.94	5.70	0.00
20.00	6.00	5.76	0.00
20.50	6.05	5.82	0.00
21.00	6.11	5.87	0.00
21.50	6.16	5.93	0.00
22.00	6.22	5.98	0.00
22.50	6.27	6.03	0.00
23.00	6.32	6.08	0.00
23.50	6.36	6.13	0.00
24.00	<b>6.41</b>	<b>6.17</b>	0.00

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Summary for Subcatchment C: DRIVE C & HOUSE

Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 6.17"  
 Routed to Pond CB B : CB B

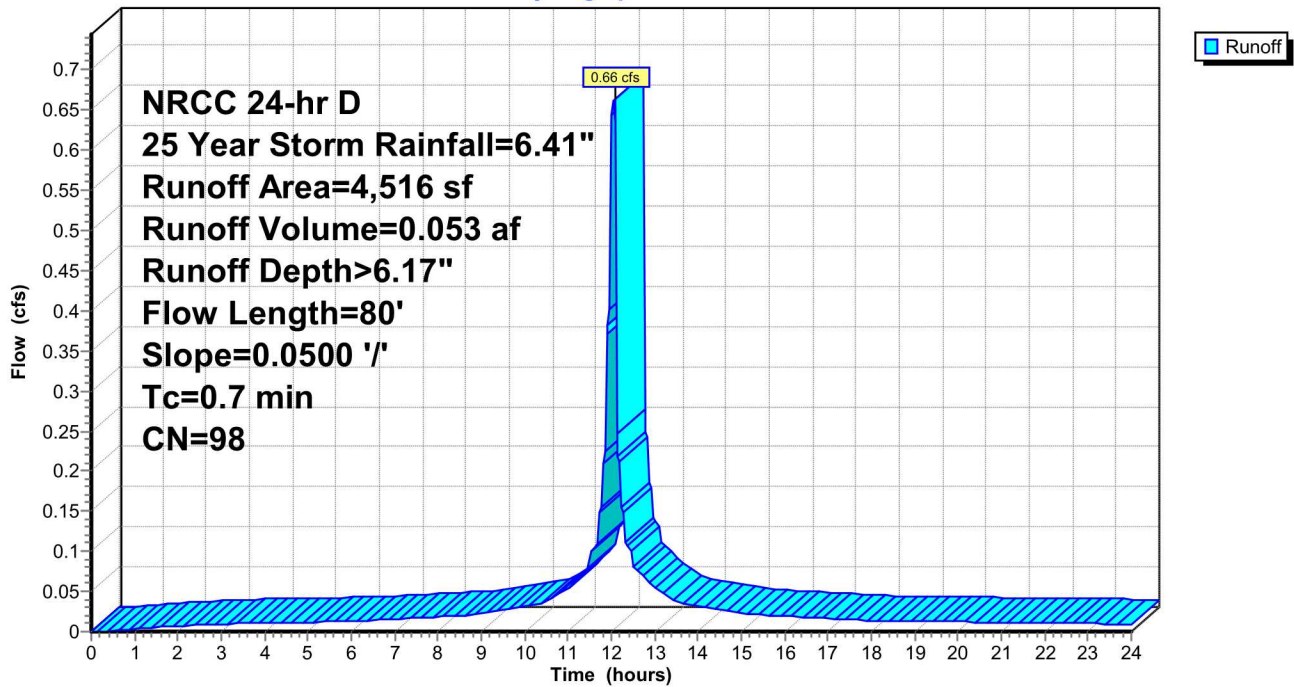
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
 NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Area (sf)	CN	Description
4,516	98	Paved parking, HSG B
4,516		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	80	0.0500	1.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment C: DRIVE C & HOUSE

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Subcatchment C: DRIVE C & HOUSE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.09	0.01	0.00
1.50	0.14	0.03	0.01
2.00	0.19	0.07	0.01
2.50	0.25	0.10	0.01
3.00	0.30	0.14	0.01
3.50	0.36	0.19	0.01
4.00	0.41	0.24	0.01
4.50	0.47	0.29	0.01
5.00	0.53	0.35	0.01
5.50	0.60	0.41	0.01
6.00	0.66	0.47	0.01
6.50	0.73	0.53	0.01
7.00	0.81	0.60	0.02
7.50	0.89	0.68	0.02
8.00	0.98	0.77	0.02
8.50	1.07	0.86	0.02
9.00	1.18	0.96	0.02
9.50	1.30	1.08	0.03
10.00	1.44	1.22	0.03
10.50	1.60	1.38	0.04
11.00	1.82	1.60	0.05
11.50	2.15	1.92	0.08
12.00	3.07	2.84	<b>0.39</b>
12.50	4.26	4.03	<b>0.10</b>
13.00	4.59	4.35	0.06
13.50	4.81	4.57	0.04
14.00	4.97	4.74	0.03
14.50	5.11	4.88	0.03
15.00	5.23	5.00	0.02
15.50	5.34	5.10	0.02
16.00	5.43	5.20	0.02
16.50	5.52	5.28	0.02
17.00	5.60	5.37	0.02
17.50	5.68	5.44	0.02
18.00	5.75	5.51	0.01
18.50	5.81	5.58	0.01
19.00	5.88	5.64	0.01
19.50	5.94	5.70	0.01
20.00	6.00	5.76	0.01
20.50	6.05	5.82	0.01
21.00	6.11	5.87	0.01
21.50	6.16	5.93	0.01
22.00	6.22	5.98	0.01
22.50	6.27	6.03	0.01
23.00	6.32	6.08	0.01
23.50	6.36	6.13	0.01
24.00	<b>6.41</b>	<b>6.17</b>	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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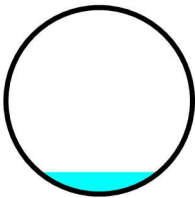
## Summary for Reach PIPE A: PIPE A 62 L.F.

Inflow Area = 0.018 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.009 af  
Outflow = 0.12 cfs @ 12.09 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CB A : CB A

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 5.04 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.74 fps, Avg. Travel Time= 0.6 min

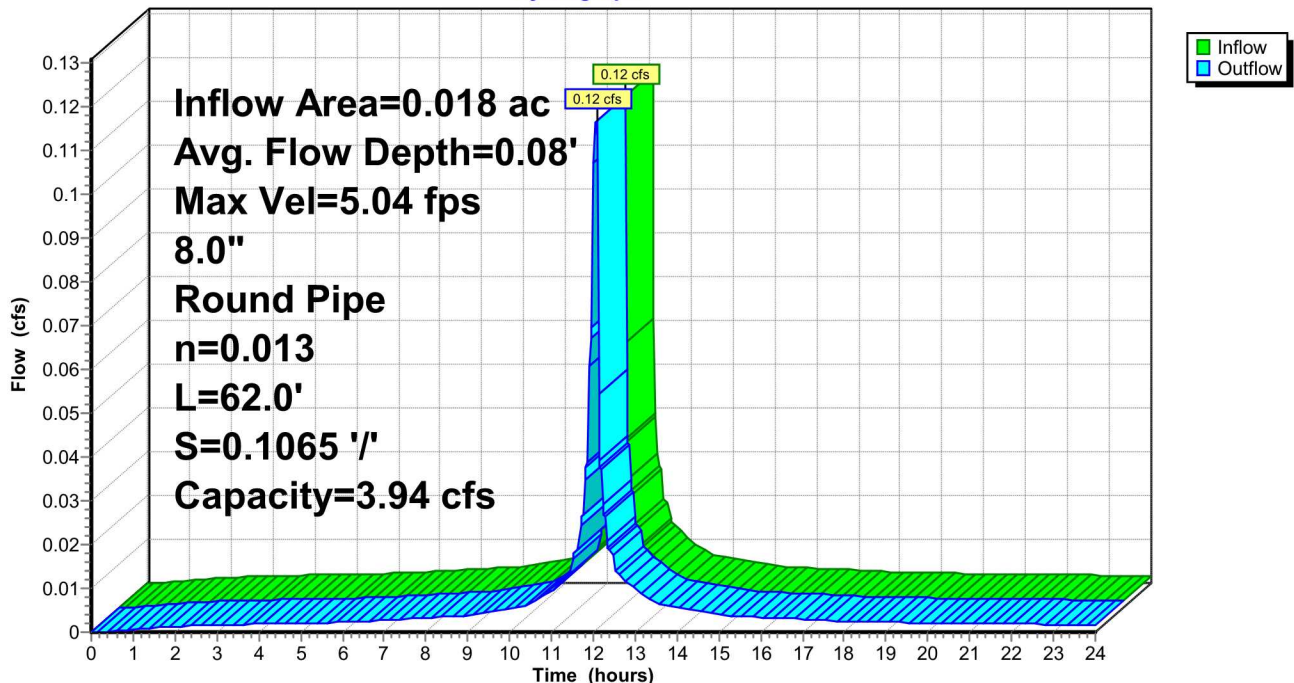
Peak Storage= 1 cf @ 12.09 hrs  
Average Depth at Peak Storage= 0.08' , Surface Width= 0.43'  
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 3.94 cfs

8.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 62.0' Slope= 0.1065 '/'  
Inlet Invert= 486.30', Outlet Invert= 479.70'



## Reach PIPE A: PIPE A 62 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Hydrograph for Reach PIPE A: PIPE A 62 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	486.30	0.00
0.50	0.00	0	486.30	0.00
1.00	0.00	0	486.31	0.00
1.50	0.00	0	486.31	0.00
2.00	0.00	0	486.31	0.00
2.50	0.00	0	486.31	0.00
3.00	0.00	0	486.31	0.00
3.50	0.00	0	486.31	0.00
4.00	0.00	0	486.31	0.00
4.50	0.00	0	486.31	0.00
5.00	0.00	0	486.31	0.00
5.50	0.00	0	486.31	0.00
6.00	0.00	0	486.31	0.00
6.50	0.00	0	486.31	0.00
7.00	0.00	0	486.31	0.00
7.50	0.00	0	486.31	0.00
8.00	0.00	0	486.31	0.00
8.50	0.00	0	486.31	0.00
9.00	0.00	0	486.32	0.00
9.50	0.00	0	486.32	0.00
10.00	0.01	0	486.32	0.01
10.50	0.01	0	486.32	0.01
11.00	0.01	0	486.32	0.01
11.50	0.01	0	486.33	0.01
12.00	<b>0.07</b>	<b>1</b>	<b>486.36</b>	<b>0.07</b>
12.50	<b>0.02</b>	<b>0</b>	<b>486.33</b>	<b>0.02</b>
13.00	0.01	0	486.32	0.01
13.50	0.01	0	486.32	0.01
14.00	0.01	0	486.32	0.01
14.50	0.00	0	486.32	0.00
15.00	0.00	0	486.32	0.00
15.50	0.00	0	486.32	0.00
16.00	0.00	0	486.31	0.00
16.50	0.00	0	486.31	0.00
17.00	0.00	0	486.31	0.00
17.50	0.00	0	486.31	0.00
18.00	0.00	0	486.31	0.00
18.50	0.00	0	486.31	0.00
19.00	0.00	0	486.31	0.00
19.50	0.00	0	486.31	0.00
20.00	0.00	0	486.31	0.00
20.50	0.00	0	486.31	0.00
21.00	0.00	0	486.31	0.00
21.50	0.00	0	486.31	0.00
22.00	0.00	0	486.31	0.00
22.50	0.00	0	486.31	0.00
23.00	0.00	0	486.31	0.00
23.50	0.00	0	486.31	0.00
24.00	0.00	0	486.31	0.00

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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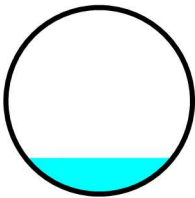
## Summary for Reach PIPE B: PIPE B 73 L.F.

Inflow Area = 0.038 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af  
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CB B : CB B

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 5.09 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.75 fps, Avg. Travel Time= 0.7 min

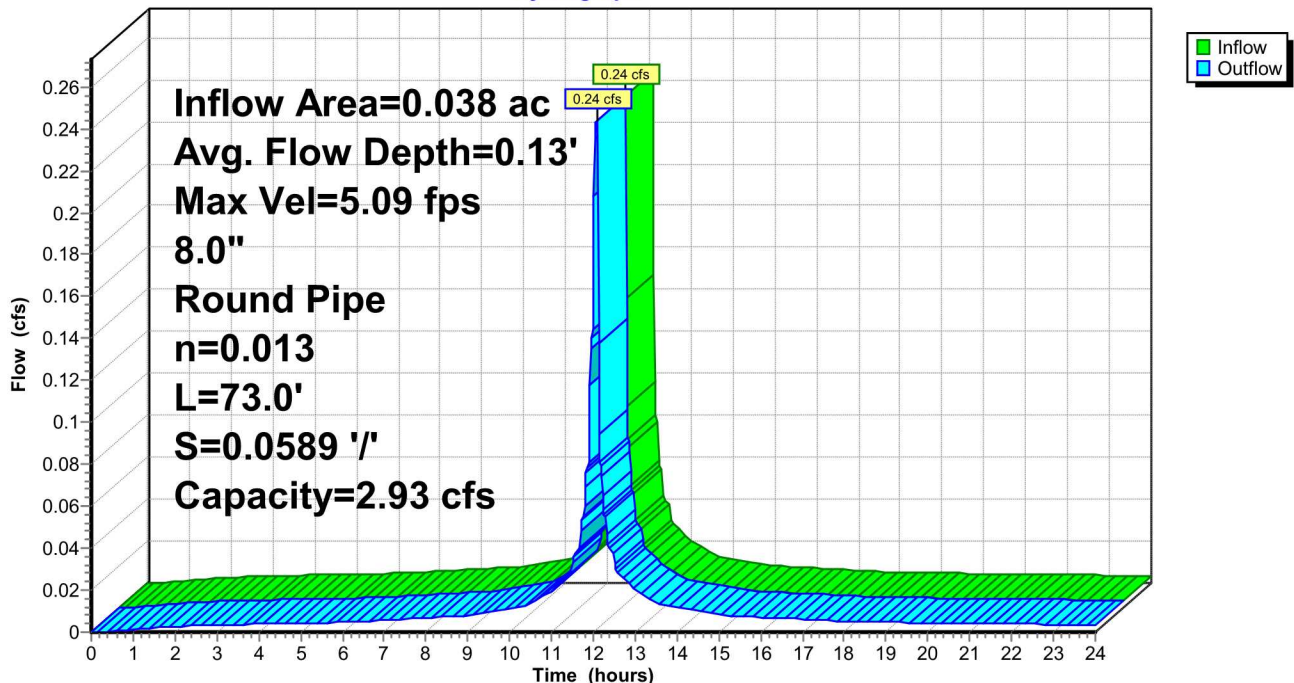
Peak Storage= 3 cf @ 12.04 hrs  
Average Depth at Peak Storage= 0.13' , Surface Width= 0.53'  
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 2.93 cfs

8.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 73.0' Slope= 0.0589 '/'  
Inlet Invert= 479.70', Outlet Invert= 475.40'



## Reach PIPE B: PIPE B 73 L.F.

Hydrograph





# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Reach PIPE B: PIPE B 73 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	479.70	0.00
0.50	0.00	0	479.70	0.00
1.00	0.00	0	479.71	0.00
1.50	0.00	0	479.71	0.00
2.00	0.00	0	479.71	0.00
2.50	0.00	0	479.72	0.00
3.00	0.00	0	479.72	0.00
3.50	0.00	0	479.72	0.00
4.00	0.00	0	479.72	0.00
4.50	0.00	0	479.72	0.00
5.00	0.00	0	479.72	0.00
5.50	0.00	0	479.72	0.00
6.00	0.00	0	479.72	0.00
6.50	0.01	0	479.72	0.01
7.00	0.01	0	479.72	0.01
7.50	0.01	0	479.72	0.01
8.00	0.01	0	479.72	0.01
8.50	0.01	0	479.72	0.01
9.00	0.01	0	479.73	0.01
9.50	0.01	0	479.73	0.01
10.00	0.01	0	479.73	0.01
10.50	0.01	0	479.73	0.01
11.00	0.02	1	479.74	0.02
11.50	0.03	1	479.75	0.03
12.00	<b>0.14</b>	<b>2</b>	<b>479.80</b>	<b>0.14</b>
12.50	<b>0.04</b>	<b>1</b>	<b>479.75</b>	<b>0.04</b>
13.00	0.02	1	479.74	0.02
13.50	0.01	0	479.73	0.01
14.00	0.01	0	479.73	0.01
14.50	0.01	0	479.73	0.01
15.00	0.01	0	479.73	0.01
15.50	0.01	0	479.72	0.01
16.00	0.01	0	479.72	0.01
16.50	0.01	0	479.72	0.01
17.00	0.01	0	479.72	0.01
17.50	0.01	0	479.72	0.01
18.00	0.01	0	479.72	0.01
18.50	0.00	0	479.72	0.00
19.00	0.00	0	479.72	0.00
19.50	0.00	0	479.72	0.00
20.00	0.00	0	479.72	0.00
20.50	0.00	0	479.72	0.00
21.00	0.00	0	479.72	0.00
21.50	0.00	0	479.72	0.00
22.00	0.00	0	479.72	0.00
22.50	0.00	0	479.72	0.00
23.00	0.00	0	479.72	0.00
23.50	0.00	0	479.72	0.00
24.00	0.00	0	479.72	0.00

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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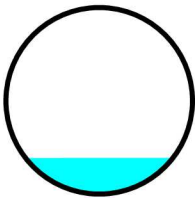
## Summary for Reach PIPE C: PIPE C 15 L.F.

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.073 af  
Outflow = 0.91 cfs @ 12.08 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CULTEC A : CULTEC A FRONT

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 8.41 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 2.89 fps, Avg. Travel Time= 0.1 min

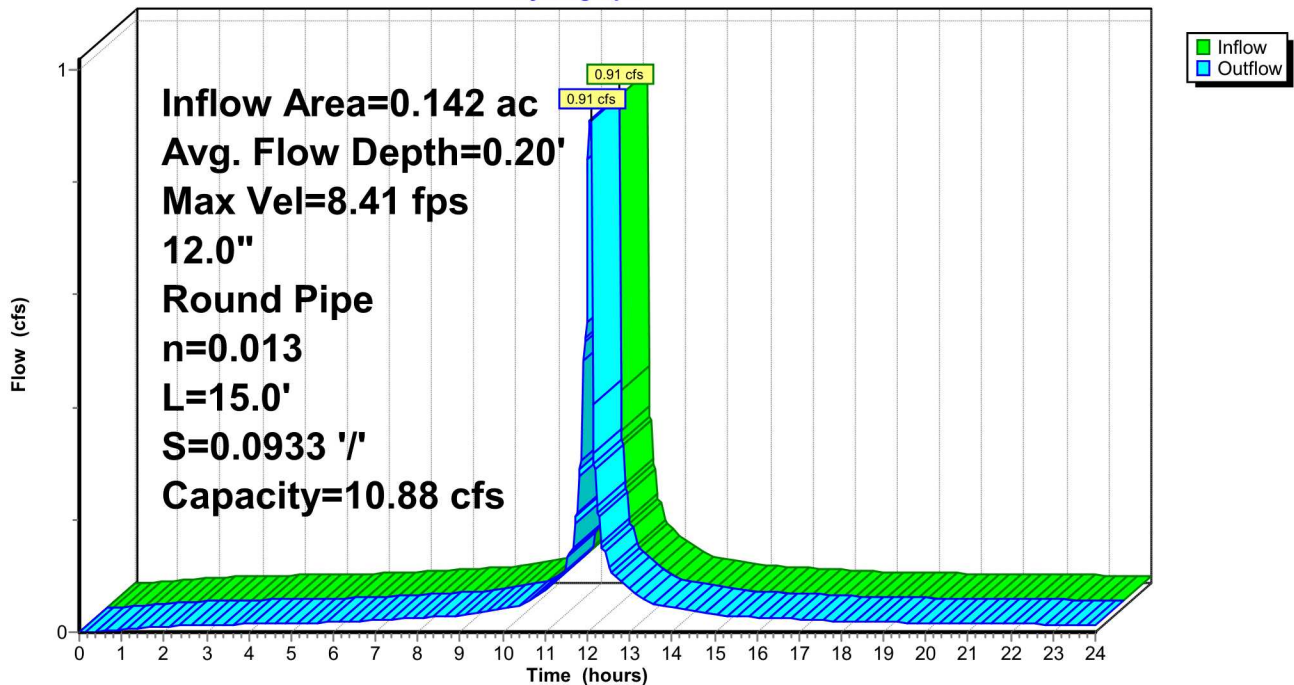
Peak Storage= 2 cf @ 12.08 hrs  
Average Depth at Peak Storage= 0.20' , Surface Width= 0.79'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.88 cfs

12.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 15.0' Slope= 0.0933 '/'  
Inlet Invert= 475.40', Outlet Invert= 474.00'



## Reach PIPE C: PIPE C 15 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Reach PIPE C: PIPE C 15 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	475.40	0.00
0.50	0.00	0	475.40	0.00
1.00	0.00	0	475.42	0.00
1.50	0.01	0	475.42	0.01
2.00	0.01	0	475.42	0.01
2.50	0.01	0	475.42	0.01
3.00	0.01	0	475.43	0.01
3.50	0.01	0	475.43	0.01
4.00	0.01	0	475.43	0.01
4.50	0.02	0	475.43	0.02
5.00	0.02	0	475.43	0.02
5.50	0.02	0	475.43	0.02
6.00	0.02	0	475.43	0.02
6.50	0.02	0	475.43	0.02
7.00	0.02	0	475.43	0.02
7.50	0.02	0	475.43	0.02
8.00	0.03	0	475.44	0.03
8.50	0.03	0	475.44	0.03
9.00	0.03	0	475.44	0.03
9.50	0.04	0	475.44	0.04
10.00	0.04	0	475.44	0.04
10.50	0.05	0	475.45	0.05
11.00	0.07	0	475.46	0.07
11.50	0.11	0	475.47	0.11
12.00	<b>0.53</b>	<b>1</b>	<b>475.55</b>	<b>0.53</b>
12.50	<b>0.14</b>	<b>0</b>	<b>475.48</b>	<b>0.14</b>
13.00	0.08	0	475.46	0.08
13.50	0.05	0	475.45	0.05
14.00	0.04	0	475.45	0.04
14.50	0.04	0	475.44	0.04
15.00	0.03	0	475.44	0.03
15.50	0.03	0	475.44	0.03
16.00	0.03	0	475.44	0.03
16.50	0.02	0	475.43	0.02
17.00	0.02	0	475.43	0.02
17.50	0.02	0	475.43	0.02
18.00	0.02	0	475.43	0.02
18.50	0.02	0	475.43	0.02
19.00	0.02	0	475.43	0.02
19.50	0.02	0	475.43	0.02
20.00	0.02	0	475.43	0.02
20.50	0.02	0	475.43	0.02
21.00	0.02	0	475.43	0.02
21.50	0.02	0	475.43	0.02
22.00	0.01	0	475.43	0.01
22.50	0.01	0	475.43	0.01
23.00	0.01	0	475.43	0.01
23.50	0.01	0	475.43	0.01
24.00	0.01	0	475.43	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Summary for Pond CB A: CB A

Inflow Area = 0.038 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af  
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.24 cfs @ 12.09 hrs, Volume= 0.020 af  
Routed to Reach PIPE B : PIPE B 73 L.F.

