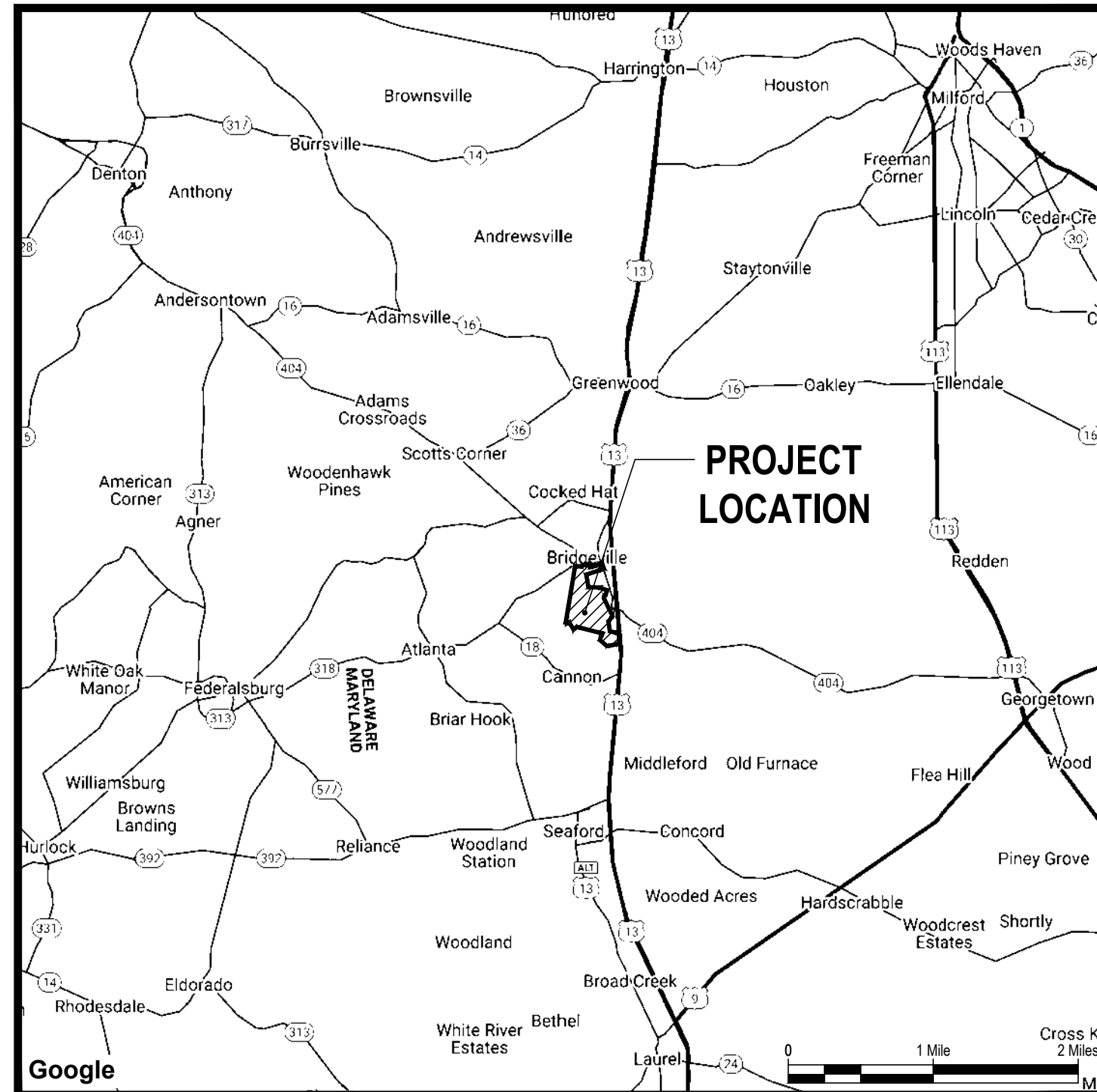


# Preliminary Sediment and Stormwater Management Plan Heritage Shores - Phase 7A



## LOCATION MAP

### STANDARD SEDIMENT AND STORMWATER CONSTRUCTION NOTES

1. THE DNREC SEDIMENT AND STORMWATER MANAGEMENT PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
7. APPROVED PLANS REMAIN VALID FOR 5 YEARS FROM THE DATE OF APPROVAL.
8. POST CONSTRUCTION VERIFICATION DRAWINGS ARE TO BE SUBMITTED TO THE DISTRICT WITHIN 60-DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION.
9. APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
10. THE NOTICE OF INTENT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NPDES GENERAL PERMIT FOR THIS PROJECT IS # 1790. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY THE DEPARTMENT.
11. THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT.
12. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OF DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
13. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
14. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL C. CH 60 AND THE CURRENT DELAWARE CONSTRUCTION GENERAL PERMIT (CGP).
15. DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC. SHALL BE PROVIDED TO THE DEPARTMENT OR DELEGATED AGENCY TO VERIFY THAT THE PERMANENT OR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN.
16. THE SUSSEX CONSERVATION DISTRICT, MAY REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATIONS IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, OR ALTERNATIVE MEASURES THAT PROVIDE FUNCTIONAL EQUIVALENCY.
17. THE OWNER SHALL ACQUIRE THE SERVICES OF A THIRD PARTY CERTIFIED CONSTRUCTION REVIEWER (CCR) TO PERFORM WEEKLY CONSTRUCTION REVIEWS. SEDIMENT AND STORMWATER MANAGEMENT PLANS APPROVED BY THE DEPARTMENT SHALL HAVE A THIRD PARTY CCR.

### Project Notes

#### Parcel Data

PROJECT TAX MAP ID: 131-14.00-44.00

PLUS NUMBER: N/A

DNREC SEDIMENT & STORMWATER PROGRAM NUMBER: 1790

SITE ADDRESS: INTERSECTION OF HERITAGE SHORES DR AND CHAMPIONS DR

LATITUDE/LONGITUDE: CENTER OF PARCEL: 38.725234 LAT, -75.806271 LNG

EXISTING SITE AREA: 7.58 AC

PROPOSED SITE AREA: 7.58 AC

EXISTING WETLAND AREA: 0 AC

PROPOSED CONDITION: 38 SINGLE FAMILY RESIDENTIAL LOTS

PROPOSED DISCHARGE LOCATION: TURKEY BRANCH

WATERSHED: NANTICOKE RIVER

TOTAL LIMIT OF DISTURBANCE PER DISCHARGE LOCATION: 7.58 AC

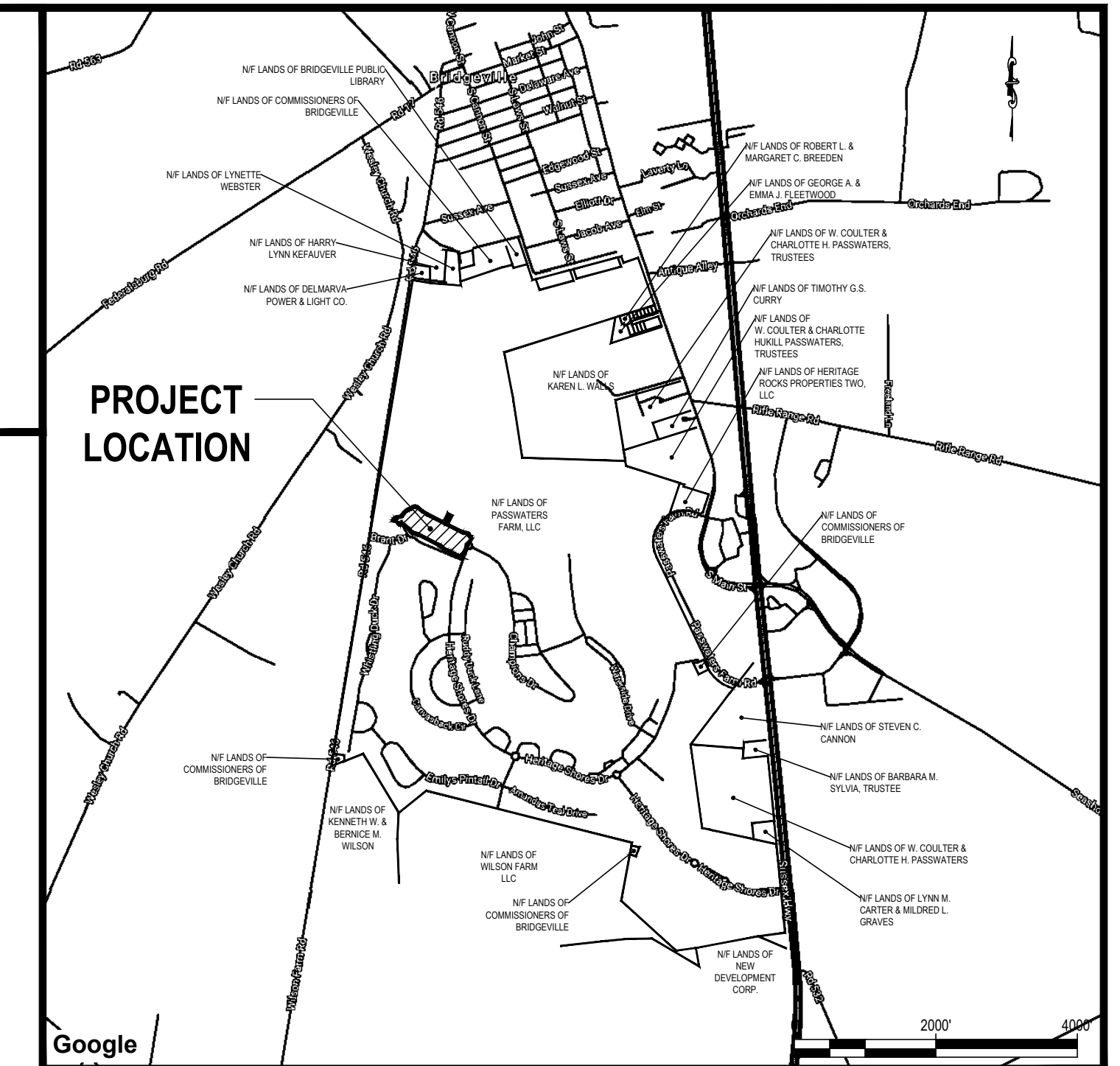
#### Contact Data

**OWNER & DEVELOPER:** PASSWATERS FARM, LLC  
3201 JERMANTOWN RD, STE. 150  
FAIRFAX, VA 22030  
PHONE: (703) 270 - 1400  
EMAIL: NEIL.PATEL@BROOKFIELDPR.COM

**ENGINEER:** RAUCH INC.  
106 N. HARRISON ST.  
EASTON, MD 21601  
PHONE: (410) 770 - 9081  
FAX: (410) 770 - 3667  
EMAIL: DESIGN@RAUCHENG.COM

### SHEET INDEX

T-1	Coversheet and General Notes
CSP-1	Overall Construction Site Phasing Plan
PSSM-1	Pre-Construction Site Stormwater Management Plan
CSSM-1	Construction Site Stormwater Management Plan
CSDN-1 → CSDN-5	Construction Site Details and Notes
PCSM-1 → PCSM-3	Post Construction Stormwater Management Plan
BMP-KEY	Overall BMP Contributing Drainage Area Plan
BMP-1 → BMP-4	BMP Contributing Drainage Area Plan
PSLOD-1	Pre-Developed Subarea Limit of Disturbance Drainage Area Plan



## VICINITY MAP

### LEGEND

- TOC PATH - SHEET FLOW
- TOC PATH - SHALLOW FLOW
- TOC PATH - PIPE FLOW
- - - - - STATIC WATER ELEVATION
- --- --- LIMITS OF DISTURBANCE
- - - - - EASEMENTS
- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- --- --- EXISTING STORM DRAIN
- --- --- PROPOSED STORM DRAIN
- --- --- SOILS BOUNDARY
- --- --- SANITARY SEWER SERVICE LATERAL AND CLEANOUT
- --- --- SANITARY SEWER MAIN AND MANHOLE
- --- --- WATER SERVICE LATERAL AND METER VAULT
- --- --- FIRE HYDRANT AND WATER VALVE
- INLET PROTECTION - TYPE 1 (CSDN-2)
- INLET PROTECTION - TYPE 3 (CSDN-4)
- RIPRAP OUTLET PROTECTION - 1 (CSDN-3)
- GEOTEXTILE DEWATERING BAG (CSDN-2)
- SILT FENCE (CSDN-2)
- STABILIZED CONSTRUCTION ENTRANCE (CSDN-5)
- STONE OUTLET SEDIMENT TRAP (CSDN-2)
- STUDY POINT POST DEVELOPMENT DA
- ★ STUDY POINT LOCATION

### OWNER'S/DEVELOPER'S CERTIFICATION

I, the undersigned, certify that all land clearing, construction and development should be done pursuant to the approved plan and that responsible personnel (i.e., Blue Card Holder) involved in the land disturbance will have a Certification of Training prior to initiation of the project, at a DNREC sponsored or approved training course for the control of erosion and sediment during construction. In addition, I grant the DNREC Sediment and Stormwater Program and/or the relevant Delegated Agency the right to conduct onsite reviews, and I understand my responsibilities under the NPDES Construction General Permit, as referenced on this Coversheet.

Signed Neil Patel Date 09/18/23  
Name NEIL PATEL Title VP OF LAND DEVELOPMENT

### ENGINEER'S CERTIFICATION STATEMENT

I hereby certify that this plan has been prepared under my supervision and to the best of my knowledge complies with the applicable state and local regulations and ordinances.

Signed Robert D. Rauch, PE Date 09/18/23

Name Robert D. Rauch, PE Title DE Registered Professional Engineer

License Number 8359

### WETLAND CERTIFICATION

This property, tax map 131-14.00-44.00, has been examined by RAUCH inc. for the presence of waters of the united states, including wetlands (section 404 and section 10), state subaqueous lands and state regulated wetlands as established by the reviewing agencies in the form of manuals, policies and procedures in place at the time that the investigation was conducted. The wetland information contained in this plan set is in accordance with this criteria.

Signed Kyle A. Kowalynski Date 09/18/23  
Title Licensed Environmental Health Scientist

### SITE CHARACTERISTICS

Total Site Area:	736.30	AC
Disturbed Area:	7.78	AC
Fill Quantity:	4,989	CY
Cut Quantity:	3,213	CY
Net Fill:	1,776	CY

**HORIZONTAL CONTROL:** DELAWARE STATE GRID NAD-83  
**VERTICAL CONTROL:** NAVD 1988  
**ZONING:** RESIDENTIAL PLANNED COMMUNITY (RPC)  
**CURRENT LAND USE:** RESIDENTIAL  
**PROPOSED LAND USE:** RESIDENTIAL

### NOTE:

This set of plans has been prepared to specifically address the additional development of the Heritage Shores - Phase 7A. All sediment control measures approved by previous plans for the development of Heritage Shores Phases 1 through 6 and the construction of the golf course shall remain in effect unless specifically modified by this plan.



