

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

<u>X</u>	Yes	BASIC APPLICATION
<u>X</u>	Yes	SIGNATURE PAGE (Page 3)
<u>X</u>	Yes	APPLICABLE APPENDICES
<u>X</u>	Yes	SCALED PLAN VIEW
<u>X</u>	Yes	SCALED CROSS-SECTION OR ELEVATION VIEW PLANS
<u>X</u>	Yes	VICINITY MAP
<u>X</u>	Yes	COPY OF THE PROPERTY DEED & SURVEY
<u>X</u>	Yes	THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET
<u>X</u>	Yes	APPROPRIATE APPLICATION FEE & PUBLIC NOTICE FEE (Separate checks made payable to the State of Delaware)

Submit 3 complete copies of the application packet to:

**Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901**

Before signing and mailing your application packet, please read the following:

The Department requests that the contractor or party who will perform the construction of your proposed project, if other than the applicant, sign the application signature page along with the applicant in the spaces provided. When the application is signed by the contractor as well as the applicant, the Department will issue the Permit to both parties. For Leases, the contractor will receive a separate construction authorization that will make them subject to all of the terms and conditions of the Lease relating to the construction

Section 1: Applicant Identification

1. Applicant's Name: DNREC Division of Watershed Stewardship c/o Charles Baird Telephone #: 3028551948
 Mailing Address: 210309 Berlin Rd. Unit 6 Fax #: _____
Georgetown, DE 19947 E-mail: charles.baird@delaware.gov
2. Consultant's Name: DNREC Division of Watershed Stewardship c/o Michael Case Company Name: DNREC Drainage Program
 Mailing Address: 210309 Berlin Rd. Unit 6 Telephone #: 3028551939
Georgetown, DE 19947 Fax #: _____
 E-mail: michael.case@delaware.gov
3. Contractor's Name: Stephen Gissy Company Name: Sussex Conservation District
 Mailing Address: _____ Telephone #: 3028562105
23818 Shortly Rd, Georgetown, DE 19947 Fax #: _____
 E-mail: stephen.gissy@sussexconservation.org

Section 2: Project Description

4. Check those that apply:
☒ New Project/addition to existing project? ☐ Repair/Replace existing structure? (If checked, must answer #16)

5. Project Purpose (attach additional sheets as necessary):

The purpose of this project is to install a pipe to safely convey water properly through the existing ditch,

reducing uncontrolled runoff and minimizing erosion. By directing the flow, the project will protect adjacent property from water damage and maintain the stability of the surrounding land.

6. Check each Appendix that is enclosed with this application:

☐	A. Boat Docking Facilities	☐	G. Bulkheads	☐	N. Preliminary Marina Checklist
☐	B. Boat Ramps	☐	H. Fill	☐	O. Marinas
☐	C. Road Crossings	☐	I. Rip-Rap Sills and Revetments	☐	P. Stormwater Management
☐	D. Channel Modifications/Dams	☐	J. Vegetative Stabilization	☐	Q. Ponds and Impoundments
☐	E. Utility Crossings	☐	K. Jetties, Groins, Breakwaters	☐	R. Maintenance Dredging
☒	F. Intake or Outfall Structures	☐	M. Activities in State Wetlands	☐	S. New Dredging

Section 3: Project Location

7. Project Site Address: _____ County: ☐ N.C. ☐ Kent ☒ Sussex
21175 Bayview Rd, Rehoboth Beach, DE 19971 Site owner name (if different from applicant): _____
 Address of site owner: _____
21175 Bayview Rd, Rehoboth Beach, DE 19971
8. Driving Directions: Start at 89 Kings Highway in Dover. Get onto DE-1 South (Coastal Highway)
Continue south on DE-1 heading toward Rehoboth Beach. Proceed to 21175 Bayview Road.
 (Attach a vicinity map identifying road names and the project location)
9. Tax Parcel ID Number: 334-19.16-109.00 Subdivision Name: bayview

WSLS Use Only:

Permit #s: _____

Type SP ☐ SL ☐ SU ☐ WE ☐ WQ ☐ LA ☐ SA ☐ MP ☐ WA ☐

Corps Permit: SPGP 18 ☐ 20 ☐ Nationwide Permit #: _____ Individual Permit # _____

Received Date: _____ Project Scientist: _____

Fee Received? Yes ☐ No ☐ Amt: \$ _____ Receipt #: _____

Public Notice #: _____ Public Notice Dates: ON _____ OFF _____

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: bay view canal waterbody is a tributary to: rehobeth bay

11. Is the waterbody: ☒ Tidal ☐ Non-tidal Waterbody width at mean low or ordinary high water 65.45 ft

12. Is the project: ☒ On public subaqueous lands? ☐ On private subaqueous lands?*
☐ In State-regulated wetlands? ☒ In Federally-regulated wetlands?

*If the project is on private subaqueous lands, provide the name of the subaqueous lands owner:

(Written permission from the private subaqueous lands owner must be included with this application)

13. Present Zoning: ☐ Agricultural ☒ Residential ☐ Commercial ☐ Industrial ☐ Other

Section 4: Miscellaneous

14. A. List the names and complete mailing addresses of the immediately adjoining property owners on all sides of the project (attach additional sheets as necessary):

CLARK JOSEPH M- 21175 Bayview Rd, Rehoboth Beach, DE 19971-- Mailing address: 16 E HIGH ST, LEBANON, PA

SCANLON MARTIN W JR, SABRINA SCANLON- 21163 Bayview Rd, Rehoboth Beach, DE 19971-- Mailing address: 8625 BUCKBOARD DR, Alexandria, VA

B. For wetlands and marina projects, list the names and complete mailing addresses of property owners within a 1,000 foot radius of the project (attach additional sheets as necessary):

15. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:
 DNREC DRAINAGE PROGRAM michael Yost - ACOE

A. Have you had a State Jurisdictional Determination performed on the property? ☐ Yes ☒ No

B. Has the project been reviewed in a monthly Joint Permit Processing Meeting? ☐ Yes ☒ No

*If yes, what was the date of the meeting? _____

16. Are there existing structures or fill at the project site in subaqueous lands? ☐ Yes ☒ No

*If yes, provide the permit and/or lease number(s): _____

*If no, were structures and/or fill in place prior to 1969? ☐ Yes ☒ No

17. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?

☐ No ☒ Pending ☐ Issued ☐ Denied Date: _____

Type of Permit: nation wide permit - minor discharge Federal Permit or ID #: _____

18. Have you applied for permits from other Sections within DNREC?

☒ No ☐ Pending ☐ Issued ☐ Denied Date: _____ Permit or ID #: _____

Type of permit (circle all that apply): Septic Well NPDES Storm Water

Other: _____

Section 5: Signature Page**19. Agent Authorization:**

If you choose to complete this section, all future correspondence to the Department may be signed by the duly authorized agent. In addition, the agent will become the primary point of contact for all correspondence from the Department.

I do not wish to authorize an agent to act on my behalf ☐

I wish to authorize an agent as indicated below ☒

DNREC Division of Watershed Stewardship c/o Charles Baird

I, _____, hereby designate and authorize _____
(Name of Applicant) (Name of Agent)

to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

DNREC Division of Watershed Stewardship c/o Michael Case

Authorized Agent's Name: _____ Telephone #: 3028551939

Mailing Address: _____ Fax #: _____

210309 Berlin Rd. Unit 6
Georgetown, DE 19947 E-mail: michael.case@delaware.gov

20. Agent's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Michael Case
Agent's Signature

1/27/2026
Date

21. Applicant's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application. I grant permission to authorized Department representatives to enter upon the premises for inspection purposes during working hours.

Charles J Baird
Applicant's Signature

1/27/2026
Date

Charles J Baird
Print Name

22. Contractor's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge, and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

SUSSEX CONSERVATION DISTRICT
Contractor's Name

9/8/25
Date

STEPHEN GISSY
Print Name

INTAKE OR OUTFALL STRUCTURES

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many feet will the intake or outfall structure(s) be placed channelward of the: placed at bulkhead

Tidal waters: mean high water line? 0 ft.
mean low water line? -2.00 ft.

Non-tidal waters: ordinary high water line? n/a ft.

2. What type of material(s) will be used to construct the intake or outfall structure(s)?
concrete pipe (RCP, 12") with concrete end sections, riprap outlet protection(that stops at bulkhead), geotextile underlayment

3. What is the appropriate median stream flow rate at the:

*please see attached HGL report

intake site _____ cfs outfall site _____ cfs unknown _____

4. What will be the daily rate of withdrawal at the intake site? _____ gpd

5. What will be the intake velocity? _____ fps

6. What will be the mesh size of the screen used on the intake structure?

n/a inches _____ other (explain)

7. What will be the daily rate of return at the outfall site? ^{variable SW discharge} _____ gpd

8. Have you applied for the National Pollutant Discharge Elimination System (NPDES) permit for this project?
_____ Yes x _____ No If your answer is "No", contact the Surface Water Discharges Section, DNREC.

9. Will a splash apron be employed at the outfall site? X _____ Yes _____ No

If your answer is "Yes" complete Appendix I.

If your answer is "No", explain your proposed method of preventing erosion.

10. How far will any associated structures for support or erosion control (e.g. wing walls, pile, bents, splash aprons, etc.) extend channelward of the:

Tidal waters: mean high water line? 0.45 ft. mean low water line? n/a ft.

Non-tidal waters: ordinary high water line? n/a ft.

11. How many square feet of any associated structures for support or erosion control will be located:

Channelward of mean high water? 6 sq. ft. In vegetated wetlands? 6 sq. ft.

12. Is there any dredging or fill associated with this project? x _____ Yes _____ No

If yes, please complete the appropriate appendix.

Yes. Minor excavation for pipe installation and replacement of existing CMP with RCP .

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
 - a. Tidal waters: mean high water line? 7 ft.
mean low water line? 0 ft.
 - b. Non-tidal waters: ordinary high water line? n/a ft.
2. What is the area of fill that will be located:
 - a. on subaqueous land (channelward of mean high water) 10.31 sq. ft.
 - b. on vegetated wetlands? 176.15 sq. ft.
3. What is the source of the fill? the fill consists of R4 riprap, 2" stone bedding, and 3,000 psi concrete/GABC (all quarried/manufactured aggregate and concrete products), not dredged material.
 X Hauled in from upland sources: What is the source company/location/parcel number?
 Obtained from dredged material: Complete Dredging Appendix.
4. What is the total volume of fill? 13.04 cubic yards
 - a. What is the total fill per running foot of shoreline? 0.33 cubic yards
5. What method will be used to place the fill?
Riprap and stone will be placed by mechanical equipment (excavator) over Mirafi 600X non-woven geotextile fabric, R4 riprap will be keyed to design grade for pipe cover and outlet protection , concrete aprons will be formed and cast-in-place
6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)
R4 riprap -100%
7. How will the fill be retained? Complete appropriate appendix.
Mirafi 600X non-woven geotextile fabric will be placed beneath all stone/riprap to prevent migration into the underlying subgrade/subaqueous soils. Along with tying into the existing bulkhead/revetment for lateral retention and concrete aprons serve as rigid retention at the inlet/pipe-end structures.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

- non-ditch disturbed areas will be seeded with DE Seed Mix #11 and stabilized using vegetative stabilization and mulching standards

- ditch areas will be seeded with Ernst ERNMX-732 (MD Coastal Plain Riparian Mix) and Clark Eastern Ecotype Native Grass Mix; straw mulch is required on all disturbed non-agricultural areas, topsoil will be placed to a 4" depth prior to seeding

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

In filled area- A 12" perforated HDPE outfall pipe (P1, 80.07 LF, 0.195% slope) discharging at outfall, protected by an R4 riprap apron and pipe cover.

in uplands - A 24" x 24" DelDOT-standard drainage inlet boxes (DI-2 through DI-5) with Type E frame & grate combinations; 12" RCP Class IV pipe segments (P2-P4) connecting the inlets and cast-in-place concrete aprons at three catch basin/inlet locations.

Height

Width

Zoom

In

Out

90

-90

NO TITLE WORK PERFORMED.

NO TITLE WORK PERFORMED.

BOOK 1621 PAGE 158

24706

THIS DEED, MADE this 22ND day of NOVEMBER, in the year of our Lord one thousand nine hundred and eighty-eight (1988),

BETWEEN: SAMUEL K. CLARK, of 7905 Dewey Drive, Harrisburg, Pennsylvania 17112, party of the first part,

-AND-

JOSEPH M. CLARK, of 16 E. High Street, Lebanon, Pennsylvania 17042, party of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of ONE DOLLAR (\$1.00) Current Lawful Money of the United States of America and other good and valuable considerations, the receipt whereof is hereby acknowledged, hereby grants and conveys unto the said party of the second part, his heirs and assigns,

ALL those certain lots, pieces or parcels of land situated in Leves and Rehoboth Hundred, Sussex County, Delaware, near the City of Rehoboth Beach, and being known and designated as Units No. C-20, C-21, C-22, and C-23 on Bay View Road, as shown on a plot of lots known as Bay Vista on Rehoboth Bay, said plot remaining of record in the Office of the Recorder of Deeds, in and for Sussex County, at Georgetown, in Plot Book No. 2, Page 63.

BEING the same land conveyed unto Samuel K. Clark and Esther M. G. Clark, his wife, by a Deed of Bay Vista, Inc., a corporation of the State of Delaware, dated August 30, 1966, and recorded in the Office of the Recorder of Deeds, in and for Sussex County at Georgetown, Delaware, in Deed Book 608, Page 449.

Esther M. G. Clark departed this life February 3, 1980, at which time the property passed unto her husband, Samuel K. Clark, in its entirety by right of survivorship.

This conveyance is subject to restrictive covenants as are contained in prior deeds of conveyance.

LAW OFFICE
TUNNELL & RAYSON
GEORGETOWN, DEL.

LAB:vh

Height

Width

Zoom

In

Out

90

-90

BOOK 1621 PAGE 159

IN WITNESS WHEREOF, the said party of the first part has hereunto set his hand and seal, the day and year aforesaid.

SIGNED, SEALED AND DELIVERED,
IN THE PRESENCE OF:

Samuel L. Clark *Samuel L. Clark*
Witness Samuel L. Clark

STATE OF PENNSYLVANIA :
COUNTY OF LEBANON : SS.

BE IT REMEMBERED, That on this 22nd day of November, 1988, one thousand nine hundred and eighty-eight, personally came before me, The Subscriber, a Notary Public for the State and County aforesaid, Samuel L. Clark, party to this Indenture, who to me personally to be such, and acknowledged this Indenture to be his Deed.

GIVEN under my Hand and Seal of Office, the day and year aforesaid.

Mary L. Dierker
Notary Public
Lebanon, Lebanon Co., Pa.
My Comm. Expires: Nov. 12, 1990

NOTARIAL SEAL
MARGO L. LUCKAS, Notary Public
Lebanon, Lebanon County, Pa.
My Commission Exp. on Nov. 12, 1990

C. BUSSELL MCCLELL
1000 DECEMBER 29 PM 3 07
RECORDED IN BOOK 1621
SUSSEX COUNTY

PUTTING OFF THIS REPORT
MADE THIS DATE
DEC 31 1988
ASSESSMENT DIVISION
OF SUSSEX CTY.

LAW OFFICE
TURNELL & HAYDON
SPRINGTOWN, PA.

Dr. Joseph M. Clark
16. Dec. 1988
Lebanon, PA 1-11-89

Tax Parcel No. 334-19.16-110.00

Prepared By/Return To:

The Rosenthal Firm, LLC

720 Yorklyn Road, Suite 5

Hockessin, DE 19707

* NO NEW SURVEY REQUESTED OR PERFORMED

DEED

THIS DEED, made this 22nd day of January, 2021,

BETWEEN Martin W. Scanlon, Jr., party of the first part,

- AND -

Martin W. Scanlon, Jr. and Sabrina Scanlon, parties of the second part, as tenants by the entirety

WITNESSETH, that the said party of the first part, for and inconsideration of the sum of TEN and 00/100 Dollars (\$10.00) lawful money of the United States of America, and other good and valuable consideration, the receipt whereof is hereby acknowledged, hereby grants and conveys unto the said parties of the second part, in fee.