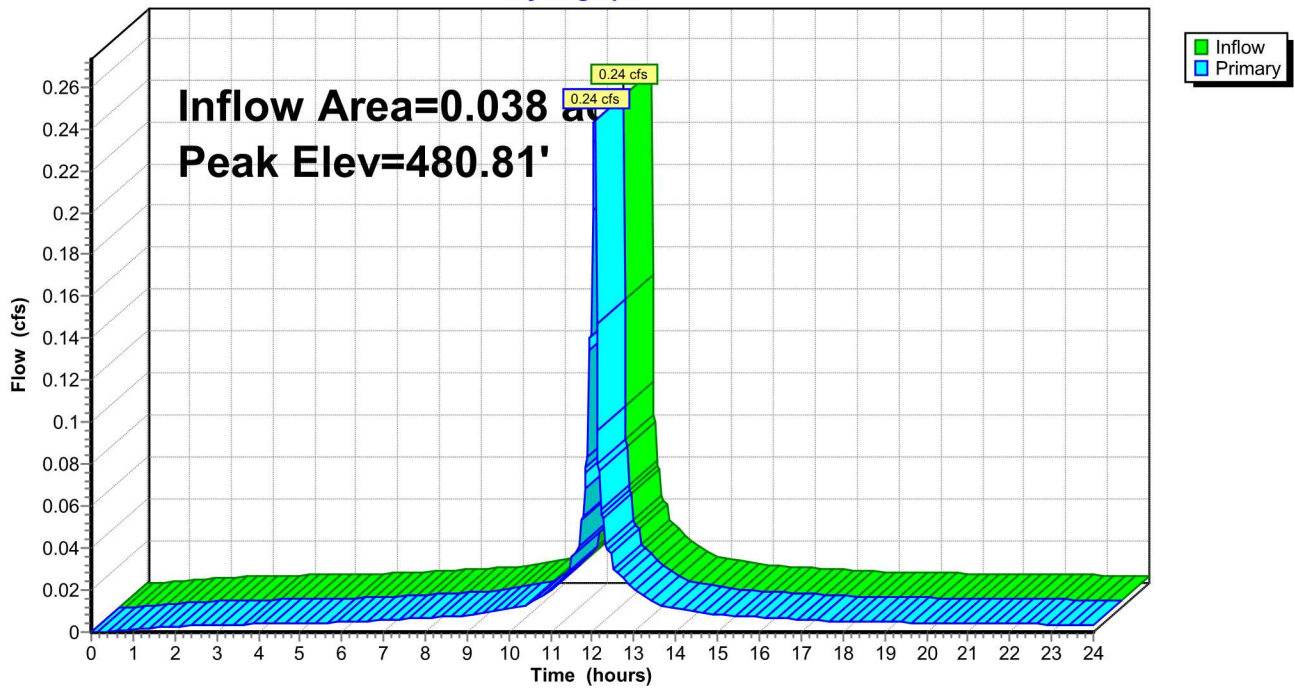
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 480.81' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	480.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 12.09 hrs HW=480.81' (Free Discharge)  
↑1=Orifice/Grate (Orifice Controls 0.24 cfs @ 1.90 fps)

## Pond CB A: CB A

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Pond CB A: CB A

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	480.50	0.00
0.50	0.00	480.51	0.00
1.00	0.00	480.52	0.00
1.50	0.00	480.53	0.00
2.00	0.00	480.53	0.00
2.50	0.00	480.53	0.00
3.00	0.00	480.53	0.00
3.50	0.00	480.53	0.00
4.00	0.00	480.54	0.00
4.50	0.00	480.54	0.00
5.00	0.00	480.54	0.00
5.50	0.00	480.54	0.00
6.00	0.00	480.54	0.00
6.50	0.01	480.54	0.01
7.00	0.01	480.54	0.01
7.50	0.01	480.54	0.01
8.00	0.01	480.55	0.01
8.50	0.01	480.55	0.01
9.00	0.01	480.55	0.01
9.50	0.01	480.56	0.01
10.00	0.01	480.56	0.01
10.50	0.01	480.57	0.01
11.00	0.02	480.58	0.02
11.50	0.03	480.60	0.03
12.00	<b>0.14</b>	<b>480.73</b>	<b>0.14</b>
12.50	<b>0.04</b>	<b>480.61</b>	<b>0.04</b>
13.00	0.02	480.58	0.02
13.50	0.01	480.57	0.01
14.00	0.01	480.56	0.01
14.50	0.01	480.56	0.01
15.00	0.01	480.55	0.01
15.50	0.01	480.55	0.01
16.00	0.01	480.55	0.01
16.50	0.01	480.55	0.01
17.00	0.01	480.54	0.01
17.50	0.01	480.54	0.01
18.00	0.01	480.54	0.01
18.50	0.00	480.54	0.00
19.00	0.00	480.54	0.00
19.50	0.00	480.54	0.00
20.00	0.00	480.54	0.00
20.50	0.00	480.54	0.00
21.00	0.00	480.54	0.00
21.50	0.00	480.54	0.00
22.00	0.00	480.54	0.00
22.50	0.00	480.54	0.00
23.00	0.00	480.53	0.00
23.50	0.00	480.53	0.00
24.00	0.00	480.53	0.00

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Summary for Pond CB B: CB B

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.073 af  
Outflow = 0.91 cfs @ 12.09 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.91 cfs @ 12.09 hrs, Volume= 0.073 af  
Routed to Reach PIPE C : PIPE C 15 L.F.

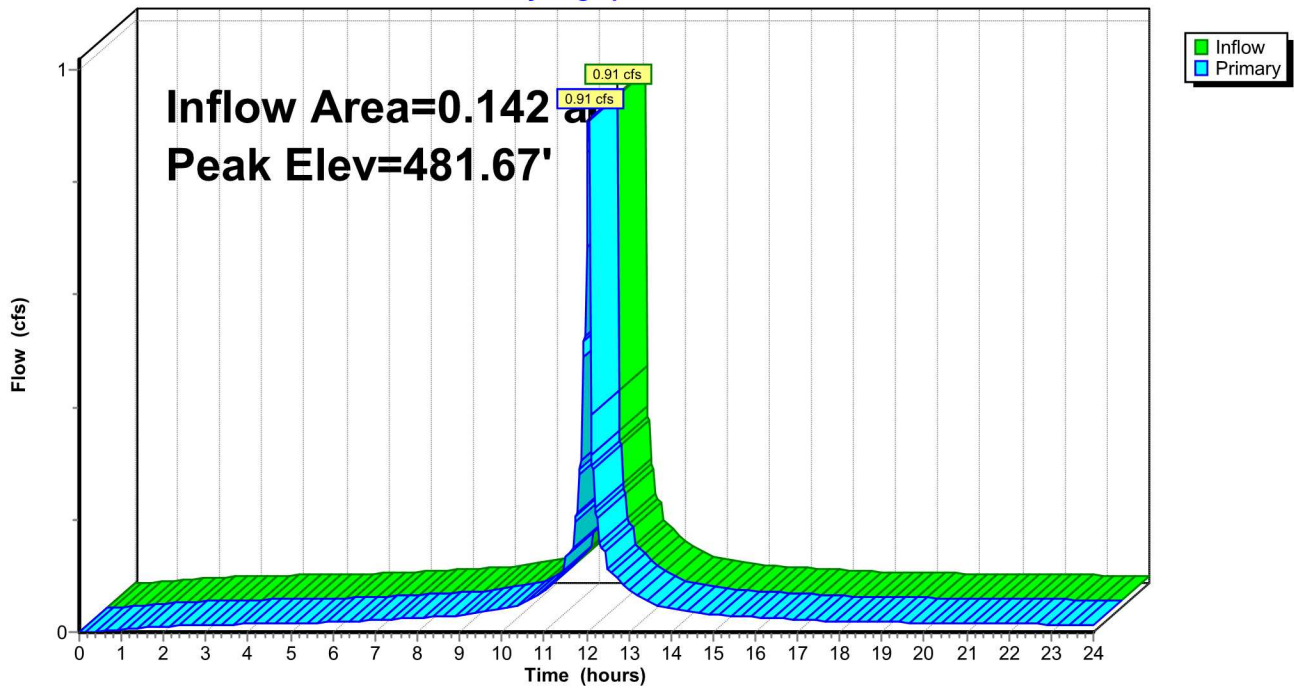
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 481.67' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	480.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.91 cfs @ 12.09 hrs HW=481.67' (Free Discharge)  
↑1=Orifice/Grate (Orifice Controls 0.91 cfs @ 4.63 fps)

## Pond CB B: CB B

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Pond CB B: CB B

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	480.50	0.00
0.50	0.00	480.51	0.00
1.00	0.00	480.54	0.00
1.50	0.01	480.55	0.01
2.00	0.01	480.56	0.01
2.50	0.01	480.56	0.01
3.00	0.01	480.56	0.01
3.50	0.01	480.57	0.01
4.00	0.01	480.57	0.01
4.50	0.02	480.57	0.02
5.00	0.02	480.57	0.02
5.50	0.02	480.57	0.02
6.00	0.02	480.58	0.02
6.50	0.02	480.58	0.02
7.00	0.02	480.58	0.02
7.50	0.02	480.59	0.02
8.00	0.03	480.59	0.03
8.50	0.03	480.60	0.03
9.00	0.03	480.60	0.03
9.50	0.04	480.61	0.04
10.00	0.04	480.62	0.04
10.50	0.05	480.63	0.05
11.00	0.07	480.66	0.07
11.50	0.11	480.70	0.11
12.00	<b>0.53</b>	<b>481.06</b>	<b>0.53</b>
12.50	<b>0.14</b>	<b>480.73</b>	<b>0.14</b>
13.00	0.08	480.67	0.08
13.50	0.05	480.64	0.05
14.00	0.04	480.62	0.04
14.50	0.04	480.61	0.04
15.00	0.03	480.60	0.03
15.50	0.03	480.60	0.03
16.00	0.03	480.59	0.03
16.50	0.02	480.59	0.02
17.00	0.02	480.59	0.02
17.50	0.02	480.58	0.02
18.00	0.02	480.58	0.02
18.50	0.02	480.58	0.02
19.00	0.02	480.58	0.02
19.50	0.02	480.57	0.02
20.00	0.02	480.57	0.02
20.50	0.02	480.57	0.02
21.00	0.02	480.57	0.02
21.50	0.02	480.57	0.02
22.00	0.01	480.57	0.01
22.50	0.01	480.57	0.01
23.00	0.01	480.57	0.01
23.50	0.01	480.57	0.01
24.00	0.01	480.57	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Summary for Pond CULTEC A: CULTEC A FRONT

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.91 cfs @ 12.08 hrs, Volume= 0.073 af  
Outflow = 0.19 cfs @ 12.31 hrs, Volume= 0.073 af, Atten= 80%, Lag= 13.8 min  
Discarded = 0.19 cfs @ 12.31 hrs, Volume= 0.073 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 473.25' @ 12.31 hrs Surf.Area= 473 sf Storage= 545 cf

Plug-Flow detention time= 13.9 min calculated for 0.073 af (100% of inflow)  
Center-of-Mass det. time= 13.6 min ( 754.9 - 741.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	471.50'	441 cf	<b>45.00'W x 10.50'L x 3.54'H Field A</b> 1,673 cf Overall - 570 cf Embedded = 1,103 cf x 40.0% Voids
#2A	472.00'	570 cf	<b>Cultec R-330XLHD x 9 Inside #1</b> Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 9 rows
#3	474.54'	1 cf	<b>0.50'D x 3.47'H Vertical Cone/Cylinder x 2</b>
		1,013 cf	Total Available Storage

Storage Group A created with Chamber Wizard

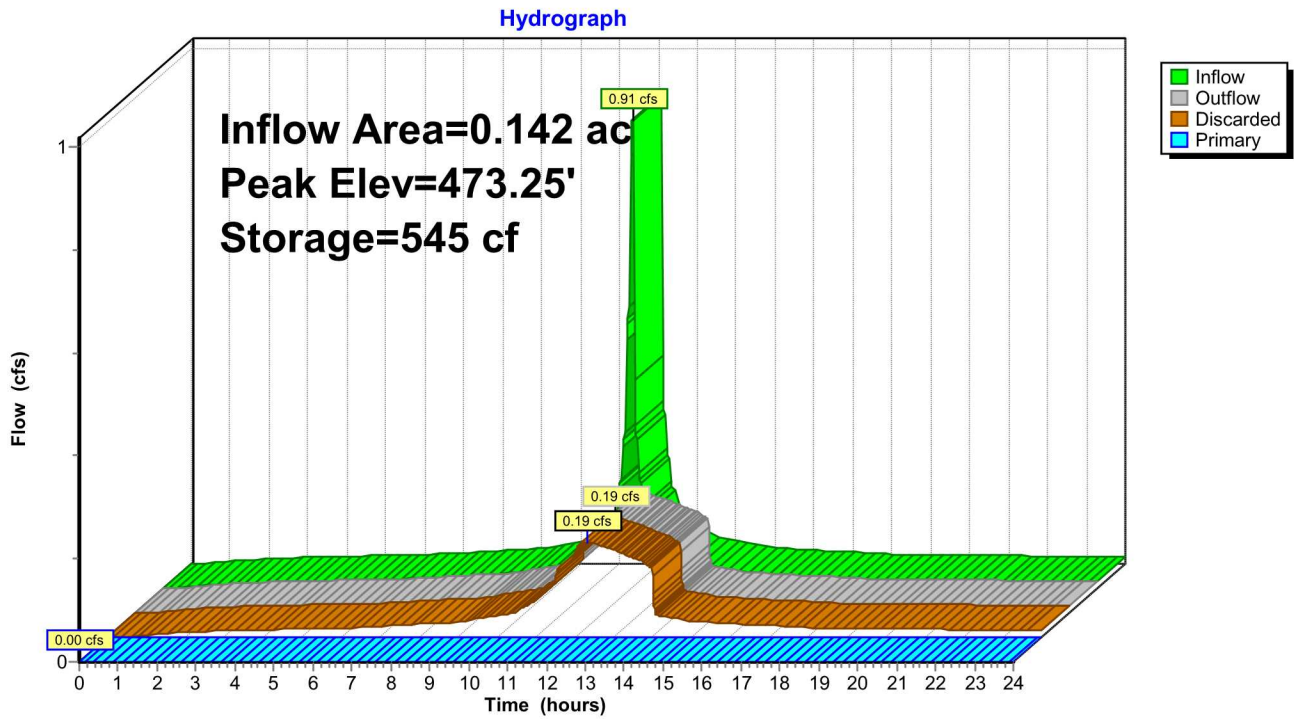
Device	Routing	Invert	Outlet Devices
#1	Discarded	471.50'	<b>12.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	478.00'	<b>6.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.19 cfs @ 12.31 hrs HW=473.25' (Free Discharge)  
↑**1=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=471.50' (Free Discharge)  
↑**2=Orifice/Grate** ( Controls 0.00 cfs)



### Pond CULTEC A: CULTEC A FRONT



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Pond CULTEC A: CULTEC A FRONT

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	471.50	0.00	0.00	<b>0.00</b>
0.50	0.00	0	471.50	0.00	0.00	0.00
1.00	0.00	0	471.50	0.00	0.00	0.00
1.50	0.01	1	471.50	0.01	0.01	0.00
2.00	0.01	1	471.50	0.01	0.01	0.00
2.50	0.01	1	471.51	0.01	0.01	0.00
3.00	0.01	1	471.51	0.01	0.01	0.00
3.50	0.01	1	471.51	0.01	0.01	0.00
4.00	0.01	1	471.51	0.01	0.01	0.00
4.50	0.02	1	471.51	0.02	0.02	0.00
5.00	0.02	1	471.51	0.02	0.02	0.00
5.50	0.02	2	471.51	0.02	0.02	0.00
6.00	0.02	2	471.51	0.02	0.02	0.00
6.50	0.02	2	471.51	0.02	0.02	0.00
7.00	0.02	2	471.51	0.02	0.02	0.00
7.50	0.02	2	471.51	0.02	0.02	0.00
8.00	0.03	2	471.51	0.03	0.03	0.00
8.50	0.03	3	471.51	0.03	0.03	0.00
9.00	0.03	3	471.51	0.03	0.03	0.00
9.50	0.04	3	471.52	0.04	0.04	0.00
10.00	0.04	4	471.52	0.04	0.04	0.00
10.50	0.05	4	471.52	0.05	0.05	0.00
11.00	0.07	7	471.53	0.07	0.07	0.00
11.50	0.11	10	471.55	0.11	0.11	0.00
12.00	<b>0.53</b>	<b>214</b>	<b>472.32</b>	<b>0.16</b>	<b>0.16</b>	0.00
12.50	<b>0.14</b>	<b>519</b>	<b>473.17</b>	<b>0.18</b>	<b>0.18</b>	0.00
13.00	0.08	372	472.76	0.17	0.17	0.00
13.50	0.05	194	472.27	0.15	0.15	0.00
14.00	0.04	16	471.58	0.13	0.13	0.00
14.50	0.04	3	471.52	0.04	0.04	0.00
15.00	0.03	3	471.52	0.03	0.03	0.00
15.50	0.03	3	471.51	0.03	0.03	0.00
16.00	0.03	2	471.51	0.03	0.03	0.00
16.50	0.02	2	471.51	0.02	0.02	0.00
17.00	0.02	2	471.51	0.02	0.02	0.00
17.50	0.02	2	471.51	0.02	0.02	0.00
18.00	0.02	2	471.51	0.02	0.02	0.00
18.50	0.02	2	471.51	0.02	0.02	0.00
19.00	0.02	2	471.51	0.02	0.02	0.00
19.50	0.02	2	471.51	0.02	0.02	0.00
20.00	0.02	2	471.51	0.02	0.02	0.00
20.50	0.02	1	471.51	0.02	0.02	0.00
21.00	0.02	1	471.51	0.02	0.02	0.00
21.50	0.02	1	471.51	0.02	0.02	0.00
22.00	0.01	1	471.51	0.01	0.01	0.00
22.50	0.01	1	471.51	0.01	0.01	0.00
23.00	0.01	1	471.51	0.01	0.01	0.00
23.50	0.01	1	471.51	0.01	0.01	0.00
24.00	0.01	1	471.51	0.01	0.01	0.00

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Summary for Subcatchment A: DRIVE A

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af, Depth> 8.96"  
Routed to Reach PIPE A : PIPE A 62 L.F.