Main Office: 108 N Harrison St - Easton, MD 21601  
Web: www.rauch-inc.com | Email: design@raucheng.com  
Phone: 410.770.9081 | Fax: 410.770.3667

### Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Delaware.  
License No. 8359  
Expiration Date: June 30, 2024

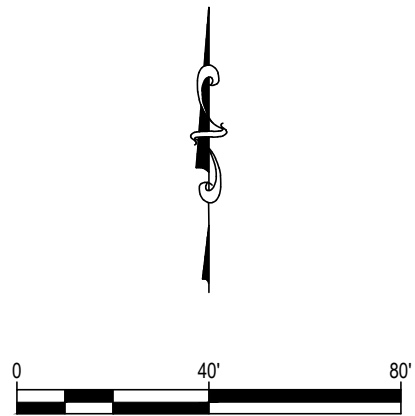


### Revisions

INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

### Heritage Shores - Phase 7A

Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	Scale: As Shown
Coversheet and General Notes	T-1



BENCHMARK #2  
 V: NAVD 88 / H: NAD 83  
 N: 264290.533  
 E: 601581.195  
 ELEV: 42.967  
 STORM DRAIN INLET MANHOLE

Osprey Lane

Compass Drive

# Phase 7A

## 7.78 Acres

BENCHMARK #1  
 V: NAVD 88 / H: NAD 83  
 N: 263926.376  
 E: 602552.288  
 ELEV: 45.364  
 SEWER MANHOLE

**LEGEND**

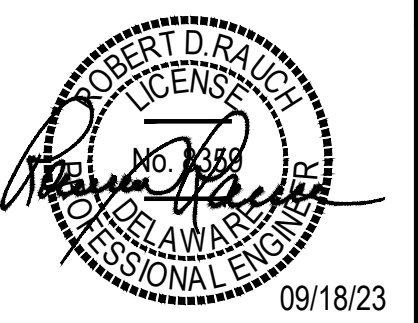
- TOC PATH - SHEET FLOW
- TOC PATH - SHALLOW FLOW
- TOC PATH - PIPE FLOW
- STATIC WATER ELEVATION
- LIMITS OF DISTURBANCE
- EASEMENTS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- SOILS BOUNDARY
- SANITARY SEWER SERVICE LATERAL AND CLEANOUT
- SANITARY SEWER MAIN AND MANHOLE
- WATER SERVICE LATERAL AND METER VAULT
- FIRE HYDRANT AND WATER VALVE
- PHASE LIMITS

Ex Wet (ED) Pond H  
 Design WSEL: 35.0  
 Actual WSEL (Sept. 2020): 36.5

**RAUCH**  
 Engineering | Survey | Architecture | Environmental

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 Web: www.rauch-inc.com | Email: design@rauch.com  
 Phone: 410.770.9001 | Fax: 410.770.9007

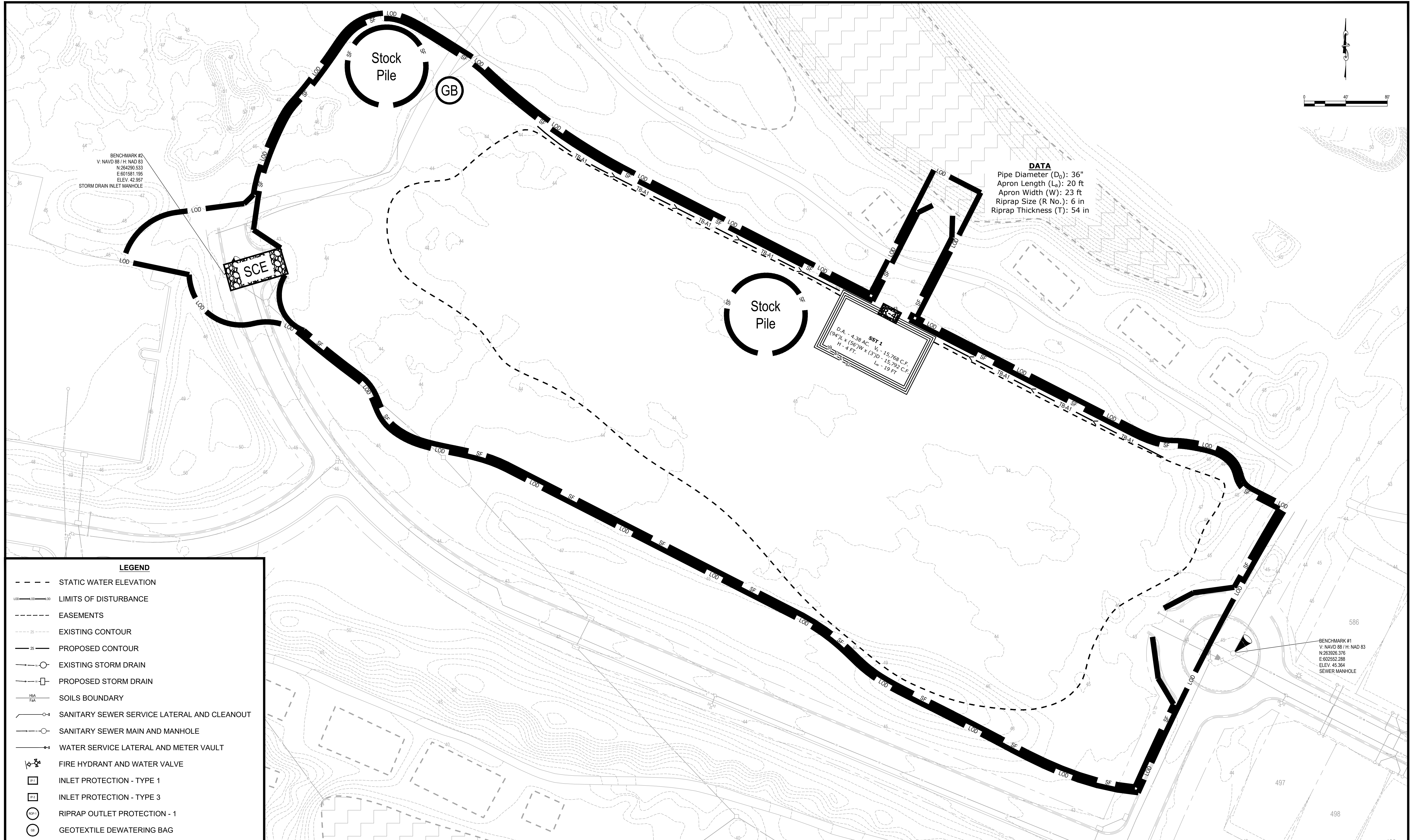
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Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	Scale: 1" = 40'
Overall Construction Site Phasing Plan	CSP-1





**DATA**  
 Pipe Diameter (D<sub>0</sub>): 36"  
 Apron Length (L<sub>a</sub>): 20 ft  
 Apron Width (W): 23 ft  
 Riprap Size (R No.): 6 in  
 Riprap Thickness (T): 54 in

BENCHMARK #2  
 V: NAVD 88 / H: NAD 83  
 N: 264290.533  
 E: 601581.195  
 ELEV: 42.967  
 STORM DRAIN INLET MANHOLE

**SST 1**  
 D.A. - 4.38 AC. V - 15,768 C.F.  
 (94") x (56") W x (3") D - 15,292 C.F.  
 H - 4 FT. L<sub>a</sub> - 19 FT

BENCHMARK #1  
 V: NAVD 88 / H: NAD 83  
 N: 263526.376  
 E: 602552.288  
 ELEV: 45.364  
 SEWER MANHOLE

Ex Wet (ED) Pond H  
 Design WSEL: 35.0  
 Actual WSEL (Sept. 2020): 36.5

**LEGEND**

- STATIC WATER ELEVATION
- LIMITS OF DISTURBANCE
- EASEMENTS
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- PROPOSED CONTOUR
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- RIPRAP OUTLET PROTECTION - 1
- GEOTEXTILE DEWATERING BAG
- SILT FENCE
- REINFORCED SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- STONE OUTLET SEDIMENT TRAP

**RAUCH**  
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 Web: www.rauch-inc.com | Email: design@rauch.com  
 Phone: 410.770.9091 | Fax: 410.770.9097

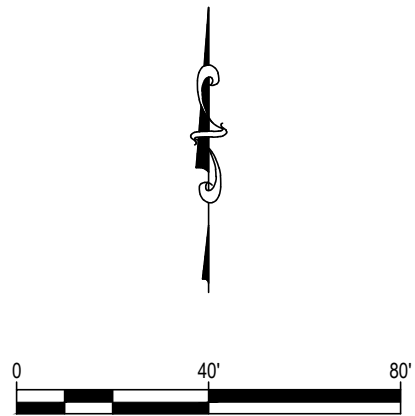
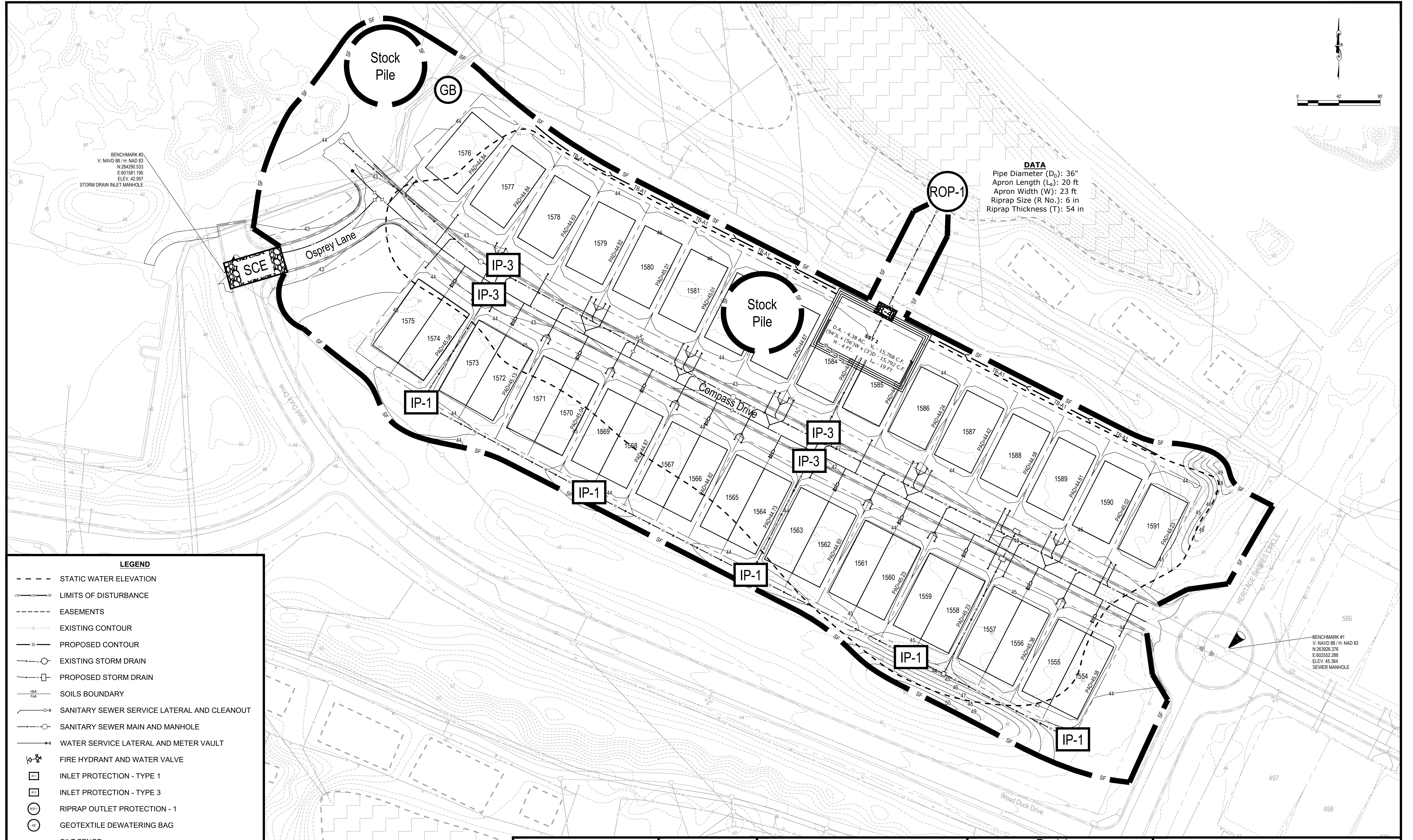
**Professional Certification**  
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 License No. 8359  
 Expiration Date: June 30, 2024

ROBERT D. RAUCH  
 LICENSED PROFESSIONAL ENGINEER  
 DELAWARE  
 09/18/23

Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	Scale: 1" = 40'
Pre-Construction Site Stormwater Management Plan	PSSM-1





BENCHMARK #2  
 V: NAVD 88 / H: NAD 83  
 N: 264290.533  
 E: 601581.195  
 ELEV: 42.967  
 STORM DRAIN INLET MANHOLE

**DATA**  
 Pipe Diameter (D<sub>0</sub>): 36"  
 Apron Length (L<sub>a</sub>): 20 ft  
 Apron Width (W): 23 ft  
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 Riprap Thickness (T): 54 in

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 V: NAVD 88 / H: NAD 83  
 N: 263526.376  
 E: 602552.288  
 ELEV: 45.364  
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LEGEND	
---	STATIC WATER ELEVATION
---	LIMITS OF DISTURBANCE
---	EASEMENTS
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
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---	SANITARY SEWER MAIN AND MANHOLE
---	WATER SERVICE LATERAL AND METER VAULT
---	FIRE HYDRANT AND WATER VALVE
IP-1	INLET PROTECTION - TYPE 1
IP-3	INLET PROTECTION - TYPE 3
ROP-1	RIPRAP OUTLET PROTECTION - 1
GB	GEOTEXTILE DEWATERING BAG
SF	SILT FENCE
SF	REINFORCED SILT FENCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
SST	STONE OUTLET SEDIMENT TRAP

Ex Wet (ED) Pond H  
 Design WSEL: 35.0  
 Actual WSEL (Sept. 2020): 36.5

SITE CHARACTERISTICS	
Total Site Area:	736.30 AC
Disturbed Area:	7.58 AC
Fill Quantity:	4,989 CY
Cut Quantity:	3,213 CY
Net Fill:	1,776 CY

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 09/18/23

Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	Scale: 1" = 40'
Construction Site Stormwater Management Plan	CSSM-1