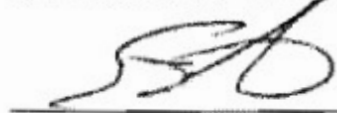
ALL those certain lots, pieces, or parcels of land, situated in Lewes and Rehoboth Hundred, Sussex County, Delaware, near the City of Rehoboth Beach, and being known and designated as Units C-16, C-17, C-18, and C-19, on Bay View Road, as shown on a Plot of Bay Vista, First Addition on Rehoboth Bay, as surveyed by E.V. Rose, drawing by Ross M. Smith, under the date of May, 1954, said Plot being of record in the Office of the Recorder of Deeds, in Plot Book 2, Page 63, at Georgetown, Delaware

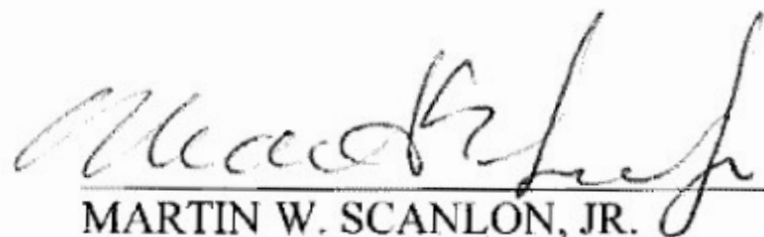
SUBJECT to any and all enforceable covenants, conditions, declarations, easements, reservations, restrictions and limitations of record, this reference to which shall not be construed to reimpose the same in the event that the same or any of the same have expired.

BEING the same lands and premises Martin W. Scanlon, Jr. and Matthew K. Scanlon, by Deed dated September 30, 2020 and recorded October 19, 2020 in the Office of the Recorder of Deeds in and for Sussex County as Instrument No. 2020000049500 in Book 5332, Page 164, did grant and convey unto Martin W. Scanlon, Jr., in fee.

IN WITNESS WHEREOF, Martin W. Scanlon, Jr., party of the first part has hereunto set his hand and seal this 22nd day of January, 2021.

SEALED AND DELIVERED
IN THE PRESENCE OF:





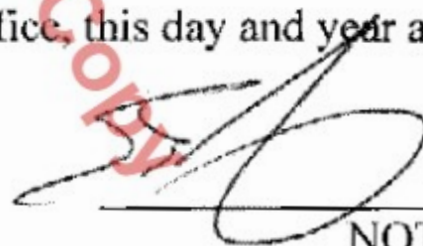
MARTIN W. SCANLON, JR.

STATE OF DELAWARE :
:
SUSSEX COUNTY :

SS

BE IT REMEMBERED that on this 22nd day of January, 2021, personally came before me, Martin W. Scanlon, party to this Indenture, personally known to me to be such, and acknowledged this Indenture to be his act and deed.

GIVEN under my Hand and Seal of Office, this day and year aforesaid.



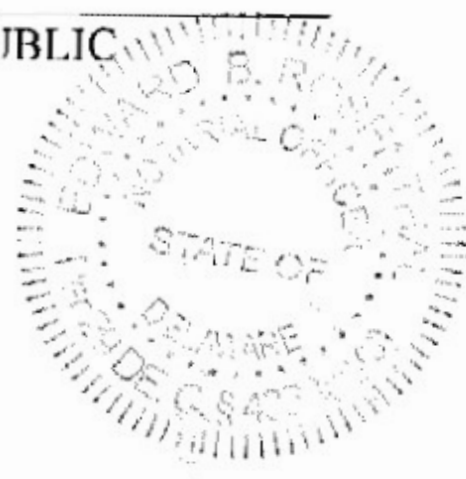
NOTARY PUBLIC

PROPERTY ADDRESS

21163 Bay View Road
Rehoboth Beach, DE 19971

OWNER ADDRESS

Martin W. Scanlon, Jr.
8625 Buckboard Drive
Alexandria, VA 22308



**DRAINAGE IMPROVEMENT
PROJECT AGREEMENT
FOR CONSTRUCTION BETWEEN
SUSSEX CONSERVATION DISTRICT
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WATERSHED STEWARDSHIP
AND
JOSEPH M. CLARK**

THIS AGREEMENT, made this ____ day of _____, 20____ by and between Joseph M. Clark and the Sussex Conservation District, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship.

WHEREAS, Joseph M. Clark is the owner(s) of a certain tract of land designated as Parcel # 334-19.16-109.00.

WHEREAS, the above owner(s) will allow the Sussex Conservation District, hereinafter called "SCD" to construct a drainage improvement project upon or along their land(s) and;

NOW, THEREFORE, IT IS AGREED, by and between the parties that:

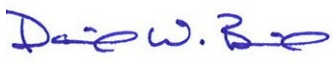
1. The "SCD" shall have the planned drainage improvement project constructed using the "SCD" and/or subcontractor resources.
2. The property owner(s) grant to the "SCD" and their subcontractors, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship hereinafter called "DWS", the temporary right to enter upon the lands of the owner(s) with personnel, materials and equipment for the purpose of implementing the planned drainage improvement project. This right shall begin from the date of this agreement and shall terminate one year after the "DWS" notifies the owner that the work has been completed. The project will be deemed complete one year from the date of successful final inspection.
3. Project implementation will consist of; surveying and layout, removal of tree(s) and or bushes where necessary, stump and root grinding where necessary, installation of pipes and catch basins, installation of rock as outlet protection, and grass seeding of the disturbed areas from construction activities.
4. The property owner(s) grant the "SCD", who will be the project permittee and will act on the property owners' behalf, to certify plans and monitor construction, to ensure compliance with soil erosion and sediment control regulations.
5. The property owner(s) shall remove all structures and plantings within the Limits of Disturbance as identified on the attached map, that the property owner(s) desire to salvage, prior to the start of construction operations.

6. The "SCD" will not attempt to preserve structures and plantings, within the Limits of Disturbance, that must be removed in order to implement the project. Removed items will be turned over to the property owner(s).
7. The "SCD" and/or its subcontractor(s), will mark and protect known property corners to the maximum extent practical. Property owner(s) shall notify the "SCD" of any known property monuments prior to the start of construction. The "SCD" and its subcontractors and the "DWS" are not responsible should an unknown property corner be disturbed during construction. Property markers that have been located prior to construction and must be temporarily removed for construction purposes to take place, will be reset by a professional surveying company following construction.
8. The "SCD" and the "DWS" assume no responsibility for future maintenance.
9. The property owner(s) will be held harmless for any personal injury or property damage that occurs as a result of the project.
10. The project will be implemented at no cost to the property owner(s).

IN WITNESS THEREOF: the parties hereto have duly executed this agreement on the day and year aforesaid.



JOSEPH M. CLARK



SUSSEX CONSERVATION DISTRICT
DAVID BAIRD, DISTRICT COORDINATOR

DNREC DIVISION OF WATERSHED
STEWARDSHIP, DRAINAGE PROGRAM,
PROGRAM MANAGER, CHARLES BAIRD

**DRAINAGE IMPROVEMENT
PROJECT AGREEMENT
FOR CONSTRUCTION BETWEEN
SUSSEX CONSERVATION DISTRICT
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WATERSHED STEWARDSHIP
AND
MARTIN W. SCANLON JR. & SABRINA SCANLON**

THIS AGREEMENT, made this 31 day of July, 2025 by and between Martin W. Scanlon Jr., Sabrina Scanlon, and the Sussex Conservation District, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship.

WHEREAS, Martin W. Scanlon Jr., Sabrina Scanlon are the owner(s) of a certain tract of land designated as Parcel # 334-19.16-110.00.

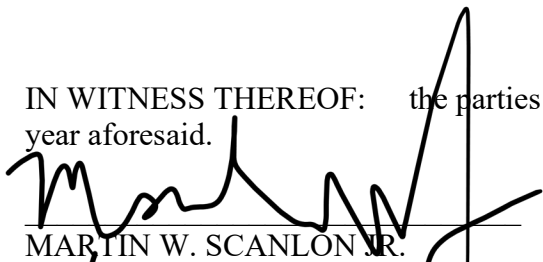
WHEREAS, the above owner(s) will allow the Sussex Conservation District, hereinafter called "SCD" to construct a drainage improvement project upon or along their land(s) and;

NOW, THEREFORE, IT IS AGREED, by and between the parties that:

1. The "SCD" shall have the planned drainage improvement project constructed using the "SCD" and/or subcontractor resources.
2. The property owner(s) grant to the "SCD" and their subcontractors, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship hereinafter called "DWS", the temporary right to enter upon the lands of the owner(s) with personnel, materials and equipment for the purpose of implementing the planned drainage improvement project. This right shall begin from the date of this agreement and shall terminate one year after the "DWS" notifies the owner that the work has been completed. The project will be deemed complete one year from the date of successful final inspection.
3. Project implementation will consist of; surveying and layout, removal of tree(s) and or bushes where necessary, stump and root grinding where necessary, installation of pipes and catch basins, installation of rock as outlet protection, and grass seeding of the disturbed areas from construction activities.
4. The property owner(s) grant the "SCD", who will be the project permittee and will act on the property owners' behalf, to certify plans and monitor construction, to ensure compliance with soil erosion and sediment control regulations.
5. The property owner(s) shall remove all structures and plantings within the Limits of Disturbance as identified on the attached map, that the property owner(s) desire to salvage, prior to the start of construction operations.

6. The "SCD" will not attempt to preserve structures and plantings, within the Limits of Disturbance, that must be removed in order to implement the project. Removed items will be turned over to the property owner(s).
7. The "SCD" and/or its subcontractor(s), will mark and protect known property corners to the maximum extent practical. Property owner(s) shall notify the "SCD" of any known property monuments prior to the start of construction. The "SCD" and its subcontractors and the "DWS" are not responsible should an unknown property corner be disturbed during construction. Property markers that have been located prior to construction and must be temporarily removed for construction purposes to take place, will be reset by a professional surveying company following construction.
8. The "SCD" and the "DWS" assume no responsibility for future maintenance.
9. The property owner(s) will be held harmless for any personal injury or property damage that occurs as a result of the project.
10. The project will be implemented at no cost to the property owner(s).

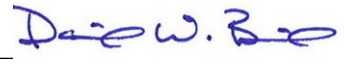
IN WITNESS THEREOF: the parties hereto have duly executed this agreement on the day and year aforesaid.



MARTIN W. SCANLON JR.



SABRINA SCANLON



SUSSEX CONSERVATION DISTRICT
DAVID BAIRD, DISTRICT COORDINATOR

DNREC DIVISION OF WATERSHED
STEWARDSHIP, DRAINAGE PROGRAM,
PROGRAM MANAGER, CHARLES BAIRD

**DRAINAGE IMPROVEMENT
PROJECT AGREEMENT
FOR CONSTRUCTION BETWEEN
SUSSEX CONSERVATION DISTRICT
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WATERSHED STEWARDSHIP
AND
SCOTT B. DAVIS & CHRISTOPHER MICHAEL SHAHEEN**

THIS AGREEMENT, made this ____ day of _____, 20__ by and between Scott B. Davis, Christopher Michael Shaheen and the Sussex Conservation District, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship.

WHEREAS, Scott B. Davis, Christopher Michael Shaheen are the owner(s) of a certain tract of land designated as Parcel # 334-19.16-77.00.

WHEREAS, the above owner(s) will allow the Sussex Conservation District, hereinafter called "SCD" to construct a drainage improvement project upon or along their land(s) and;

NOW, THEREFORE, IT IS AGREED, by and between the parties that:

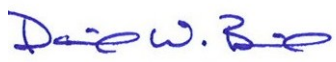
1. The "SCD" shall have the planned drainage improvement project constructed using the "SCD" and/or subcontractor resources.
2. The property owner(s) grant to the "SCD" and their subcontractors, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship hereinafter called "DWS", the temporary right to enter upon the lands of the owner(s) with personnel, materials and equipment for the purpose of implementing the planned drainage improvement project. This right shall begin from the date of this agreement and shall terminate one year after the "DWS" notifies the owner that the work has been completed. The project will be deemed complete one year from the date of successful final inspection.
3. Project implementation will consist of; surveying and layout, removal of tree(s) and or bushes where necessary, stump and root grinding where necessary, installation of pipes and catch basins, installation of rock as outlet protection, and grass seeding of the disturbed areas from construction activities.
4. The property owner(s) grant the "SCD", who will be the project permittee and will act on the property owners' behalf, to certify plans and monitor construction, to ensure compliance with soil erosion and sediment control regulations.
5. The property owner(s) shall remove all structures and plantings within the Limits of Disturbance as identified on the attached map, that the property owner(s) desire to salvage, prior to the start of construction operations.

6. The "SCD" will not attempt to preserve structures and plantings, within the Limits of Disturbance, that must be removed in order to implement the project. Removed items will be turned over to the property owner(s).
7. The "SCD" and/or its subcontractor(s), will mark and protect known property corners to the maximum extent practical. Property owner(s) shall notify the "SCD" of any known property monuments prior to the start of construction. The "SCD" and its subcontractors and the "DWS" are not responsible should an unknown property corner be disturbed during construction. Property markers that have been located prior to construction and must be temporarily removed for construction purposes to take place, will be reset by a professional surveying company following construction.
8. The "SCD" and the "DWS" assume no responsibility for future maintenance.
9. The property owner(s) will be held harmless for any personal injury or property damage that occurs as a result of the project.
10. The project will be implemented at no cost to the property owner(s).

IN WITNESS THEREOF: the parties hereto have duly executed this agreement on the day and year aforesaid.


SCOTT B. DAVIS


CHRISTOPHER MICHAEL SHAHEEN


SUSSEX CONSERVATION DISTRICT
DAVID BAIRD, DISTRICT COORDINATOR

DNREC DIVISION OF WATERSHED
STEWARDSHIP, DRAINAGE PROGRAM,
PROGRAM MANAGER, CHARLES BAIRD

**DRAINAGE IMPROVEMENT
PROJECT AGREEMENT
FOR CONSTRUCTION BETWEEN
SUSSEX CONSERVATION DISTRICT
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF WATERSHED STEWARDSHIP
AND
JOHN WEIKEL & LISA WEIKEL**

THIS AGREEMENT, made this 18th day of March, 2025 by and between John Weikel, Lisa Weikel and the Sussex Conservation District, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship.

WHEREAS, John Weikel, Lisa Weikel are the owner(s) of a certain tract of land designated as Parcel # 334-19.16-76.00.

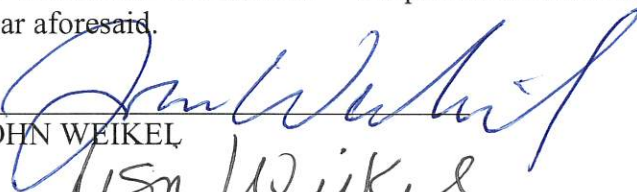
WHEREAS, the above owner(s) will allow the Sussex Conservation District, hereinafter called "SCD" to construct a drainage improvement project upon or along their land(s) and;

NOW, THEREFORE, IT IS AGREED, by and between the parties that:

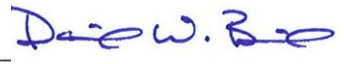
1. The "SCD" shall have the planned drainage improvement project constructed using the "SCD" and/or subcontractor resources.
2. The property owner(s) grant to the "SCD" and their subcontractors, and the Department of Natural Resources and Environmental Control, Division of Watershed Stewardship hereinafter called "DWS", the temporary right to enter upon the lands of the owner(s) with personnel, materials and equipment for the purpose of implementing the planned drainage improvement project. This right shall begin from the date of this agreement and shall terminate one year after the "DWS" notifies the owner that the work has been completed. The project will be deemed complete one year from the date of successful final inspection.
3. Project implementation will consist of; surveying and layout, removal of tree(s) and or bushes where necessary, stump and root grinding where necessary, installation of pipes and catch basins, installation of rock as outlet protection, and grass seeding of the disturbed areas from construction activities.
4. The property owner(s) grant the "SCD", who will be the project permittee and will act on the property owners' behalf, to certify plans and monitor construction, to ensure compliance with soil erosion and sediment control regulations.
5. The property owner(s) shall remove all structures and plantings within the Limits of Disturbance as identified on the attached map, that the property owner(s) desire to salvage, prior to the start of construction operations.

6. The "SCD" will not attempt to preserve structures and plantings, within the Limits of Disturbance, that must be removed in order to implement the project. Removed items will be turned over to the property owner(s).
7. The "SCD" and/or its subcontractor(s), will mark and protect known property corners to the maximum extent practical. Property owner(s) shall notify the "SCD" of any known property monuments prior to the start of construction. The "SCD" and its subcontractors and the "DWS" are not responsible should an unknown property corner be disturbed during construction. Property markers that have been located prior to construction and must be temporarily removed for construction purposes to take place, will be reset by a professional surveying company following construction.
8. The "SCD" and the "DWS" assume no responsibility for future maintenance.
9. The property owner(s) will be held harmless for any personal injury or property damage that occurs as a result of the project.
10. The project will be implemented at no cost to the property owner(s).