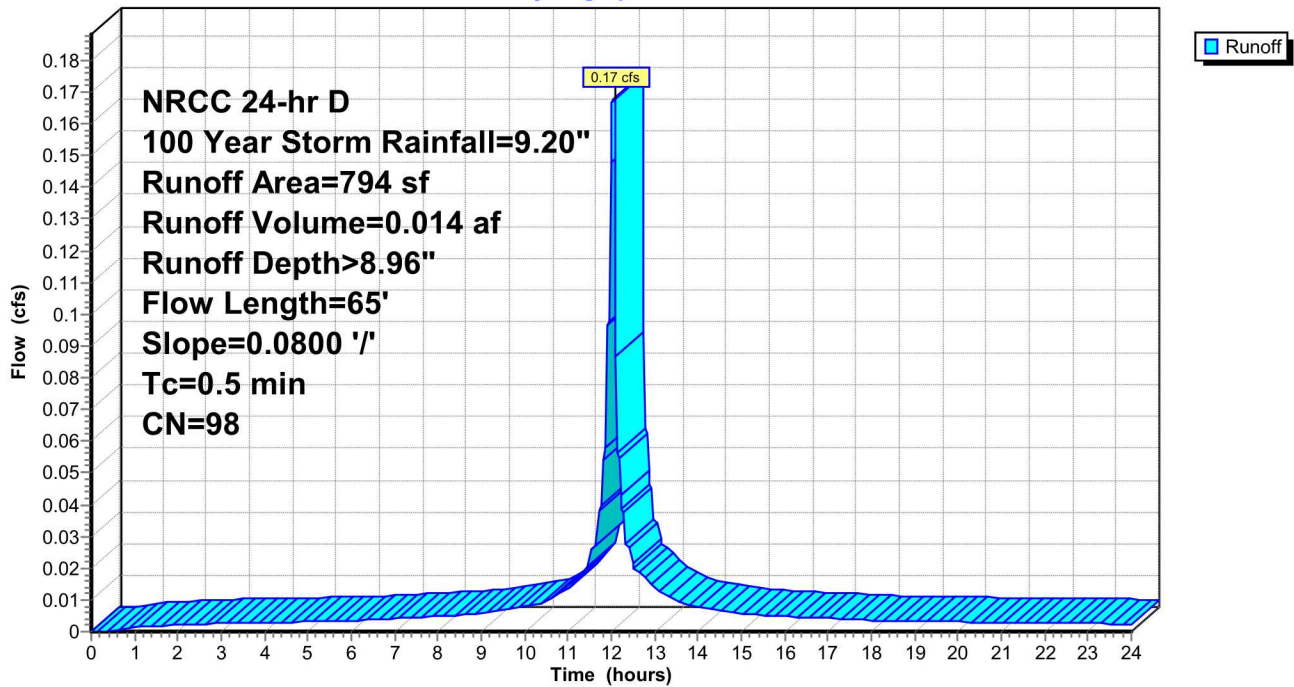
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Area (sf)	CN	Description
794	98	Paved parking, HSG B
794		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	65	0.0800	2.30		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment A: DRIVE A

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Subcatchment A: DRIVE A

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.07	0.00	0.00
1.00	0.13	0.03	0.00
1.50	0.20	0.07	0.00
2.00	0.28	0.13	0.00
2.50	0.35	0.19	0.00
3.00	0.43	0.26	0.00
3.50	0.51	0.33	0.00
4.00	0.59	0.40	0.00
4.50	0.68	0.48	0.00
5.00	0.77	0.57	0.00
5.50	0.86	0.65	0.00
6.00	0.95	0.74	0.00
6.50	1.05	0.84	0.00
7.00	1.16	0.94	0.00
7.50	1.27	1.06	0.00
8.00	1.40	1.18	0.00
8.50	1.54	1.32	0.01
9.00	1.69	1.47	0.01
9.50	1.86	1.64	0.01
10.00	2.06	1.84	0.01
10.50	2.30	2.07	0.01
11.00	2.61	2.38	0.01
11.50	3.08	2.85	0.02
12.00	4.41	4.17	<b>0.10</b>
12.50	6.12	5.88	<b>0.03</b>
13.00	6.59	6.35	0.01
13.50	6.90	6.66	0.01
14.00	7.14	6.90	0.01
14.50	7.34	7.10	0.01
15.00	7.51	7.27	0.01
15.50	7.66	7.42	0.01
16.00	7.80	7.56	0.00
16.50	7.93	7.69	0.00
17.00	8.04	7.80	0.00
17.50	8.15	7.91	0.00
18.00	8.25	8.01	0.00
18.50	8.34	8.10	0.00
19.00	8.43	8.19	0.00
19.50	8.52	8.28	0.00
20.00	8.61	8.37	0.00
20.50	8.69	8.45	0.00
21.00	8.77	8.53	0.00
21.50	8.85	8.61	0.00
22.00	8.92	8.68	0.00
22.50	9.00	8.76	0.00
23.00	9.07	8.83	0.00
23.50	9.13	8.89	0.00
24.00	<b>9.20</b>	<b>8.96</b>	0.00

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Summary for Subcatchment B: DRIVE B

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 8.96"

Routed to Pond CB A : CB A

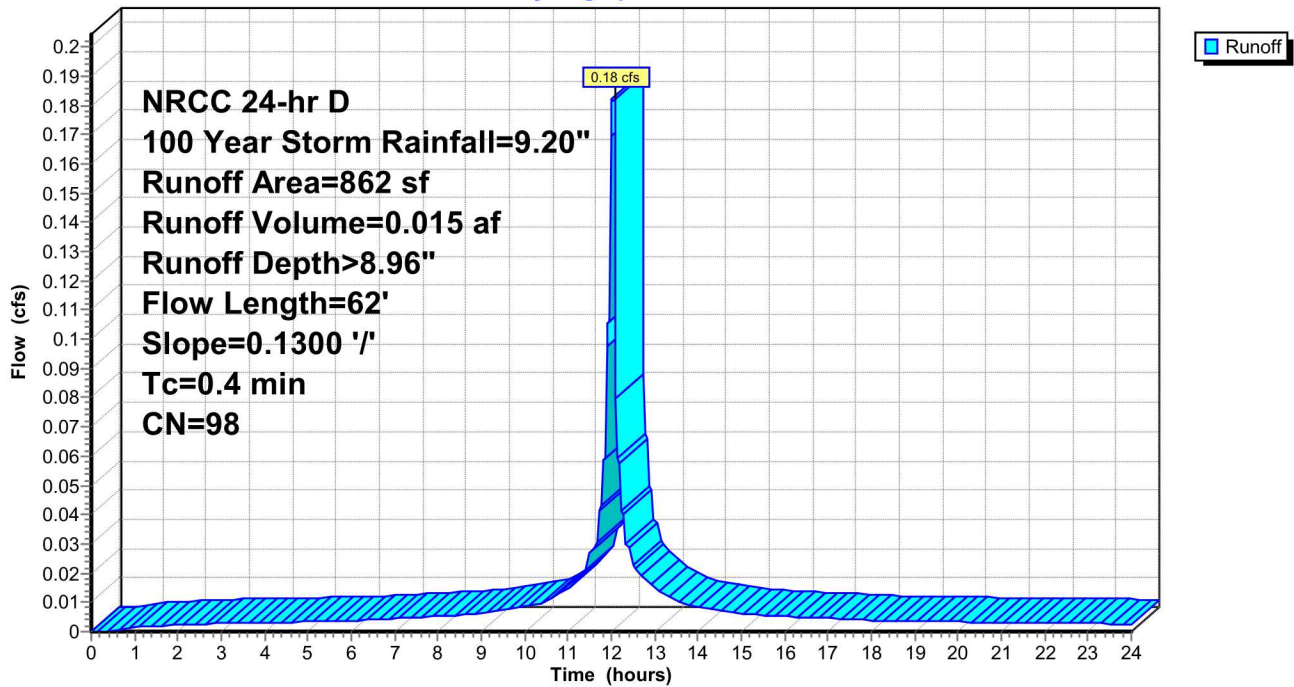
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Area (sf)	CN	Description
862	98	Paved parking, HSG B
862		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	62	0.1300	2.76		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment B: DRIVE B

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Subcatchment B: DRIVE B

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.07	0.00	0.00
1.00	0.13	0.03	0.00
1.50	0.20	0.07	0.00
2.00	0.28	0.13	0.00
2.50	0.35	0.19	0.00
3.00	0.43	0.26	0.00
3.50	0.51	0.33	0.00
4.00	0.59	0.40	0.00
4.50	0.68	0.48	0.00
5.00	0.77	0.57	0.00
5.50	0.86	0.65	0.00
6.00	0.95	0.74	0.00
6.50	1.05	0.84	0.00
7.00	1.16	0.94	0.00
7.50	1.27	1.06	0.00
8.00	1.40	1.18	0.01
8.50	1.54	1.32	0.01
9.00	1.69	1.47	0.01
9.50	1.86	1.64	0.01
10.00	2.06	1.84	0.01
10.50	2.30	2.07	0.01
11.00	2.61	2.38	0.01
11.50	3.08	2.85	0.02
12.00	4.41	4.17	<b>0.11</b>
12.50	6.12	5.88	<b>0.03</b>
13.00	6.59	6.35	0.02
13.50	6.90	6.66	0.01
14.00	7.14	6.90	0.01
14.50	7.34	7.10	0.01
15.00	7.51	7.27	0.01
15.50	7.66	7.42	0.01
16.00	7.80	7.56	0.01
16.50	7.93	7.69	0.00
17.00	8.04	7.80	0.00
17.50	8.15	7.91	0.00
18.00	8.25	8.01	0.00
18.50	8.34	8.10	0.00
19.00	8.43	8.19	0.00
19.50	8.52	8.28	0.00
20.00	8.61	8.37	0.00
20.50	8.69	8.45	0.00
21.00	8.77	8.53	0.00
21.50	8.85	8.61	0.00
22.00	8.92	8.68	0.00
22.50	9.00	8.76	0.00
23.00	9.07	8.83	0.00
23.50	9.13	8.89	0.00
24.00	<b>9.20</b>	<b>8.96</b>	0.00

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Summary for Subcatchment C: DRIVE C & HOUSE

Runoff = 0.96 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 8.96"

Routed to Pond CB B : CB B

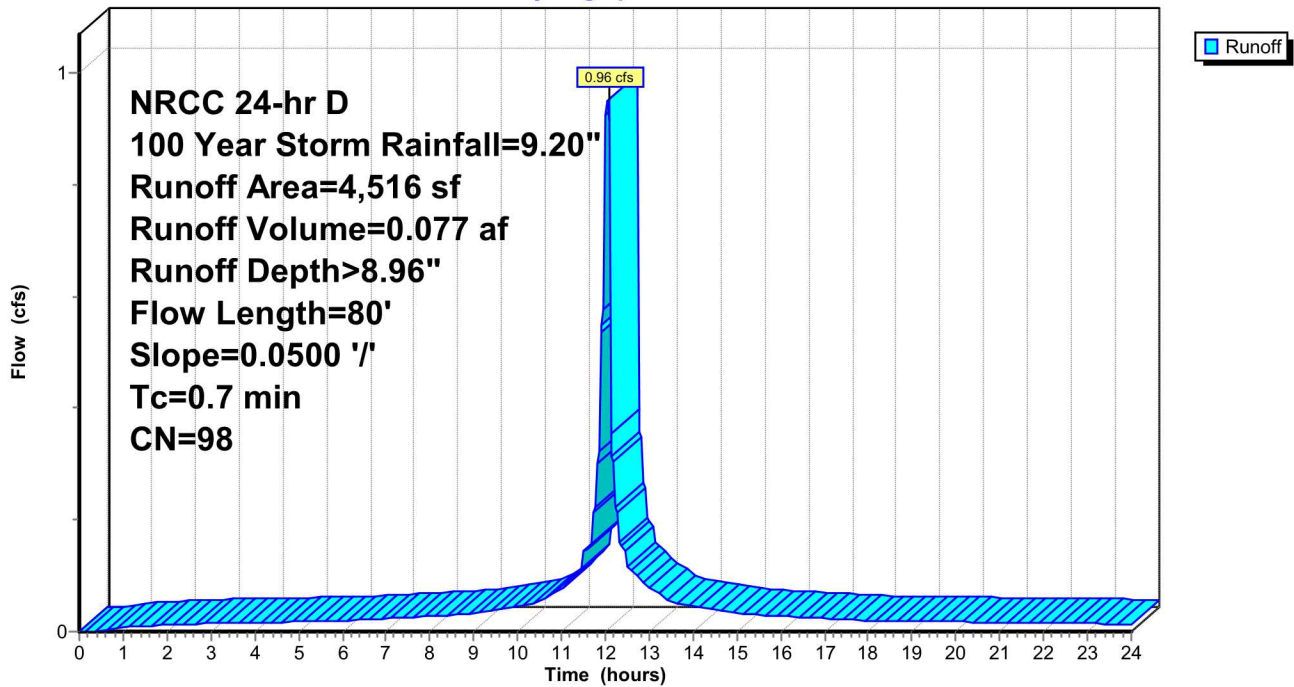
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Area (sf)	CN	Description
4,516	98	Paved parking, HSG B
4,516		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	80	0.0500	1.98		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment C: DRIVE C & HOUSE

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Subcatchment C: DRIVE C & HOUSE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.07	0.00	0.00
1.00	0.13	0.03	0.01
1.50	0.20	0.07	0.01
2.00	0.28	0.13	0.01
2.50	0.35	0.19	0.01
3.00	0.43	0.26	0.01
3.50	0.51	0.33	0.02
4.00	0.59	0.40	0.02
4.50	0.68	0.48	0.02
5.00	0.77	0.57	0.02
5.50	0.86	0.65	0.02
6.00	0.95	0.74	0.02
6.50	1.05	0.84	0.02
7.00	1.16	0.94	0.02
7.50	1.27	1.06	0.03
8.00	1.40	1.18	0.03
8.50	1.54	1.32	0.03
9.00	1.69	1.47	0.03
9.50	1.86	1.64	0.04
10.00	2.06	1.84	0.04
10.50	2.30	2.07	0.05
11.00	2.61	2.38	0.07
11.50	3.08	2.85	0.11
12.00	4.41	4.17	<b>0.56</b>
12.50	6.12	5.88	<b>0.15</b>
13.00	6.59	6.35	0.08
13.50	6.90	6.66	0.06
14.00	7.14	6.90	0.05
14.50	7.34	7.10	0.04
15.00	7.51	7.27	0.03
15.50	7.66	7.42	0.03
16.00	7.80	7.56	0.03
16.50	7.93	7.69	0.03
17.00	8.04	7.80	0.02
17.50	8.15	7.91	0.02
18.00	8.25	8.01	0.02
18.50	8.34	8.10	0.02
19.00	8.43	8.19	0.02
19.50	8.52	8.28	0.02
20.00	8.61	8.37	0.02
20.50	8.69	8.45	0.02
21.00	8.77	8.53	0.02
21.50	8.85	8.61	0.02
22.00	8.92	8.68	0.02
22.50	9.00	8.76	0.02
23.00	9.07	8.83	0.01
23.50	9.13	8.89	0.01
24.00	<b>9.20</b>	<b>8.96</b>	0.01



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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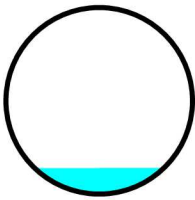
## Summary for Reach PIPE A: PIPE A 62 L.F.

Inflow Area = 0.018 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af  
Outflow = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CB A : CB A

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 5.61 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.94 fps, Avg. Travel Time= 0.5 min

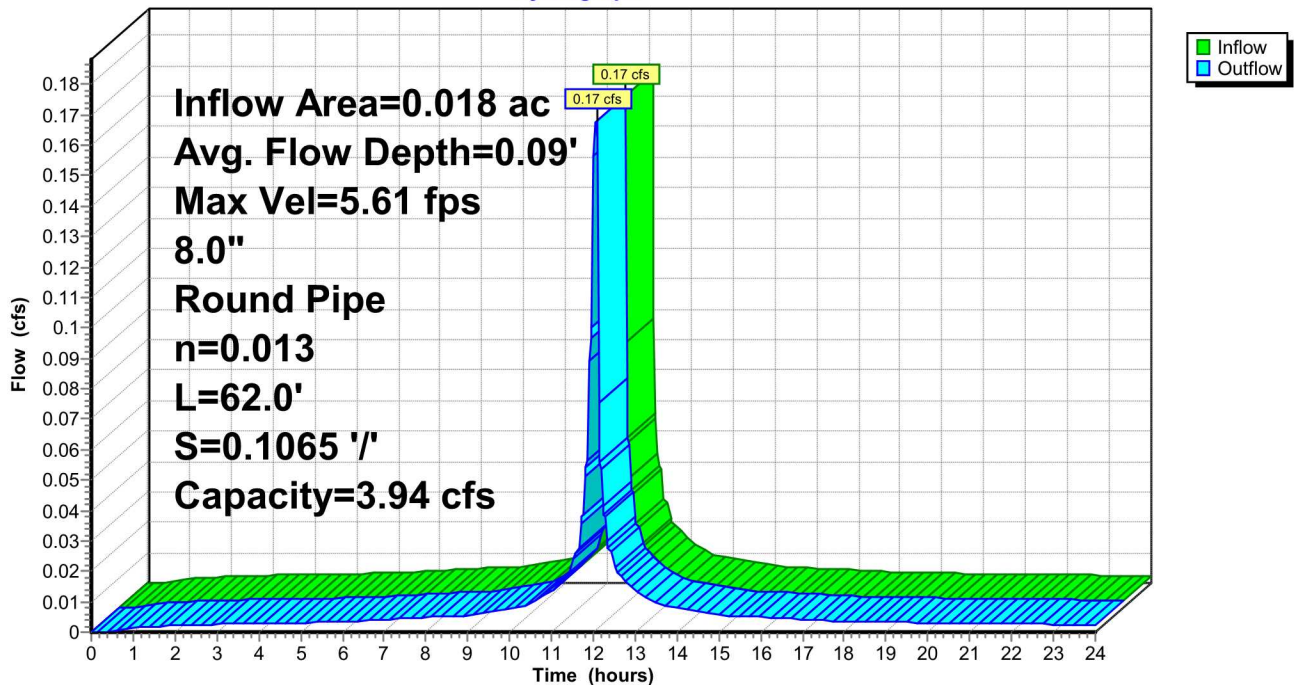
Peak Storage= 2 cf @ 12.04 hrs  
Average Depth at Peak Storage= 0.09' , Surface Width= 0.46'  
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 3.94 cfs

8.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 62.0' Slope= 0.1065 '/'  
Inlet Invert= 486.30', Outlet Invert= 479.70'



## Reach PIPE A: PIPE A 62 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Reach PIPE A: PIPE A 62 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	486.30	0.00
0.50	0.00	0	486.31	0.00
1.00	0.00	0	486.31	0.00
1.50	0.00	0	486.31	0.00
2.00	0.00	0	486.31	0.00
2.50	0.00	0	486.31	0.00
3.00	0.00	0	486.31	0.00
3.50	0.00	0	486.31	0.00
4.00	0.00	0	486.31	0.00
4.50	0.00	0	486.31	0.00
5.00	0.00	0	486.31	0.00
5.50	0.00	0	486.31	0.00
6.00	0.00	0	486.31	0.00
6.50	0.00	0	486.32	0.00
7.00	0.00	0	486.32	0.00
7.50	0.00	0	486.32	0.00
8.00	0.00	0	486.32	0.00
8.50	0.01	0	486.32	0.01
9.00	0.01	0	486.32	0.01
9.50	0.01	0	486.32	0.01
10.00	0.01	0	486.32	0.01
10.50	0.01	0	486.32	0.01
11.00	0.01	0	486.33	0.01
11.50	0.02	0	486.33	0.02
12.00	<b>0.10</b>	<b>1</b>	<b>486.37</b>	<b>0.10</b>
12.50	<b>0.03</b>	<b>1</b>	<b>486.34</b>	<b>0.03</b>
13.00	0.01	0	486.33	0.01
13.50	0.01	0	486.32	0.01
14.00	0.01	0	486.32	0.01
14.50	0.01	0	486.32	0.01
15.00	0.01	0	486.32	0.01
15.50	0.01	0	486.32	0.01
16.00	0.00	0	486.32	0.00
16.50	0.00	0	486.32	0.00
17.00	0.00	0	486.32	0.00
17.50	0.00	0	486.32	0.00
18.00	0.00	0	486.31	0.00
18.50	0.00	0	486.31	0.00
19.00	0.00	0	486.31	0.00
19.50	0.00	0	486.31	0.00
20.00	0.00	0	486.31	0.00
20.50	0.00	0	486.31	0.00
21.00	0.00	0	486.31	0.00
21.50	0.00	0	486.31	0.00
22.00	0.00	0	486.31	0.00
22.50	0.00	0	486.31	0.00
23.00	0.00	0	486.31	0.00
23.50	0.00	0	486.31	0.00
24.00	0.00	0	486.31	0.00

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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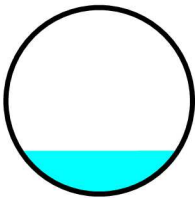
## Summary for Reach PIPE B: PIPE B 73 L.F.