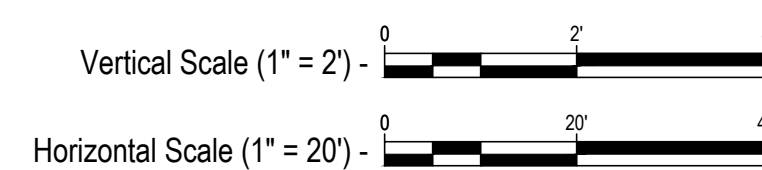
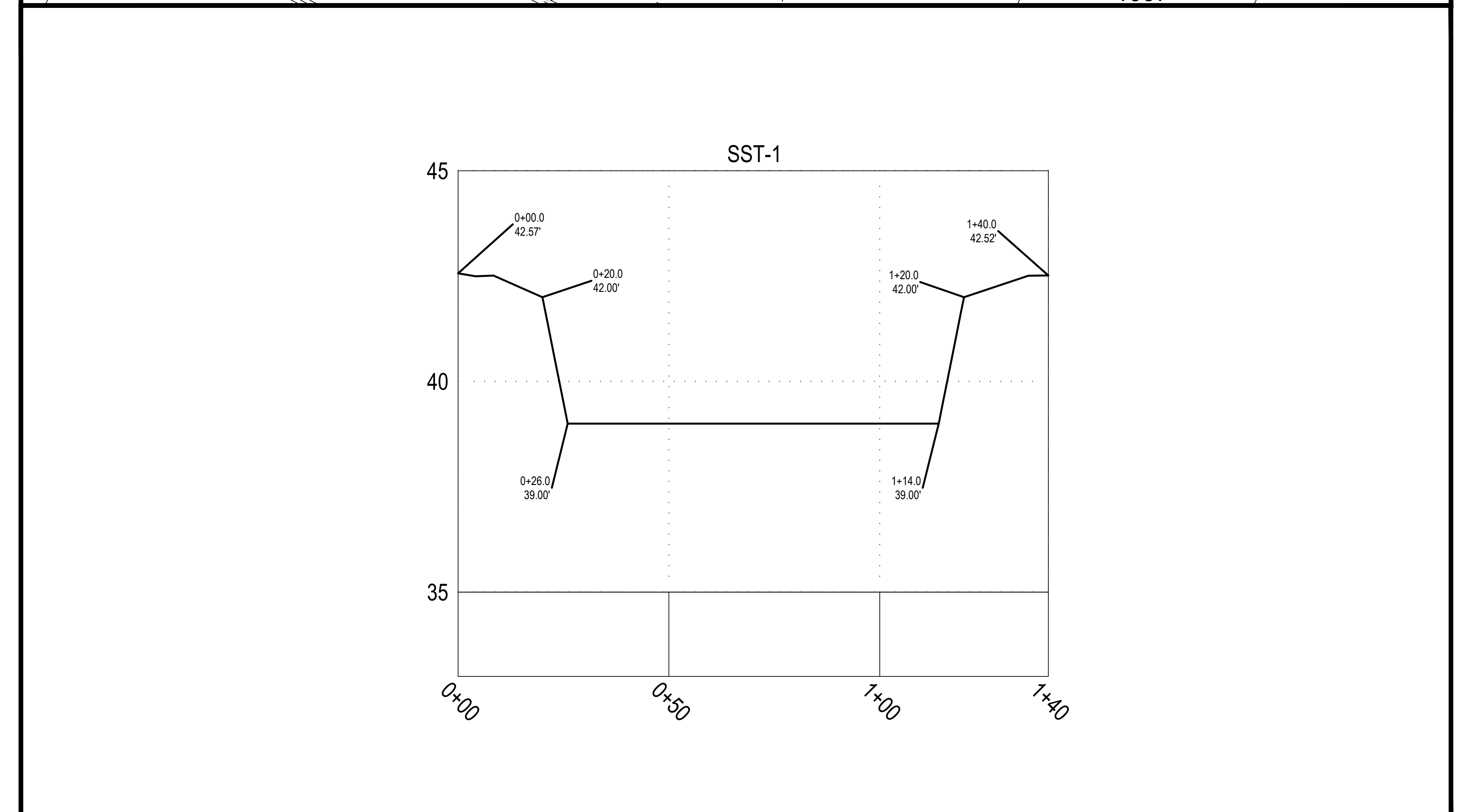
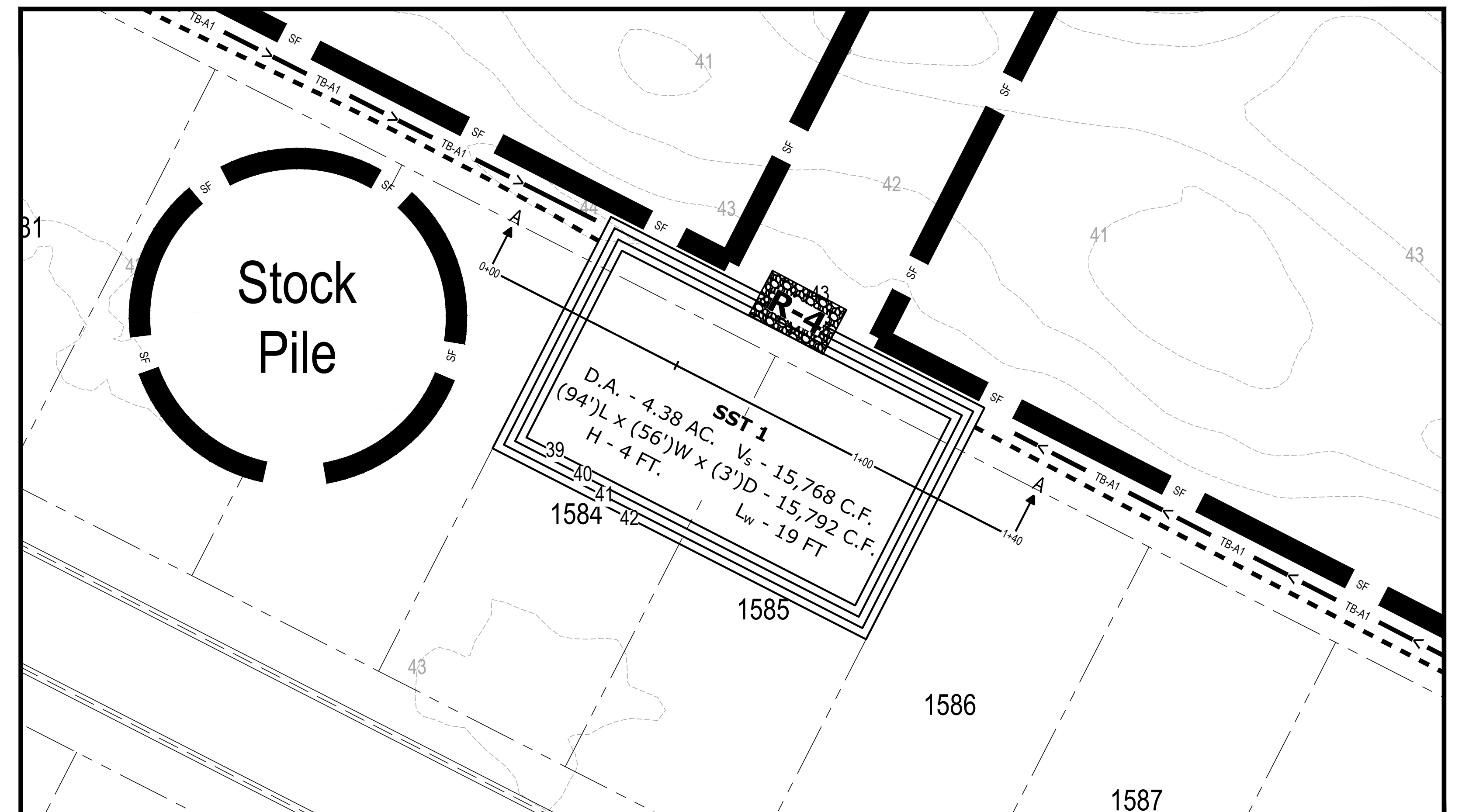


## CONSTRUCTION NOTES

1. Passwaters Farm LLC shall be responsible for maintenance and repair of all sediment control and stormwater management practices during construction and utility installation.
2. Passwaters Farm LLC certifies that DNREC or a delegated inspection agency shall have access to the site for the completion of on-site inspections.
3. Batter Board Water Control Structures shall be installed per the typical detail at the inlet end of all pipes discharging from ponds serving as sediment basins.
4. 9" - 18" of topsoil shall be stripped from all road right-of-ways and stockpiled in designated areas.
5. Water shall be sprinkled on disturbed areas to control dust when necessary.
6. Due to the size of the stormwater management ponds and excess capacity, sediment from construction will not be removed from the existing ponds. The existing stormwater management ponds will not be dewatered at any time during construction, unless under the direction of DNREC or Sussex Conservation District.
7. All slopes steeper than 4:1 shall be stabilized with Excelsior "Curlex 1" matting, or approved equal. Matting shall be installed in accordance with manufacturers specifications. Matting shall not be installed below the static water level of the ponds.
8. Sediment accumulation in the 0% grade pipes connecting the proposed ponds shall be cleaned when the sediment interferes with the normal operation of the pipe. The pipes shall be cleaned with high pressure hoses. Sediment control silt fences at the entrance of the discharge pipe shall be maintained during the pipe cleaning process.

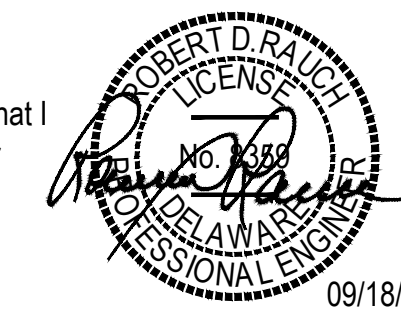
## SEQUENCE OF CONSTRUCTION

1. Notification. Note: Notify the Sussex Conservation District in writing at least five (5) days prior to the start of construction. Failure to do so constitutes a violation of the approved Sediment and Stormwater Management Plan.
2. Pre-construction meeting. Note: Prior to any clearing, installation of sediment control measures or grading, a pre-construction meeting shall be scheduled and conducted with the Agency Construction Site Reviewer. The landowner/developer, contractor, and third party Certified Construction Reviewer (CCR) are required to be in attendance at the pre-construction meeting; the designer is recommended to attend.
3. Maintenance of construction site stormwater management BMPs. Note: The contractor should at all times protect against sediment or debris laden runoff or wind from leaving the site. Perimeter controls should be checked daily and adjusted and/or repaired to fully contain and control sedimentation on the site. Accumulated sediment should be removed when it has reached half of the effective capacity of the control. In addition, the contractor may need to adjust or repair measures in times of adverse weather conditions, or as directed by the Agency Construction Site Reviewer.
4. Repair or replace any damaged perimeter controls established in previous phases of construction.
5. Stakeout location of Sediment Control Devices
6. Install Stabilized Construction Entrance
7. Clear and grub area necessary to install perimeter controls
8. Install Silt Fence, all perimeter controls and sediment traps.
9. Perimeter control review. Note: All perimeter controls are to be reviewed by the Agency Construction Site Reviewer and approved prior to proceeding with further site disturbance or construction.
10. Concurrent Grading Activities (No more than 20 Acres may be disturbed at one time) Note: Prior to commencing a new phase of construction, the contractor shall receive approval from the Agency Construction Site Reviewer that the previous phase has been sufficiently stabilized.
  - 10.1. Phase 7A - (7.78 Acres)
    - 10.1.1. Strip and stockpile topsoil within road right of way
    - 10.1.2. Grade to design subgrade
    - 10.1.3. Install Storm drains (7A-1 to 7A-7, 7A-9 to 7A-5, 7A-11 to 7A-10)
    - 10.1.4. Install inlet protection
    - 10.1.5. Install stabilized outfall (7A-8)
    - 10.1.6. Install gravity sewer with sewer laterals and cleanouts (SSMH 7A-1 to EX SSMH 4F-38)
    - 10.1.7. Backfill and compact SS trench with select material at specified lifts and compaction to design subgrade
    - 10.1.8. Install watermain with services to lot lines
    - 10.1.9. Raise stormdrain inlets and install and compact road base material
    - 10.1.10. Reinstall inlet protection
11. Install Curb and finish SD Inlets
12. Install base paving
13. Finish grade lots and stabilize
14. Sediment trap conversion
15. Removal of sediment control practices. Note: Erosion and sediment control devices to be removed only after work in an area has been completed and stabilized, with written approval from the Agency Construction Site Reviewer.
16. Project closeout. Note: The termination of the Construction General Permit will require submission and acceptance of the Post Construction Verification Documents, including final stabilization throughout the site, all elements of the Sediment and Stormwater Management Plan implemented, and acceptance of the final Operation and Maintenance Plan.



### Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Delaware.  
License No. 8359  
Expiration Date: June 30, 2024



### Revisions

INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

### Heritage Shores - Phase 7A

Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	
Construction Site Details and Notes	CSDN-1

### Standard Detail & Specifications

## Silt Fence

**Section**

**Plan**

Source: Adapted from MD Stds. & Specs. for ESC

Symbol: **SF**

Detail No. **DE-ESC-3.1.2.1**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications

## Silt Fence

### Construction Detail

Method for joining continuous sections

**Construction Notes:**

- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

**Materials:**

- Stakes: Steel (either T or U) or 2" x 2" hardwood
- Geosynthetic Fabric: Type GD-I
- Reinforcing strip: Wooden lath or plastic strip

Source: Adapted from MD Stds. & Specs. for ESC

Symbol: **SF**

Detail No. **DE-ESC-3.1.2.1**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications

## Stone Outlet Sediment Trap

**Perspective**

**Section A-A**

**Section B-B**

Source: Adapted from MD Stds. & Specs. for ESC

Symbol: **SST**

Detail No. **DE-ESC-3.1.3.2**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications

## Stone Outlet Sediment Trap

**Construction Notes:**

- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
- The volume of sediment storage shall be 3600 cubic feet per acre of drainage area in addition to any storage provided in the form of a permanent wet pool. The plan shall include an approved means of dewatering the wet pool for necessary maintenance or removal.
- All fill slopes shall be 2:1 or flatter, cut slopes 1:1 or flatter.
- The stone used in the outlet shall be small riprap (R-4) along with a 1' thickness of DE #3 aggregate placed on the up-grade side on the small riprap or embedded filter cloth in the riprap.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
- The structure shall be inspected after each rain and repairs made as needed.
- An approved dewatering device shall be considered an integral part of the trap. Dewatering operations shall be conducted in accordance with any and all regulatory requirements.
- Construction operations shall be carried out in such a manner that erosion and water pollution are minimized. Disturbed areas shall be stabilized in accordance with the Standards and Specifications for Vegetative Stabilization contained in this Handbook.
- The structure shall only be removed when the contributing drainage area has been properly stabilized.
- OPTIONAL: A one foot layer of DE #3 stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

**MAXIMUM DRAINAGE AREA: 5 ACRES**

Source: Adapted from MD Stds. & Specs. for ESC

Symbol: **SST**

Detail No. **DE-ESC-3.1.3.2**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications

## Inlet Protection - Type 1

**Plan**

**Section A-A**

Source: Adapted from Erosion Draw Manual J. McCullah & Assoc.

Symbol: **IP-1**

Detail No. **DE-ESC-3.1.5.1**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications

## Inlet Protection - Type 1

**Construction Notes:**

- Excavate completely around inlet to a depth of 18" below grate elevation.
- Drive 2" x 4" post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2" x 4" frame using overlap joint shown. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.
- Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
- Stretch geotextile fabric tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet grate elevation. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
- Backfill around inlet in compacted 6" layers until at least 12" of geotextile fabric is buried.
- If the inlet is not in a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 6" higher than the top of frame (weir).
- This structure must be inspected frequently and the filter fabric replaced when clogged.