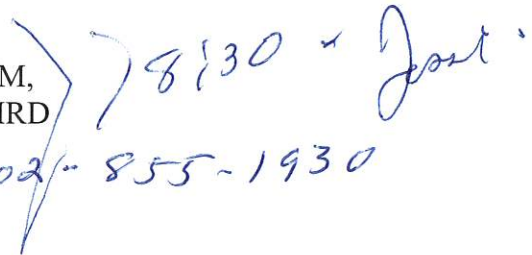
IN WITNESS THEREOF: the parties hereto have duly executed this agreement on the day and year aforesaid.


JOHN WEIKEL


LISA WEIKEL


SUSSEX CONSERVATION DISTRICT
DAVID BAIRD, DISTRICT COORDINATOR

DNREC DIVISION OF WATERSHED
STEWARDSHIP, DRAINAGE PROGRAM,
PROGRAM MANAGER, CHARLES BAIRD


Drainage Program 302-855-1930

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-0024, Exp: 11/30/2024</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: <u>Bay view Mahon Water Management</u>	City/County: <u>Rehobeth, Sussex</u>	Sampling Date: <u>4/2/2025</u>
Applicant/Owner: <u>DNREC Drainage</u>	State: <u>DE</u>	Sampling Point: <u>A- UP</u>
Investigator(s): <u>Michael Case</u>	Section, Township, Range: <u>x</u>	
Landform (hillside, terrace, etc.): <u>Terrace</u>	Local relief (concave, convex, none): <u>None</u>	Slope (%): <u>0-2</u>
Subregion (LRR or MLRA): <u>LRR T</u>	Lat: <u>38.697077</u>	Long: <u>-75.097850</u> Datum: <u></u>
Soil Map Unit Name: <u>please see attached soil survey</u>	NW1 classification: <u>n/a</u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No <u></u> (If no, explain in Remarks.)		
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u></u>		
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	<table style="width: 100%;"> <tr> <td style="width: 60%;">Is the Sampled Area within a Wetland?</td> <td style="width: 40%;">Yes <u></u> No <u>X</u></td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u></u> No <u>X</u>
Is the Sampled Area within a Wetland?	Yes <u></u> No <u>X</u>		
Remarks: The maintained yard/ roadways project area along the segments planned for maintenance were all representative of each other. There was little vegetative diversity in these habitats, the area is landscaped. As such the area were mostly grassy buffers, and privavy barrier planted by owner .			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Sphagnum Moss (D8) (LRR T, U)</u>	
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u>24</u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u>24</u> (includes capillary fringe)	<table style="width: 100%;"> <tr> <td style="width: 60%;">Wetland Hydrology Present?</td> <td style="width: 40%;">Yes <u></u> No <u>X</u></td> </tr> </table>	Wetland Hydrology Present?	Yes <u></u> No <u>X</u>
Wetland Hydrology Present?	Yes <u></u> No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No wetland hydrology was observed onsite. Soil borings were dug to a depth of at least 24" and no soil saturation or water table was observed. The area is considered uplands.			

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: A- UP

Tree Stratum (Plot size: <u>25' ROW</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Juniperus virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
<u>15</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>67</u></td> <td>x 4 = <u>268</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92</u> (A)</td> <td><u>333</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.62</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>67</u>	x 4 = <u>268</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92</u> (A)	<u>333</u> (B)	Prevalence Index = B/A = <u>3.62</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>67</u>	x 4 = <u>268</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>92</u> (A)	<u>333</u> (B)																			
Prevalence Index = B/A = <u>3.62</u>																				
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																				
Sapling/Shrub Stratum (Plot size: <u>25' ROW</u>)																				
1. <u>Juniperus virginiana</u>	<u>12</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Ilex opaca</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Thuja occidentalis</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
<u>37</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>19</u> 20% of total cover: <u>8</u>																				
Herb Stratum (Plot size: <u>25' ROW</u>)																				
1. <u>Fescue</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>40</u> = Total Cover																				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																				
Woody Vine Stratum (Plot size: <u>25' ROW</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				

 Remarks: (If observed, list morphological adaptations below.)
 maintained and landscaped yard

SOIL

Sampling Point: A- UP**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 6/4	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Gleyed Matrix (S4)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Redox (S5)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Dark Surface (S7) (LRR P, S, T, U)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	☐ Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16)
(outside MLRA 150A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bay view - Mahon City/County: Rehobeth, Sussex Sampling Date: 4/2/2025

Applicant/Owner: DNREC Drainage State: DE Sampling Point: B- Wetlands

Investigator(s): Michael Case Section, Township, Range: x

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR T Lat: 38.697108 Long: -75.03744 Datum:

Soil Map Unit Name: see attached soil survey NWI classification: WDC2

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u> Hydric Soil Present? Yes <u>X</u> No <u></u> Wetland Hydrology Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u>
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Remarks:
 Habitat B- contained a area that met the 3 criteria and determined to be a wetland(hydrophytic Vegetation, Hydric Soil and Wetland Hydrology). this area has been marked on plan. This area is estuarine/ marine deepwater wetlands indicative of canals connected to Rehobeth Bay.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>X</u> Surface Water (A1) <u>X</u> High Water Table (A2) <u>X</u> Saturation (A3) ___ Water Marks (B1) ___ Sediment Deposits (B2) ___ Drift Deposits (B3) <u>X</u> Algal Mat or Crust (B4) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) <u>X</u> Aquatic Fauna (B13) ___ Marl Deposits (B15) (LRR U) ___ Hydrogen Sulfide Odor (C1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Presence of Reduced Iron (C4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Thin Muck Surface (C7) ___ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) <u>X</u> Sphagnum Moss (D8) (LRR T, U)
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Field Observations: Surface Water Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u> Water Table Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u> Saturation Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u></u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Hydrophic vegetation and water present at the surface is an indicator that the suggested area is frequently inundated with water on a regular basis.

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: B- Wetlands

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>95</u></td> <td>x 1 = <u>95</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>95</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>95</u>	x 1 = <u>95</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>95</u> (B)	Prevalence Index = B/A = <u>1.00</u>	
Total % Cover of:	Multiply by:																			
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Column Totals: <u>95</u> (A)	<u>95</u> (B)																			
Prevalence Index = B/A = <u>1.00</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30'</u>)																				
1. <u>Phragmites</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																				
Herb Stratum (Plot size: <u>30'</u>)																				
1. <u>Phragmites</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Algae</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

 Remarks: (If observed, list morphological adaptations below.)
 Habitat B of contained hydrophytic vegetation observed within the project area.

SOIL

Sampling Point: B- Wetlands

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
n/a							Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Histic Epipedon (A2)	☐ Barrier Islands 1 cm Muck (S12)
☐ Black Histic (A3)	(MLRA 153B, 153D)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)
☒ Organic Bodies (A6) (LRR P, T, U)	☐ Depleted Matrix (F3)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Redox Dark Surface (F6)
☐ Muck Presence (A8) (LRR U)	☐ Depleted Dark Surface (F7)
☐ 1 cm Muck (A9) (LRR P, T)	☐ Redox Depressions (F8)
☐ Depleted Below Dark Surface (A11)	☐ Marl (F10) (LRR U)
☐ Thick Dark Surface (A12)	☐ Depleted Ochric (F11) (MLRA 151)
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Umbric Surface (F13) (LRR P, T, U)
☐ Sandy Gleyed Matrix (S4)	☐ Delta Ochric (F17) (MLRA 151)
☐ Sandy Redox (S5)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Dark Surface (S7) (LRR P, S, T, U)	☐ Anomalous Bright Floodplain Soils (F20)
☐ Polyvalue Below Surface (S8)	(MLRA 149A, 153C, 153D)
(LRR S, T, U)	☐ Very Shallow Dark Surface (F22)
	(MLRA 138, 152A in FL, 154)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Coast Prairie Redox (A16)
(outside MLRA 150A)
☐ Reduced Vertic (F18)
(outside MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (LRR P, T)
☐ Anomalous Bright Floodplain Soils (F20)
(MLRA 153B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
(outside MLRA 138, 152A in FL, 154)
☐ Barrier Islands Low Chroma Matrix (TS7)
(MLRA 153B, 153D)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

unnamed navigable tributary of Rehobeth Bay

**Bay view Mahon Drainage Project
PHOTO LOG OF DELINEATED RIGHTS-OF-WAY**

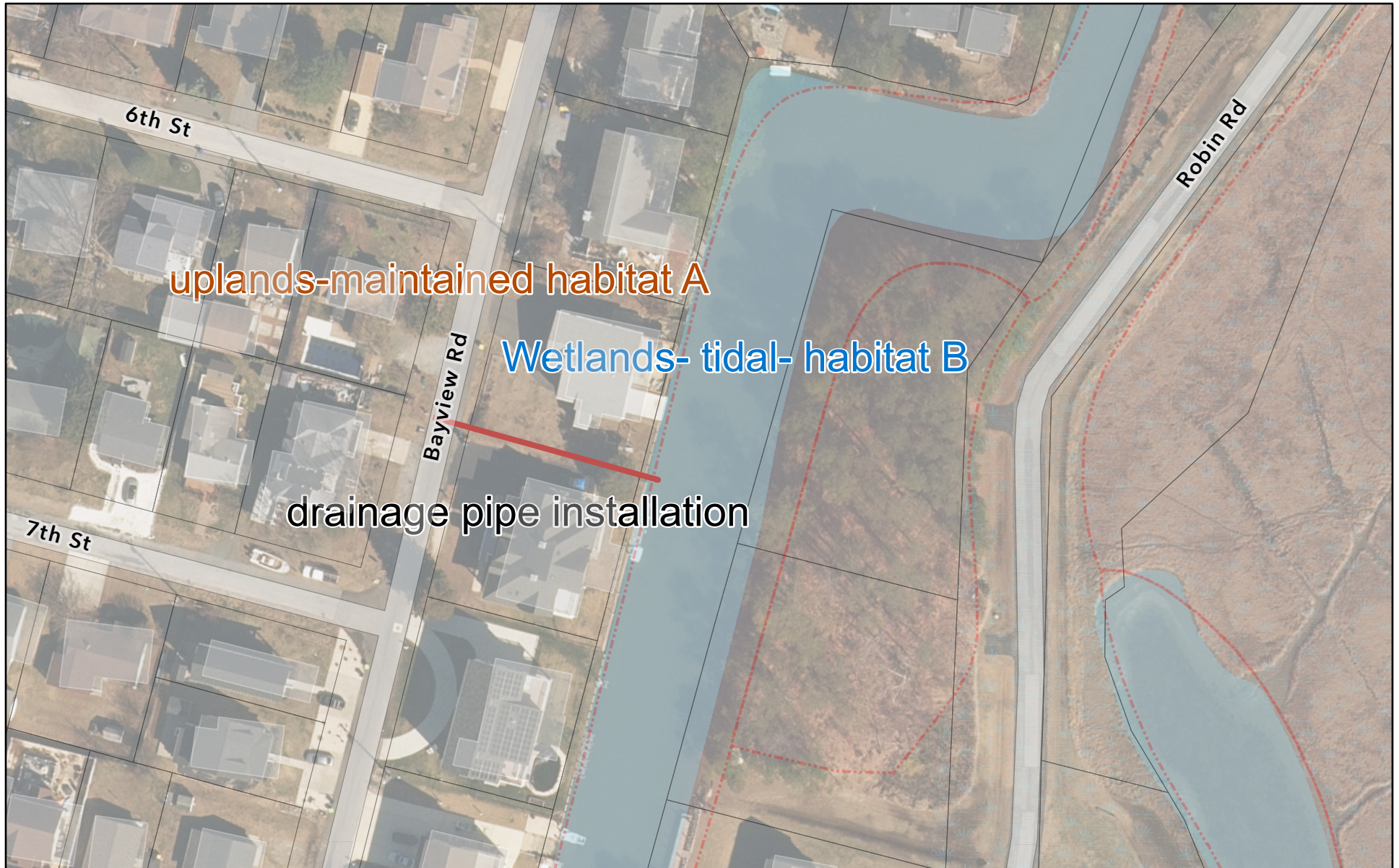


Image 1: Example of typical wetland Habitat B: Canal Tidal Wetlands includes invasive Phragmites. Unnamed canal tributary of Rehobeth bay



Image 2: Example of typical **Habitat A:** – Uplands – Yards and developed areas **adjacent to project area.**

Bay view - mahon- pipe outfall drainage project- aerial habitat

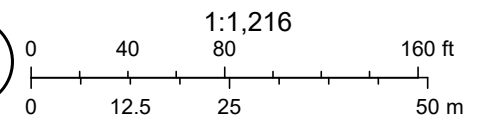


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-  Parcels - Sussex
-  DE_Wetlands - 2017 Wetlands (not regulatory)

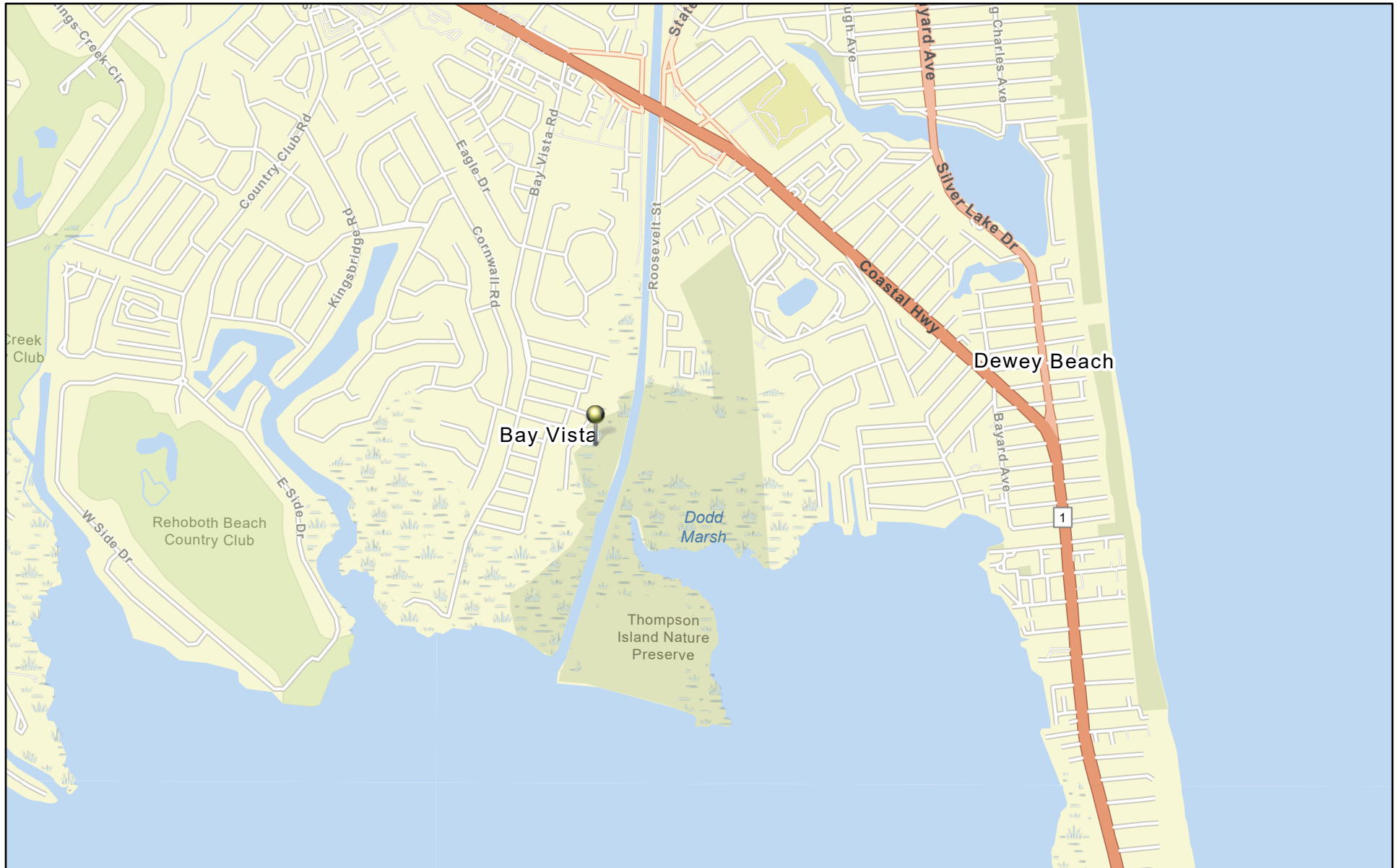
Lakes and Ponds

-  Marsh
-  Water

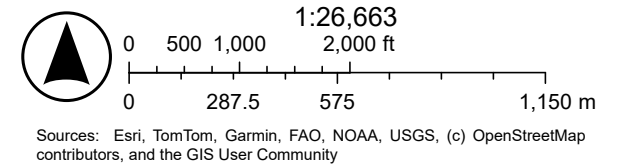


Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, State of Delaware, Sanborn Map