Inflow Area = 0.038 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af  
Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CB B : CB B

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 5.66 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.96 fps, Avg. Travel Time= 0.6 min

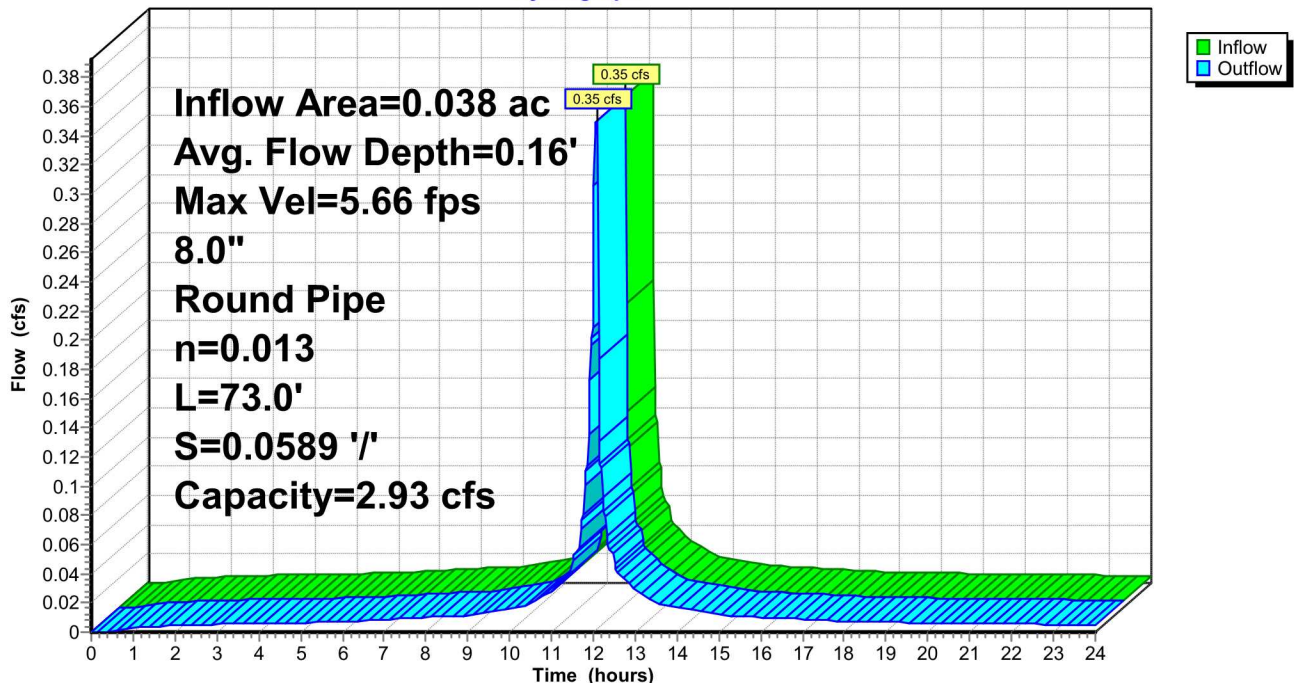
Peak Storage= 5 cf @ 12.04 hrs  
Average Depth at Peak Storage= 0.16' , Surface Width= 0.56'  
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 2.93 cfs

8.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 73.0' Slope= 0.0589 '/'  
Inlet Invert= 479.70', Outlet Invert= 475.40'



## Reach PIPE B: PIPE B 73 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Reach PIPE B: PIPE B 73 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	479.70	0.00
0.50	0.00	0	479.71	0.00
1.00	0.00	0	479.72	0.00
1.50	0.00	0	479.72	0.00
2.00	0.00	0	479.72	0.00
2.50	0.00	0	479.72	0.00
3.00	0.01	0	479.72	0.01
3.50	0.01	0	479.72	0.01
4.00	0.01	0	479.72	0.01
4.50	0.01	0	479.72	0.01
5.00	0.01	0	479.72	0.01
5.50	0.01	0	479.72	0.01
6.00	0.01	0	479.72	0.01
6.50	0.01	0	479.72	0.01
7.00	0.01	0	479.73	0.01
7.50	0.01	0	479.73	0.01
8.00	0.01	0	479.73	0.01
8.50	0.01	0	479.73	0.01
9.00	0.01	0	479.73	0.01
9.50	0.01	0	479.73	0.01
10.00	0.02	1	479.74	0.02
10.50	0.02	1	479.74	0.02
11.00	0.03	1	479.75	0.03
11.50	0.04	1	479.76	0.04
12.00	<b>0.21</b>	<b>3</b>	<b>479.82</b>	<b>0.20</b>
12.50	<b>0.05</b>	<b>1</b>	<b>479.76</b>	<b>0.05</b>
13.00	0.03	1	479.75	0.03
13.50	0.02	1	479.74	0.02
14.00	0.02	1	479.74	0.02
14.50	0.01	0	479.73	0.01
15.00	0.01	0	479.73	0.01
15.50	0.01	0	479.73	0.01
16.00	0.01	0	479.73	0.01
16.50	0.01	0	479.73	0.01
17.00	0.01	0	479.73	0.01
17.50	0.01	0	479.73	0.01
18.00	0.01	0	479.72	0.01
18.50	0.01	0	479.72	0.01
19.00	0.01	0	479.72	0.01
19.50	0.01	0	479.72	0.01
20.00	0.01	0	479.72	0.01
20.50	0.01	0	479.72	0.01
21.00	0.01	0	479.72	0.01
21.50	0.01	0	479.72	0.01
22.00	0.01	0	479.72	0.01
22.50	0.01	0	479.72	0.01
23.00	0.01	0	479.72	0.01
23.50	0.01	0	479.72	0.01
24.00	0.00	0	479.72	0.01

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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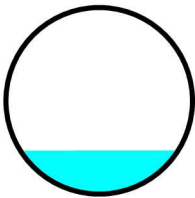
## Summary for Reach PIPE C: PIPE C 15 L.F.

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 1.31 cfs @ 12.09 hrs, Volume= 0.106 af  
Outflow = 1.31 cfs @ 12.06 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond CULTEC A : CULTEC A FRONT

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 9.35 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 3.24 fps, Avg. Travel Time= 0.1 min

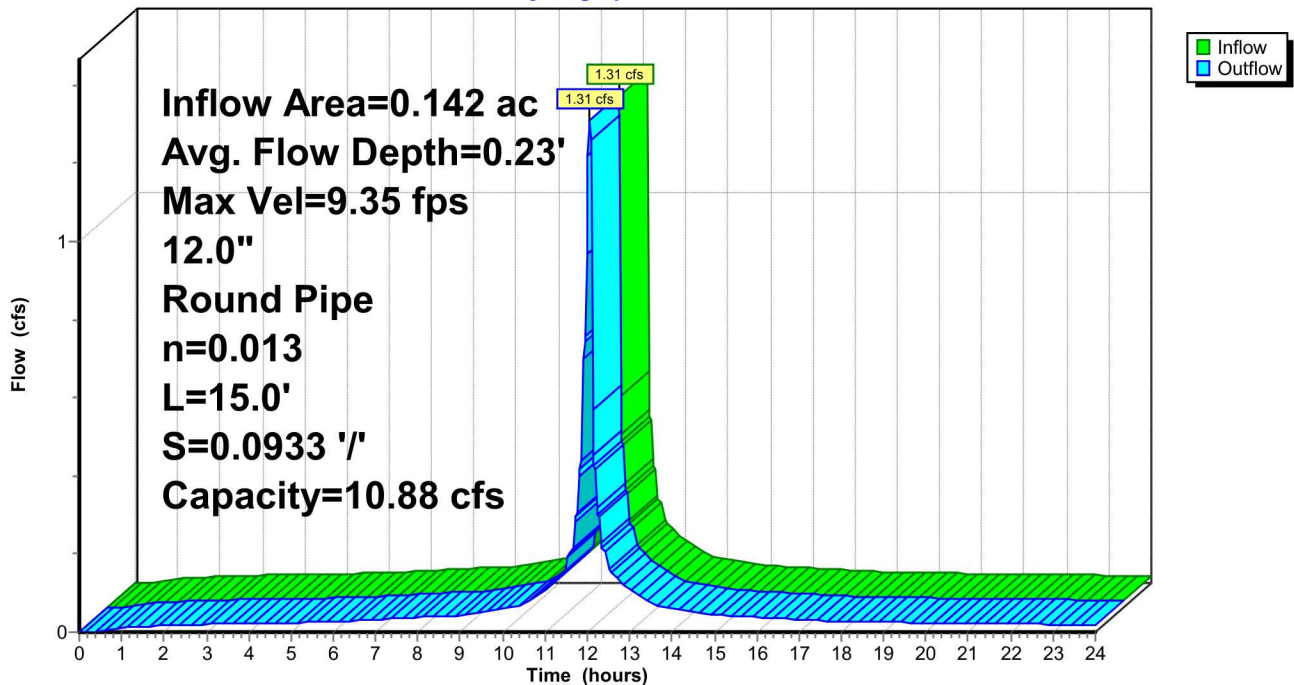
Peak Storage= 2 cf @ 12.06 hrs  
Average Depth at Peak Storage= 0.23' , Surface Width= 0.85'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.88 cfs

12.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 15.0' Slope= 0.0933 '/'  
Inlet Invert= 475.40', Outlet Invert= 474.00'



## Reach PIPE C: PIPE C 15 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Reach PIPE C: PIPE C 15 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	475.40	0.00
0.50	0.00	0	475.41	0.00
1.00	0.01	0	475.42	0.01
1.50	0.01	0	475.43	0.01
2.00	0.02	0	475.43	0.02
2.50	0.02	0	475.43	0.02
3.00	0.02	0	475.43	0.02
3.50	0.02	0	475.43	0.02
4.00	0.02	0	475.43	0.02
4.50	0.02	0	475.43	0.02
5.00	0.02	0	475.43	0.02
5.50	0.02	0	475.43	0.02
6.00	0.03	0	475.44	0.03
6.50	0.03	0	475.44	0.03
7.00	0.03	0	475.44	0.03
7.50	0.03	0	475.44	0.03
8.00	0.04	0	475.44	0.04
8.50	0.04	0	475.44	0.04
9.00	0.04	0	475.45	0.04
9.50	0.05	0	475.45	0.05
10.00	0.06	0	475.45	0.06
10.50	0.07	0	475.46	0.07
11.00	0.10	0	475.47	0.10
11.50	0.15	0	475.48	0.15
12.00	<b>0.76</b>	<b>1</b>	<b>475.58</b>	<b>0.76</b>
12.50	<b>0.20</b>	<b>1</b>	<b>475.49</b>	<b>0.20</b>
13.00	0.11	0	475.47	0.11
13.50	0.08	0	475.46	0.08
14.00	0.06	0	475.45	0.06
14.50	0.05	0	475.45	0.05
15.00	0.05	0	475.45	0.05
15.50	0.04	0	475.44	0.04
16.00	0.04	0	475.44	0.04
16.50	0.04	0	475.44	0.04
17.00	0.03	0	475.44	0.03
17.50	0.03	0	475.44	0.03
18.00	0.03	0	475.44	0.03
18.50	0.03	0	475.44	0.03
19.00	0.03	0	475.44	0.03
19.50	0.02	0	475.43	0.02
20.00	0.02	0	475.43	0.02
20.50	0.02	0	475.43	0.02
21.00	0.02	0	475.43	0.02
21.50	0.02	0	475.43	0.02
22.00	0.02	0	475.43	0.02
22.50	0.02	0	475.43	0.02
23.00	0.02	0	475.43	0.02
23.50	0.02	0	475.43	0.02
24.00	0.02	0	475.43	0.02

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Pond CB A: CB A

Inflow Area = 0.038 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af  
Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af  
Routed to Reach PIPE B : PIPE B 73 L.F.

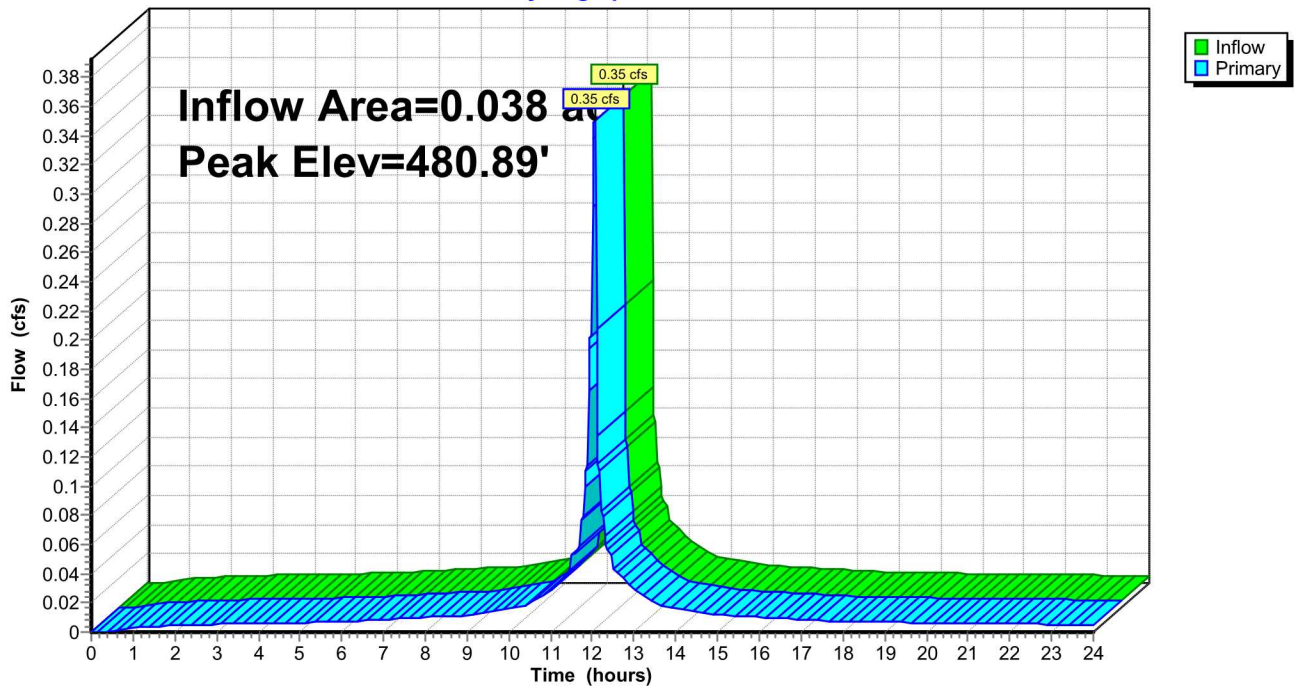
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 480.89' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	480.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 12.09 hrs HW=480.89' (Free Discharge)  
↑1=Orifice/Grate (Orifice Controls 0.35 cfs @ 2.13 fps)

## Pond CB A: CB A

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Pond CB A: CB A

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	480.50	0.00
0.50	0.00	480.52	0.00
1.00	0.00	480.53	0.00
1.50	0.00	480.53	0.00
2.00	0.00	480.54	0.00
2.50	0.00	480.54	0.00
3.00	0.01	480.54	0.01
3.50	0.01	480.54	0.01
4.00	0.01	480.54	0.01
4.50	0.01	480.54	0.01
5.00	0.01	480.55	0.01
5.50	0.01	480.55	0.01
6.00	0.01	480.55	0.01
6.50	0.01	480.55	0.01
7.00	0.01	480.55	0.01
7.50	0.01	480.55	0.01
8.00	0.01	480.56	0.01
8.50	0.01	480.56	0.01
9.00	0.01	480.56	0.01
9.50	0.01	480.57	0.01
10.00	0.02	480.57	0.02
10.50	0.02	480.58	0.02
11.00	0.03	480.60	0.03
11.50	0.04	480.62	0.04
12.00	<b>0.21</b>	<b>480.78</b>	<b>0.21</b>
12.50	<b>0.05</b>	<b>480.64</b>	<b>0.05</b>
13.00	0.03	480.60	0.03
13.50	0.02	480.58	0.02
14.00	0.02	480.57	0.02
14.50	0.01	480.57	0.01
15.00	0.01	480.56	0.01
15.50	0.01	480.56	0.01
16.00	0.01	480.56	0.01
16.50	0.01	480.56	0.01
17.00	0.01	480.55	0.01
17.50	0.01	480.55	0.01
18.00	0.01	480.55	0.01
18.50	0.01	480.55	0.01
19.00	0.01	480.55	0.01
19.50	0.01	480.55	0.01
20.00	0.01	480.55	0.01
20.50	0.01	480.54	0.01
21.00	0.01	480.54	0.01
21.50	0.01	480.54	0.01
22.00	0.01	480.54	0.01
22.50	0.01	480.54	0.01
23.00	0.01	480.54	0.01
23.50	0.01	480.54	0.01
24.00	0.00	480.54	0.00



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Pond CB B: CB B

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 1.31 cfs @ 12.09 hrs, Volume= 0.106 af  
Outflow = 1.31 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min  
Primary = 1.31 cfs @ 12.09 hrs, Volume= 0.106 af  
Routed to Reach PIPE C : PIPE C 15 L.F.

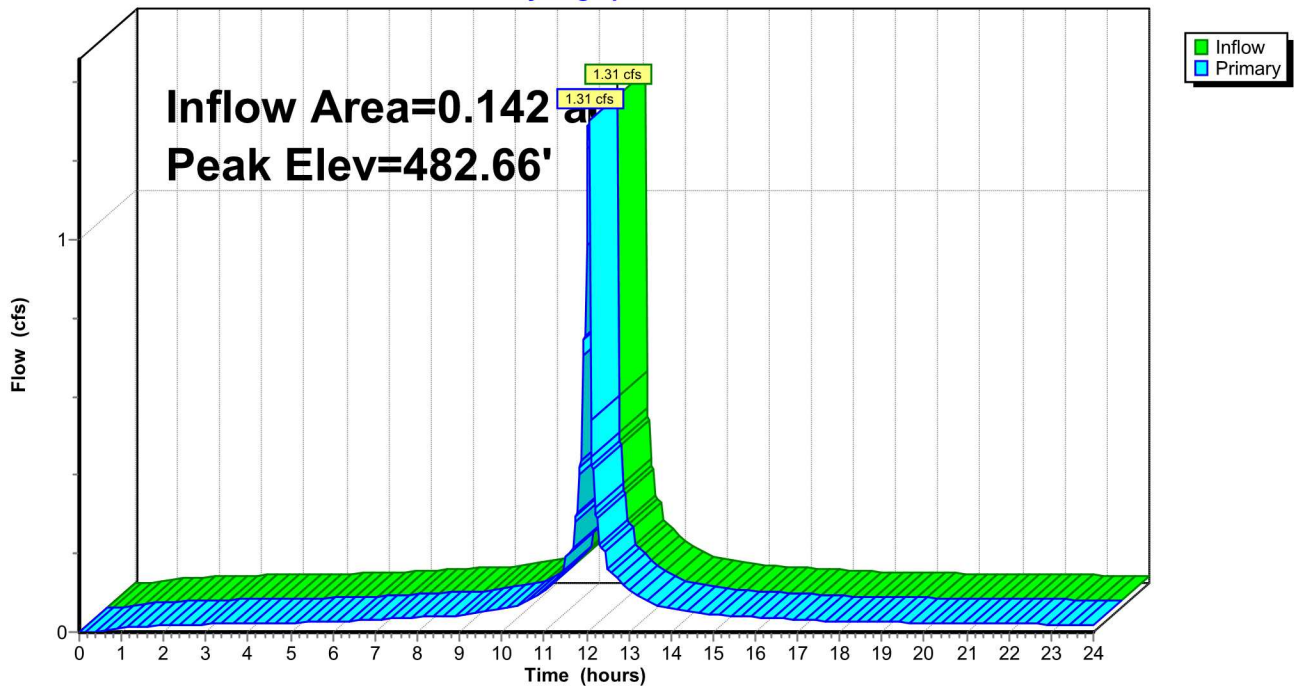
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 482.66' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	480.50'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.31 cfs @ 12.09 hrs HW=482.66' (Free Discharge)  
↑1=Orifice/Grate (Orifice Controls 1.31 cfs @ 6.65 fps)

## Pond CB B: CB B

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Pond CB B: CB B

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	480.50	0.00
0.50	0.00	480.53	0.00
1.00	0.01	480.56	0.01
1.50	0.01	480.57	0.01
2.00	0.02	480.57	0.02
2.50	0.02	480.58	0.02
3.00	0.02	480.58	0.02
3.50	0.02	480.58	0.02
4.00	0.02	480.58	0.02
4.50	0.02	480.59	0.02
5.00	0.02	480.59	0.02
5.50	0.02	480.59	0.02
6.00	0.03	480.59	0.03
6.50	0.03	480.60	0.03
7.00	0.03	480.60	0.03
7.50	0.03	480.61	0.03
8.00	0.04	480.61	0.04
8.50	0.04	480.62	0.04
9.00	0.04	480.62	0.04
9.50	0.05	480.63	0.05
10.00	0.06	480.64	0.06
10.50	0.07	480.66	0.07
11.00	0.10	480.69	0.10
11.50	0.15	480.74	0.15
12.00	<b>0.76</b>	<b>481.40</b>	<b>0.76</b>
12.50	<b>0.20</b>	<b>480.78</b>	<b>0.20</b>
13.00	0.11	480.70	0.11
13.50	0.08	480.66	0.08
14.00	0.06	480.65	0.06
14.50	0.05	480.64	0.05
15.00	0.05	480.62	0.05
15.50	0.04	480.62	0.04
16.00	0.04	480.61	0.04
16.50	0.04	480.61	0.04
17.00	0.03	480.60	0.03
17.50	0.03	480.60	0.03
18.00	0.03	480.59	0.03
18.50	0.03	480.59	0.03
19.00	0.03	480.59	0.03
19.50	0.02	480.59	0.02
20.00	0.02	480.59	0.02
20.50	0.02	480.59	0.02
21.00	0.02	480.59	0.02
21.50	0.02	480.58	0.02
22.00	0.02	480.58	0.02
22.50	0.02	480.58	0.02
23.00	0.02	480.58	0.02
23.50	0.02	480.58	0.02
24.00	0.02	480.58	0.02

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Summary for Pond CULTEC A: CULTEC A FRONT

Inflow Area = 0.142 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 1.31 cfs @ 12.06 hrs, Volume= 0.106 af  
Outflow = 0.23 cfs @ 12.32 hrs, Volume= 0.106 af, Atten= 83%, Lag= 15.8 min  
Discarded = 0.23 cfs @ 12.32 hrs, Volume= 0.106 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 474.63' @ 12.32 hrs Surf.Area= 473 sf Storage= 934 cf

Plug-Flow detention time= 22.8 min calculated for 0.106 af (100% of inflow)  
Center-of-Mass det. time= 22.6 min ( 758.6 - 736.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	471.50'	441 cf	<b>45.00'W x 10.50'L x 3.54'H Field A</b> 1,673 cf Overall - 570 cf Embedded = 1,103 cf x 40.0% Voids
#2A	472.00'	570 cf	<b>Cultec R-330XLHD x 9 Inside #1</b> Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 9 rows
#3	474.54'	1 cf	<b>0.50'D x 3.47'H Vertical Cone/Cylinder x 2</b>
		1,013 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	471.50'	<b>12.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	478.00'	<b>6.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.23 cfs @ 12.32 hrs HW=474.63' (Free Discharge)  
↑**1=Exfiltration** (Exfiltration Controls 0.23 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=471.50' (Free Discharge)  
↑**2=Orifice/Grate** ( Controls 0.00 cfs)