**Materials:**

- Wooden frame is to be constructed of 2" x 4" construction grade lumber.
- Wire mesh must be of sufficient strength to support filter fabric with water fully impounded against it.
- Geotextile fabric: Type GD-II

Source: Adapted from Erosion Draw Manual J. McCullah & Assoc.

Symbol: **IP-1**

Detail No. **DE-ESC-3.1.5.1**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications

## Geotextile Dewatering Bag

**Plan**

**Profile**

Source: Adapted from ACF Products, Inc.

Symbol: **GB**

Detail No. **DE-ESC-3.2.1.2**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications

## Geotextile Dewatering Bag

**Construction Notes:**

- The dewatering bag should be placed so the incoming water flows into and through the bag, and then flow off the site without creating more erosion. The neck should be tied off tightly to stop the water from flowing out of the bag without going through the walls. The dewatering bag should be placed on a gravel bed to allow water to flow in all directions.
- The dewatering bag is considered full and should be disposed when it is impractical for the bag to filter the sediment out at a reasonable flow rate. At this point, it should be replaced with a new bag.
- Disposal may be accomplished as directed by the construction reviewer. If the site allows, the bag may be buried on site and seeded, visible fabric removed and seeded or removed from site to a proper disposal area.

**Materials:**

- The geotextile fabric shall be a Type GD-IV.
- The dewatering bag shall be sewn with a double needle machine using high strength thread. All structural seams will be sewn with high strength, double stitched "J" type. Seam strength test will have the following minimum average roll values:

Type	TEST METHOD	TEST RESULT
Heavy duty	ASTM D-4884	100 lb / in

- The dewatering bag shall have an opening large enough to accommodate a four (4) inch discharge hose with attached strap to tie off the hose to prevent the pumped water from escaping from the bag without being filtered.

Source: Adapted from ACF Products, Inc.

Symbol: **GB**

Detail No. **DE-ESC-3.2.1.2**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Riprap Outlet Protection - 1

**Plan**

NOTE: Depress centerline of apron slightly to prevent edge-cutting

**Section A-A**

NOTE: Key into exist. grd

**DATA**

Pipe diameter (D<sub>p</sub>)  
Apron length (L<sub>a</sub>)  
Apron width (W)  
Riprap size (R No.)  
Riprap thickness (T)

$T_w < 0.05 D_o$

Source: Adapted from MD Stds. & Specs. for ESC  
Symbol: **ROP-1**  
Detail No. **DE-ESC-3.3.10.1**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Riprap Outlet Protection - 1

**Construction Notes:**

- The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The riprap shall conform to the grading limits as shown on the plan.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter cloth.
- Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

Source: Adapted from MD Stds. & Specs. for ESC  
Symbol: **ROP-1**  
Detail No. **DE-ESC-3.3.10.1**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Temporary Earth Berm

**Plan**

Discharge to be directed to sediment trapping device (or stable outlet for clean water).

Runoff

Flowline

Limits of Contributing Area

**Section A-A**

Excavate as needed to provide required flow width at design flow depth

3:1 or flatter

Ex. grd

**Table:**

	Type A (5 ac. or less)	Type B (5-10 ac.)
a - BERM HEIGHT	18"	36"
b - BERM TOP WIDTH	24"	36"
c - FLOW WIDTH	4'	6'
d - FLOW DEPTH	8"	15"

Source: Adapted from MD Stds. & Specs. for ESC  
Symbol: **TB-(A/B)(1-4)**  
Detail No. **DE-ESC-3.3.2**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Temporary Earth Berm

**FLOW CHANNEL STABILIZATION CHART**

Stabilization Method	Channel Grade	Type A	Type B
1	0.5-3.0%	Seed with stab. blanket Seed with stab. blanket	Seed with stab. blanket Seed with stab. blanket; sod; DE #2 stone
2	3.1-5.0%		Lined R-4 riprap
3	5.1-8.0%	Seed with stab. blanket; sod; DE #2 stone	Lined R-4 riprap
4	8.1-20%		Engineering design

a. Stone to be DE #2 stone in a layer at least 3 inches in thickness and underlain with GS-1 geotextile.  
b. Riprap to be R-4 in a layer at least 8 inches thickness and underlain with GS-1 geotextile.

**Construction Notes:**

- All berms shall be compacted by earth-moving equipment.
- All berms shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter if desired to facilitate crossing construction traffic.
- Field location should be adjusted as needed to utilize a stabilized safe outlet.
- Earth berms shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the berm channel or the drainage area above the berm are not adequately stabilized.
- Stabilization shall be: (a) In accordance with standard specifications for seed and straw mulch or straw mulch if not in seeding season, (b) Flow channel as per the chart above.
- Inspection and required maintenance shall be provided after each rain event.

Source: Adapted from MD Stds. & Specs. for ESC  
Symbol: **TB-(A/B)(1-4)**  
Detail No. **DE-ESC-3.3.2**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Vegetative Stabilization

**TEMPORARY SEEDING BY RATES, DEPTHS AND DATES**

Mix #	Species <sup>a</sup>	Seeding Rate	Optimum Seeding Dates <sup>1</sup>						Planting Depth <sup>3</sup>	
			Coastal Plain		Piedmont		All <sup>4</sup>			
		lb/Ac <sup>4</sup>	2/1-4/30	5/1-8/16	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	2/1	
1	Barley	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils
2	Oats	125	4	O	A	A	O	A	A	1-2 inches 2-3" sandy soils
3	Rye	125	4	O	A	O	O	A	O	2-3" sandy soils
4	Perennial Ryegrass	125	4	O	A	O	O	A	O	0.5 inches 1-2" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	A	O	0.5 inches 1-2" sandy soils
6	Winter Wheat	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils
7	Foxtail Millet	30 PLS	0.7	O				O		0.5 inches 1-2" sandy soils
8	Pearl Millet	20 PLS	0.5	O				O		0.5 inches 1-2" sandy soils

1. Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.  
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.  
3. Applicable on slopes 3:1 or less.  
4. Use varieties currently recommended for Delaware. Contact a County Extension Office for information.  
5. Warm season grasses such as Millet may be used between 5/1 and 9/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.3**  
Detail No. **DE-ESC-3.4.3**  
Sheet 1 of 4  
Effective July 2023

### Standard Detail & Specifications Vegetative Stabilization

**PERMANENT SEEDING AND SEEDING DATES**

Mix No.	Certified Seed <sup>1</sup>	Seeding Rate <sup>1</sup>	Optimum Seeding Dates <sup>2</sup>				Remarks			
			Coastal Plain	Piedmont	All <sup>4</sup>	Alt <sup>5</sup>				
		lb/Ac	2/1-4/30	5/1-8/16	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
1	Tall Fescue Canada Wild Rye	140 10	3.2 0.23	A O	A O	A O	A O	A O	A	Good erosion control mix Tolerant of low fertility soils Good for droughty sites
2	Ornamental Sheep Fescue White Clover	30 30 10	0.69 0.69 0.35	A O A	A O A	A O A	A O A	A O A	A	Good erosion control mix Tolerant of low fertility soils Legume that fixes atmospheric N into soil
3	Tall Fescue (Turf type) or Strong Creeping Red Fescue or Perennial Ryegrass plus Flatgrass <sup>6</sup>	50 50 50 15	1.15 1.15 1.15 0.24	A O A O	A O A O	A O A O	A O A O	A O A O	A	Good erosion control mix Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Flatgrass to suppress woody vegetation.
4	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Rottop	100 70 15 5	2.3 1.61 0.35 0.11	A O A O	A O A O	A O A O	A O A O	A O A O	A	Substrate wet/dry mix. Canada Bluegrass more drought tolerant. Use Rottop for increased drought tolerance.
5	Switchgrass <sup>7</sup> or Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	10 10 5 5 5	0.23 0.23 0.11 0.11 0.1	O O A O O	O O A O O	O O A O O	O O A O O	O O A O O	O	Native warm-season mixture Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds
6	Tall Fescue (Turf type) (Blend of 3 cultivars)	150	3.5	O	A <sup>4</sup>	O	O	A <sup>4</sup>	O	Managed filter strip for nutrient uptake.
7	Tall Fescue Ryegrass (Blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O	A <sup>4</sup>	O	O	A <sup>4</sup>	O	Three cultivars of Kentucky Bluegrass. Traffic tolerant.
8	Big Bluestem <sup>8</sup> or Indian Grass <sup>8</sup> Little Bluestem <sup>8</sup> Creeping Red Fescue plus one of: Partridge Pea Bush Clover Wild Indigo Showy Tick-Trefoil	10 10 8 30 5 3 3 2	0.23 0.23 0.18 0.69 0.11 0.07 0.07 0.55	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O	All species are native. Indian Grass and Bluestem have fully seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.3**  
Detail No. **DE-ESC-3.4.3**  
Sheet 2 of 4  
Effective July 2023

### Standard Detail & Specifications Vegetative Stabilization

**PERMANENT SEEDING AND SEEDING DATES (cont.)**

Mix No.	Certified Seed <sup>1</sup>	Seeding Rate <sup>1</sup>	Optimum Seeding Dates <sup>2</sup>				Remarks			
			Coastal Plain	Piedmont	All <sup>4</sup>	Alt <sup>5</sup>				
		lb/Ac	2/1-4/30	5/1-8/16	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
9	Rottop Creeping Bentgrass Sheep Fescue Rough Bluegrass	75 35 30 45	1.72 0.8 0.69 1	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O	Quick stabilization of disturbed sites and waterways
10	Switchgrass <sup>7</sup>	10	0.23	A	O	A	O	O	O	Good erosion control, wildlife cover and wetland revegetation.
<b>Residential Lawns</b>										
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O	High value, high maintenance, light traffic. Irrigation necessary. Well drained soils, full sun.
12	Tall Fescue Perennial Ryegrass Sheep Fescue	100 25 25	2.3 0.57 0.57	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O	Moderate value, low maintenance, traffic tolerant.
13	Creeping Red Fescue Chewings Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 20	1.15 1.15 0.4 0.4	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O O A <sup>4</sup>	O	Shade tolerant, moderate traffic tolerance, moderate maintenance.
14	Creeping Red Fescue Rough Bluegrass or Chewings Fescue	50 60	1.15 2.1	O O	A <sup>4</sup>	O O	O A <sup>4</sup>	O O	O	Shade tolerant, moisture tolerant.
15	K-31 Tall Fescue	150	3.5	O	A <sup>4</sup>	O	O	A <sup>4</sup>	O	Monoculture, but performs well alone in lawns. Discourage.

1. When hydroseeding is the chosen method of application, the total rate of seed should be increased by 25%.  
2. Winter seeding requires 3 tons per acre of straw mulch. Planting dates listed above are averages for Delaware. These dates may require adjustment to reflect local conditions.  
3. All seed shall meet the minimum purity and minimum germination percentages recommended by the Delaware Department of Agriculture. The maximum % of weed seeds shall be in accordance with Chapter 15, Title 3 of the Delaware Code.  
4. Turf-type species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.  
5. It is recommended that all leguminous seed be inoculated.  
6. Warm season grass mix and Switchgrass cannot be mowed more than 4 times per year.  
7. Warm season grasses require a soil temperature of at least 50 degrees in order to germinate and will remain dormant until then.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.3**  
Detail No. **DE-ESC-3.4.3**  
Sheet 3 of 4  
Effective July 2023

### Standard Detail & Specifications Vegetative Stabilization

**Construction Notes:**

- Site Preparation
  - Prior to seeding, install positive erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
  - Final grading and shaping is not necessary for temporary seedings.
- Seeded Preparation
 

It is important to prepare a good seedbed to ensure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
- Soil Amendments
  - Lime - Apply liming materials based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
  - Fertilizer - Apply fertilizer based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soil.
- Seeding
  - For temporary stabilization, select a mixture from Sheet 1. For a permanent stabilization, select a mixture from Sheet 2 or Sheet 3 depending on the conditions. Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.
  - Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
  - Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
- Mulching
 

All mulching shall be done in accordance with detail DE-ESC-3.4.5.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.4.3**  
Detail No. **DE-ESC-3.4.3**  
Sheet 4 of 4  
Effective July 2023

**RAUCH**  
Professional Certification  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Delaware.  
License No. 8359  
Expiration Date: June 30, 2024

**Professional Certification**  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Delaware.  
License No. 8359  
Expiration Date: June 30, 2024

**Revisions**

Revision No.	Description	Date
1	INITIAL SUBMISSION - 08/08/23	
2	FIRST REVISION - 09/18/23	

**Heritage Shores - Phase 7A**

Location	Date
Brigville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	
Construction Site Details and Notes	CSDN-3



### Standard Detail & Specifications Inlet Protection - Type 3

**Plan View - Concrete Block Option**

Sand bag or concrete block to secure end to curb (as needed)

Curb opening

2" min. taper spacing (typ.)

Concrete blocks used to keep log in place in front of grate as needed (lack of topcoat may be sufficient to keep the log in place)

8" min. compost filter log or alternate media

**Isometric View - Wire Mesh Option**

Welded wire mesh, min. opening 1" x 2"

1" min. overhang (typ.)

1" min. opening

Strapping to secure wire mesh to the log (also strap around grate if applicable)

Source:	Symbol:	Detail No.
Adapted from Filtrex <sup>TM</sup> International	<b>IP-3</b>	<b>DE-ESC-3.1.5.3</b> Sheet 1 of 3 Effective July 2023

### Standard Detail & Specifications Inlet Protection - Type 3

**Notes:**

- This practice shall only be used in situations in which Inlet Protection – Type 1 cannot be used due to site constraints. These include, but are not limited to partially complete parking areas, streets, roads, etc., having a throat or curb opening. It should be used in conjunction with Type 2 Inlet Protection when a grate is also present.
- The filter log sock fabric shall be high durability netting material to resist puncture and wear in the traffic areas. If compost media is used to fill the sock it must meet the Standards and Specifications for Compost Material in the Appendix, except that the maximum pass through for a 3/8" screen shall be 20% to allow for higher flow through. Additives, such as soluble phosphorus and petroleum hydrocarbons, can be mixed with the compost media to aid in pollutant removal, if desired. Reference the Compost Filter Log design guidelines for additional requirements on the high durability netting material, compost media, and sock filling and installation procedures. Reference the design alternatives below for additional log media options.
- The maximum contributing drainage area shall be 3 acres, or as recommended by the manufacturer. 8" diameter socks shall be used for standard roadway applications. If in a highly disturbed area, the Engineer or Site Reviewer may opt for larger socks, either 12" or 18" depending on the need. (If used as a replacement for Type 1 Inlet Protection with special approval, minimum 12" diameter socks shall be used.) The top of the log may need to be flattened so that it is always below the top of curb elevation with a minimum 1" opening in order to prevent localized flooding.
- Concrete blocks shall be used to aid in the log shape and prevent it from entering into the throat. They should be placed between the log and the throat opening, and used to secure the ends of the log against the curb if needed. The end of the log shall extend a minimum of 2 feet past the end of the throat opening. If a grate is also present in addition to the throat opening, the concrete blocks can either be laid perpendicular to the curb (recommended) so that the log lies on the outside of the grate, or parallel to the curb so that the log lies on top of the grate (note, Type 2 Inlet Protection is also used in conjunction with Type 3 if a grate is present). Sand bags can be used as an alternate to the concrete blocks at the end of the log to secure the log against the curb.