Bay view - mahon- pipe outfall drainage project- Street Map



10/1/2025, 11:37:57 AM

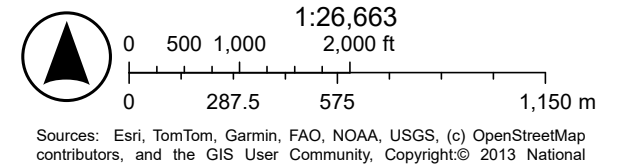


Bay view - mahon- pipe outfall drainage project- Topo Map



10/1/2025, 11:37:47 AM

USA_Topo_Maps





United States
Department of
Agriculture

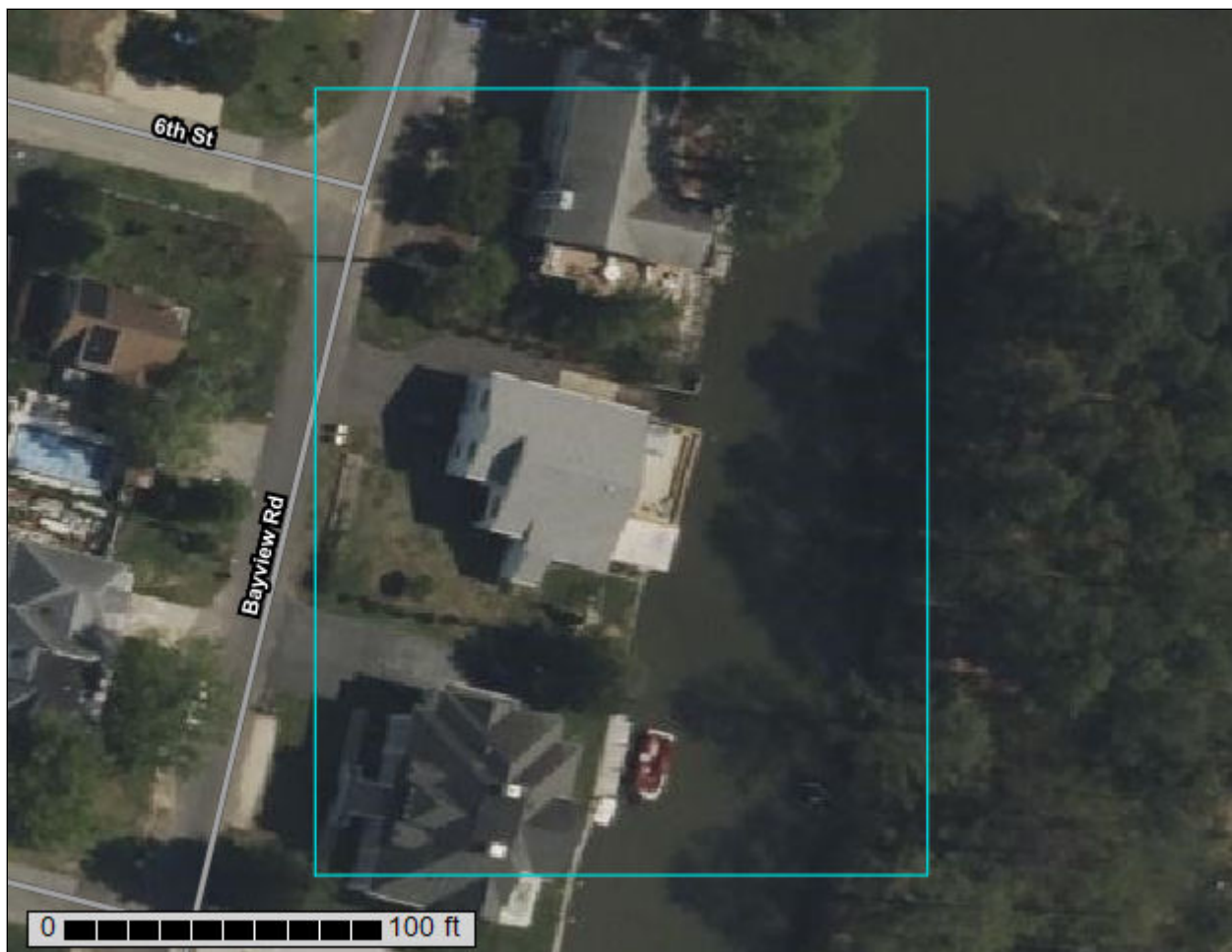
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Sussex County, Delaware**

**bay view mahon draiange outfall
project**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 26, Sep 9, 2025

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

Date(s) aerial images were photographed: May 30, 2022—Jul 4, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuA	Brockatonorton-Urban land complex, 0 to 2 percent slopes	0.6	57.1%
HnA	Hammonton sandy loam, 0 to 2 percent slopes	0.2	14.3%
WDc2	Dredge Channel, 1 to 4 meter water depth	0.3	28.5%
Totals for Area of Interest		1.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sussex County, Delaware

BuA—Brockatonorton-Urban land complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1qtfp
Elevation: 0 to 130 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Brockatonorton and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brockatonorton

Setting

Landform: Back-barrier beaches
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy eolian deposits and/or sandy marine deposits

Typical profile

A - 0 to 3 inches: sand
C - 3 to 24 inches: sand
Cg1 - 24 to 50 inches: sand
Oe - 50 to 60 inches: mucky peat
Cg2 - 60 to 72 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Maximum salinity: Nonsaline to strongly saline (0.0 to 16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F153DY090MD - Backdune
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Flats

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 10 percent

Landform: Flats

Hydric soil rating: No

Beaches

Percent of map unit: 5 percent

Landform: Beaches

Hydric soil rating: Yes

Acquango

Percent of map unit: 3 percent

Landform: Backshores, dunes

Ecological site: R153DY100MD - Foredune

Hydric soil rating: No

Transquaking

Percent of map unit: 2 percent

Landform: Tidal marshes

Ecological site: R153DY060MD - Tidal Salt Marsh

Hydric soil rating: Yes

HnA—Hammonton sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1qth1

Elevation: 0 to 120 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Hammonton and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hammonton

Setting

Landform: Flats, drainageways, depressions
Landform position (three-dimensional): Talf
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Loamy fluviomarine sediments

Typical profile

Ap - 0 to 11 inches: sandy loam
Bt - 11 to 30 inches: sandy loam
Cg - 30 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 20 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F149AY130NJ - Moist Loamy Upland
Hydric soil rating: No

Minor Components

Hurlock, drained

Percent of map unit: 5 percent
Landform: Depressions, swales, flats
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp
Hydric soil rating: Yes

Ingleside

Percent of map unit: 5 percent
Landform: Flats, fluviomarine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland
Hydric soil rating: No

Klej

Percent of map unit: 5 percent
Landform: Flats, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave

Custom Soil Resource Report

Across-slope shape: Linear, concave
Ecological site: F153DY150NJ - Moist Sandy Upland
Hydric soil rating: No

Rosedale

Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland
Hydric soil rating: No

WDc2—Dredge Channel, 1 to 4 meter water depth

Map Unit Setting

National map unit symbol: 2xhnh
Elevation: -20 to -10 feet
Mean annual precipitation: 41 to 49 inches
Mean annual air temperature: 53 to 60 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Water, dredge channel: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

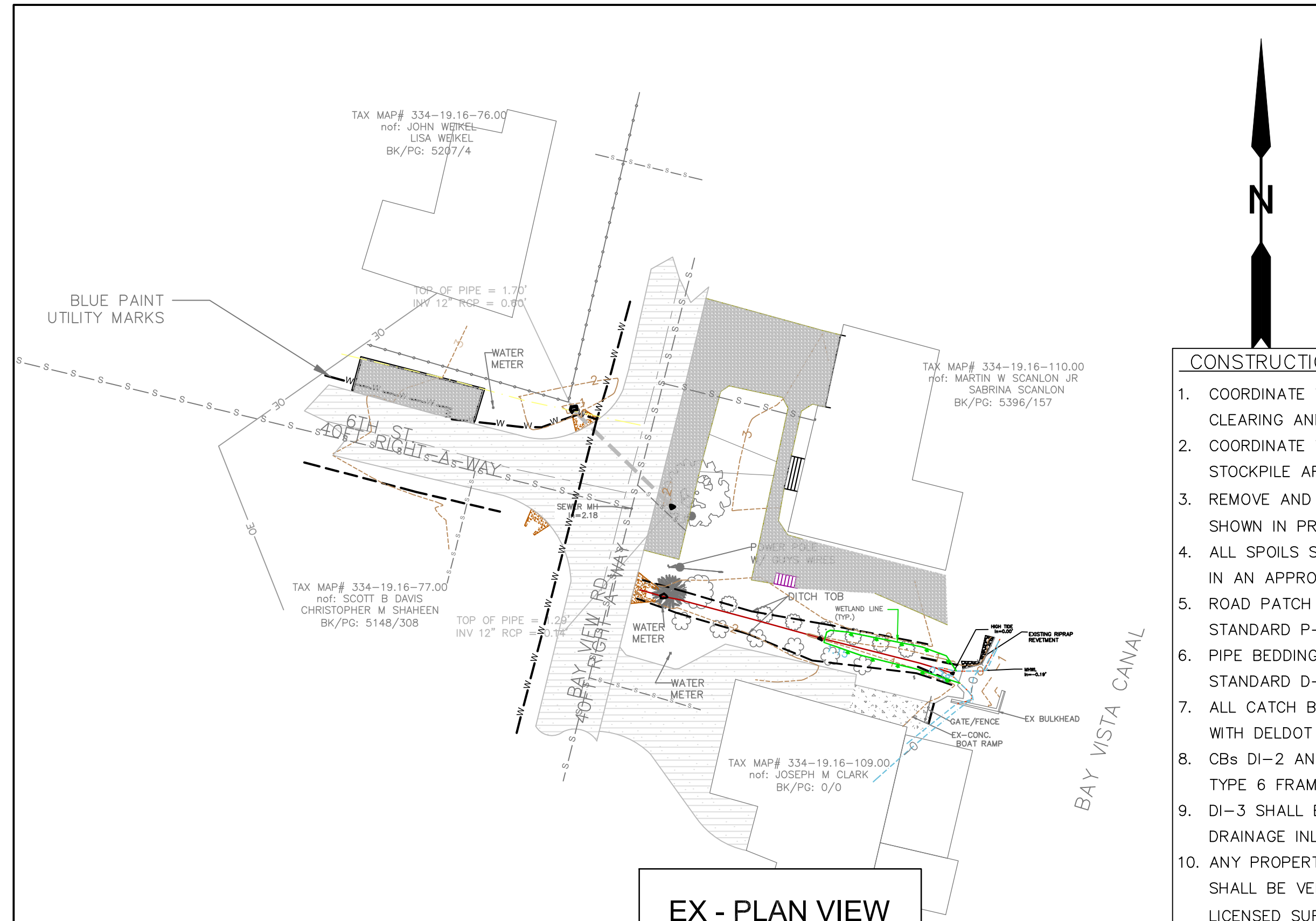
Description of Water, Dredge Channel

Properties and qualities

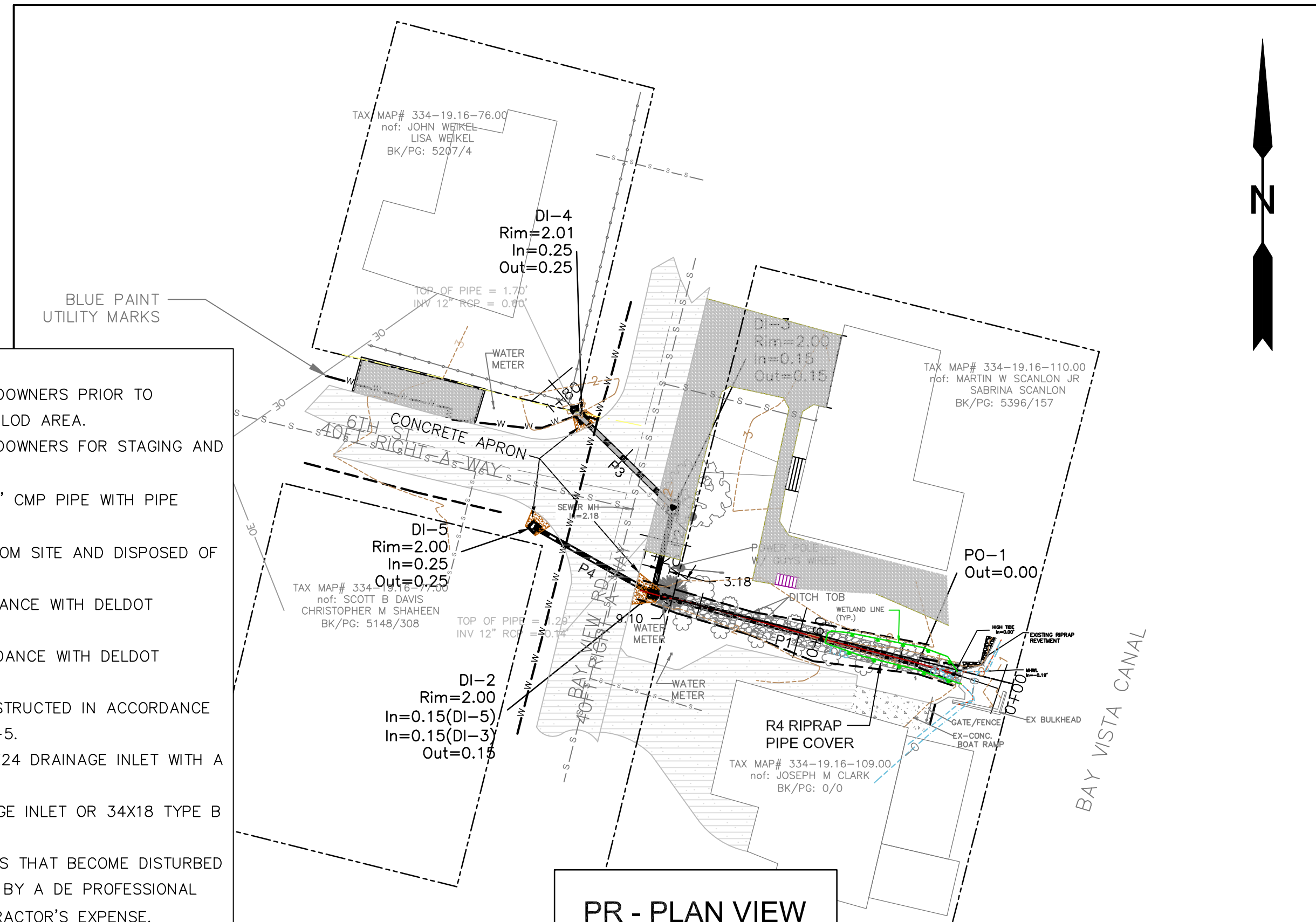
Slope: 0 to 2 percent
Drainage class: Subaqueous
Depth to water table: About 0 inches
Frequency of flooding: Very frequent