# 1 Guion

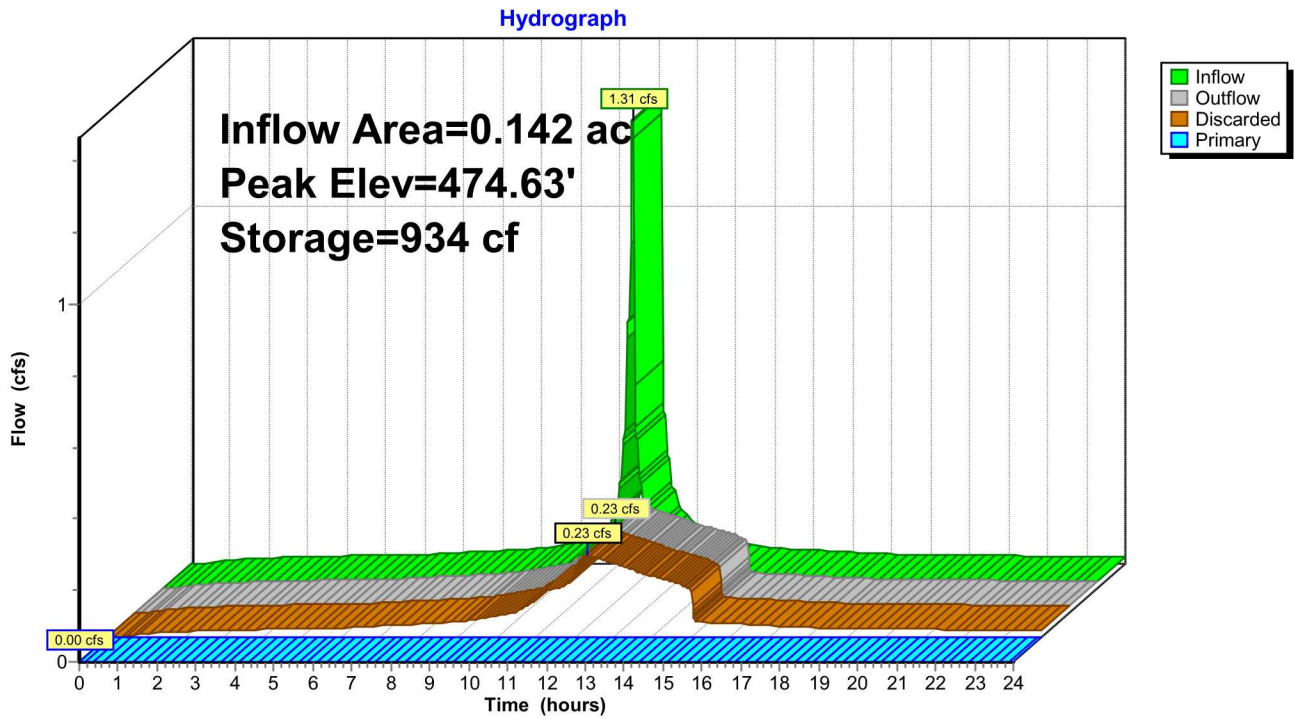
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Pond CULTEC A: CULTEC A FRONT



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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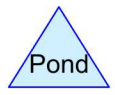
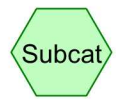
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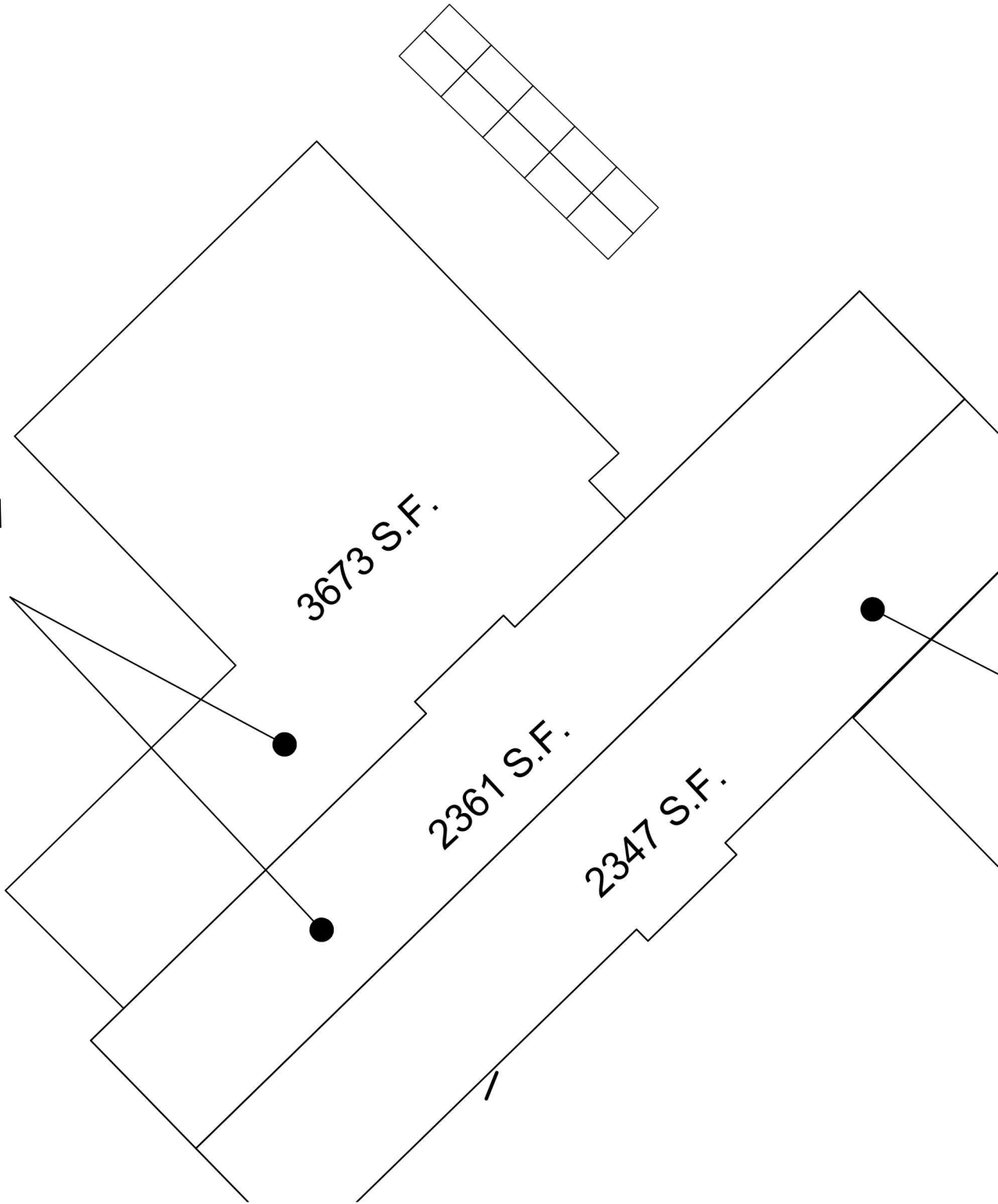
## Hydrograph for Pond CULTEC A: CULTEC A FRONT

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	471.50	0.00	0.00	<b>0.00</b>
0.50	0.00	0	471.50	0.00	0.00	0.00
1.00	0.01	1	471.50	0.01	0.01	0.00
1.50	0.01	1	471.51	0.01	0.01	0.00
2.00	0.02	2	471.51	0.02	0.02	0.00
2.50	0.02	2	471.51	0.02	0.02	0.00
3.00	0.02	2	471.51	0.02	0.02	0.00
3.50	0.02	2	471.51	0.02	0.02	0.00
4.00	0.02	2	471.51	0.02	0.02	0.00
4.50	0.02	2	471.51	0.02	0.02	0.00
5.00	0.02	2	471.51	0.02	0.02	0.00
5.50	0.02	2	471.51	0.02	0.02	0.00
6.00	0.03	2	471.51	0.03	0.03	0.00
6.50	0.03	3	471.51	0.03	0.03	0.00
7.00	0.03	3	471.52	0.03	0.03	0.00
7.50	0.03	3	471.52	0.03	0.03	0.00
8.00	0.04	3	471.52	0.04	0.04	0.00
8.50	0.04	4	471.52	0.04	0.04	0.00
9.00	0.04	4	471.52	0.04	0.04	0.00
9.50	0.05	5	471.53	0.05	0.05	0.00
10.00	0.06	6	471.53	0.06	0.06	0.00
10.50	0.07	6	471.53	0.07	0.07	0.00
11.00	0.10	9	471.55	0.10	0.10	0.00
11.50	0.15	22	471.62	0.13	0.13	0.00
12.00	<b>0.76</b>	<b>407</b>	<b>472.86</b>	<b>0.17</b>	<b>0.17</b>	0.00
12.50	<b>0.20</b>	<b>921</b>	<b>474.56</b>	<b>0.23</b>	<b>0.23</b>	0.00
13.00	0.11	777	473.96	0.21	0.21	0.00
13.50	0.08	584	473.36	0.19	0.19	0.00
14.00	0.06	383	472.79	0.17	0.17	0.00
14.50	0.05	194	472.27	0.16	0.16	0.00
15.00	0.05	20	471.60	0.13	0.13	0.00
15.50	0.04	4	471.52	0.04	0.04	0.00
16.00	0.04	4	471.52	0.04	0.04	0.00
16.50	0.04	3	471.52	0.04	0.04	0.00
17.00	0.03	3	471.52	0.03	0.03	0.00
17.50	0.03	3	471.51	0.03	0.03	0.00
18.00	0.03	3	471.51	0.03	0.03	0.00
18.50	0.03	2	471.51	0.03	0.03	0.00
19.00	0.03	2	471.51	0.03	0.03	0.00
19.50	0.02	2	471.51	0.02	0.02	0.00
20.00	0.02	2	471.51	0.02	0.02	0.00
20.50	0.02	2	471.51	0.02	0.02	0.00
21.00	0.02	2	471.51	0.02	0.02	0.00
21.50	0.02	2	471.51	0.02	0.02	0.00
22.00	0.02	2	471.51	0.02	0.02	0.00
22.50	0.02	2	471.51	0.02	0.02	0.00
23.00	0.02	2	471.51	0.02	0.02	0.00
23.50	0.02	2	471.51	0.02	0.02	0.00
24.00	0.02	2	471.51	0.02	0.02	0.00

## Rear Yard System



Rear Yard  
System



3673 S.F.

2361 S.F.

2347 S.F.



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Summary for Subcatchment HOUSE: REAR HOUSE

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 6.17"

Routed to Pond CULTEC B : CULTEC B REAR

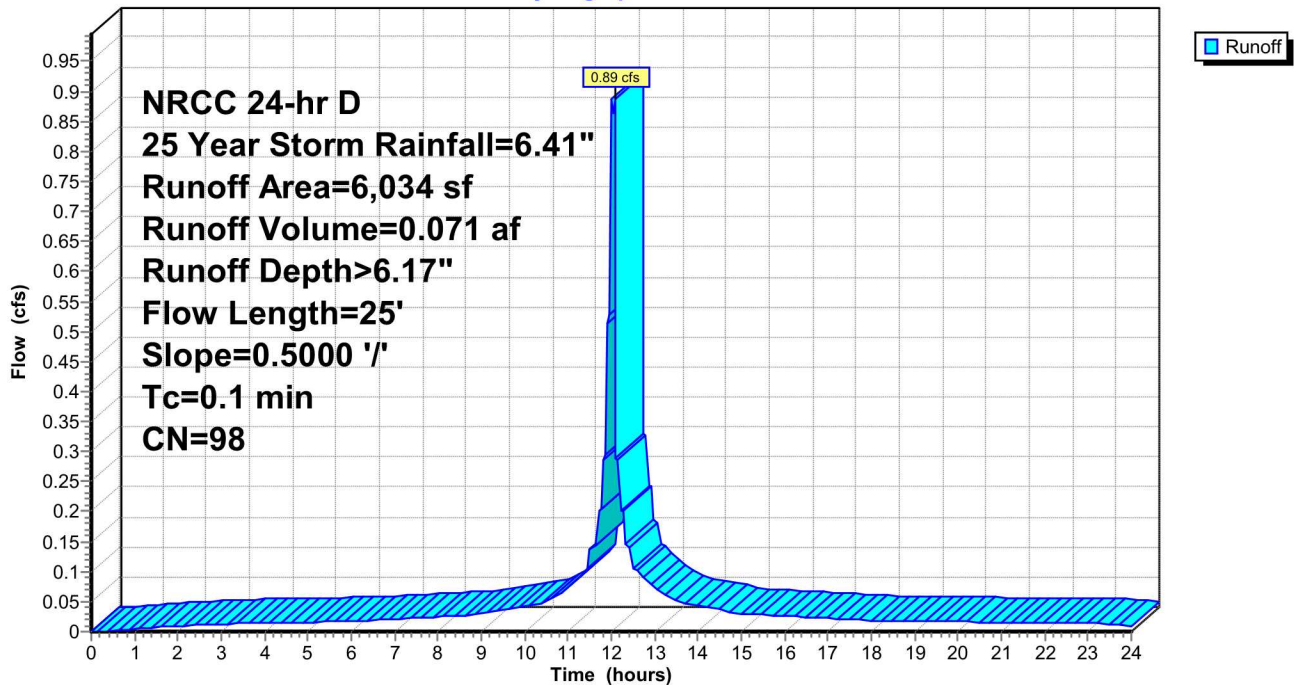
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Area (sf)	CN	Description
6,034	98	Paved parking, HSG B
6,034		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	25	0.5000	3.95		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment HOUSE: REAR HOUSE

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Subcatchment HOUSE: REAR HOUSE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.09	0.01	0.00
1.50	0.14	0.03	0.01
2.00	0.19	0.07	0.01
2.50	0.25	0.10	0.01
3.00	0.30	0.14	0.01
3.50	0.36	0.19	0.01
4.00	0.41	0.24	0.01
4.50	0.47	0.29	0.02
5.00	0.53	0.35	0.02
5.50	0.60	0.41	0.02
6.00	0.66	0.47	0.02
6.50	0.73	0.53	0.02
7.00	0.81	0.60	0.02
7.50	0.89	0.68	0.02
8.00	0.98	0.77	0.03
8.50	1.07	0.86	0.03
9.00	1.18	0.96	0.03
9.50	1.30	1.08	0.04
10.00	1.44	1.22	0.04
10.50	1.60	1.38	0.05
11.00	1.82	1.60	0.07
11.50	2.15	1.92	0.12
12.00	3.07	2.84	<b>0.64</b>
12.50	4.26	4.03	<b>0.13</b>
13.00	4.59	4.35	0.07
13.50	4.81	4.57	0.05
14.00	4.97	4.74	0.04
14.50	5.11	4.88	0.04
15.00	5.23	5.00	0.03
15.50	5.34	5.10	0.03
16.00	5.43	5.20	0.03
16.50	5.52	5.28	0.02
17.00	5.60	5.37	0.02
17.50	5.68	5.44	0.02
18.00	5.75	5.51	0.02
18.50	5.81	5.58	0.02
19.00	5.88	5.64	0.02
19.50	5.94	5.70	0.02
20.00	6.00	5.76	0.02
20.50	6.05	5.82	0.02
21.00	6.11	5.87	0.02
21.50	6.16	5.93	0.01
22.00	6.22	5.98	0.01
22.50	6.27	6.03	0.01
23.00	6.32	6.08	0.01
23.50	6.36	6.13	0.01
24.00	<b>6.41</b>	<b>6.17</b>	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Summary for Pond CULTEC B: CULTEC B REAR

Inflow Area = 0.139 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.071 af  
Outflow = 0.17 cfs @ 12.30 hrs, Volume= 0.071 af, Atten= 81%, Lag= 12.7 min  
Discarded = 0.17 cfs @ 12.30 hrs, Volume= 0.071 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 465.91' @ 12.30 hrs Surf.Area= 430 sf Storage= 557 cf

Plug-Flow detention time= 15.7 min calculated for 0.071 af (100% of inflow)  
Center-of-Mass det. time= 15.5 min ( 756.1 - 740.6 )

Volume	Invert	Avail.Storage	Storage Description
#1A	464.00'	391 cf	<b>11.17'W x 38.50'L x 3.54'H Field A</b> 1,523 cf Overall - 544 cf Embedded = 979 cf x 40.0% Voids
#2A	464.50'	544 cf	<b>Cultec R-330XLHD x 10 Inside #1</b> Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	467.04'	1 cf	<b>0.50'D x 3.47'H Vertical Cone/Cylinder</b>
		936 cf	Total Available Storage

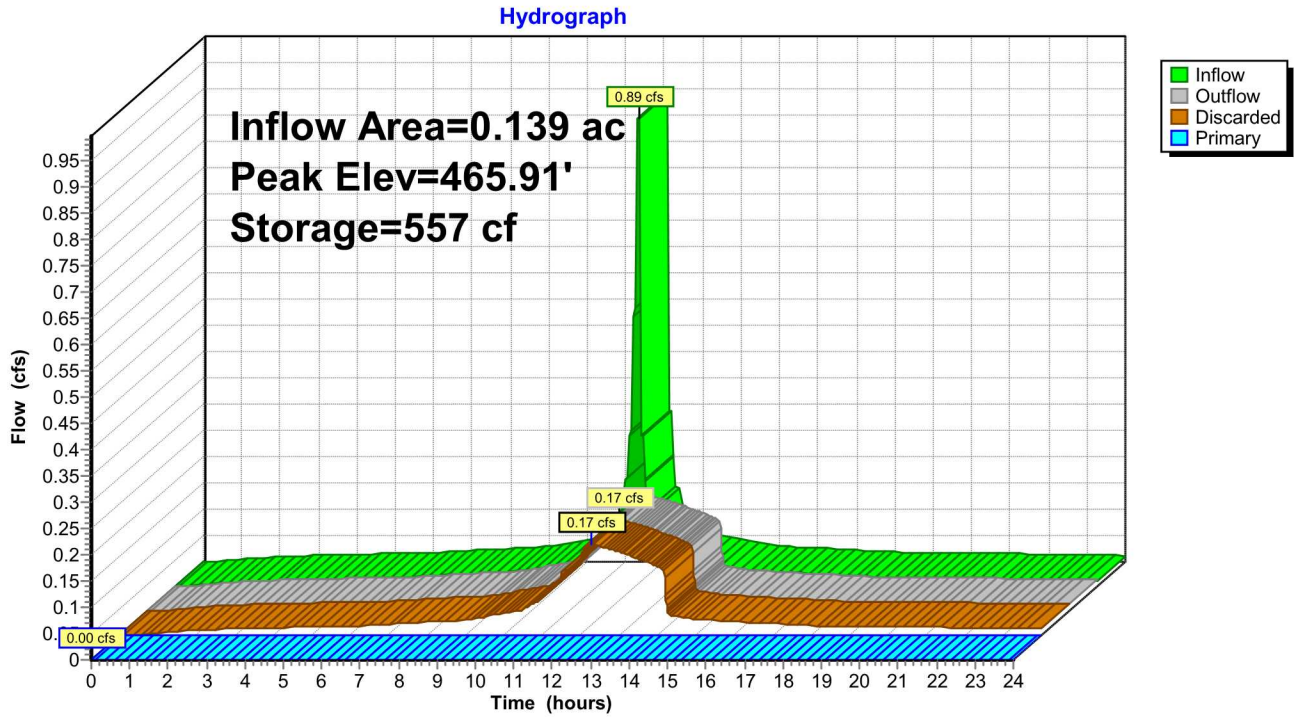
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	464.00'	<b>12.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	470.50'	<b>6.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.17 cfs @ 12.30 hrs HW=465.91' (Free Discharge)  
↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=464.00' (Free Discharge)  
↑**2=Orifice/Grate** ( Controls 0.00 cfs)

Pond CULTEC B: CULTEC B REAR



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Hydrograph for Pond CULTEC B: CULTEC B REAR

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	464.00	0.00	0.00	<b>0.00</b>
0.50	0.00	0	464.00	0.00	0.00	0.00
1.00	0.00	0	464.00	0.00	0.00	0.00
1.50	0.01	1	464.00	0.01	0.01	0.00
2.00	0.01	1	464.01	0.01	0.01	0.00
2.50	0.01	1	464.01	0.01	0.01	0.00
3.00	0.01	1	464.01	0.01	0.01	0.00
3.50	0.01	1	464.01	0.01	0.01	0.00
4.00	0.01	1	464.01	0.01	0.01	0.00
4.50	0.02	1	464.01	0.02	0.02	0.00
5.00	0.02	1	464.01	0.02	0.02	0.00
5.50	0.02	2	464.01	0.02	0.02	0.00
6.00	0.02	2	464.01	0.02	0.02	0.00
6.50	0.02	2	464.01	0.02	0.02	0.00
7.00	0.02	2	464.01	0.02	0.02	0.00
7.50	0.02	2	464.01	0.02	0.02	0.00
8.00	0.03	2	464.01	0.02	0.02	0.00
8.50	0.03	2	464.01	0.03	0.03	0.00
9.00	0.03	3	464.02	0.03	0.03	0.00
9.50	0.04	3	464.02	0.04	0.04	0.00
10.00	0.04	4	464.02	0.04	0.04	0.00
10.50	0.05	4	464.03	0.05	0.05	0.00
11.00	0.07	6	464.04	0.07	0.07	0.00
11.50	0.12	10	464.06	0.11	0.11	0.00
12.00	<b>0.64</b>	<b>241</b>	<b>464.95</b>	<b>0.15</b>	<b>0.15</b>	0.00
12.50	<b>0.13</b>	<b>536</b>	<b>465.84</b>	<b>0.17</b>	<b>0.17</b>	0.00
13.00	0.07	403	465.44	0.16	0.16	0.00
13.50	0.05	240	464.95	0.15	0.15	0.00
14.00	0.04	72	464.42	0.13	0.13	0.00
14.50	0.04	3	464.02	0.04	0.04	0.00
15.00	0.03	3	464.02	0.03	0.03	0.00
15.50	0.03	3	464.02	0.03	0.03	0.00
16.00	0.03	2	464.01	0.03	0.03	0.00
16.50	0.02	2	464.01	0.02	0.02	0.00
17.00	0.02	2	464.01	0.02	0.02	0.00
17.50	0.02	2	464.01	0.02	0.02	0.00
18.00	0.02	2	464.01	0.02	0.02	0.00
18.50	0.02	2	464.01	0.02	0.02	0.00
19.00	0.02	2	464.01	0.02	0.02	0.00
19.50	0.02	2	464.01	0.02	0.02	0.00
20.00	0.02	2	464.01	0.02	0.02	0.00
20.50	0.02	1	464.01	0.02	0.02	0.00
21.00	0.02	1	464.01	0.02	0.02	0.00
21.50	0.01	1	464.01	0.01	0.01	0.00
22.00	0.01	1	464.01	0.01	0.01	0.00
22.50	0.01	1	464.01	0.01	0.01	0.00
23.00	0.01	1	464.01	0.01	0.01	0.00
23.50	0.01	1	464.01	0.01	0.01	0.00
24.00	0.01	1	464.01	0.01	0.01	0.00