Source:	Symbol:	Detail No.
Adapted from Filtrex <sup>TM</sup> International	<b>IP-3</b>	<b>DE-ESC-3.1.5.3</b> Sheet 2 of 3 Effective July 2023

### Standard Detail & Specifications Inlet Protection - Type 3

- If concrete blocks are not desired due to high traffic volumes, a welded wire screen in an "S" shape can be fitted over the length of the opening and secured to the log with straps, such as zip-ties. This will prevent the sock from falling into the opening. In this case, the log only needs to extend past the curb opening a minimum of 1 foot.
- In all cases, the log shall provide a physical barrier to the catchbasin to allow for ponding and sedimentation along the upstream side of the log. The logs shall be placed on flat surfaces and maintain constant contact with the paved surface. Any daylight will allow for untreated discharge and is not permitted.
- All structures must be inspected frequently (24 hours after a storm event and weekly) for proper function. Accumulated sediment shall be removed to avoid future failure, and must not exceed half of the effective height of the log. Reference manufacturer's recommendations for additional maintenance.

**Alternatives:**

- In lieu of the compost filter log, crushed DE #3 stone with a fractured face on all sides that is double wrapped in 1" chicken wire made from 10 gauge wire may be used. The wire should be secured using hog rings or wire ties on 6" centers along the length of the joint, and on 1" center on the ends of the rock sock. All installation and maintenance criteria are the same as the compost log above.
- In lieu of the compost filter media, 100% shredded rubber (typically from tires) can be used.
- For applications that have a grate and a throat inlet, some Type 2 Inlet Protection manufacturers have developed a catchbasin sack insert that also have a tubular attachment which rests above the grate and against the throat. As long as the sack meets the requirements of Type 2 Inlet Protection, and the provided throat protection extends a minimum of 1' past the limits of the curb opening, without any daylight along the edges, these combination Type 2 and Type 3 devices may be used upon approval of the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Adapted from Filtrex <sup>TM</sup> International	<b>IP-3</b>	<b>DE-ESC-3.1.5.3</b> Sheet 3 of 3 Effective July 2023

### Standard Detail & Specifications Dust Control

**Temporary Methods:**

- Mulches - See DE-ESC-3.4.5, Standard Detail and Specifications for Mulching.
- Vegetative cover - See DE-ESC-3.4.3, Std. Detail and Specifications for Vegetative Stabilization.
- Adhesives - Use on mineral soils only (not effective on muck soils). Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal/Ac.
Latex emulsion	12.5:1	Fine spray	235
Resin-in-water emulsion	4:1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

- Tillage - For emergency temporary treatment, scarify the soil surface to prevent or reduce the amount of blowing dust until a more appropriate solution can be implemented. Begin the tillage operation on the windward side of the site using a chisel-type plow for best results.
- Sprinkling - Sprinkle site with water until the surface is moist. Repeat as needed.
- Calcium Chloride - Apply as flakes or granular material with a spreader at a rate that will keep the soil surface moist. Re-apply as necessary.
- Barriers - Place barriers such as solid board fences, snow fences, hay bales, etc. at right angles to the prevailing air currents at intervals of approx. 10X their height.

**Permanent Methods:**

- Vegetative cover - See DE-ESC-3.4.3, Std. Detail and Specifications for Vegetative Stabilization.
- Stone - Apply layer of crushed stone or coarse gravel to protect soil surface.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook		<b>DE-ESC-3.4.8</b> Sheet 1 of 1 Effective July 2023

### Standard Detail & Specifications Construction Site Pollution Prevention

**Delaware NPDES Discharge Permit**  
General Permit for Discharge of Stormwater from Construction Activities

((Project Name))

((NOI Permit Number))

((Agency Plan Approval ID))

((Contact Name & Number for Additional Site Information))

((Contact Name & Number to Obtain Copy of Approved Plan))

If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbody, call the DNREC Spill Notification 24 HR Hotline at

**1-800-662-8802**

Example Construction General Permit (CGP) Signage

**NOTES:**

- Minimum sign size 2' x 2'
- Minimum text size 1"
- Sign must be posted at a safe, publicly accessible location close to construction site
- Sign must be visible from the public road nearest the active construction site
- Signs posted within a DelDOT or other public road right-of-way (ROW) must be in accordance with all local and/or State requirements in regards to safety, location, orientation, etc.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		<b>DE-ESC-3.6.1</b> Sheet 1 of 4 Effective July 2023

### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes:**

The Construction Site Pollution Prevention Plan includes the following elements:

- Material Inventory**  
Document the storage and use of the following materials:
  - Concrete
  - Detergents
  - Paints (enamel and latex)
  - Cleaning solvents
  - Pesticides
  - Wood scraps
  - Fertilizers
  - Petroleum based products
- Good housekeeping practices**
  - Store only enough product required to do the job.
  - Store all materials in a neat, orderly manner in their original labeled containers and covered.
  - Do not mix different substances.
  - When possible, use all of a product prior to disposal of the container.
  - Manufacturers' instructions for disposal should be strictly adhered to.
  - Designate someone to inspect all BMPs daily.
- Waste management practices**
  - Collect and store all waste materials in securely lidded dumpsters in a location that does not drain to a waterbody.
  - Salvage and/or recycle waste materials whenever possible.
  - The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		<b>DE-ESC-3.6.1</b> Sheet 2 of 4 Effective July 2023

### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes (cont.)**

- Dispose of all trash in accordance with all applicable Delaware laws.
- Littering is strictly prohibited. Trash cans should be placed at all lunch spots and recycle bins should be placed near the construction trailer.
- If fertilizer bags can not be stored in a weather-proof location, they should be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.

- Equipment maintenance practices**
  - If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
  - If performed on-site, wash vehicles with high-pressure water spray without detergents in an area contained by an impervious berm.
  - Use drip pans for all equipment maintenance.
  - Inspect equipment for leaks on a daily basis.
  - Direct washout from concrete trucks into a temporary pit for hardening and proper disposal.
  - Equip fuel nozzles with automatic shut-off valves.
  - Dispose of all used products such as oil, antifreeze, solvents and tires in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- Spill prevention practices**
  - Identify potential spill areas and contain them in covered areas with no connection to the storm drain system.
  - Post warning signs in hazardous material storage areas.
  - Perform preventive maintenance on all tanks, valves, pumps, pipes and other equipment as necessary.
  - Prioritize low or non-toxic substances for use.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		<b>DE-ESC-3.6.1</b> Sheet 3 of 4 Effective July 2023

### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes (cont.)**

- Prominently post contact information for reporting spills through the DNREC 24-Hour Toll Free Number.

- Education**
  - Include Best Management Practices (BMPs) for construction site pollution control as part of regular progress meetings.
  - Information regarding waste management, equipment maintenance and spill prevention should be prominently posted in the construction trailer.

**CONTACT INFORMATION**

<b>DNREC 24-Hour Toll Free Number</b>	<b>800-662-8802</b>
<b>DNREC Solid &amp; Hazardous Waste Management Section</b>	<b>302-739-9403</b>

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		<b>DE-ESC-3.6.1</b> Sheet 4 of 4 Effective July 2023



**Professional Certification**

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Delaware.

License No. 8359  
Expiration Date: June 30, 2024



Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	
Construction Site Details and Notes	CSDN-4



### Standard Detail & Specifications Stabilized Construction Entrance

**Plan**

**Profile**

**Section A-A (Std.)**

Source: Adapted from VA ESC Handbook  
Symbol: **SCE**  
Detail No. **DE-ESC-3.4.7**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Stabilized Construction Entrance

**Section A-A (Opt.)**

Source: Adapted from VA ESC Handbook  
Symbol: **SCE**  
Detail No. **DE-ESC-3.4.7**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Concrete Washout

**Plan View**

**Section A-A**

**Alternate Liner Option**

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **CW**  
Detail No. **DE-ESC-3.6.2**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Concrete Washout

**Construction Notes:**

1. Locate washout area a minimum of 50 feet from open channels, stormdrain inlets, wetlands or waterbodies.
2. Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
3. Minimum dimensions for prefabricated units are 4 feet by 4 feet by 1 foot deep with a minimum 4mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 6 feet by 6 feet by 3 feet deep, with a minimum 10mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
4. The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overlap with sandbags or concrete blocks to hold in place.
5. Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to its location.
6. Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
7. Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **CW**  
Detail No. **DE-ESC-3.6.2**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Fueling & Spill Control

**Plan**

**Section A-A**

Source: Delaware ESC Handbook  
Symbol: **SCE**  
Detail No. **DE-ESC-3.6.4**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Fueling & Spill Control

**Pollution Prevention – Fueling & Spill Control**

1. Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
2. Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
3. Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
4. Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
5. Place a "Fueling Area" sign next to each fueling area.
6. Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
7. Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
8. Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
9. If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
10. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

**CLEAN UP SPILLS**

1. If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
2. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
3. Do not bury spills or wash them down with water.

**LEAKS AND DRIPS**

1. Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
2. Do not allow oil, grease, fuel or chemicals to drip onto the ground.
3. Have spill kits and clean up material on-site.
4. Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
5. Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
6. Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source: Delaware ESC Handbook  
Symbol: **SCE**  
Detail No. **DE-ESC-3.6.4**  
Sheet 2 of 2  
Effective July 2023

### Standard Detail & Specifications Soil Stockpile

**Plan**

**Section A-A**

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **SP**  
Detail No. **DE-ESC-3.7.3**  
Sheet 1 of 2  
Effective July 2023

### Standard Detail & Specifications Soil Stockpile

**Construction Notes:**

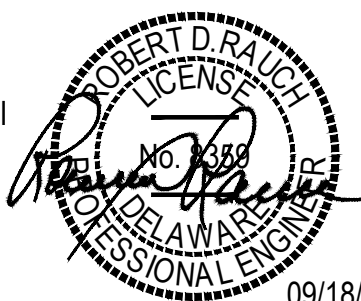
1. Locate stockpiles so that they are 50 feet from any storm drain inlet, open channel, wetland or waterbody. Redirect any concentrated flow around the stockpile using an approved erosion and sediment control measure.
2. Secure the perimeter of the stockpile with an approved erosion and sediment control perimeter device.
3. If stockpile is to remain inactive for more than 14 calendar days, the stockpile must be vegetated. Follow the temporary vegetation specifications. The vegetation chosen shall last the duration of the stockpile; the stockpile shall be restabilized if the temporary vegetation dies or erosion results.

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **SP**  
Detail No. **DE-ESC-3.7.3**  
Sheet 2 of 2  
Effective July 2023

**RAUCH**  
Engineering | Survey | Architecture | Environmental

Main Office: 108 N. Harrison St. - Easton, MD 21601  
Web: www.rauch-hcc.com | Email: design@rauchhcc.com  
Phone: 410.776.9081 | Fax: 410.776.9087

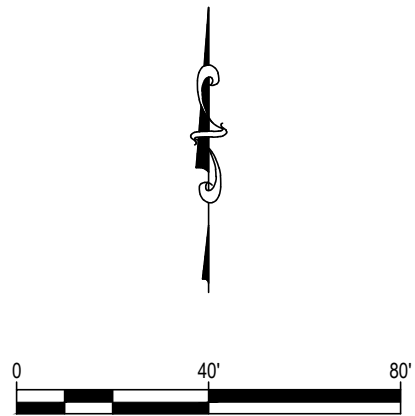
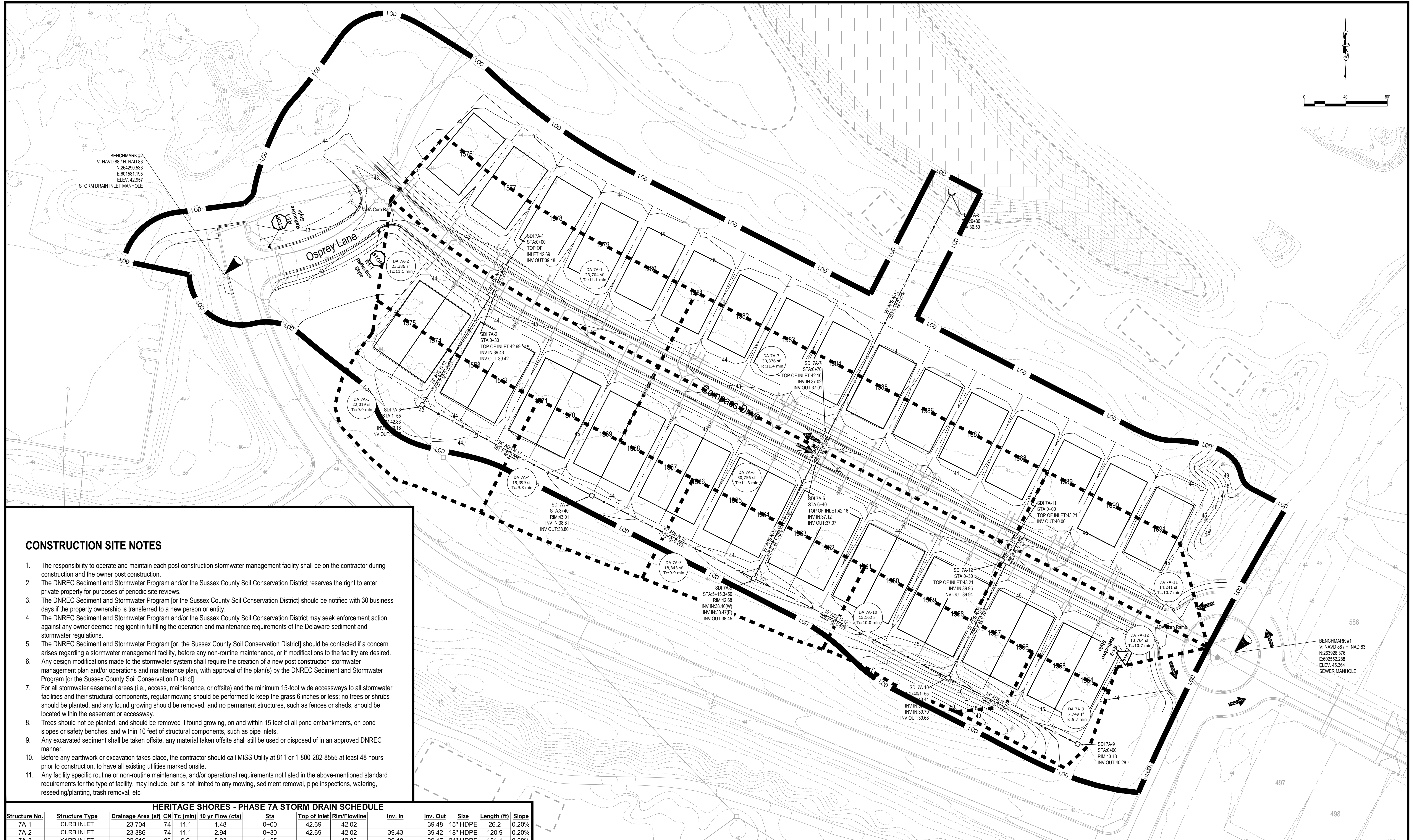
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Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	
Construction Site Details and Notes	CSDN-5