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Yes

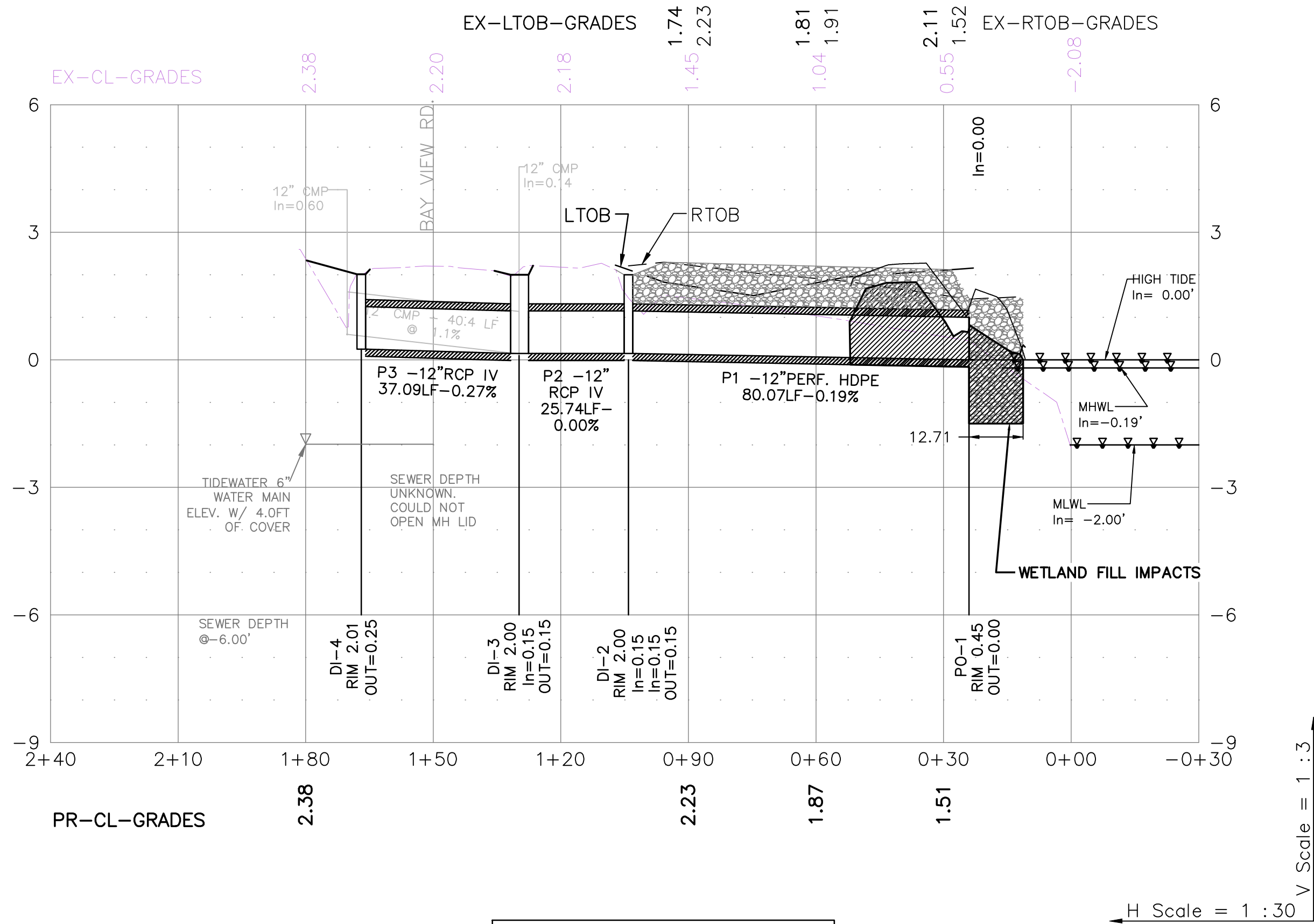


EX - PLAN VIEW
SCALE: 1" = 30'

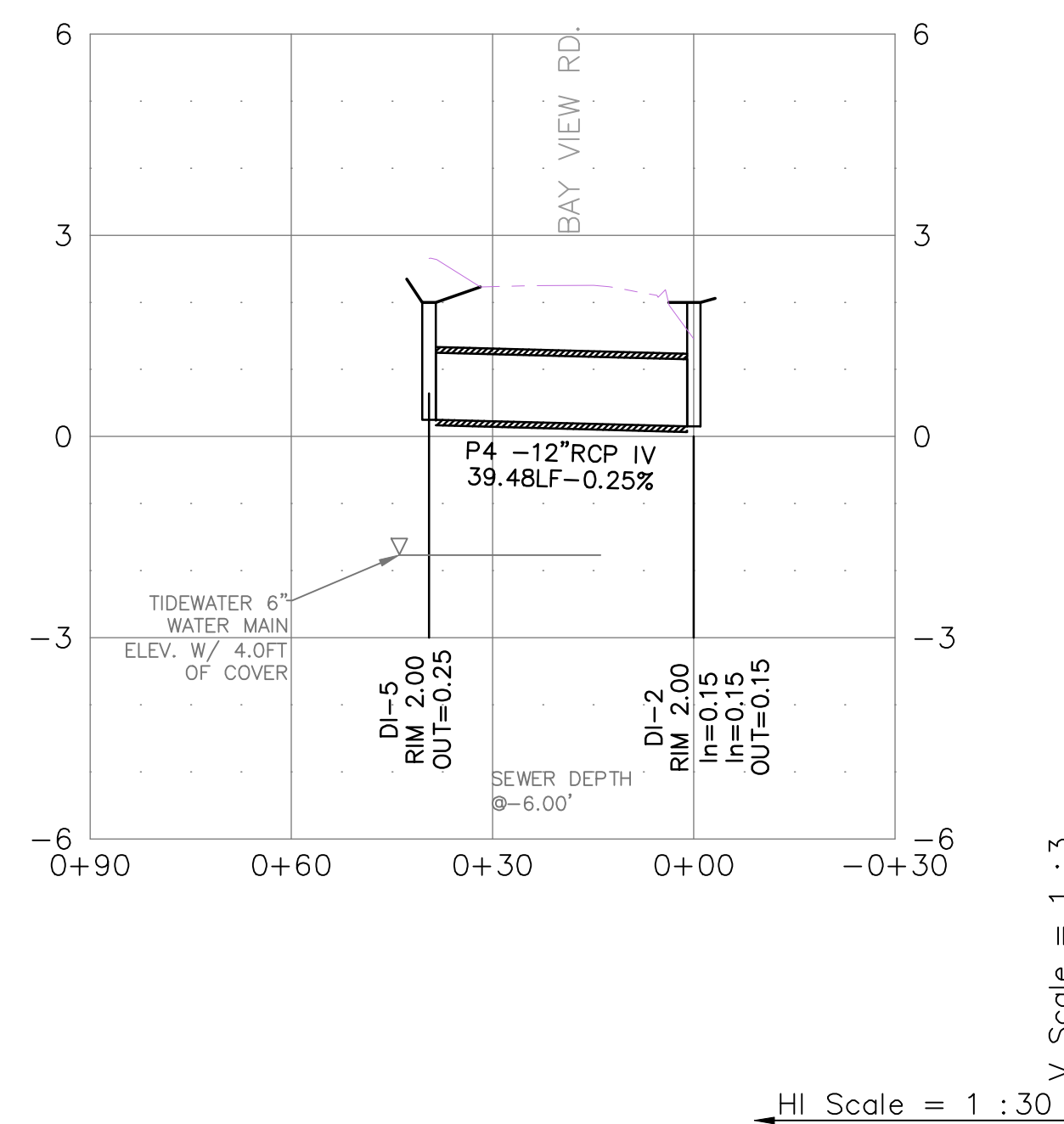


PR - PLAN VIEW
SCALE: 1" = 30'

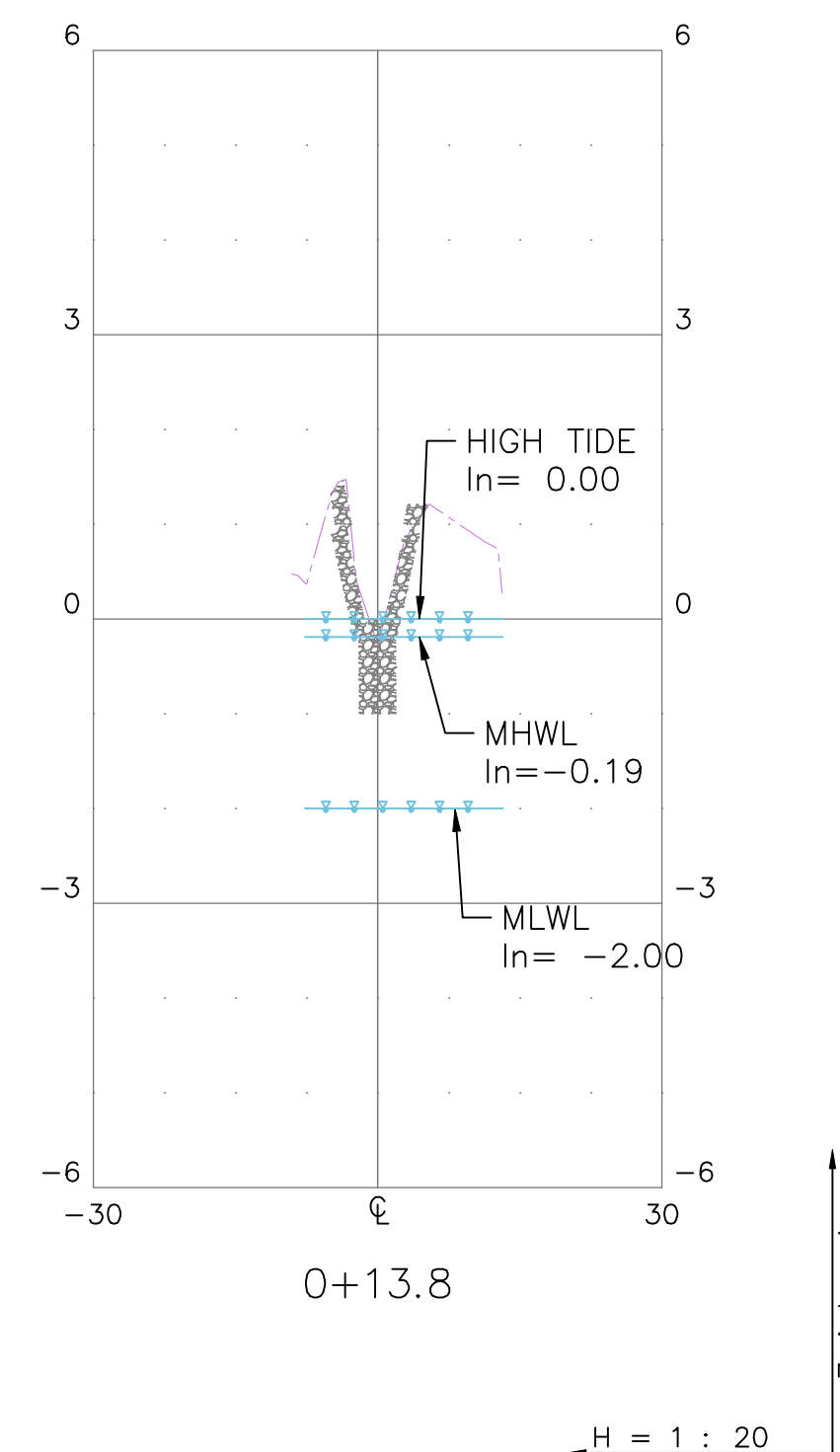
- CONSTRUCTION NOTES:**
- COORDINATE WITH DNREC AND LANDOWNERS PRIOR TO CLEARING AND GRUBBING PROJECT LOD AREA.
 - COORDINATE WITH DNREC AND LANDOWNERS FOR STAGING AND STOCKPILE AREAS
 - REMOVE AND REPLACE EXISTING 12" CMP PIPE WITH PIPE SHOWN IN PROFILE.
 - ALL SPOILS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN AN APPROVED MANNER.
 - ROAD PATCH SHALL BE IN ACCORDANCE WITH DELDOT STANDARD P-4.
 - PIPE BEDDING SHALL BE IN ACCORDANCE WITH DELDOT STANDARD D-8.
 - ALL CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DELDOT STANDARD D-4 & D-5.
 - CBs DI-2 AND DI-4 SHALL BE 24X24 DRAINAGE INLET WITH A TYPE 6 FRAME & GRATE COMBO.
 - DI-3 SHALL BE A PWBD-1 DRAINAGE INLET OR 34X18 TYPE B DRAINAGE INLET.
 - ANY PROPERTY CORNER MONUMENTS THAT BECOME DISTURBED SHALL BE VERIFIED AND OR RESET BY A DE PROFESSIONAL LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
 - COORDINATE WITH DNREC AND LANDOWNERS FOR THE REMOVAL OF LANDSCAPE VEGETATION.
 - INSTALL P1 PER PROFILE AND DETAIL VIEW ON C-501.
 - ROP2 SHALL EXTEND TO LIMITS OF REVETMENT.
 - INSTALL CONCRETE APRONS ON DI-4, DI-2, AND DI-5. APRON DETAIL ON C-501.



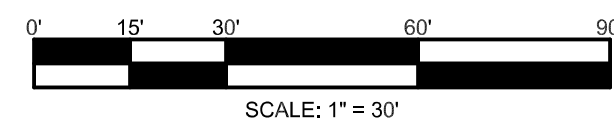
SD DI-4 TO PO-1
PROFILE VIEW
SCALE: 1" = 30'



SD DI-5 TO DI-2
PROFILE VIEW
SCALE: 1" = 30'



SECTION VIEW
SCALE: 1" = 20'



REVISIONS	
DATE	DESCRIPTION
1.22.25	ADDITIONAL DI AT INTERSECTION
2.06.2025	ADDITIONAL UTILITY INFO-WATER
5.05.2025	drawing clean up
5.06.2025	SITE VISIT
5.06.2025	LANDOWNER COMMENTS
12.2025	WETLAND COMMENTS
3.2026	WETLAND COMMENTS

SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD, GEORGETOWN, DE 19557
PHONE: (302) 356-2105 FAX: (302) 356-0951

DNREC - Division of Watershed Stewardship
Drainage Program

Dover Office
285 Baier Blvd., Suite 102 Phone: (302) 739-9921
Dover DE, 19901 Fax: (302) 739-6724