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Subcatchment HOUSE: REAR HOUSE

Runoff = 1.28 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 8.96"  
Routed to Pond CULTEC B : CULTEC B REAR

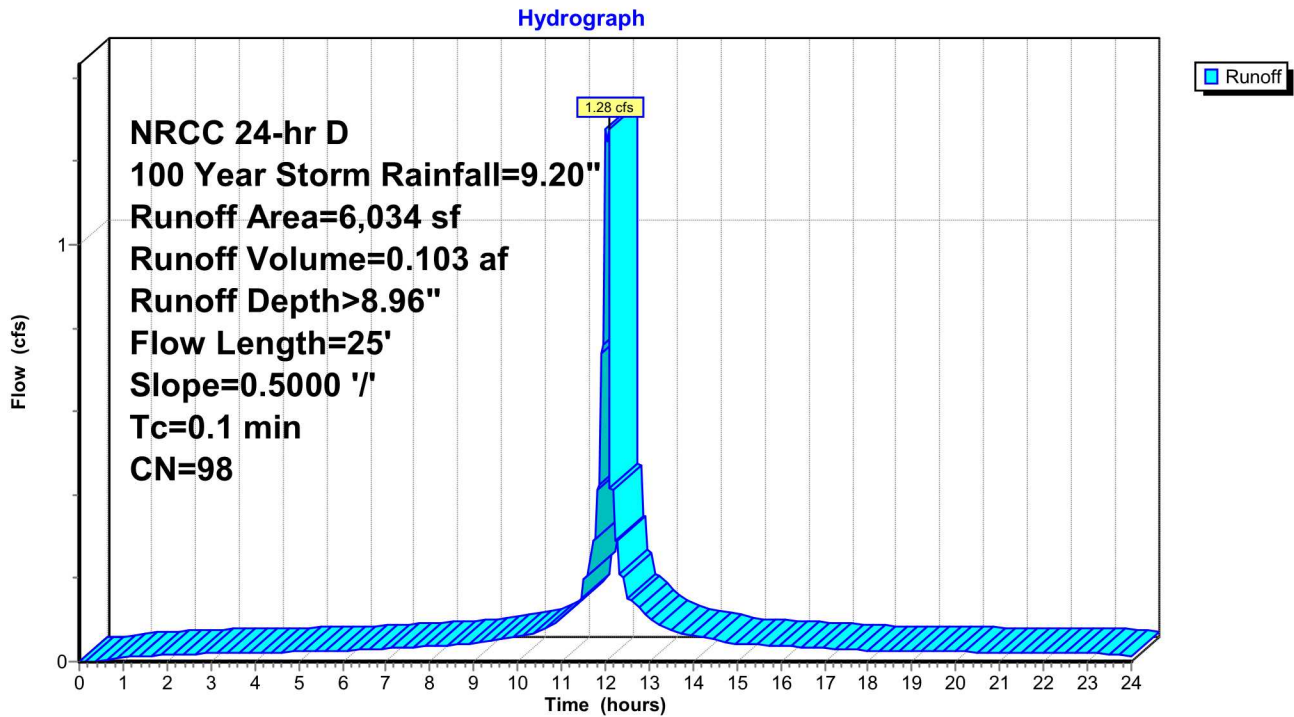
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Area (sf)	CN	Description
6,034	98	Paved parking, HSG B
6,034		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	25	0.5000	3.95		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"

## Subcatchment HOUSE: REAR HOUSE



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Subcatchment HOUSE: REAR HOUSE

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.07	0.00	0.00
1.00	0.13	0.03	0.01
1.50	0.20	0.07	0.01
2.00	0.28	0.13	0.02
2.50	0.35	0.19	0.02
3.00	0.43	0.26	0.02
3.50	0.51	0.33	0.02
4.00	0.59	0.40	0.02
4.50	0.68	0.48	0.02
5.00	0.77	0.57	0.02
5.50	0.86	0.65	0.02
6.00	0.95	0.74	0.03
6.50	1.05	0.84	0.03
7.00	1.16	0.94	0.03
7.50	1.27	1.06	0.03
8.00	1.40	1.18	0.04
8.50	1.54	1.32	0.04
9.00	1.69	1.47	0.04
9.50	1.86	1.64	0.05
10.00	2.06	1.84	0.06
10.50	2.30	2.07	0.07
11.00	2.61	2.38	0.10
11.50	3.08	2.85	0.17
12.00	4.41	4.17	<b>0.92</b>
12.50	6.12	5.88	<b>0.18</b>
13.00	6.59	6.35	0.11
13.50	6.90	6.66	0.07
14.00	7.14	6.90	0.06
14.50	7.34	7.10	0.05
15.00	7.51	7.27	0.04
15.50	7.66	7.42	0.04
16.00	7.80	7.56	0.04
16.50	7.93	7.69	0.03
17.00	8.04	7.80	0.03
17.50	8.15	7.91	0.03
18.00	8.25	8.01	0.03
18.50	8.34	8.10	0.03
19.00	8.43	8.19	0.02
19.50	8.52	8.28	0.02
20.00	8.61	8.37	0.02
20.50	8.69	8.45	0.02
21.00	8.77	8.53	0.02
21.50	8.85	8.61	0.02
22.00	8.92	8.68	0.02
22.50	9.00	8.76	0.02
23.00	9.07	8.83	0.02
23.50	9.13	8.89	0.02
24.00	<b>9.20</b>	<b>8.96</b>	0.01

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Pond CULTEC B: CULTEC B REAR

Inflow Area = 0.139 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 1.28 cfs @ 12.09 hrs, Volume= 0.103 af  
Outflow = 0.31 cfs @ 12.29 hrs, Volume= 0.103 af, Atten= 76%, Lag= 11.9 min  
Discarded = 0.22 cfs @ 12.28 hrs, Volume= 0.103 af  
Primary = 0.09 cfs @ 12.29 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 470.54' @ 12.29 hrs Surf.Area= 430 sf Storage= 936 cf

Plug-Flow detention time= 25.0 min calculated for 0.103 af (100% of inflow)  
Center-of-Mass det. time= 24.8 min ( 760.1 - 735.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	464.00'	391 cf	<b>11.17'W x 38.50'L x 3.54'H Field A</b> 1,523 cf Overall - 544 cf Embedded = 979 cf x 40.0% Voids
#2A	464.50'	544 cf	<b>Cultec R-330XLHD x 10 Inside #1</b> Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	467.04'	1 cf	<b>0.50'D x 3.47'H Vertical Cone/Cylinder</b>
		936 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	464.00'	<b>12.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	470.50'	<b>6.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.22 cfs @ 12.28 hrs HW=470.52' (Free Discharge)  
↑**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

**Primary OutFlow** Max=0.07 cfs @ 12.29 hrs HW=470.53' (Free Discharge)  
↑**2=Orifice/Grate** (Weir Controls 0.07 cfs @ 0.61 fps)



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

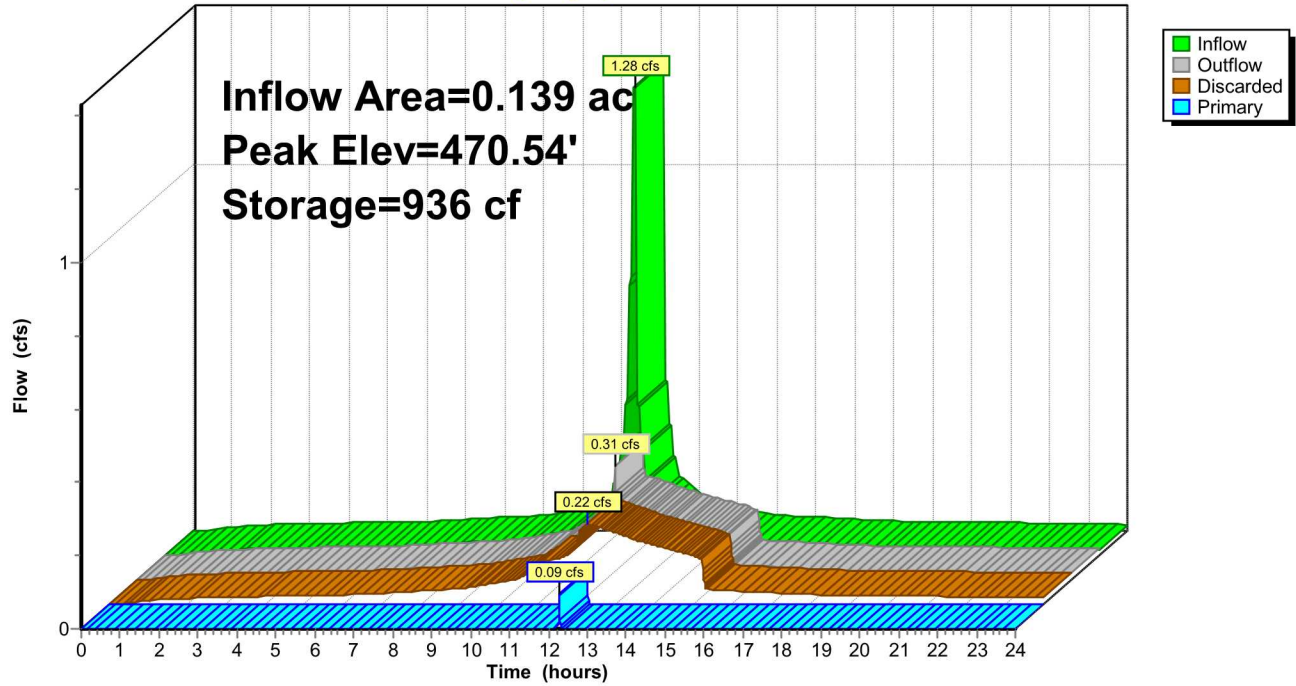
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## Pond CULTEC B: CULTEC B REAR

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

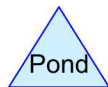
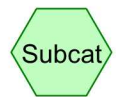
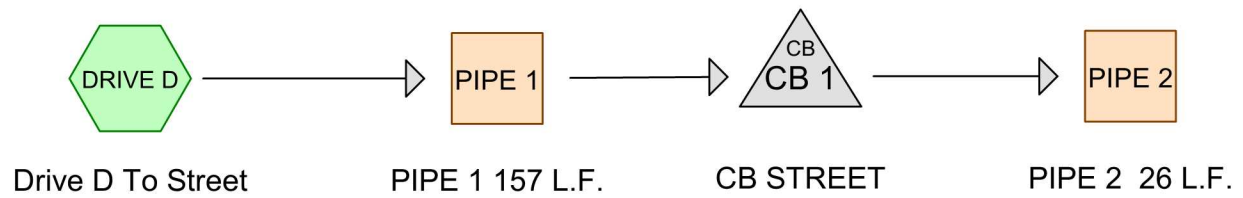
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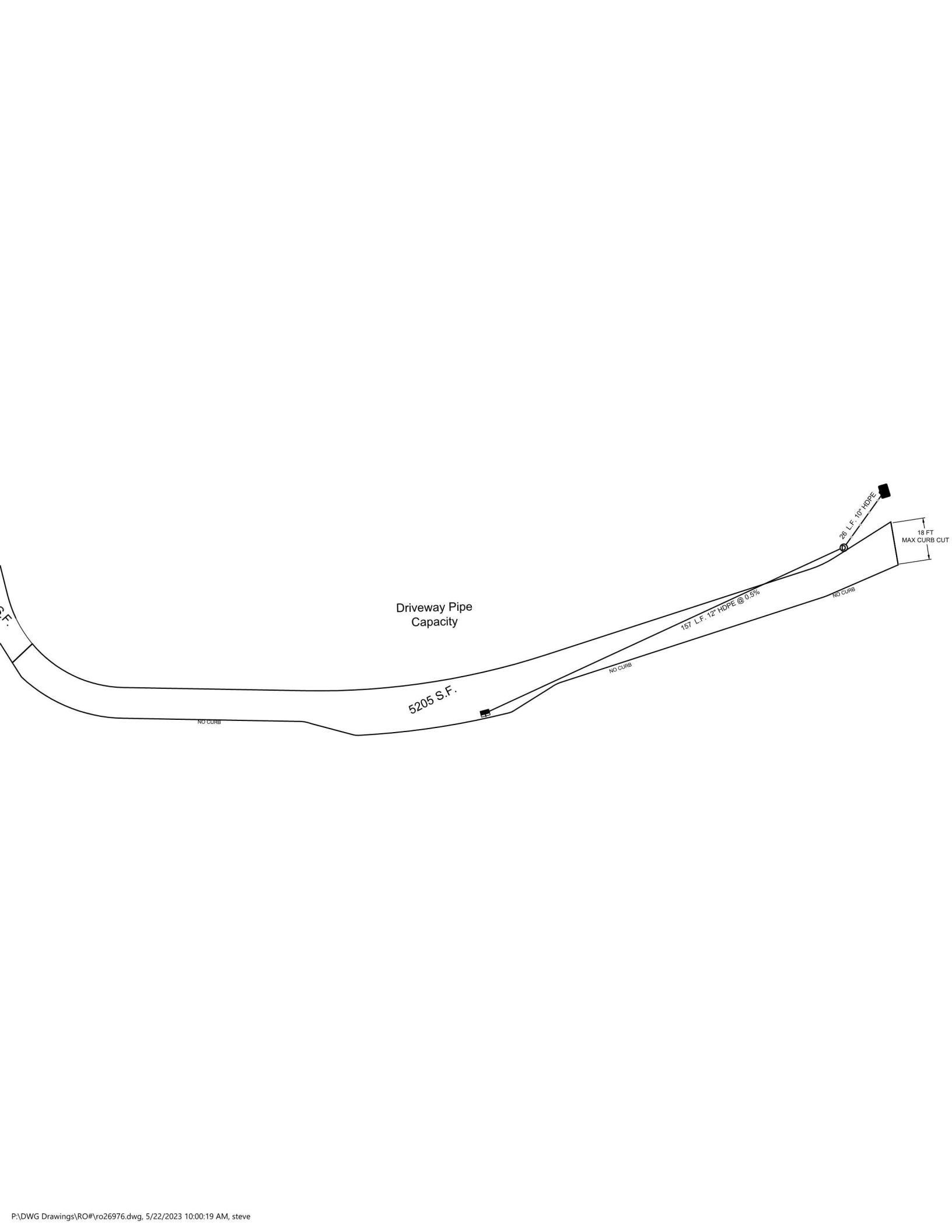
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## Hydrograph for Pond CULTEC B: CULTEC B REAR

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	464.00	0.00	0.00	0.00
0.50	0.00	0	464.00	0.00	0.00	0.00
1.00	0.01	1	464.01	0.01	0.01	0.00
1.50	0.01	1	464.01	0.01	0.01	0.00
2.00	0.02	1	464.01	0.02	0.02	0.00
2.50	0.02	2	464.01	0.02	0.02	0.00
3.00	0.02	2	464.01	0.02	0.02	0.00
3.50	0.02	2	464.01	0.02	0.02	0.00
4.00	0.02	2	464.01	0.02	0.02	0.00
4.50	0.02	2	464.01	0.02	0.02	0.00
5.00	0.02	2	464.01	0.02	0.02	0.00
5.50	0.02	2	464.01	0.02	0.02	0.00
6.00	0.03	2	464.01	0.03	0.03	0.00
6.50	0.03	3	464.02	0.03	0.03	0.00
7.00	0.03	3	464.02	0.03	0.03	0.00
7.50	0.03	3	464.02	0.03	0.03	0.00
8.00	0.04	3	464.02	0.04	0.04	0.00
8.50	0.04	4	464.02	0.04	0.04	0.00
9.00	0.04	4	464.02	0.04	0.04	0.00
9.50	0.05	5	464.03	0.05	0.05	0.00
10.00	0.06	6	464.03	0.06	0.06	0.00
10.50	0.07	6	464.04	0.07	0.07	0.00
11.00	0.10	9	464.05	0.10	0.10	0.00
11.50	0.17	31	464.18	0.12	0.12	0.00
12.00	<b>0.92</b>	<b>448</b>	<b>465.57</b>	<b>0.16</b>	<b>0.16</b>	<b>0.00</b>
12.50	<b>0.18</b>	<b>926</b>	<b>467.48</b>	<b>0.22</b>	<b>0.22</b>	<b>0.00</b>
13.00	0.11	791	466.75	0.20	0.20	0.00
13.50	0.07	615	466.10	0.18	0.18	0.00
14.00	0.06	429	465.51	0.16	0.16	0.00
14.50	0.05	254	464.99	0.15	0.15	0.00
15.00	0.04	88	464.51	0.13	0.13	0.00
15.50	0.04	4	464.02	0.04	0.04	0.00
16.00	0.04	3	464.02	0.04	0.04	0.00
16.50	0.03	3	464.02	0.03	0.03	0.00
17.00	0.03	3	464.02	0.03	0.03	0.00
17.50	0.03	3	464.02	0.03	0.03	0.00
18.00	0.03	2	464.01	0.03	0.03	0.00
18.50	0.03	2	464.01	0.03	0.03	0.00
19.00	0.02	2	464.01	0.02	0.02	0.00
19.50	0.02	2	464.01	0.02	0.02	0.00
20.00	0.02	2	464.01	0.02	0.02	0.00
20.50	0.02	2	464.01	0.02	0.02	0.00
21.00	0.02	2	464.01	0.02	0.02	0.00
21.50	0.02	2	464.01	0.02	0.02	0.00
22.00	0.02	2	464.01	0.02	0.02	0.00
22.50	0.02	2	464.01	0.02	0.02	0.00
23.00	0.02	2	464.01	0.02	0.02	0.00
23.50	0.02	2	464.01	0.02	0.02	0.00
24.00	0.01	2	464.01	0.02	0.02	0.00

## Driveway Capacity





Driveway Pipe Capacity

5205 S.F.

151 L.F. 12" HDPE @ 0.5%

28' L.F. 10" HDPE

18 FT  
MAX CURB CUT

NO CURB

NO CURB

NO CURB

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Summary for Subcatchment DRIVE D: Drive D To Street

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 6.17"  
Routed to Reach PIPE 1 : PIPE 1 157 L.F.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 25 Year Storm Rainfall=6.41"

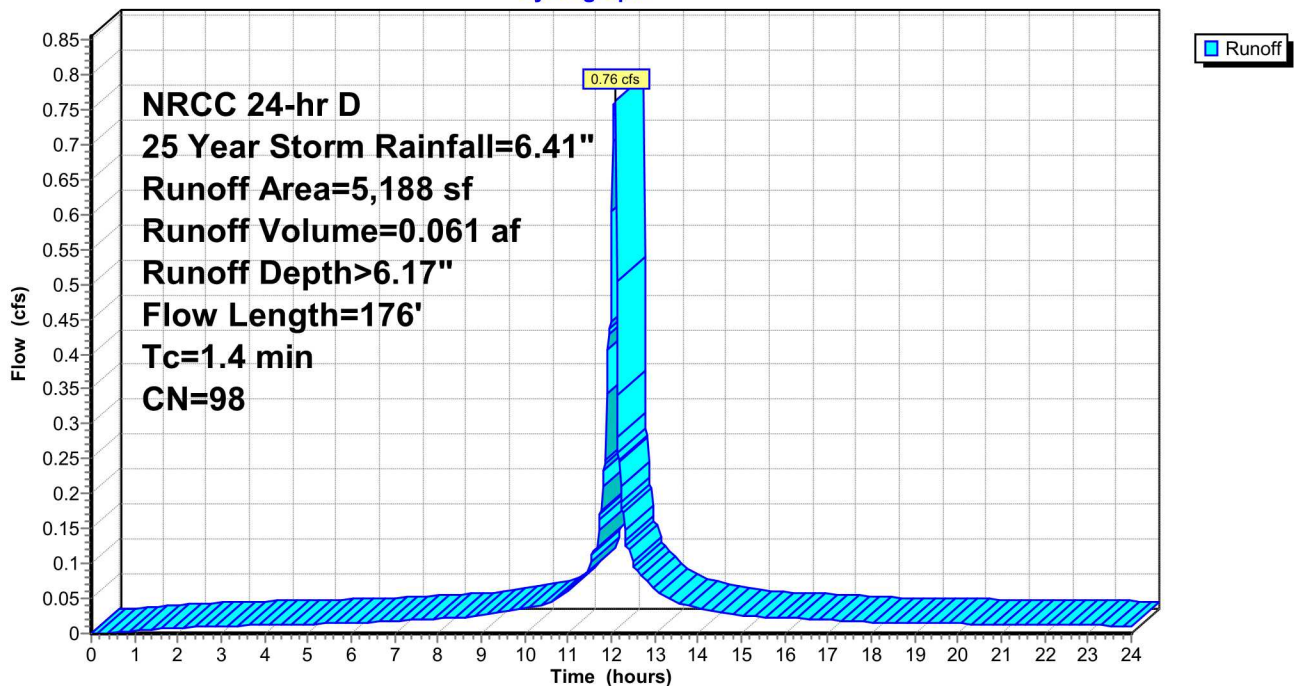
Area (sf)	CN	Description
5,188	98	Paved roads w/curbs & sewers, HSG B
5,188		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.08		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"
0.6	76	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.4	176	Total			

## Subcatchment DRIVE D: Drive D To Street

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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## Hydrograph for Subcatchment DRIVE D: Drive D To Street

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.09	0.01	0.00
1.50	0.14	0.03	0.01
2.00	0.19	0.07	0.01
2.50	0.25	0.10	0.01
3.00	0.30	0.14	0.01
3.50	0.36	0.19	0.01
4.00	0.41	0.24	0.01
4.50	0.47	0.29	0.01
5.00	0.53	0.35	0.01
5.50	0.60	0.41	0.01
6.00	0.66	0.47	0.01
6.50	0.73	0.53	0.02
7.00	0.81	0.60	0.02
7.50	0.89	0.68	0.02
8.00	0.98	0.77	0.02
8.50	1.07	0.86	0.02
9.00	1.18	0.96	0.02
9.50	1.30	1.08	0.03
10.00	1.44	1.22	0.04
10.50	1.60	1.38	0.04
11.00	1.82	1.60	0.06
11.50	2.15	1.92	0.09
12.00	3.07	2.84	<b>0.44</b>
12.50	4.26	4.03	<b>0.12</b>
13.00	4.59	4.35	0.07
13.50	4.81	4.57	0.05
14.00	4.97	4.74	0.04
14.50	5.11	4.88	0.03
15.00	5.23	5.00	0.03
15.50	5.34	5.10	0.02
16.00	5.43	5.20	0.02
16.50	5.52	5.28	0.02
17.00	5.60	5.37	0.02
17.50	5.68	5.44	0.02
18.00	5.75	5.51	0.02
18.50	5.81	5.58	0.02
19.00	5.88	5.64	0.01
19.50	5.94	5.70	0.01
20.00	6.00	5.76	0.01
20.50	6.05	5.82	0.01
21.00	6.11	5.87	0.01
21.50	6.16	5.93	0.01
22.00	6.22	5.98	0.01
22.50	6.27	6.03	0.01
23.00	6.32	6.08	0.01
23.50	6.36	6.13	0.01
24.00	<b>6.41</b>	<b>6.17</b>	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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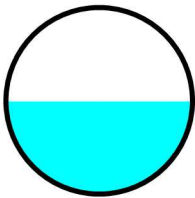
## Summary for Reach PIPE 1: PIPE 1 157 L.F.

Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 6.17" for 25 Year Storm event  
Inflow = 0.76 cfs @ 12.09 hrs, Volume= 0.061 af  
Outflow = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af, Atten= 0%, Lag= 1.0 min  
Routed to Pond CB 1 : CB STREET

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 2.82 fps, Min. Travel Time= 0.9 min  
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.6 min

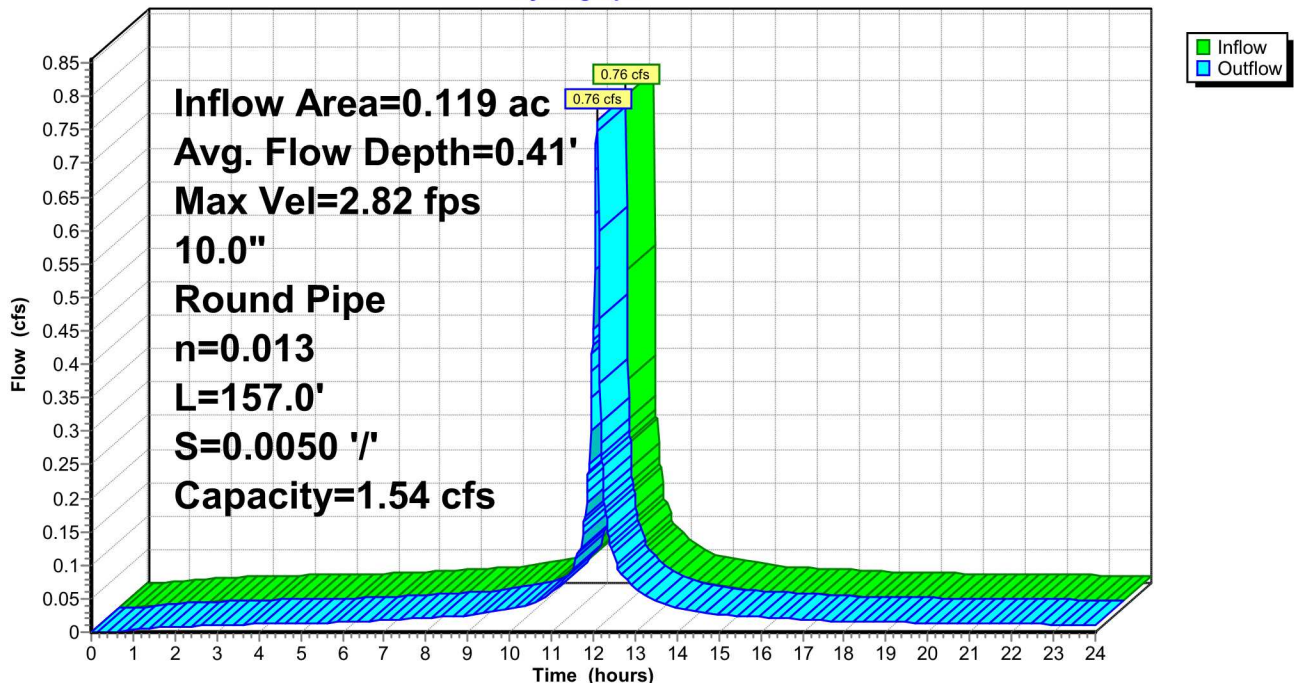
Peak Storage= 42 cf @ 12.10 hrs  
Average Depth at Peak Storage= 0.41' , Surface Width= 0.83'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 1.54 cfs

10.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 157.0' Slope= 0.0050 '/'  
Inlet Invert= 485.37', Outlet Invert= 484.59'



## Reach PIPE 1: PIPE 1 157 L.F.

Hydrograph





# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Reach PIPE 1: PIPE 1 157 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	485.37	0.00
0.50	0.00	0	485.37	0.00
1.00	0.00	1	485.40	0.00
1.50	0.01	1	485.41	0.01
2.00	0.01	2	485.41	0.01
2.50	0.01	2	485.42	0.01
3.00	0.01	2	485.42	0.01
3.50	0.01	2	485.42	0.01
4.00	0.01	2	485.42	0.01
4.50	0.01	2	485.42	0.01
5.00	0.01	2	485.42	0.01
5.50	0.01	2	485.43	0.01
6.00	0.01	3	485.43	0.01
6.50	0.02	3	485.43	0.02
7.00	0.02	3	485.43	0.02
7.50	0.02	3	485.44	0.02
8.00	0.02	3	485.44	0.02
8.50	0.02	4	485.44	0.02
9.00	0.02	4	485.44	0.02
9.50	0.03	4	485.45	0.03
10.00	0.04	5	485.46	0.04
10.50	0.04	5	485.46	0.04
11.00	0.06	7	485.48	0.06
11.50	0.09	9	485.51	0.09
12.00	<b>0.44</b>	<b>28</b>	<b>485.67</b>	<b>0.44</b>
12.50	<b>0.12</b>	<b>11</b>	<b>485.53</b>	<b>0.12</b>
13.00	0.07	7	485.49	0.07
13.50	0.05	6	485.47	0.05
14.00	0.04	5	485.46	0.04
14.50	0.03	4	485.45	0.03
15.00	0.03	4	485.45	0.03
15.50	0.02	4	485.44	0.02
16.00	0.02	3	485.44	0.02
16.50	0.02	3	485.44	0.02
17.00	0.02	3	485.44	0.02
17.50	0.02	3	485.43	0.02
18.00	0.02	3	485.43	0.02
18.50	0.02	3	485.43	0.02
19.00	0.01	3	485.43	0.01
19.50	0.01	3	485.43	0.01
20.00	0.01	2	485.43	0.01
20.50	0.01	2	485.43	0.01
21.00	0.01	2	485.42	0.01
21.50	0.01	2	485.42	0.01
22.00	0.01	2	485.42	0.01
22.50	0.01	2	485.42	0.01
23.00	0.01	2	485.42	0.01
23.50	0.01	2	485.42	0.01
24.00	0.01	2	485.42	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

Prepared by Gabriel E Senor PC

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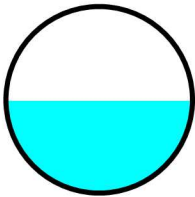
## Summary for Reach PIPE 2: PIPE 2 26 L.F.

Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 6.16" for 25 Year Storm event  
Inflow = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af  
Outflow = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 2.83 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.01 fps, Avg. Travel Time= 0.4 min

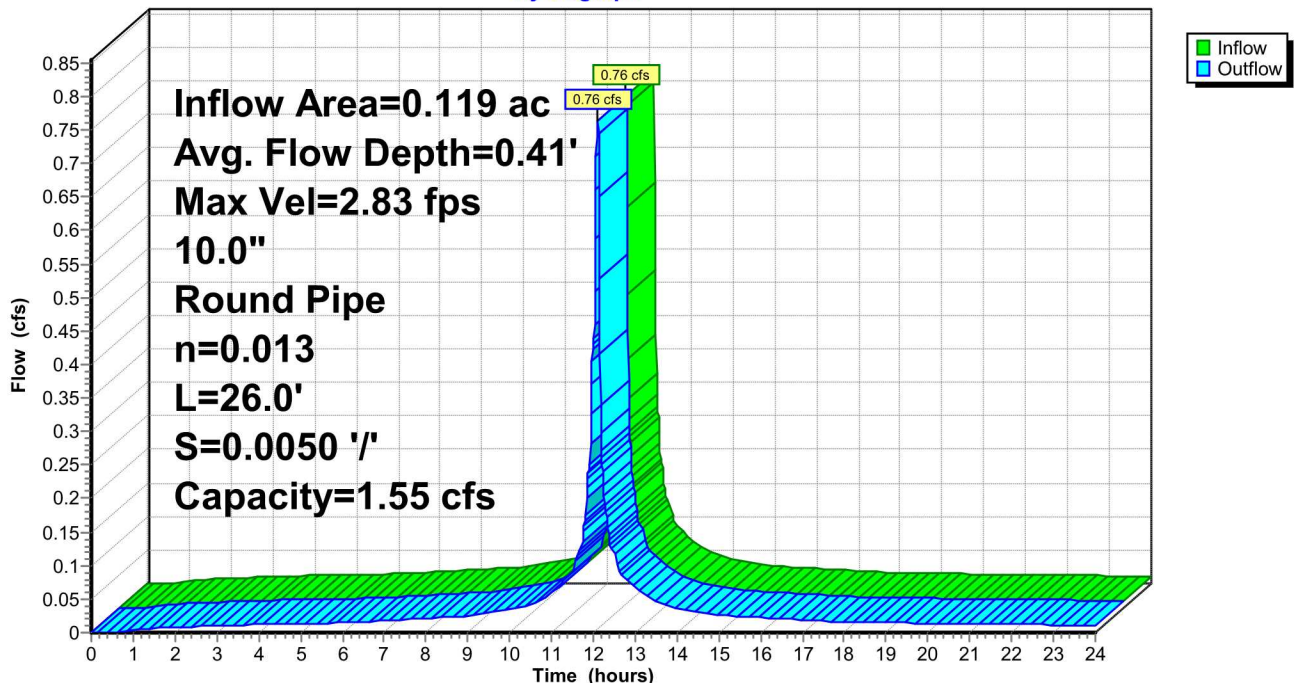
Peak Storage= 7 cf @ 12.11 hrs  
Average Depth at Peak Storage= 0.41', Surface Width= 0.83'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 1.55 cfs

10.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 26.0' Slope= 0.0050 '/'  
Inlet Invert= 484.59', Outlet Invert= 484.46'



## Reach PIPE 2: PIPE 2 26 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Reach PIPE 2: PIPE 2 26 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	484.59	0.00
0.50	0.00	0	484.59	0.00
1.00	0.00	0	484.62	0.00
1.50	0.01	0	484.63	0.01
2.00	0.01	0	484.63	0.01
2.50	0.01	0	484.64	0.01
3.00	0.01	0	484.64	0.01
3.50	0.01	0	484.64	0.01
4.00	0.01	0	484.64	0.01
4.50	0.01	0	484.64	0.01
5.00	0.01	0	484.64	0.01
5.50	0.01	0	484.65	0.01
6.00	0.01	0	484.65	0.01
6.50	0.02	0	484.65	0.02
7.00	0.02	0	484.65	0.02
7.50	0.02	1	484.66	0.02
8.00	0.02	1	484.66	0.02
8.50	0.02	1	484.66	0.02
9.00	0.02	1	484.66	0.02
9.50	0.03	1	484.67	0.03
10.00	0.04	1	484.68	0.04
10.50	0.04	1	484.68	0.04
11.00	0.06	1	484.70	0.06
11.50	0.09	2	484.73	0.09
12.00	<b>0.44</b>	<b>5</b>	<b>484.89</b>	<b>0.44</b>
12.50	<b>0.12</b>	<b>2</b>	<b>484.75</b>	<b>0.12</b>
13.00	0.07	1	484.71	0.07
13.50	0.05	1	484.69	0.05
14.00	0.04	1	484.68	0.04
14.50	0.03	1	484.67	0.03
15.00	0.03	1	484.67	0.03
15.50	0.02	1	484.66	0.02
16.00	0.02	1	484.66	0.02
16.50	0.02	1	484.66	0.02
17.00	0.02	1	484.66	0.02
17.50	0.02	0	484.65	0.02
18.00	0.02	0	484.65	0.02
18.50	0.02	0	484.65	0.02
19.00	0.01	0	484.65	0.01
19.50	0.01	0	484.65	0.01
20.00	0.01	0	484.65	0.01
20.50	0.01	0	484.65	0.01
21.00	0.01	0	484.64	0.01
21.50	0.01	0	484.64	0.01
22.00	0.01	0	484.64	0.01
22.50	0.01	0	484.64	0.01
23.00	0.01	0	484.64	0.01
23.50	0.01	0	484.64	0.01
24.00	0.01	0	484.64	0.01

# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Summary for Pond CB 1: CB STREET

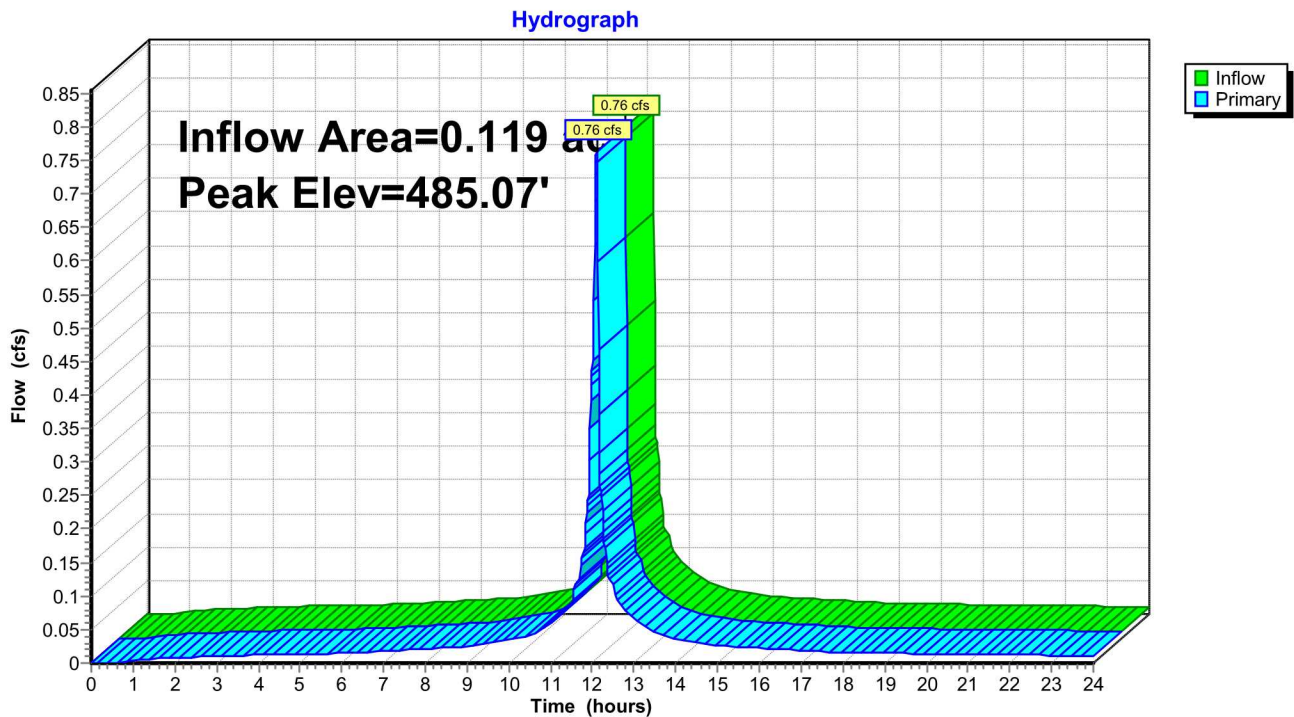
Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 6.16" for 25 Year Storm event  
Inflow = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af  
Outflow = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min  
Primary = 0.76 cfs @ 12.11 hrs, Volume= 0.061 af  
Routed to Reach PIPE 2 : PIPE 2 26 L.F.

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 485.07' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	484.59'	10.0" Vert. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.76 cfs @ 12.11 hrs HW=485.07' (Free Discharge)  
↑1=Orifice/Gate (Orifice Controls 0.76 cfs @ 2.35 fps)

## Pond CB 1: CB STREET



# 1 Guion

NRCC 24-hr D 25 Year Storm Rainfall=6.41"

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## Hydrograph for Pond CB 1: CB STREET

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	484.59	0.00
0.50	0.00	484.59	0.00
1.00	0.00	484.62	0.00
1.50	0.01	484.63	0.01
2.00	0.01	484.63	0.01
2.50	0.01	484.64	0.01
3.00	0.01	484.64	0.01
3.50	0.01	484.64	0.01
4.00	0.01	484.64	0.01
4.50	0.01	484.65	0.01
5.00	0.01	484.65	0.01
5.50	0.01	484.65	0.01
6.00	0.01	484.65	0.01
6.50	0.02	484.65	0.02
7.00	0.02	484.66	0.02
7.50	0.02	484.66	0.02
8.00	0.02	484.66	0.02
8.50	0.02	484.67	0.02
9.00	0.02	484.67	0.02
9.50	0.03	484.68	0.03
10.00	0.04	484.68	0.04
10.50	0.04	484.69	0.04
11.00	0.06	484.71	0.06
11.50	0.09	484.74	0.09
12.00	<b>0.44</b>	<b>484.94</b>	<b>0.44</b>
12.50	<b>0.12</b>	<b>484.76</b>	<b>0.12</b>
13.00	0.07	484.72	0.07
13.50	0.05	484.70	0.05
14.00	0.04	484.69	0.04
14.50	0.03	484.68	0.03
15.00	0.03	484.67	0.03
15.50	0.02	484.67	0.02
16.00	0.02	484.66	0.02
16.50	0.02	484.66	0.02
17.00	0.02	484.66	0.02
17.50	0.02	484.66	0.02
18.00	0.02	484.65	0.02
18.50	0.02	484.65	0.02
19.00	0.01	484.65	0.01
19.50	0.01	484.65	0.01
20.00	0.01	484.65	0.01
20.50	0.01	484.65	0.01
21.00	0.01	484.65	0.01
21.50	0.01	484.65	0.01
22.00	0.01	484.65	0.01
22.50	0.01	484.64	0.01
23.00	0.01	484.64	0.01
23.50	0.01	484.64	0.01
24.00	0.01	484.64	0.01

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Subcatchment DRIVE D: Drive D To Street

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.089 af, Depth> 8.96"  
Routed to Reach PIPE 1 : PIPE 1 157 L.F.