**CONSTRUCTION SITE NOTES**

1. The responsibility to operate and maintain each post construction stormwater management facility shall be on the contractor during construction and the owner post construction.
2. The DNREC Sediment and Stormwater Program and/or the Sussex County Soil Conservation District reserves the right to enter private property for purposes of periodic site reviews.
3. The DNREC Sediment and Stormwater Program [or the Sussex County Soil Conservation District] should be notified with 30 business days if the property ownership is transferred to a new person or entity.
4. The DNREC Sediment and Stormwater Program and/or the Sussex County Soil Conservation District may seek enforcement action against any owner deemed negligent in fulfilling the operation and maintenance requirements of the Delaware sediment and stormwater regulations.
5. The DNREC Sediment and Stormwater Program [or, the Sussex County Soil Conservation District] should be contacted if a concern arises regarding a stormwater management facility, before any non-routine maintenance, or if modifications to the facility are desired.
6. Any design modifications made to the stormwater system shall require the creation of a new post construction stormwater management plan and/or operations and maintenance plan, with approval of the plan(s) by the DNREC Sediment and Stormwater Program [or the Sussex County Soil Conservation District].
7. For all stormwater easement areas (i.e., access, maintenance, or offsite) and the minimum 15-foot wide accessways to all stormwater facilities and their structural components, regular mowing should be performed to keep the grass 6 inches or less; no trees or shrubs should be planted, and any found growing should be removed; and no permanent structures, such as fences or sheds, should be located within the easement or accessway.
8. Trees should not be planted, and should be removed if found growing, on and within 15 feet of all pond embankments, on pond slopes or safety benches, and within 10 feet of structural components, such as pipe inlets.
9. Any excavated sediment shall be taken offsite. any material taken offsite shall still be used or disposed of in an approved DNREC manner.
10. Before any earthwork or excavation takes place, the contractor should call MISS Utility at 811 or 1-800-282-8555 at least 48 hours prior to construction, to have all existing utilities marked onsite.
11. Any facility specific routine or non-routine maintenance, and/or operational requirements not listed in the above-mentioned standard requirements for the type of facility, may include, but is not limited to any mowing, sediment removal, pipe inspections, watering, reseeding/planting, trash removal, etc

**HERITAGE SHORES - PHASE 7A STORM DRAIN SCHEDULE**

Structure No.	Structure Type	Drainage Area (sf)	CN	Tc (min)	10 yr Flow (cfs)	Sta	Top of Inlet	Rim/Flowline	Inv. In	Inv. Out	Size	Length (ft)	Slope
7A-1	CURB INLET	23,704	74	11.1	1.48	0+00	42.69	42.02	39.48	39.48	15" HDPE	26.2	0.20%
7A-2	CURB INLET	23,386	74	11.1	2.94	0+30	42.69	42.02	39.43	39.42	18" HDPE	120.9	0.20%
7A-3	YARD INLET	22,019	86	9.9	5.03	1+55	42.83	42.83	39.18	39.17	24" HDPE	181.1	0.20%
7A-4	YARD INLET	19,399	86	9.8	6.88	3+40	-	43.01	38.81	38.80	30" HDPE	171.0	0.20%
7A-5	YARD INLET	18,343	86	9.9	12.58	5+15.3+50	-	42.68	38.46, 38.47	38.45	30" HDPE	121.6	1.10%
7A-6	CURB INLET	30,756	74	11.3	14.48	6+40	42.16	41.49	37.12	37.07	36" HDPE	26.0	0.20%
7A-7	CURB INLET	30,376	74	11.4	16.35	6+70	42.16	41.49	37.02	37.01	36" HDPE	257.8	0.20%
7A-8	FLARED END SECTION	-	-	-	16.35	9+30	-	-	36.50	36.50	36" HDPE	-	-
7A-9	YARD INLET	7,749	86	9.7	0.74	0+00	-	43.13	-	40.28	15" HDPE	136.0	0.42%
7A-10	YARD INLET	15,162	86	10.0	3.96	1+40/1+55	-	43.44	39.70, 39.70	39.68	18" HDPE	206.6	0.59%
7A-11	CURB INLET	14,241	74	10.7	0.91	0+00	43.21	42.54	-	40.00	15" HDPE	26.0	0.20%
7A-12	CURB INLET	13,764	74	10.7	1.79	0+30	43.21	42.54	39.95	39.94	18" HDPE	120.9	0.20%



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**Revisions**

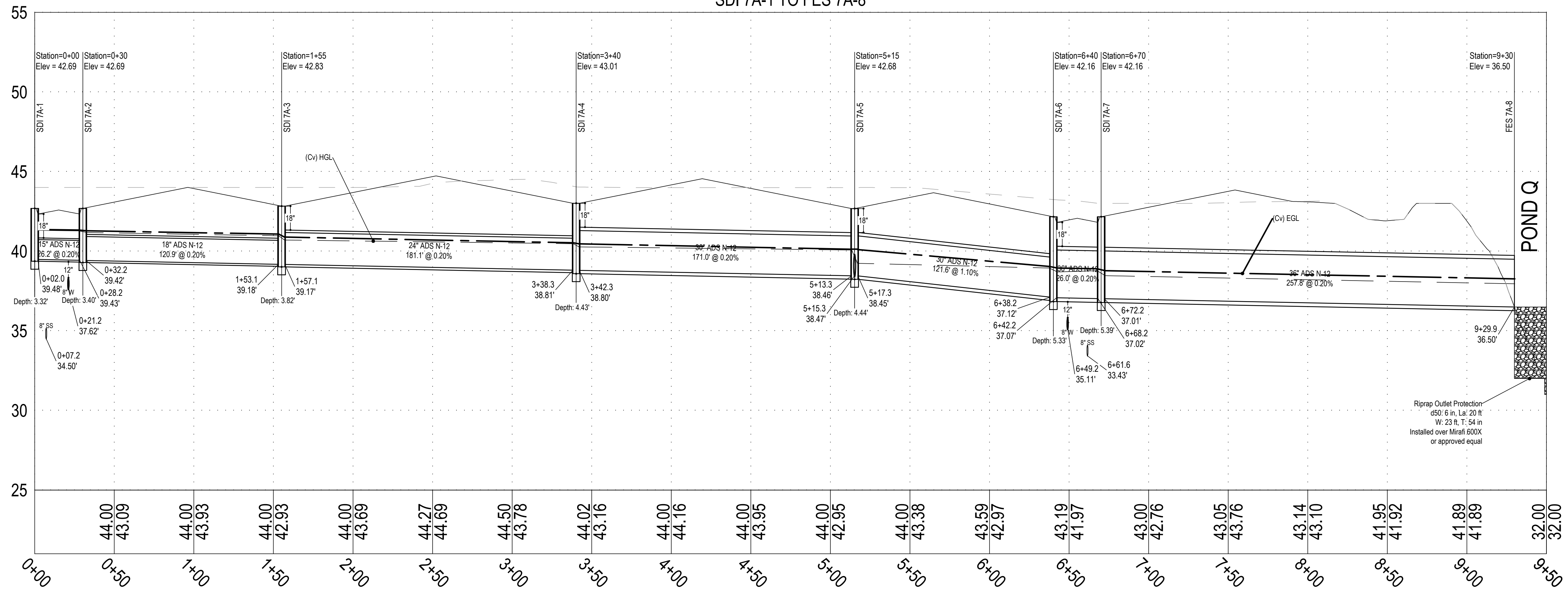
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

**Heritage Shores - Phase 7A**

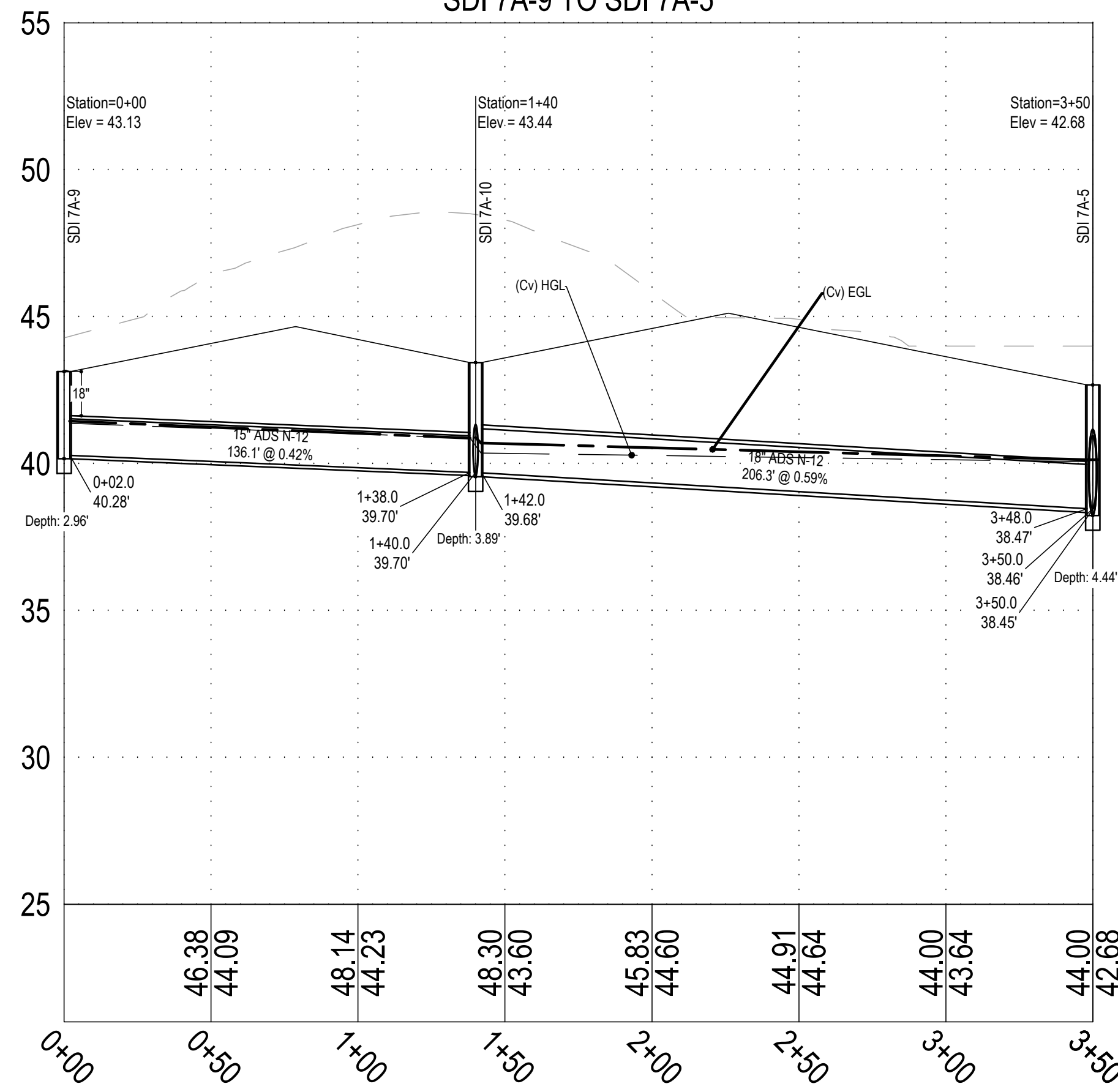
Bridgeville, Delaware - Northwest Fork Hundred	09/18/23
First Election District - Sussex County	Scale: 1" = 40'
Post Construction Stormwater Management Plan	PCSM-1



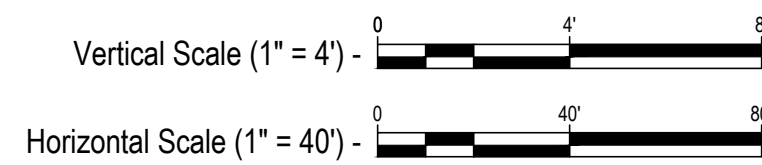
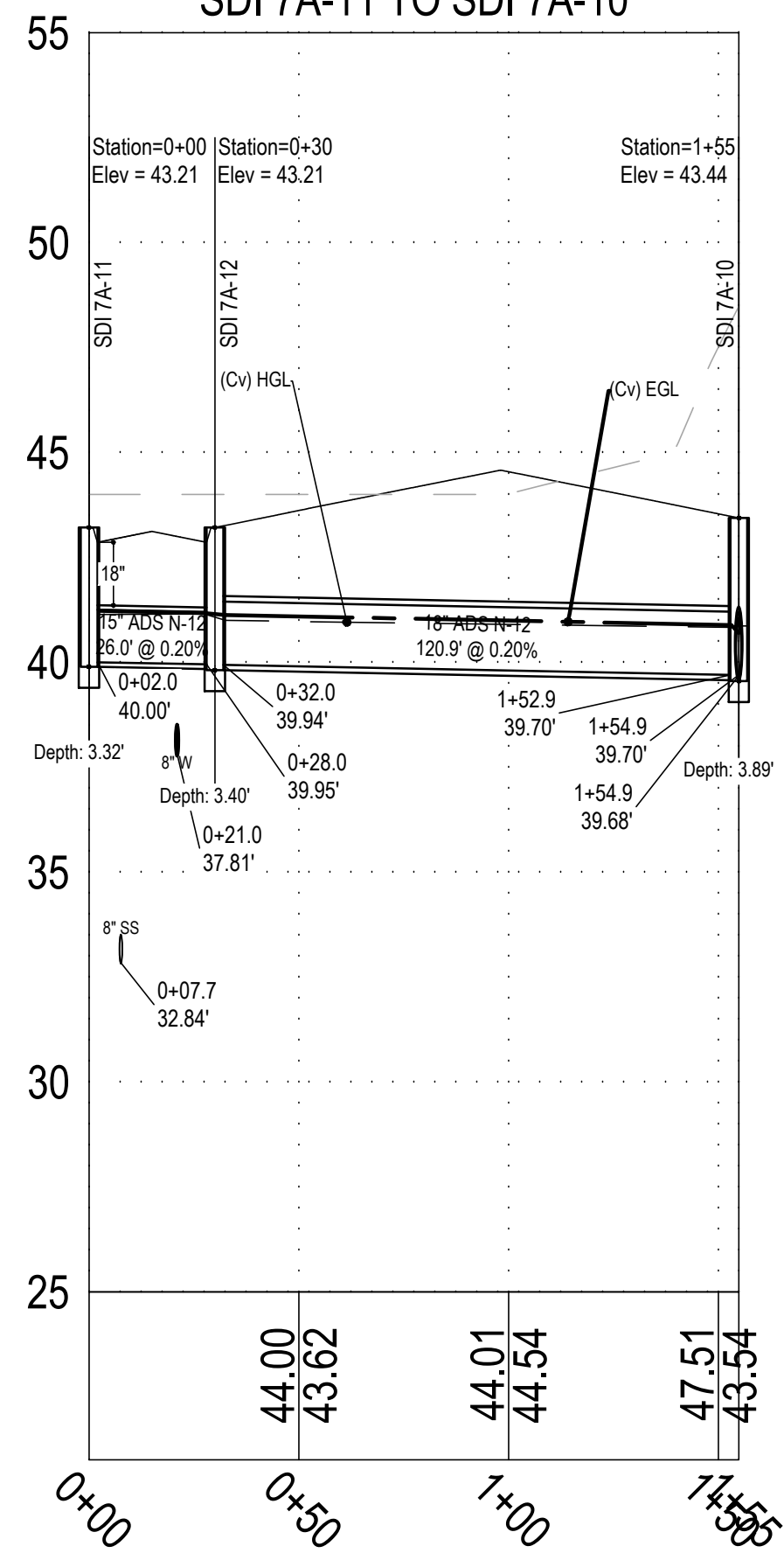
SDI 7A-1 TO FES 7A-8