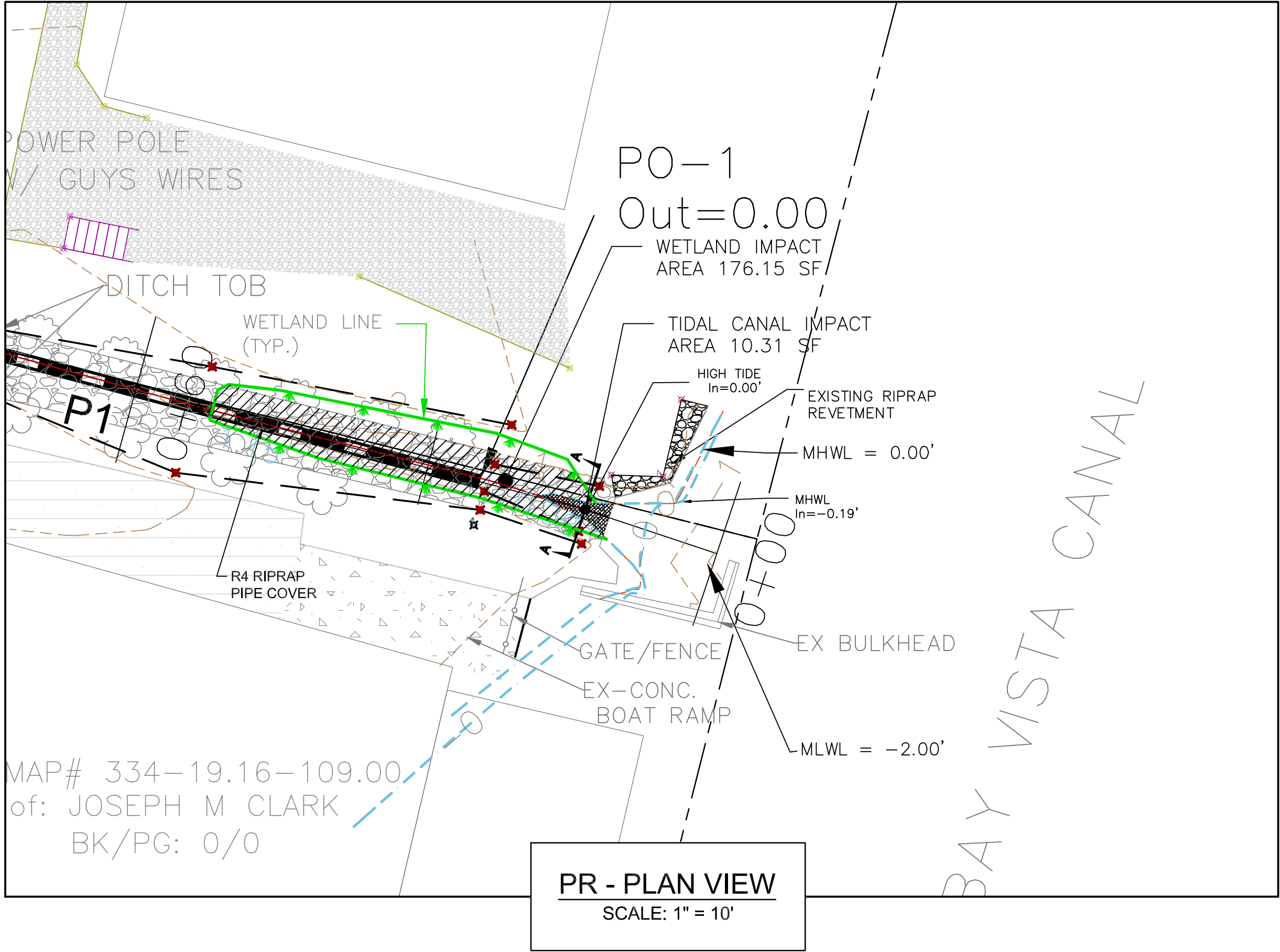
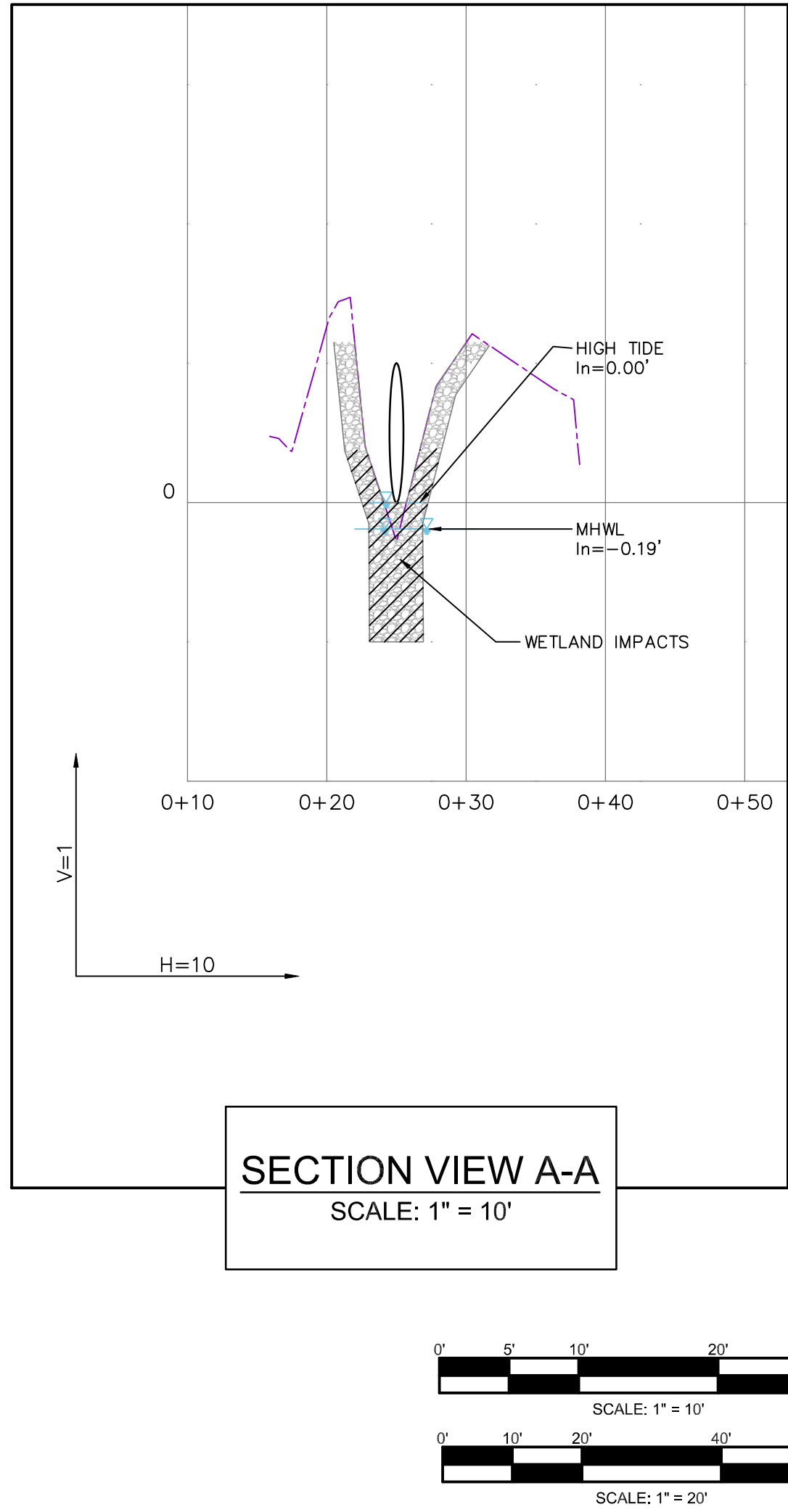
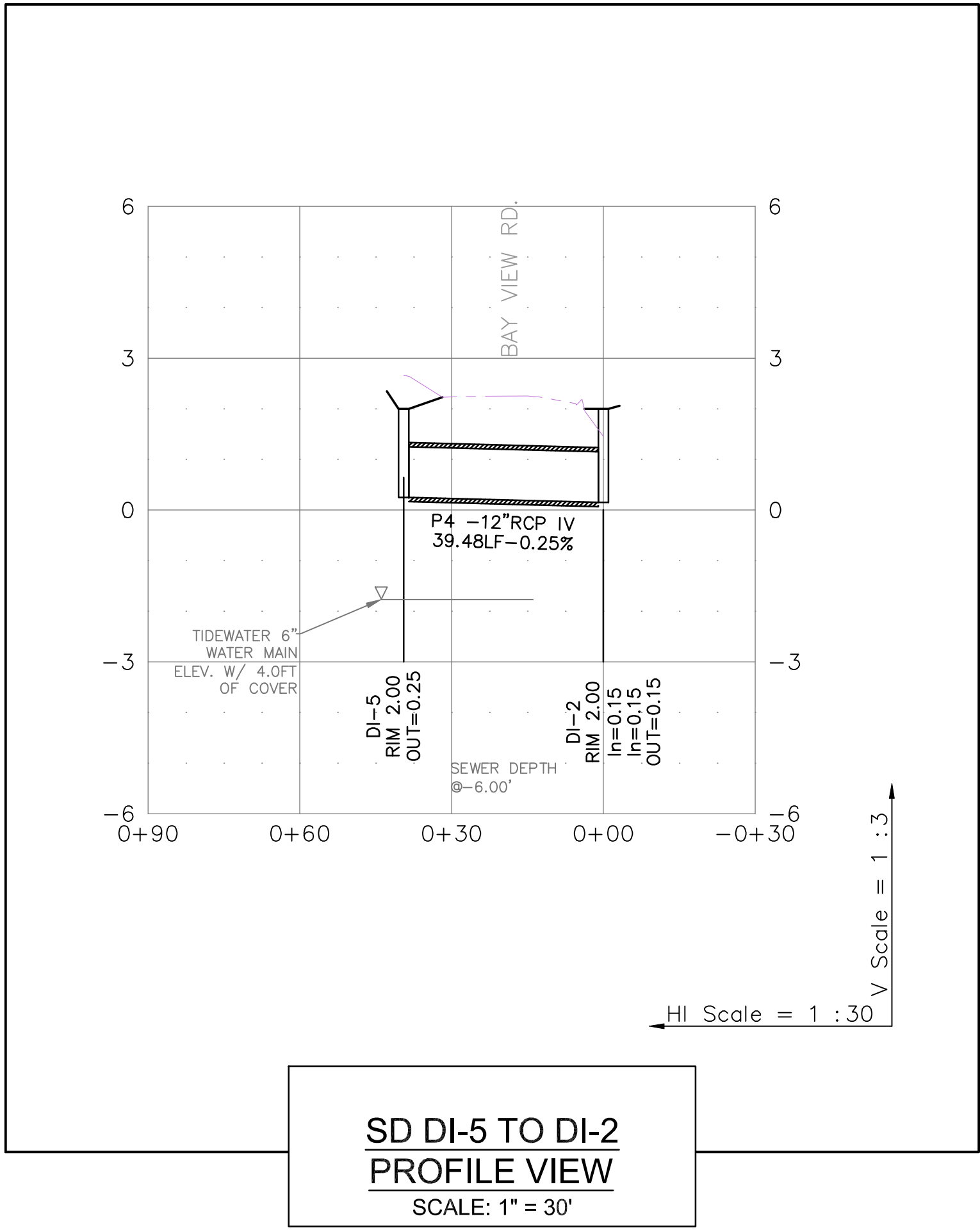
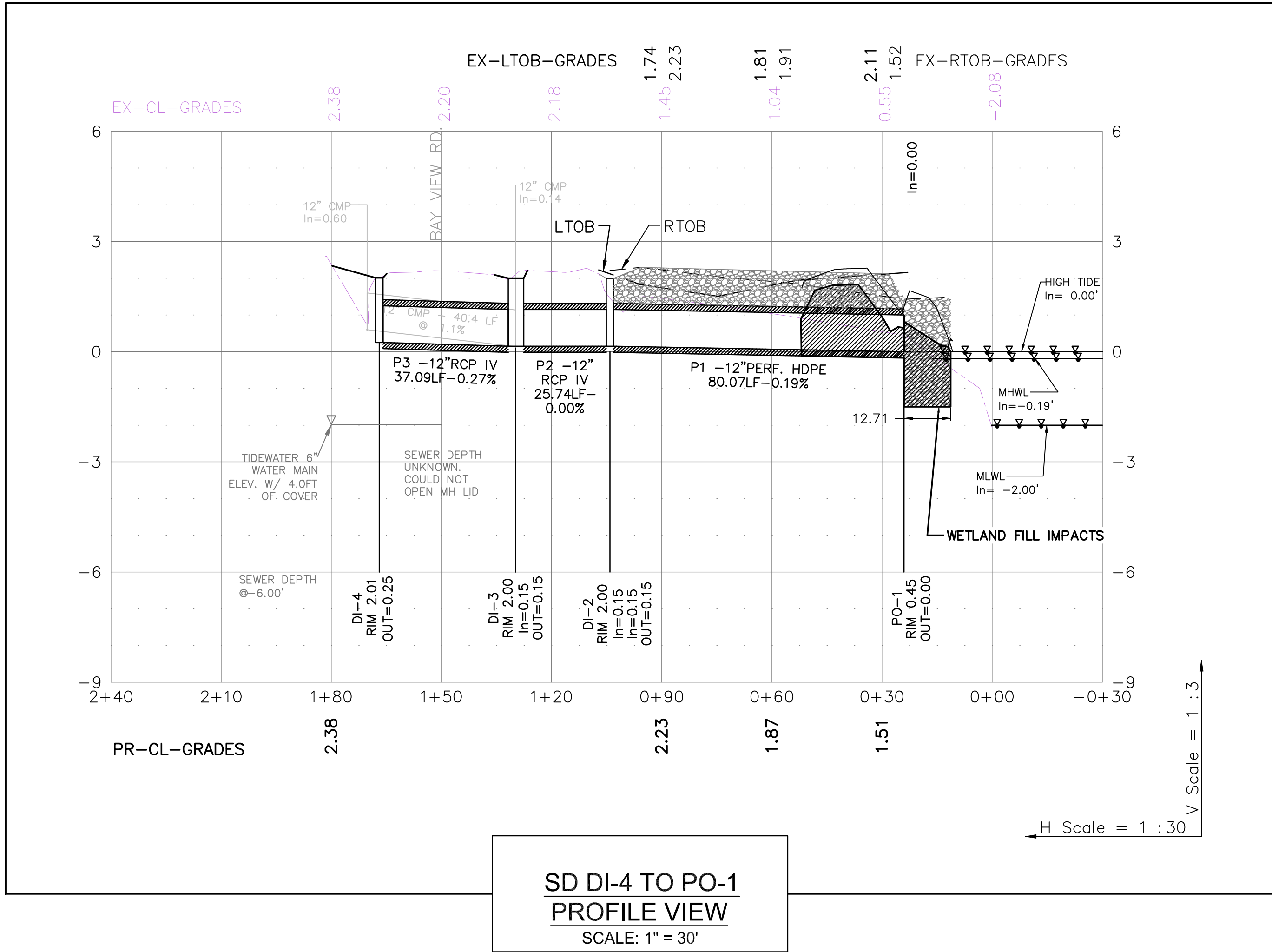
Georgetown Office
21309 Berlin Rd. Unit 6 Phone: (302) 855-1930
Georgetown DE, 19547 Fax: (302) 877-7059

BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

PROJECT CONSTRUCTION PLAN

Date: 4.01.2026
Designed: AR - JLE
Planned: TB - KW - JG
Drawn: JLE

Sheet No. **C-100**



REVISIONS	
DATE	DESCRIPTION
1.22.25	ADDITIONAL DI AT INTERSECTION
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3.2026	WETLAND COMMENTS



SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD., GEORGETOWN, DE 19957
PHONE: (302) 856-2105 FAX: (302) 856-0951

DNREC - Division of Watershed Stewardship
Drainage Program
Georgetown Office
21309 Berlin Rd. Unit 6 Phone: (302) 855-1930
Georgetown DE 19947 Fax: (302) 877-7059

Dover Office
285 Baister Blvd., Suite 102 Phone: (302) 739-9921
Dover DE, 19901 Fax: (302) 739-6724



BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

WETLAND EXHIBIT CONSTRUCTION PLAN

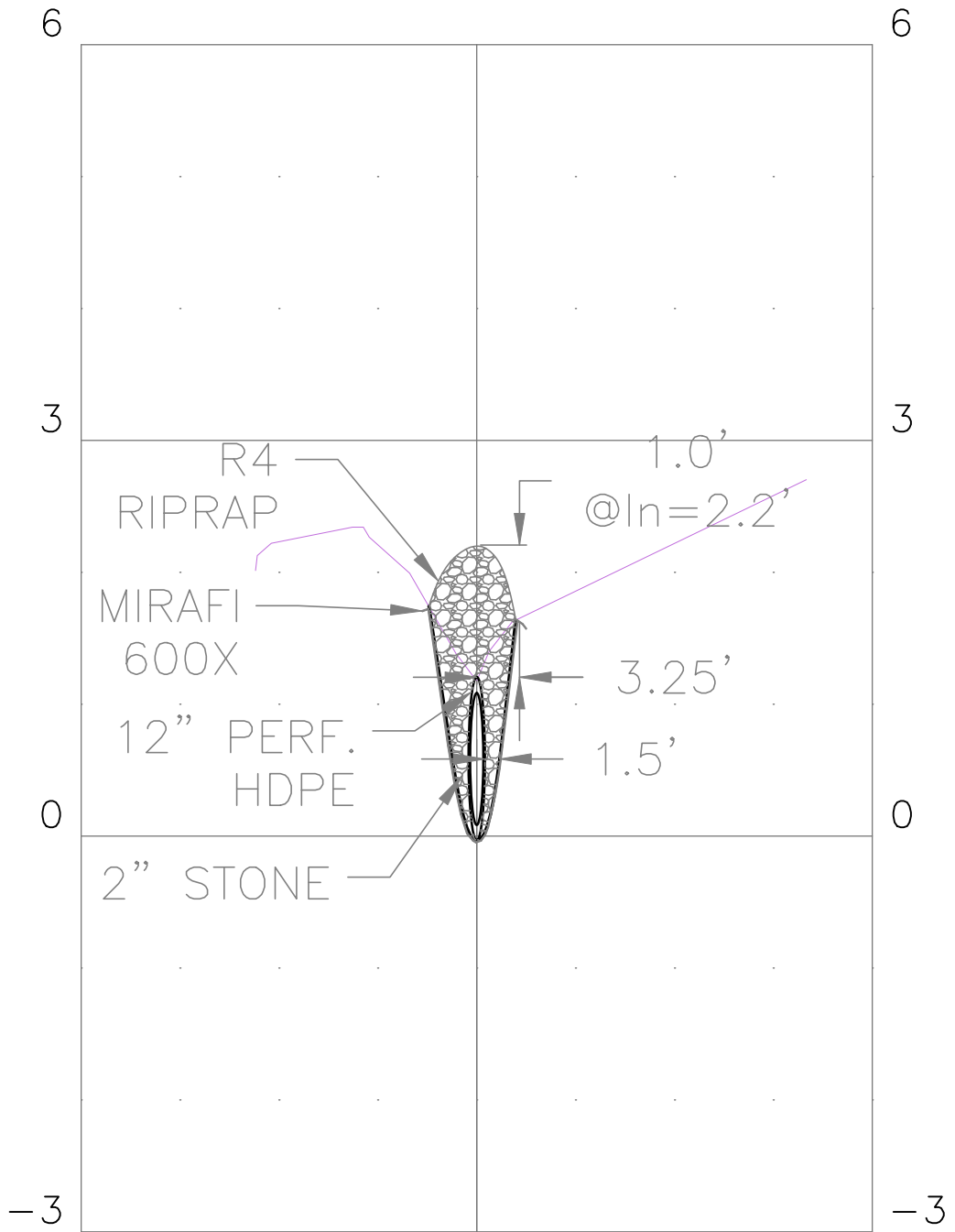
Date:	4.01.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE
Sheet No.	C-101