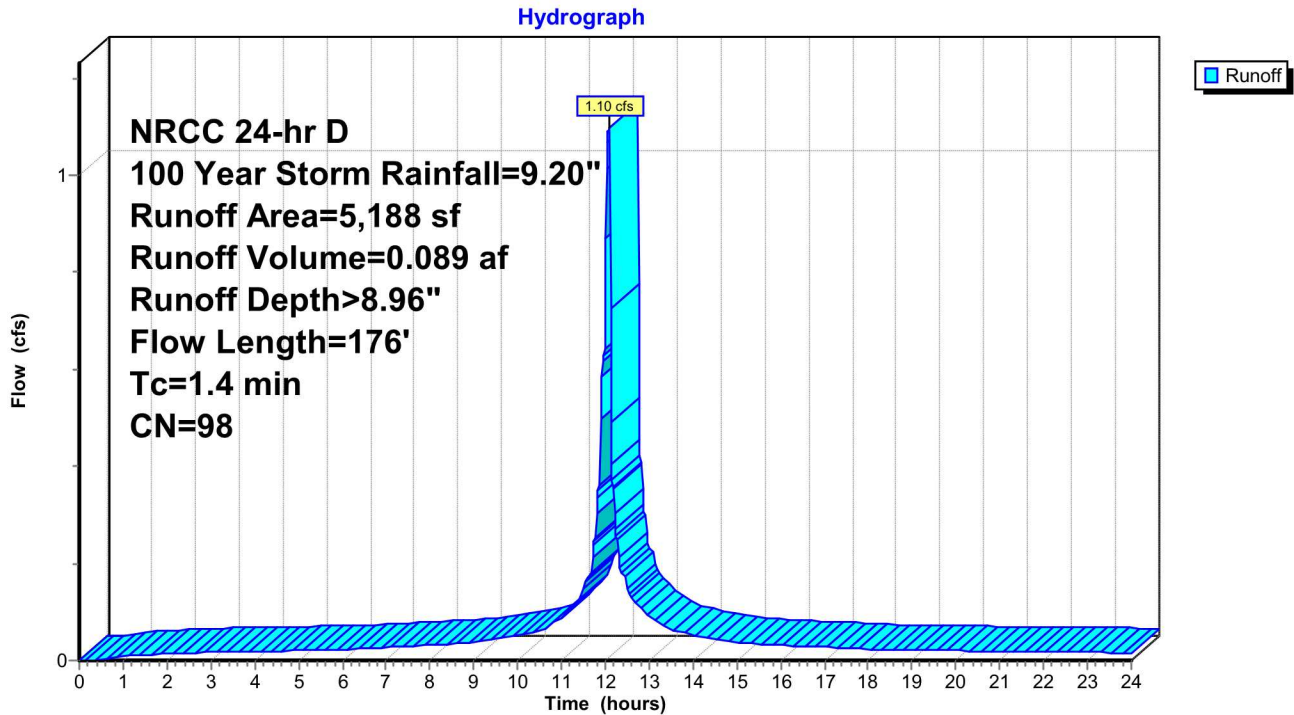
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Area (sf)	CN	Description
5,188	98	Paved roads w/curbs & sewers, HSG B
5,188		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.08		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.50"
0.6	76	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.4	176	Total			

## Subcatchment DRIVE D: Drive D To Street



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Subcatchment DRIVE D: Drive D To Street

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.07	0.00	0.00
1.00	0.13	0.03	0.01
1.50	0.20	0.07	0.01
2.00	0.28	0.13	0.01
2.50	0.35	0.19	0.02
3.00	0.43	0.26	0.02
3.50	0.51	0.33	0.02
4.00	0.59	0.40	0.02
4.50	0.68	0.48	0.02
5.00	0.77	0.57	0.02
5.50	0.86	0.65	0.02
6.00	0.95	0.74	0.02
6.50	1.05	0.84	0.02
7.00	1.16	0.94	0.03
7.50	1.27	1.06	0.03
8.00	1.40	1.18	0.03
8.50	1.54	1.32	0.03
9.00	1.69	1.47	0.04
9.50	1.86	1.64	0.04
10.00	2.06	1.84	0.05
10.50	2.30	2.07	0.06
11.00	2.61	2.38	0.09
11.50	3.08	2.85	0.13
12.00	4.41	4.17	<b>0.64</b>
12.50	6.12	5.88	<b>0.17</b>
13.00	6.59	6.35	0.10
13.50	6.90	6.66	0.06
14.00	7.14	6.90	0.05
14.50	7.34	7.10	0.05
15.00	7.51	7.27	0.04
15.50	7.66	7.42	0.03
16.00	7.80	7.56	0.03
16.50	7.93	7.69	0.03
17.00	8.04	7.80	0.03
17.50	8.15	7.91	0.03
18.00	8.25	8.01	0.02
18.50	8.34	8.10	0.02
19.00	8.43	8.19	0.02
19.50	8.52	8.28	0.02
20.00	8.61	8.37	0.02
20.50	8.69	8.45	0.02
21.00	8.77	8.53	0.02
21.50	8.85	8.61	0.02
22.00	8.92	8.68	0.02
22.50	9.00	8.76	0.02
23.00	9.07	8.83	0.02
23.50	9.13	8.89	0.02
24.00	<b>9.20</b>	<b>8.96</b>	0.02

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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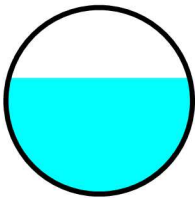
## Summary for Reach PIPE 1: PIPE 1 157 L.F.

Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 8.96" for 100 Year Storm event  
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.089 af  
Outflow = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af, Atten= 0%, Lag= 1.0 min  
Routed to Pond CB 1 : CB STREET

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 3.07 fps, Min. Travel Time= 0.9 min  
Avg. Velocity = 1.13 fps, Avg. Travel Time= 2.3 min

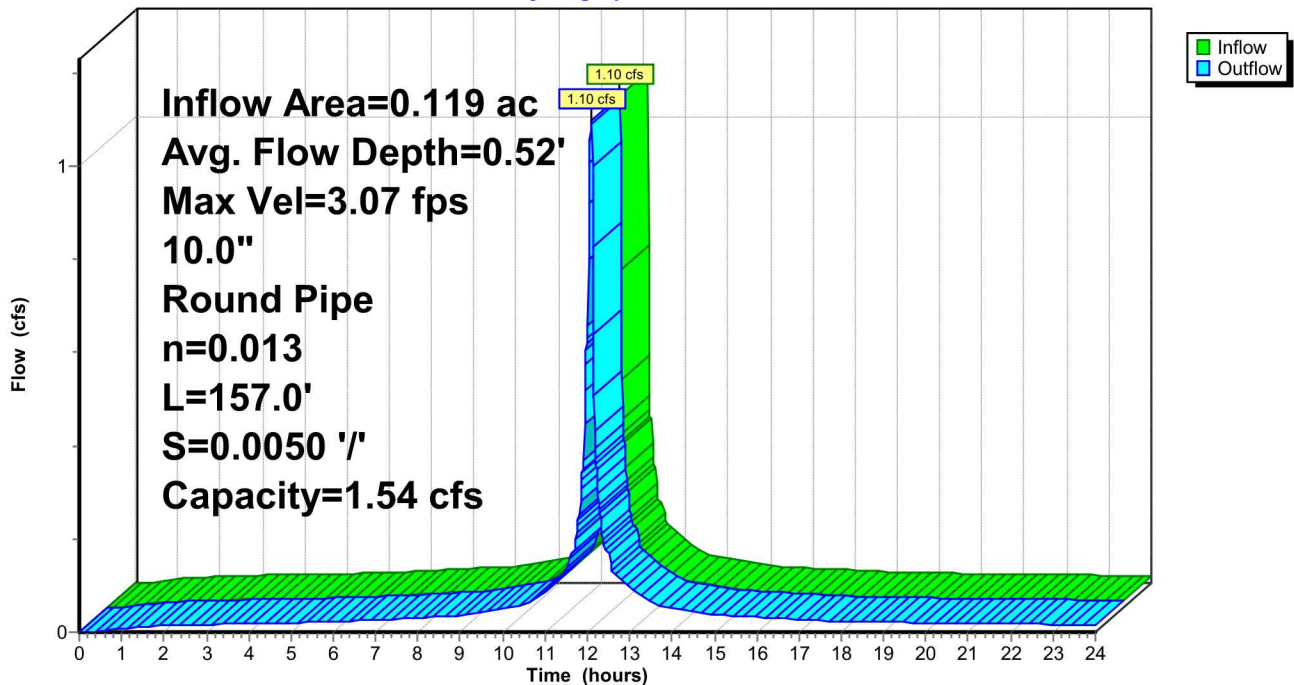
Peak Storage= 56 cf @ 12.10 hrs  
Average Depth at Peak Storage= 0.52' , Surface Width= 0.81'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 1.54 cfs

10.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 157.0' Slope= 0.0050 '/'  
Inlet Invert= 485.37', Outlet Invert= 484.59'



## Reach PIPE 1: PIPE 1 157 L.F.

Hydrograph





# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Reach PIPE 1: PIPE 1 157 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	485.37	0.00
0.50	0.00	1	485.39	0.00
1.00	0.01	2	485.41	0.01
1.50	0.01	2	485.42	0.01
2.00	0.01	2	485.43	0.01
2.50	0.02	3	485.43	0.02
3.00	0.02	3	485.43	0.02
3.50	0.02	3	485.43	0.02
4.00	0.02	3	485.43	0.02
4.50	0.02	3	485.44	0.02
5.00	0.02	3	485.44	0.02
5.50	0.02	3	485.44	0.02
6.00	0.02	3	485.44	0.02
6.50	0.02	4	485.44	0.02
7.00	0.03	4	485.45	0.03
7.50	0.03	4	485.45	0.03
8.00	0.03	4	485.45	0.03
8.50	0.03	5	485.45	0.03
9.00	0.04	5	485.46	0.04
9.50	0.04	6	485.47	0.04
10.00	0.05	6	485.47	0.05
10.50	0.06	7	485.48	0.06
11.00	0.09	9	485.50	0.09
11.50	0.13	12	485.53	0.13
12.00	<b>0.64</b>	<b>37</b>	<b>485.74</b>	<b>0.63</b>
12.50	<b>0.17</b>	<b>14</b>	<b>485.56</b>	<b>0.17</b>
13.00	0.10	10	485.51	0.10
13.50	0.06	7	485.49	0.07
14.00	0.05	6	485.48	0.05
14.50	0.05	6	485.47	0.05
15.00	0.04	5	485.46	0.04
15.50	0.03	5	485.46	0.03
16.00	0.03	4	485.45	0.03
16.50	0.03	4	485.45	0.03
17.00	0.03	4	485.45	0.03
17.50	0.03	4	485.44	0.03
18.00	0.02	4	485.44	0.02
18.50	0.02	3	485.44	0.02
19.00	0.02	3	485.44	0.02
19.50	0.02	3	485.44	0.02
20.00	0.02	3	485.44	0.02
20.50	0.02	3	485.44	0.02
21.00	0.02	3	485.43	0.02
21.50	0.02	3	485.43	0.02
22.00	0.02	3	485.43	0.02
22.50	0.02	3	485.43	0.02
23.00	0.02	3	485.43	0.02
23.50	0.02	3	485.43	0.02
24.00	0.02	3	485.43	0.02

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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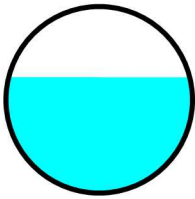
## Summary for Reach PIPE 2: PIPE 2 26 L.F.

Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 8.95" for 100 Year Storm event  
Inflow = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af  
Outflow = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Max. Velocity= 3.08 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.13 fps, Avg. Travel Time= 0.4 min

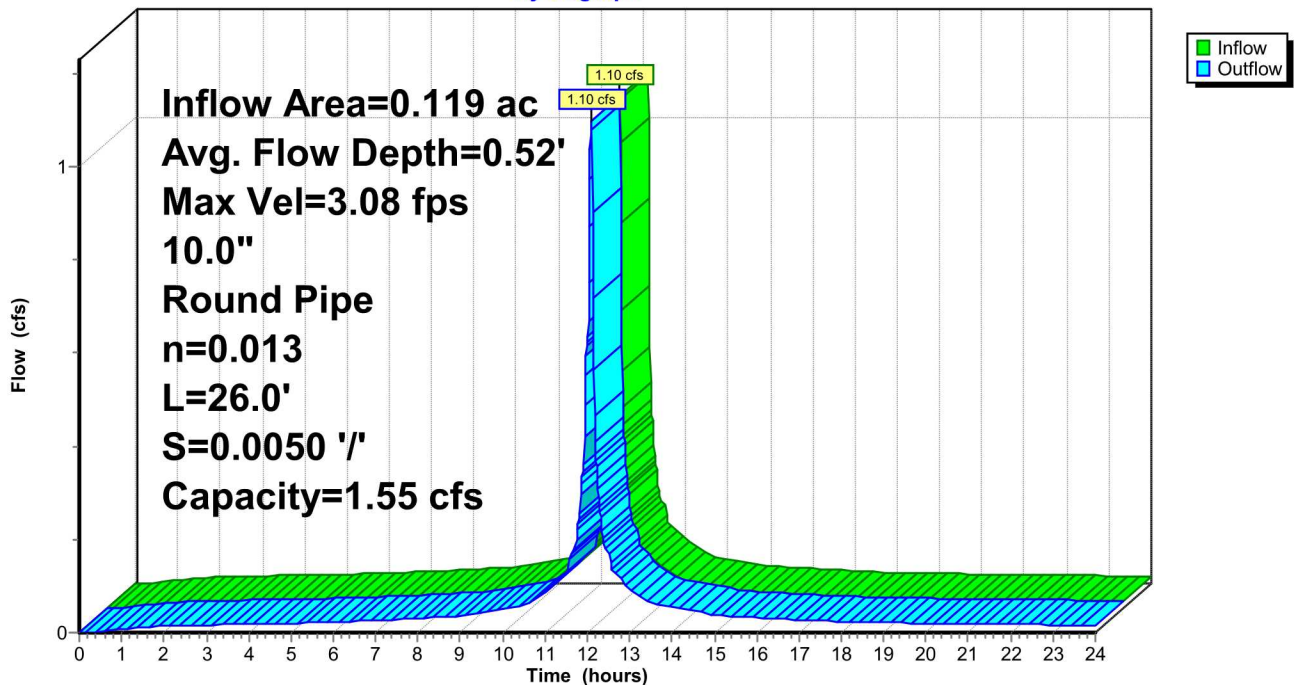
Peak Storage= 9 cf @ 12.11 hrs  
Average Depth at Peak Storage= 0.52' , Surface Width= 0.81'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 1.55 cfs

10.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 26.0' Slope= 0.0050 '/'  
Inlet Invert= 484.59', Outlet Invert= 484.46'



## Reach PIPE 2: PIPE 2 26 L.F.

Hydrograph



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Hydrograph for Reach PIPE 2: PIPE 2 26 L.F.

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	484.59	0.00
0.50	0.00	0	484.61	0.00
1.00	0.01	0	484.63	0.01
1.50	0.01	0	484.64	0.01
2.00	0.01	0	484.65	0.01
2.50	0.02	0	484.65	0.02
3.00	0.02	0	484.65	0.02
3.50	0.02	0	484.65	0.02
4.00	0.02	1	484.65	0.02
4.50	0.02	1	484.66	0.02
5.00	0.02	1	484.66	0.02
5.50	0.02	1	484.66	0.02
6.00	0.02	1	484.66	0.02
6.50	0.02	1	484.66	0.02
7.00	0.03	1	484.67	0.03
7.50	0.03	1	484.67	0.03
8.00	0.03	1	484.67	0.03
8.50	0.03	1	484.67	0.03
9.00	0.04	1	484.68	0.04
9.50	0.04	1	484.69	0.04
10.00	0.05	1	484.69	0.05
10.50	0.06	1	484.70	0.06
11.00	0.09	1	484.72	0.09
11.50	0.13	2	484.75	0.13
12.00	<b>0.63</b>	<b>6</b>	<b>484.96</b>	<b>0.63</b>
12.50	<b>0.17</b>	<b>2</b>	<b>484.78</b>	<b>0.17</b>
13.00	0.10	2	484.73	0.10
13.50	0.07	1	484.71	0.07
14.00	0.05	1	484.70	0.05
14.50	0.05	1	484.69	0.05
15.00	0.04	1	484.68	0.04
15.50	0.03	1	484.68	0.03
16.00	0.03	1	484.67	0.03
16.50	0.03	1	484.67	0.03
17.00	0.03	1	484.67	0.03
17.50	0.03	1	484.66	0.03
18.00	0.02	1	484.66	0.02
18.50	0.02	1	484.66	0.02
19.00	0.02	1	484.66	0.02
19.50	0.02	1	484.66	0.02
20.00	0.02	1	484.66	0.02
20.50	0.02	1	484.66	0.02
21.00	0.02	1	484.65	0.02
21.50	0.02	0	484.65	0.02
22.00	0.02	0	484.65	0.02
22.50	0.02	0	484.65	0.02
23.00	0.02	0	484.65	0.02
23.50	0.02	0	484.65	0.02
24.00	0.02	0	484.65	0.02

# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

Prepared by Gabriel E Senor PC

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## Summary for Pond CB 1: CB STREET

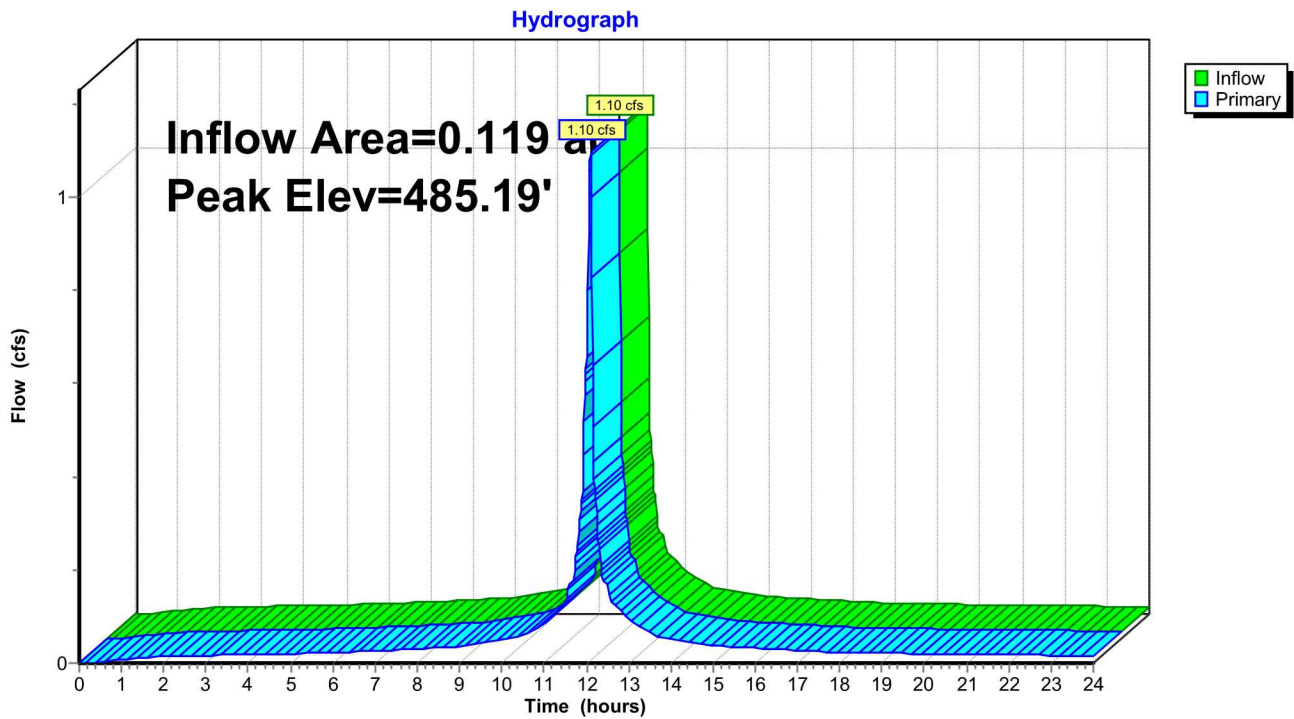
Inflow Area = 0.119 ac, 100.00% Impervious, Inflow Depth > 8.95" for 100 Year Storm event  
Inflow = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af  
Outflow = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min  
Primary = 1.10 cfs @ 12.11 hrs, Volume= 0.089 af  
Routed to Reach PIPE 2 : PIPE 2 26 L.F.

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs  
Peak Elev= 485.19' @ 12.11 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	484.59'	10.0" Vert. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.10 cfs @ 12.11 hrs HW=485.19' (Free Discharge)  
↑1=Orifice/Gate (Orifice Controls 1.10 cfs @ 2.63 fps)

## Pond CB 1: CB STREET



# 1 Guion

NRCC 24-hr D 100 Year Storm Rainfall=9.20"

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## Hydrograph for Pond CB 1: CB STREET

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	484.59	0.00
0.50	0.00	484.61	0.00
1.00	0.01	484.63	0.01
1.50	0.01	484.64	0.01
2.00	0.01	484.65	0.01
2.50	0.02	484.65	0.02
3.00	0.02	484.65	0.02
3.50	0.02	484.66	0.02
4.00	0.02	484.66	0.02
4.50	0.02	484.66	0.02
5.00	0.02	484.66	0.02
5.50	0.02	484.66	0.02
6.00	0.02	484.66	0.02
6.50	0.02	484.67	0.02
7.00	0.03	484.67	0.03
7.50	0.03	484.67	0.03
8.00	0.03	484.68	0.03
8.50	0.03	484.68	0.03
9.00	0.04	484.68	0.04
9.50	0.04	484.69	0.04
10.00	0.05	484.70	0.05
10.50	0.06	484.71	0.06
11.00	0.09	484.74	0.09
11.50	0.13	484.77	0.13
12.00	<b>0.63</b>	<b>485.02</b>	<b>0.63</b>
12.50	<b>0.17</b>	<b>484.80</b>	<b>0.17</b>
13.00	0.10	484.75	0.10
13.50	0.07	484.72	0.07
14.00	0.05	484.71	0.05
14.50	0.05	484.70	0.05
15.00	0.04	484.69	0.04
15.50	0.03	484.68	0.03
16.00	0.03	484.68	0.03
16.50	0.03	484.68	0.03
17.00	0.03	484.67	0.03
17.50	0.03	484.67	0.03
18.00	0.02	484.67	0.02
18.50	0.02	484.66	0.02
19.00	0.02	484.66	0.02
19.50	0.02	484.66	0.02
20.00	0.02	484.66	0.02
20.50	0.02	484.66	0.02
21.00	0.02	484.66	0.02
21.50	0.02	484.66	0.02
22.00	0.02	484.66	0.02
22.50	0.02	484.66	0.02
23.00	0.02	484.65	0.02
23.50	0.02	484.65	0.02
24.00	0.02	484.65	0.02