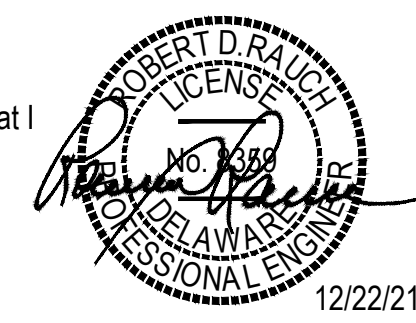
SDI 7A-9 TO SDI 7A-5



SDI 7A-11 TO SDI 7A-10

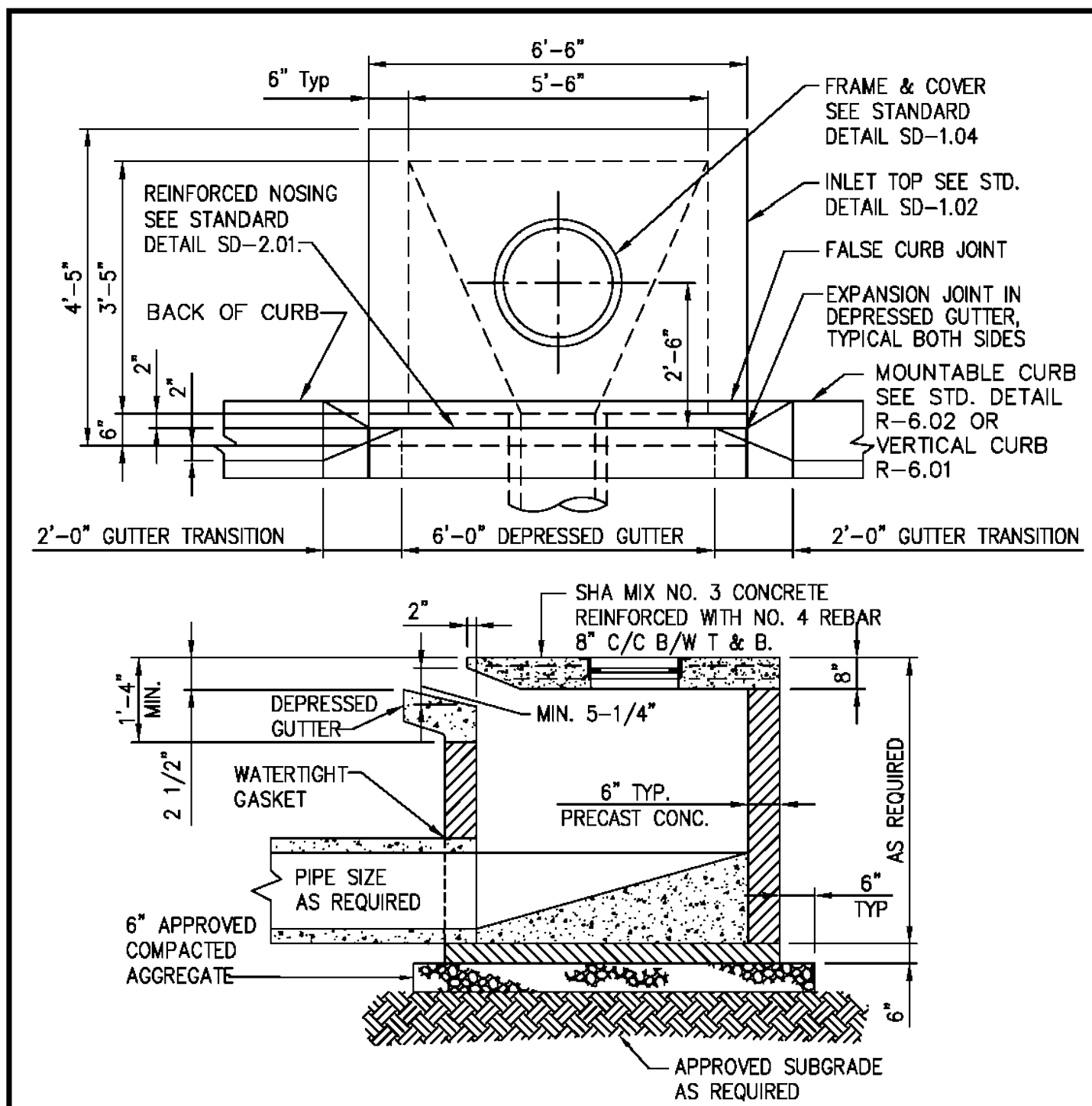


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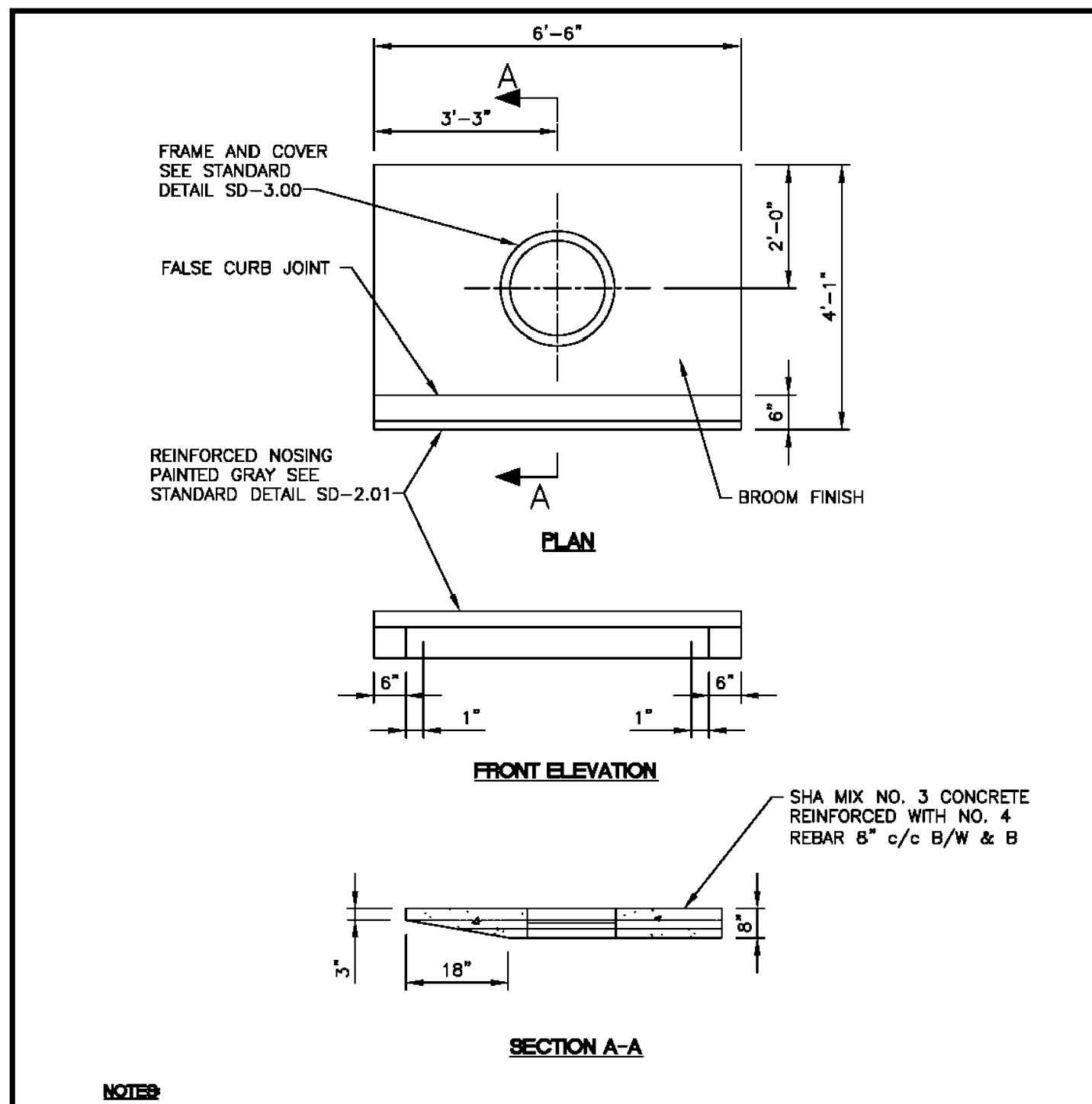
Revisions	
INITIAL SUBMISSION - 08/08/23	
FIRST REVISION - 09/18/23	

Heritage Shores - Phase 7A	
Bridgeville, Delaware	12/22/21
First Election District - Sussex County	Scale: As Shown
Grading & Storm Drainage - Profiles	PCSM-2



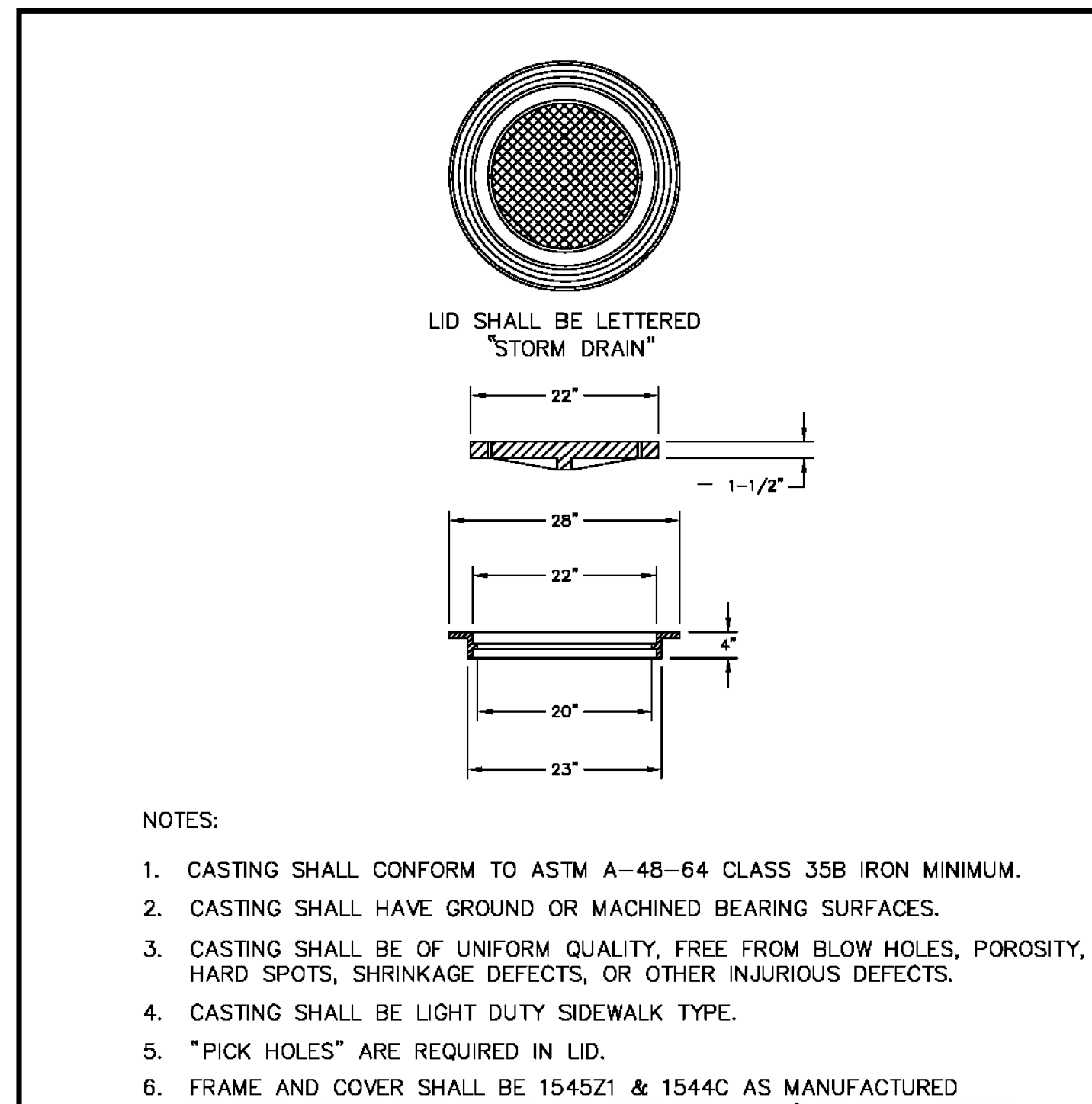
- NOTES**
1. PROVIDE LIFT HOOKS IN UNEXPOSED SURFACES TO ACCOMMODATE FIELD PLACEMENT.