PIPE SCHEDULE								
NAME	UP STRUCTURE	UP INVERT (FT)	DN STRUCTURE	DOWN INVERT (FT)	SIZE (IN)	LENGTH (FT)	SLOPE (%)	MATERIAL
P1	DI-2	0.15	PO-1	0.00	12.0"	80.07'	0.187	PERF. HDPE
P4	DI-5	0.25	DI-2	0.15	12.0"	39.48'	0.253	RCP IV
P2	DI-3	0.15	DI-2	0.15	12.0"	25.74'	0.000	RCP IV
P3	DI-4	0.25	DI-3	0.15	12.0"	37.09'	0.270	RCP IV

STRUCTURE SCHEDULE							
NAME	NORTHING	EASTING	RIM ELEV(FT)	INV-IN ELEV(FT) (1)	INV-IN ELEV(FT) (2)	INV-OUT ELEV(FT)	STRUCTURE ID
PO-1	254018.14	747244.52	0.45	—	—	0.00	PIPE END
DI-2	254038.71	747167.14	2.00	0.00	0.00	0.00	DELDOT 24 x 24 BASIN
DI-5	254060.06	747136.10	2.20	—	—	0.64	DELDOT 24 x 24 BASIN
DI-3	254063.73	747173.17	2.00	0.14	—	0.14	PWBD-1
DI-4	254088.06	747148.35	2.13	—	—	0.60	DELDOT 24 x 24 BASIN

PIPE / STRUCTURE NOTES:

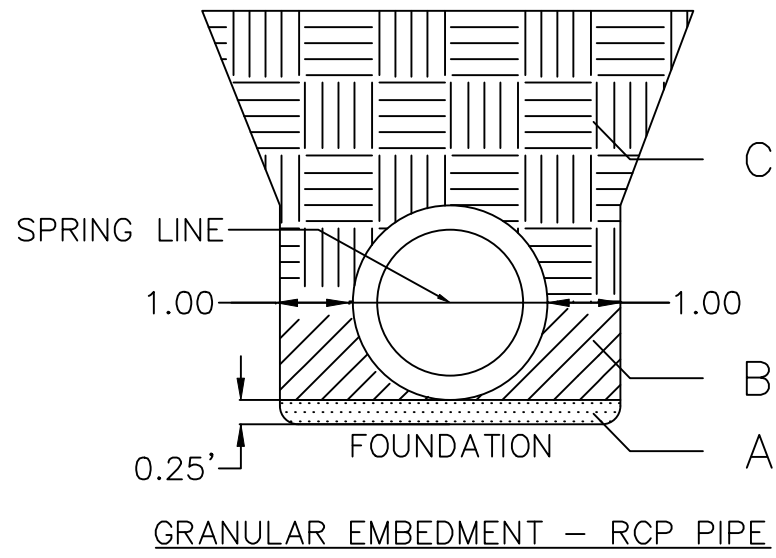
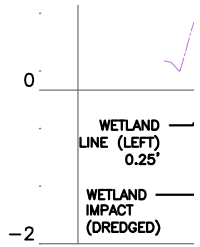
- ALL JOINTS FOR PIPES DEEPER THAN 4' BELOW GRADE MUST BE MINIMUM 2' IN LENGTH AND WRAPPED IN GEOTEXTILE FABRIC MEETING DE-ESC GD-II REQUIREMENTS.
- ALL FLARED END-SECTIONS, UNLESS OTHERWISE NOTED, SHALL BE ADS OR APPROVED EQUAL AND MATCH THE PIPE SIZE.
- PIPE BACKFILL SHALL BE CLASS C BEDDING PER DELDOT STD NO D-8 WITH MIN. 6" LOOSE SAND OR TYPE C BORROW.
- ALL DELDOT 24x24 INLET BOXES SHALL HAVE TYPE 6 FRAME/GRATE COMBO.
- ALL HDPE PIPE SHALL COMPLY WITH AASHOT M252, M294, MP7, AD ASTM 3350. PIPE SHALL BE INSTALLED PER ASTM D2321 AND AS RECOMMENDED BY THE MANUFACTURER. ALL HDPE PIPE SHALL HVE WATER TIGHT CONNECTIONS. ALL HDPE PIPE SHALL MEET OR EXCEED AASHTO M-330 PIPE SPECIFICATION.
- REINFORCED CIRCULAR CONCRETE PIPE SHALL COMPLY WITH AASHTO M170/ M170M.
- PROVIDE FLEXIBLE WATERTIGHT GASKETED JOINTS IN ACCORDANCE WITH ASTM C443.
- ALL DRAINAGE INLETS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST STANDARDS OF DELDOT'S STANDARD CONSTRUCTION DETAILS UNLESS NOTED OTHERWISE ON THE PLANS.
- P1 SHALL BE 12" PERF. HDPE PIPE.
- P1 SHALLBE INSTALLED PER THE PERF. PIPE TRENCH DETAIL BELOW.



0+69

- NOTES:
- UES R4 RIPRAP FOR PIPE COVER. COVER SHALL BE AT LEAST 1.0' OVER CROWN OF PIPE.
 - USE 2" STONE FOR PIPE BACK FILL UP TO PIPE CROWN.
 - GRAVEL/STONE SHALL BE PLACED OVER MIRAFI 600X GEOTEXTILE.

PERF. PIPE TRENCH
DETAIL
SCALE: NTS

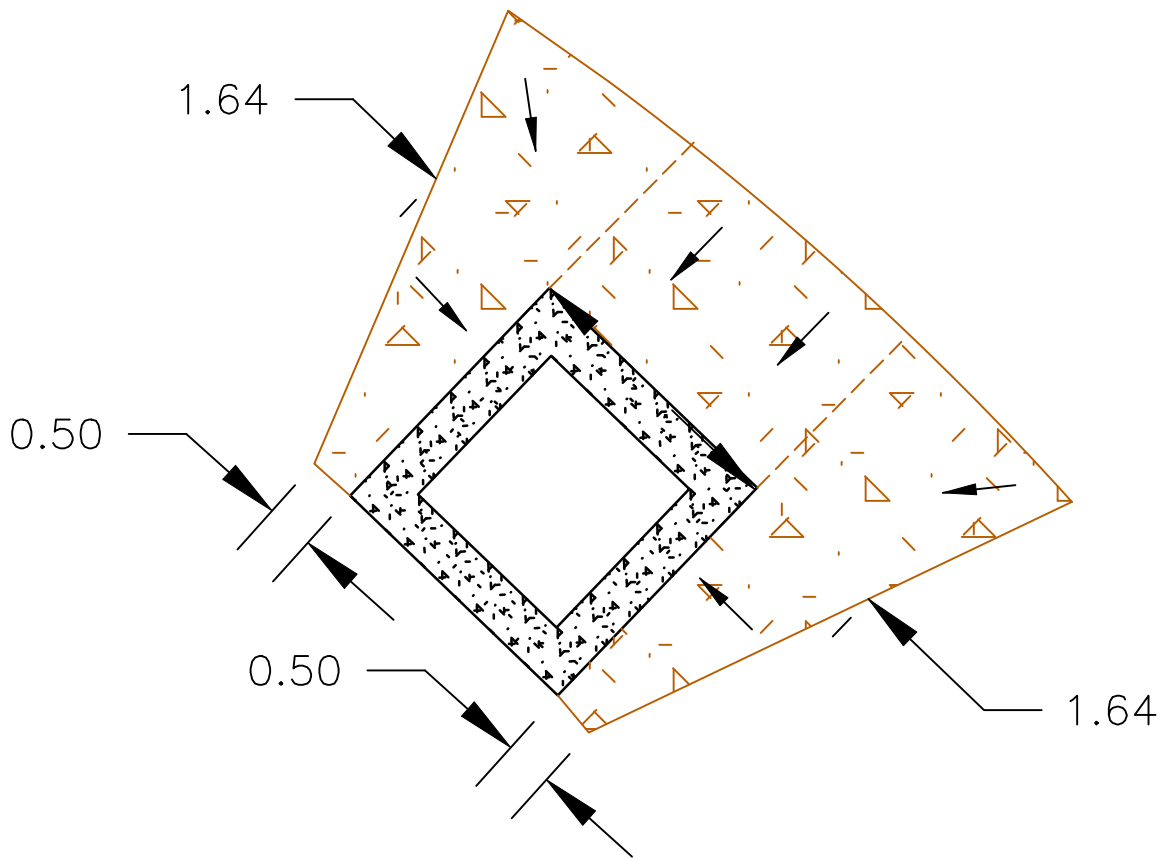


INSTALLATION SHALL FOLLOW ASTM C1479-16 STANDARD PRACTICE FOR THE INSTALLATION OF PRE CAST CONCRETE STORM DRAIN AND CULVERT PIPE USING STANDARD INSTALLATIONS.

FOUNDATION SHALL BE SUITABLE AND STABLE ENOUGH TO SUPPORT PIPE INSTALLATION. IF IT IS NOT, CONTACT ENGINEER FOR DIRECTION.

- BEDDING - LOOSE PLACED CRUSHED #57 STONE, MIN. 4" DEPTH OR 'AS DETERMINED BY ENGINEER.
- PIPE EMBEDMENT - COMPACTED TYPE C BORROW, TO SPRING LINE OF RCP PIPE IN 6" LIFTS. COMPACTED TO 90% PROCTOR DENSITY.
- BACKFILL - COMPACTED TYPE C BORROW TO DESIGN SUBGRADE IN 12" LIFTS COMPACTED TO 85% PROCTOR DENSITY.
- PIPE TRENCH WIDTH MUST BE 2.0' WIDER THAN O.D. OF PIPE.

DELDOT CLASS C BEDDING SHALL BE SAND, GRAVEL, CRUSHED STONE, OR CRUSHED SLAG.



CONSTRUCTION NOTES:

- CONCRETE APRON SHALL BE 3000 PSI STRENGTH CONCRETE
- APRON SHALL BE 6" THICK OVER 6" COMPACTED GABC.
- APRON SHALL START AT THE EDGE OF PAVEMENT AND SLOPE TO CB RIM.
- APRON SHALL SLOPE TOWARD CENTER AND TOWARD CB.

CB APRON
DETAIL
SCALE: NTS

- 36.5 CF OF CONCRETE FOR THE 3 APRONS.
- 36.5 CF OF GABC FOR THE 3 APRONS' BASE.

- 243 CF 2" STONE - PIPE BEDDING
- 420 CF R4 RIPRAP - PIPE COVER
- 140 CF R4 RIPRAP - ROP2

REVISIONS

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SUSSEX CONSERVATION DISTRICT

23818 SHORTLY RD, GEORGETOWN, DE 19957
PHONE (302) 856-2008 FAX (302) 856-0951

DNREC - Division of Watershed Stewardship

Drainage Program

Dover Office
21309 Berlin Rd, Unit 6 Phone (302) 735-9921
285 Beaver Blvd., Suite 102 Phone (302) 735-0724
Dover DE, 19901 Fax (302) 735-0724

BAY VIEW ROAD - MAHON

WATER MANAGEMENT PROJECT

REHOBOTH BAY / INLAND BAY WATERSHED

REHOBOTH BEACH, DELAWARE

CONSTRUCTION DETAILS - 2

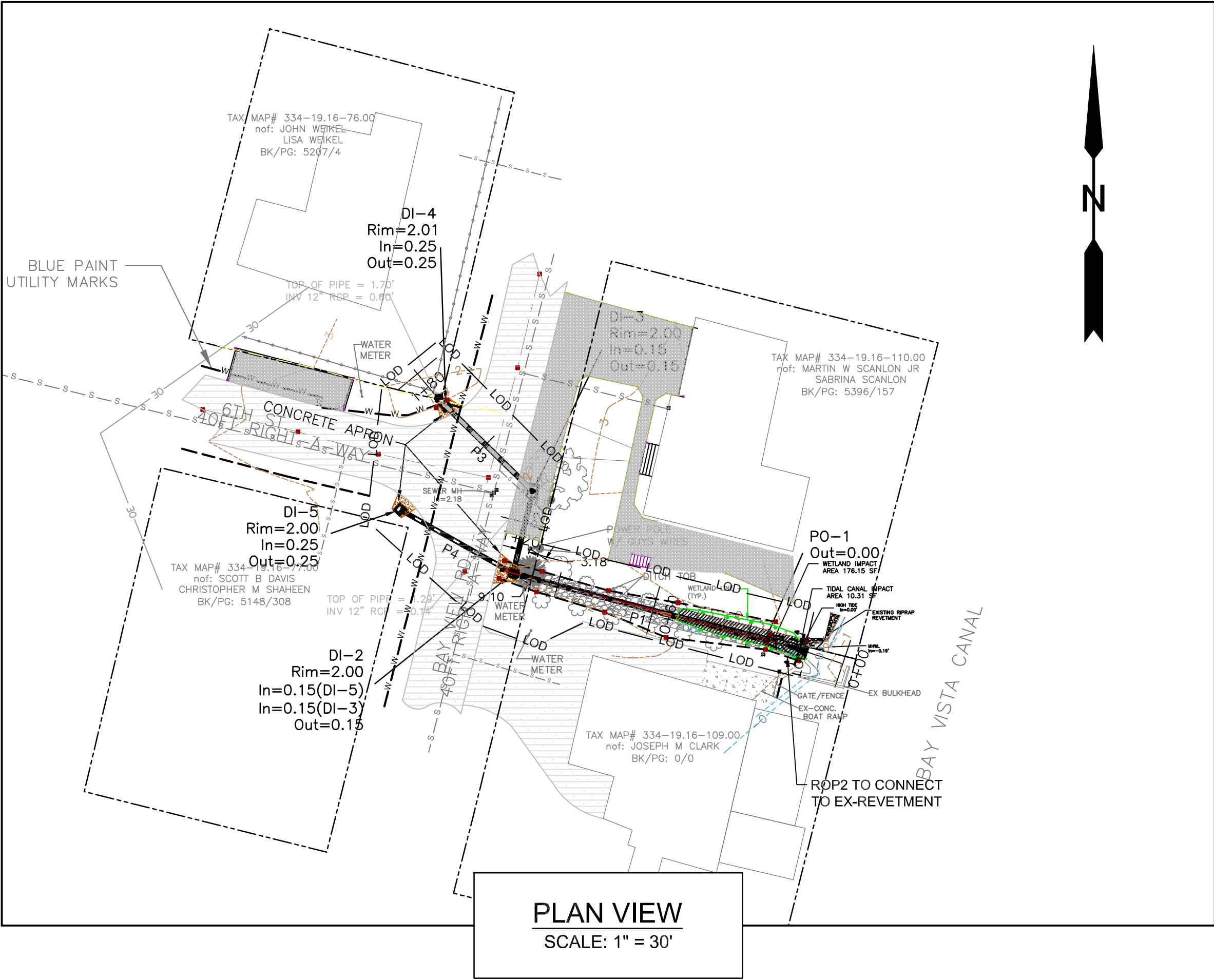
Date: 4.01.2026

Designed: AR - JLE

Planned: TB - KW - JG

Drawn: JLE

Sheet No. C-501



- EROSION & SEDIMENT CONTROL NOTES:**
1. PROJECT LOD ACREAGE IS 0.12 ACRES.
 2. STABILIZED ALL PERVIOUS AREAS USING DE SEED MIX #11 AND MULCH FOLLOWING LATEST DE ESC HANDBOOK STANDARD.
 3. REFRESH ALL DISTURBED GRAVEL AREAS USING GRAVEL SIMILAR / IN-KIND TO EXISTING GRAVEL.
 4. ROP-2 SIZING SHALL BE PER DATA BLOCK ON C-703.
 5. COORDINATE WITH DNREC AND LANDOWNERS FOR THE REMOVAL OF LANDSCAPE VEGETATION.
 6. ANY PROPERTY CORNERS THAT ARE DISTURBED SHALL CHECKED AND RESET BY A DE PROFESSIONAL SURVEYOR AT THE CONTRACTOR'S EXPENSE.
 7. ROP2 SHALL EXTEND TO THE LIMITS OF THE ADJACENT REVETMENT.