	<b>APPROVAL</b>  TOWN ENGINEER DATE: 1/2020	<b>TOWN OF EASTON</b> <b>STANDARD DETAILS</b> <b>CURB INLET</b>
	ISSUED: JANUARY 2020	STANDARD NO.: TOE-SD-101



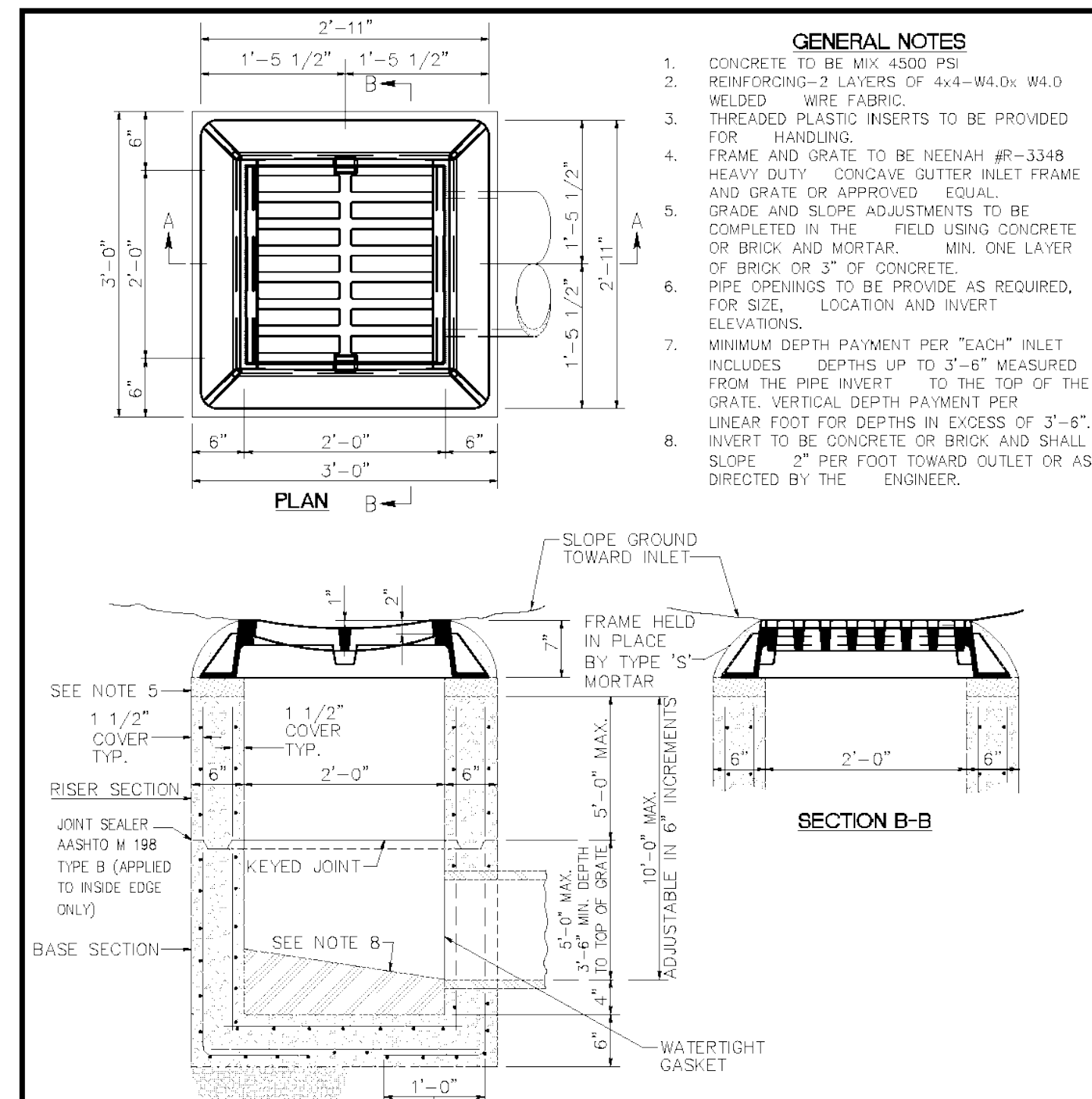
- NOTES**
1. LIFTING DEVICE SHALL BE DETERMINED BY CONTRACTOR, NO DEVICES SHALL BE PERMITTED IN EXPOSED TOP SURFACES.

	<b>APPROVAL</b>  TOWN ENGINEER DATE: 1/2020	<b>TOWN OF EASTON</b> <b>STANDARD DETAILS</b> <b>INLET TOP</b>
	ISSUED: JANUARY 2020	STANDARD NO.: TOE-SD-102



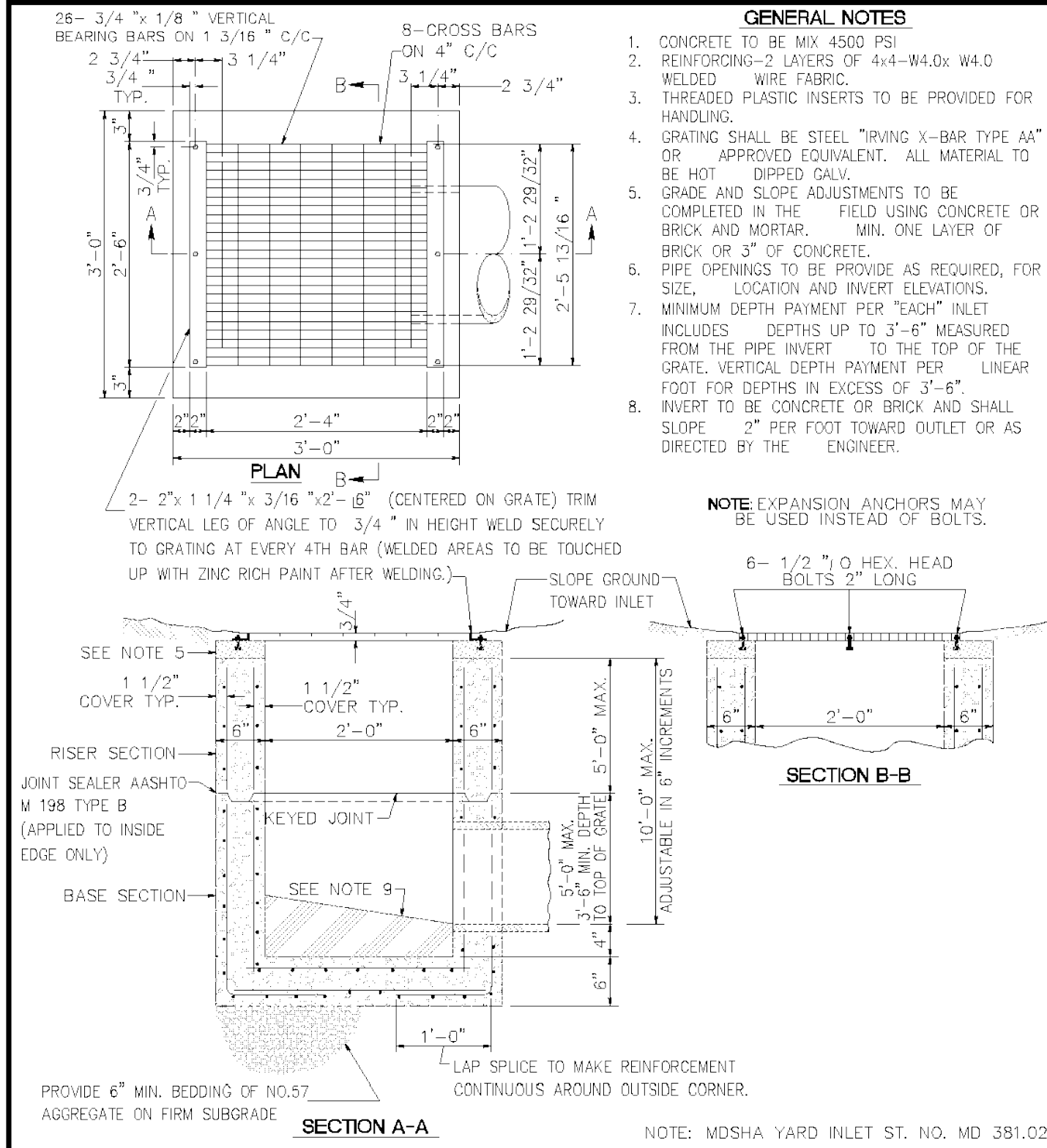
- NOTES:**
1. CASTING SHALL CONFORM TO ASTM A-48-64 CLASS 35B IRON MINIMUM.
  2. CASTING SHALL HAVE GROUND OR MACHINED BEARING SURFACES.
  3. CASTING SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, HARD SPOTS, SHRINKAGE DEFECTS, OR OTHER INJURIOUS DEFECTS.
  4. CASTING SHALL BE LIGHT DUTY SIDEWALK TYPE.
  5. "PICK HOLES" ARE REQUIRED IN LID.
  6. FRAME AND COVER SHALL BE 1545Z1 & 1544C AS MANUFACTURED BY EAST JORDON IRON WORKS, P.O. BOX 439 SPRING ST. EAST JORDON, MICH. 49727, OR AN APPROVED EQUAL.

	<b>APPROVAL</b>  TOWN ENGINEER DATE: 1/2020	<b>TOWN OF EASTON</b> <b>STANDARD DETAILS</b> <b>INLET FRAME AND COVER</b>
	ISSUED: JANUARY 2020	STANDARD NO.: TOE-SD-104



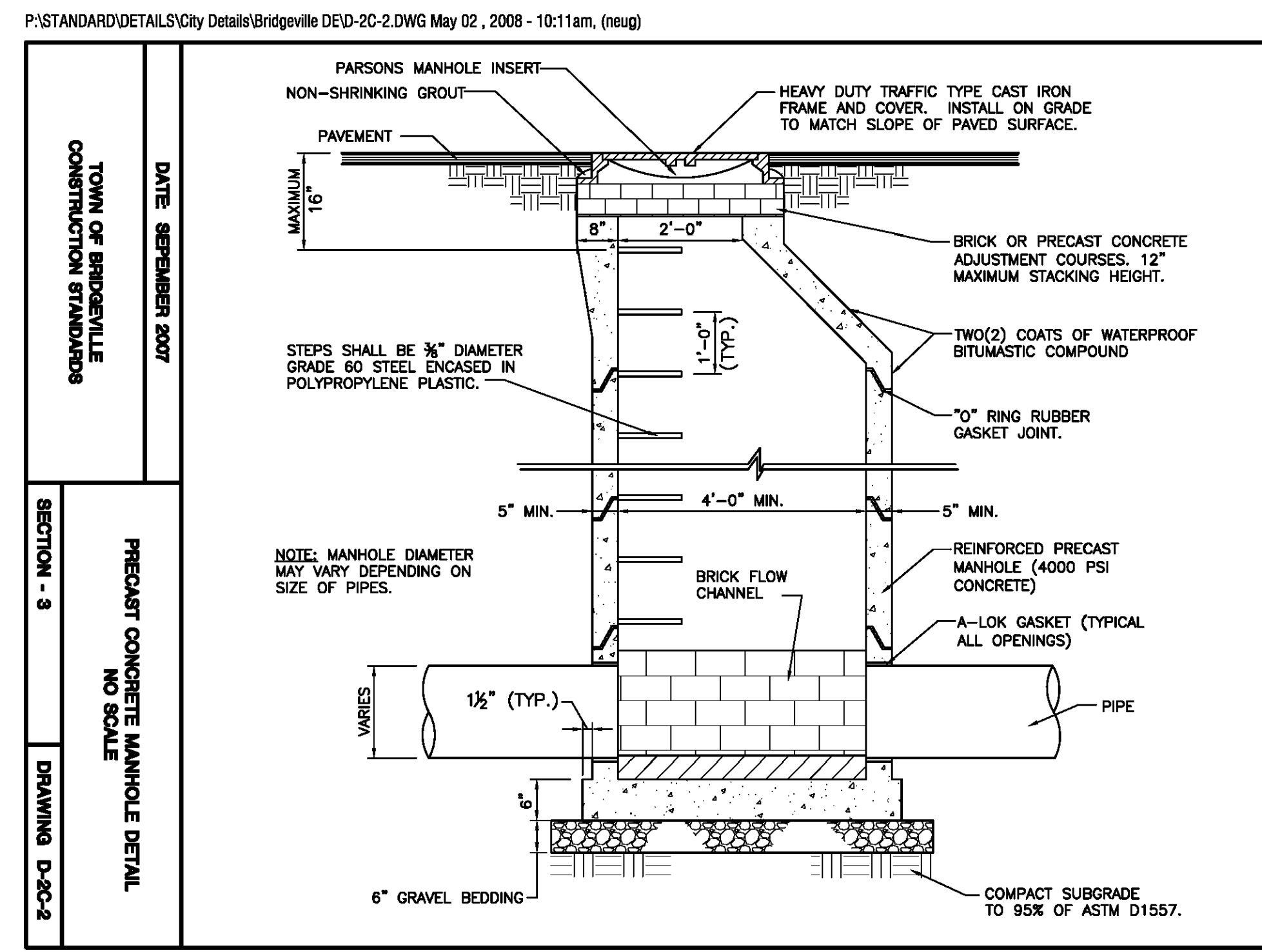
- GENERAL NOTES**
1. CONCRETE TO BE MIX 4500 PSI REINFORCING-2 LAYERS OF 4x4-W4.0x W4.0 WELDED WIRE FABRIC.
  2. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
  3. FRAME AND GRATE TO BE HEENAH #R-3348 HEAVY DUTY CONCAVE GUTTER INLET FRAME AND GRATE OR APPROVED EQUAL.
  4. GRADE AND SLOPE ADJUSTMENTS TO BE COMPLETED IN THE FIELD USING CONCRETE OR BRICK AND MORTAR. MIN. ONE LAYER OF BRICK OR 3" OF CONCRETE.
  5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS.
  6. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE GRATE. VERTICAL DEPTH PAYMENT PER LINEAR FOOT FOR DEPTHS IN EXCESS OF 3'-6" INVERT TO BE CONCRETE OR BRICK AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.

	<b>APPROVAL</b>  TOWN ENGINEER DATE: 1/2020	<b>TOWN OF EASTON</b> <b>STANDARD DETAILS</b> <b>TRAFFIC BEARING YARD INLET</b>
	ISSUED: JANUARY 2020	STANDARD NO.: TOE-SD-106



- GENERAL NOTES**
1. CONCRETE TO BE MIX 4500 PSI REINFORCING-2 LAYERS OF 4x4-W4.0x W4.0 WELDED WIRE FABRIC.
  2. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
  3. GRADE AND SLOPE ADJUSTMENTS TO BE COMPLETED IN THE FIELD USING CONCRETE OR BRICK AND MORTAR. MIN. ONE LAYER OF BRICK OR 3" OF CONCRETE.
  4. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS.
  5. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE GRATE. VERTICAL DEPTH PAYMENT PER LINEAR FOOT FOR DEPTHS IN EXCESS OF 3'-6" INVERT TO BE CONCRETE OR BRICK AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.

	<b>APPROVAL</b>  TOWN ENGINEER DATE: 1/2020	<b>TOWN OF EASTON</b> <b>STANDARD DETAILS</b> <b>NON-TRAFFIC BEARING YARD INLET</b>
	ISSUED: JANUARY 2020	STANDARD NO.: TOE-SD-107



- GENERAL NOTES**
1. PARSONS MANHOLE INSERT NON-SHRINKING GROUT.
  2. HEAVY DUTY TRAFFIC TYPE CAST IRON FRAME AND COVER. INSTALL ON GRADE TO MATCH SLOPE OF PAVED SURFACE.
  3. BRICK OR PRECAST CONCRETE ADJUSTMENT COURSES. 12" MAXIMUM STACKING HEIGHT.
  4. TWO(2) COATS OF WATERPROOF BITUMASTIC COMPOUND.
  5. 10" RING RUBBER GASKET JOINT.
  6. REINFORCED PRECAST MANHOLE (4000 PSI CONCRETE).
  7. A-LOK GASKET (TYPICAL ALL OPENINGS).
  8. PIPE.
  9. 6" GRAVEL BEDDING.
  10. COMPACT SUBGRADE TO 95% OF ASTM D1557.

DATE: SEPTEMBER 2007	<b>TOWN OF BRIDGEVILLE</b> <b>CONSTRUCTION STANDARDS</b>
SECTION - 3	<b>PRECAST CONCRETE MANHOLE DETAIL</b> NO SCALE
DRAWING: D-30-2	

**RAUCH**  
 Engineering | Survey | Architecture | Environmental  
 Main Office: 108 N. Harrison St., Easton, MD 21601  
 Web: www.rauch-hcc.com | Email: design@rauchhcc.com  
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Revisions	
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Heritage Shores - Phase 7A	
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First Election District - Sussex County	Scale: As Shown
Grading & Storm Drainage - Details	PCSM-3