REVISIONS	
DATE	DESCRIPTION
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3.2026	WETLAND COMMENTS



SUSSEX CONSERVATION DISTRICT
23318 SHORTLY RD. GEORGETOWN, DE 19957
PHONE: (302) 856-2105 FAX: (302) 856-0951

DNREC - Division of Watershed Stewardship
Drainage Program

Dover Office
235 Beaver Blvd., Suite 102 Phone: (302) 739-9921 Fax: (302) 739-9724
Dover DE, 19901

Georgetown Office
21399 Beetle Rd. Unit 6 Phone: (302) 883-1930 Fax: (302) 677-7029
Georgetown DE, 19947



BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

EROSION & SEDIMENT CONTROL PLAN - 1

Date: 4.01.2026
Designed: AR - JLE
Planned: TB - KW - JG
Drawn: JLE

Sheet No. **C-700**

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES												
Mix #	Species ²	Seeding Rate	Optimum Seeding Dates ¹								Planting Depth ¹	
			Coastal Plain				Piedmont					All
	Certified Seed	lb/Ac ²	lb/1000 sq.ft.	21-4/30	8/14-8/14	9/16-4/30	3/1-7/31	5/1-10/1	8/1-10/31	2/1		
1	Barley	125	4	O	A	O	O	A	O		1-2 inches	
2	Oats	125	4	O	A	O	A	O	A		1-2 inches	
3	Rye	125	4	O	A	O	O	A	O	A	2-3" sandy soils	
4	Perennial Ryegrass	125	4	O	A	O	O	A	O		0.5 inches	
5	Annual Ryegrass	125	4	O	A	O	O	A	O	A	1-2" sandy soils	
6	Winter Wheat	125	4	O	A	O	O	A	O	A	2-3" sandy soils	
7	Foxtail Millet	30 PLS	0.7		O			O			0.5 inches	
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 8/1 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:

Detail No.

DE-ESC-3.4.3

Sheet 2 of 4

Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES												
Seeding Mixtures	Seeding Rate ¹	Optimum Seeding Dates ²								Remarks		
		Coastal Plain				Piedmont					All ¹	
Mix No.	Certified Seed ²	lb/Ac	lb/1000 sq.ft.	21-4/30	8/14-8/14	9/16-4/30	3/1-7/31	5/1-10/1	8/1-10/31			
1	Tall Fescue Canada Wild Rye	140 10	3.2 0.23	A	O	A	A	O	A	Add 100 lb. no Winter Rye	Good erosion control mix. Tolerant of low fertility soils. Good for draughty sites	
2	Orchardgrass Sheep Fescue White Clover	30 30 10	0.69 0.69 0.35	A	O	A	A	O	A	Add 100 lb. no Winter Rye	Good erosion control mix. Tolerant of low fertility soils. Legume that fixes atmospheric N into soil	
3	Tall Fescue (Turftype) or Strong Cheeping Red Fescue or Perennial Ryegrass plus Flaxseed ³	50 50 50	1.15 1.15 1.15	O	A ¹	O	O	A ¹	O	Add 100 lb. no Winter Rye	Good erosion control mix. Tall Fescue for draughty conditions. Cheeping Red Fescue for heavy shade. Flaxseed to suppress weeds and vegetation	
4	Strong Cheeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Redtop plus Flaxseed ³	100 70 15 5	2.3 1.01 0.35 0.11	O	A ¹	O	O	A ¹	O	Add 100 lb. no Winter Rye	Sublime waterway mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.	
5	Orchardgrass ⁴ or Coastal Panicgrass Rye Bluegrass Little Bluestem Indian Grass	10 10 5 5	0.23 0.23 0.11 0.11		O			O			Native warm-season mixtures. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds Managed after site for reforestation	
6	Tall Fescue (Turftype) (Blend of 3 cultivars)	150	3.5	O	A ¹	O	O	A ¹	O		Three cultivars of Kentucky Bluegrass. Traffic tolerant.	
7	Tall Fescue Ry. Bluegrass (Blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O	A ¹	O	O	A ¹	O		All species are native. Indian Grass and Bluestem have fully seeds. Plant with a specialized native seed drill.	
8	Ry. Bluegrass ⁵ Indian Grass ⁵ Little Bluestem ⁵ Climbing Red Fescue plus alfalfa Partridge Pea Bush Clover Wild Indigo Shiny Tick-Trefoil	10 10 5 3 3 3 2	0.23 0.23 0.18 0.69 1.1 0.07 0.07 0.05	O	A ¹	O	A ¹	O			Hydraulically applied mulch 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:

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.)												
Seeding Mixtures	Seeding Rate ¹	Optimum Seeding Dates ²								Remarks		
		Coastal Plain				Piedmont					All ¹	
Mix No.	Certified Seed ²	lb/Ac	lb/1000 sq.ft.	21-4/30	8/14-8/14	9/16-4/30	3/1-7/31	5/1-10/1	8/1-10/31			
9	Redtop Cheeping Redgrass Sheep Fescue Rough Bluegrass	75 35 30 45	1.72 0.8 0.69 1	O	A ¹	O	O	A ¹	O	Add 100 lb. no Winter Rye	Quick stabilization of disturbed sites and waterways	
10	Switchgrass ⁶	10	0.23	A		O	A		O		Good erosion control, wildlife cover and wetland revegetation.	
Residential Lawns												
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O	A ¹	O	O	A ¹	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	A ¹	O	O	A ¹	O		Moderate value, low maintenance, traffic tolerant	
13	Climbing Red Fescue Cheeping Red Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 20	1.15 1.15 0.6 0.6	O	A ¹	O	O	A ¹	O		Shade tolerant, moderate traffic tolerance, moderate maintenance.	
14	Climbing Red Fescue Rough Bluegrass or Cheeping Fescue	50 90	1.15 2.1	O	A ¹	O	O	A ¹	O		Shade tolerant, moisture tolerant.	
15	K-31 Tall Fescue	150	3.5	O	A ¹	O	O	A ¹	O		Monoculture, but performs well alone in forests. Discouraged	

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 average 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. Turftype species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.

5. It is recommended that all leguminous seeds 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:

Detail No.

DE-ESC-3.4.3

Sheet 2 of 4

Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

Construction Notes:

1. Site Preparation

a. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.

b. Final grading and shaping is not necessary for temporary seedings.

2. Seedbed 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.

3. Soil Amendments

a. 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.

b. 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 soils.

4. Seeding

a. 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.

b. Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.

c. 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.

5. Mulching

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

Source:

Delaware ESC Handbook

Symbol:

Detail No.

DE-ESC-3.4.3

Sheet 4 of 4

Effective July 2023

SEEDING AND MULCHING NOTES:

DITCH AREAS:

REFERENCE SEED MIXES:

ERNST SEEDS: ERNMX-732 – MD COASTAL PLAIN RIPARIAN MIX
CLARK SEEDS: EASTERN ECOTYPE NATIVE GRASS MIX

NON-DITCH AREAS / RESIDENTIAL LOTS:

DE SEED MIX #11

SEED MUST BE APPLIED PER MANUFACTURER'S RECOMMENDED RATE.

MULCHING:

IN ALL NON-AGRICULTURAL AREAS, MULCHING MEETING THE REQUIREMENTS OF DE-ESC-3.4.5 OR STABILIZATION MATTING MEETING THE REQUIREMENTS OF DE-ESC-3.4.6 MUST BE USED.

< STRAW MULCH SHALL BE USED IN DISTURBED AREA ON

TOPSOILING NOTES:

STOCKPILED TOPSOIL SHALL BE SPREAD TO A 4" DEPTH WITHIN: ALL REMAINING TOPSOIL TO BE SPREAD AS DIRECTED BY THE CONSTRUCTION SITE REVIEWER.

Standard Detail & Specifications

Topsoiling

Construction Notes:

1. Site Preparation (Where Topsoil is to be added)

Note: When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, waterways and sediment basins.

a. Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.

b. Liming - Where the topsoil is either highly acid or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet). Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

c. Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or by scarifying to a depth of a least 3 inches to permit bonding of the topsoil to the subsoil. Pack by passing a bulldozer up and down over the entire surface area of the slope to create horizontal erosion check slots to prevent topsoil from sliding down the slope.

2. Topsoil Material and Application

Note: Topsoil salvaged from the existing site may often be used but it should meet the same standards as set forth in these specifications. The depth of topsoil to be salvaged shall be no more than the depth described as a representative profile for that particular soil type as described in the soil survey published by USDA-SCS in cooperation with Delaware Agricultural Experimental Station.

Source:

USDA - NRCS

Symbol:

Detail No.

DE-ESC-3.4.1

Sheet 1 of 2

Effective July 2023

Standard Detail & Specifications

Topsoiling

Construction Notes (cont.)

a. Materials - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall not have a mixture of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragment, gravel, sticks, roots, trash or other extraneous materials larger than 1-1/2 inches in diameter. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistles, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.5 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

Note: No sod or seed shall be placed on soil which has been treated with soil sterilant or chemicals used for weed control until sufficient time has elapsed to permit dissipation of toxic materials.

b. Grading - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seedling can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Note: Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.

Compost amendments that are intended to meet specific post-construction stormwater management goals shall further meet the requirements of Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments.

Source:

USDA - NRCS

Symbol:

Detail No.

DE-ESC-3.4.1

Sheet 1 of 2

Effective July 2023

Standard Detail & Specifications

Mulching

1. Materials and Amounts

a. Straw - Straw shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales) per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as; thistles, Johnsongrass, and quackgrass. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square foot sections and place 70-90 pounds (two bales) of mulch in each section.

b. Wood chips - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 66 pounds of 30-0-0 per acre).

c. Hydraulically applied mulch - The following conditions apply to hydraulically applied mulch:

i. Definitions:

a. Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.

b. Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.

c. A bonded fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFM's shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.

d. Refer to Figure 3.4.5a for conditions and limitations of use for each of the above categories of hydraulic mulch.

ii. All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.

iii. Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.

iv. Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.

v. Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source:

Delaware ESC Handbook & Filtrex™ International

Symbol:

Detail No.

DE-ESC-3.4.5

Sheet 1 of 3

Effective July 2023

Standard Detail & Specifications

Mulching

v. Application:

a. Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.

b. Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.

c. During the spring (March 1 to May 31) and fall (September 1 to November 30) seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single-tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.

d. During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:

Step One - Mix and apply seed and soil amendments with a small amount of mulch for visual metering.

Step Two - Mix and apply mulch at manufacturers recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.

e. Minimum curing temperature is 40° F (4° C). The best results and more rapid curing are achieved at temperatures exceeding 60° F (15° C). Curing times may be accelerated in high temperature, low humidity conditions on dry soils.

vi. Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires 100% soil coverage. Any areas with bare soil showing shall be top dressed until full coverage is achieved.

2. Anchoring mulch - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost.

a. Crimping - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.

b. Tracking - Tracking is the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with cleat marks running across the slope.

c. Liquid mulch binders - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.

d. Paper fiber - The fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.

e. Nettings - Biodegradable nettings may be used to secure straw mulch. Install and secure according to the manufacturer's recommendations. Photodegradable or synthetic nettings are not acceptable.

Source:

Delaware ESC Handbook & Filtrex™ International

Symbol:

Detail No.

DE-ESC-3.4.5

Sheet 2 of 3

Effective July 2023

Standard Detail & Specifications

Mulching

Percent Slope Less than 2%	Years of Mulch / Area Rate ¹	MULCHING MATERIAL SELECTION GUIDE											
		Dec. 1 to Feb. 29/28	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30	Oct. 1 to Dec. 31							
24% to 49%	Blended Fiber @ 2000 lbs/ac. minimum Rough Bluegrass @ 1500 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
50% to 59%	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
60% to 69%	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
70% to 79%	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
80% to 89%	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
90% to 99%	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							
100% and up	Blended Fiber @ 2000 lbs/ac. min. Rough Bluegrass @ 1500 lbs/ac. min. 1" Compost Blanket (CB) Biomatix Mulch ²	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK	OK OK OK OK OK							

¹Note: Manufacturers Recommended Rates for informational purposes only. Performance standard requires 100% soil coverage.

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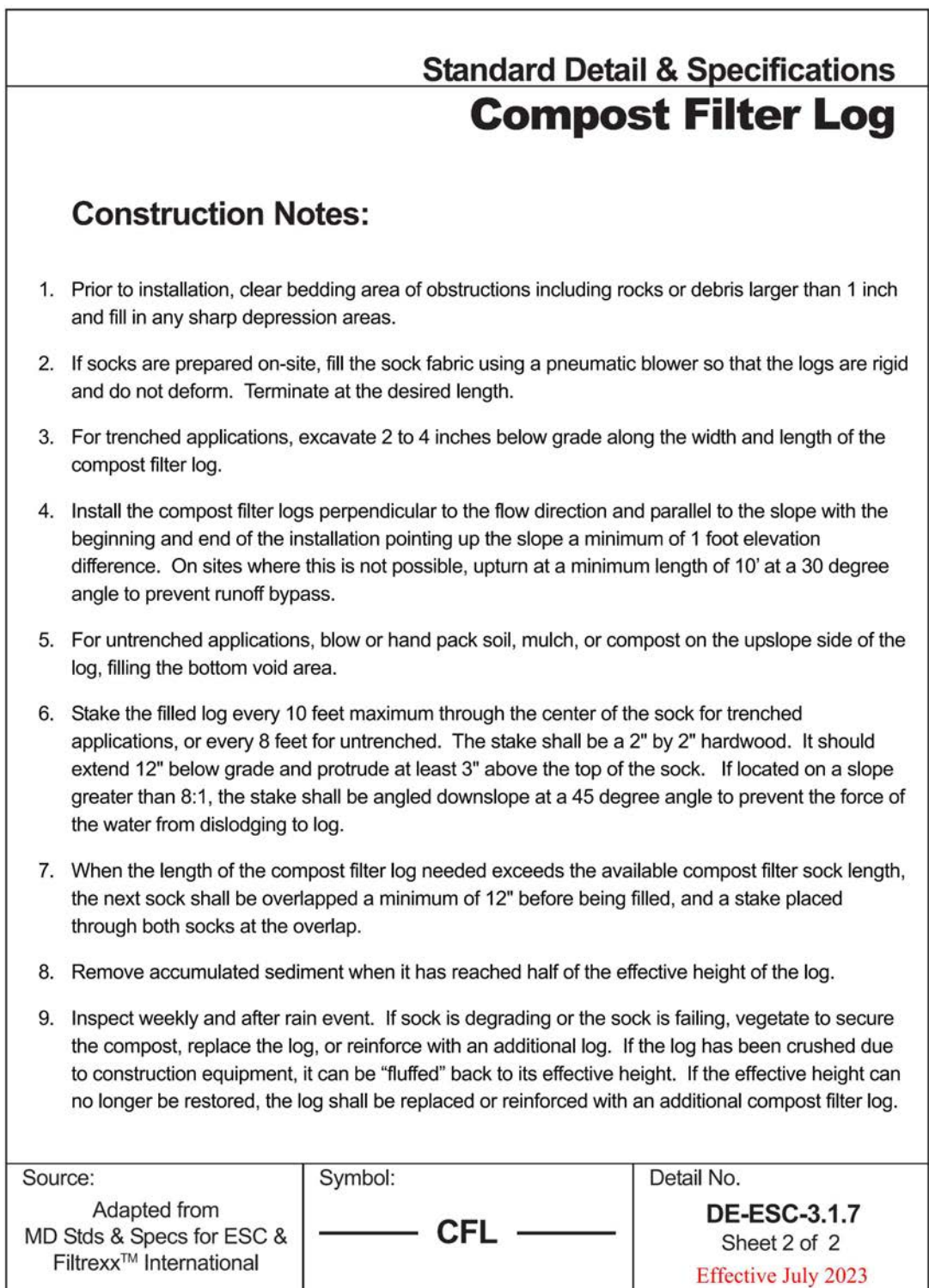
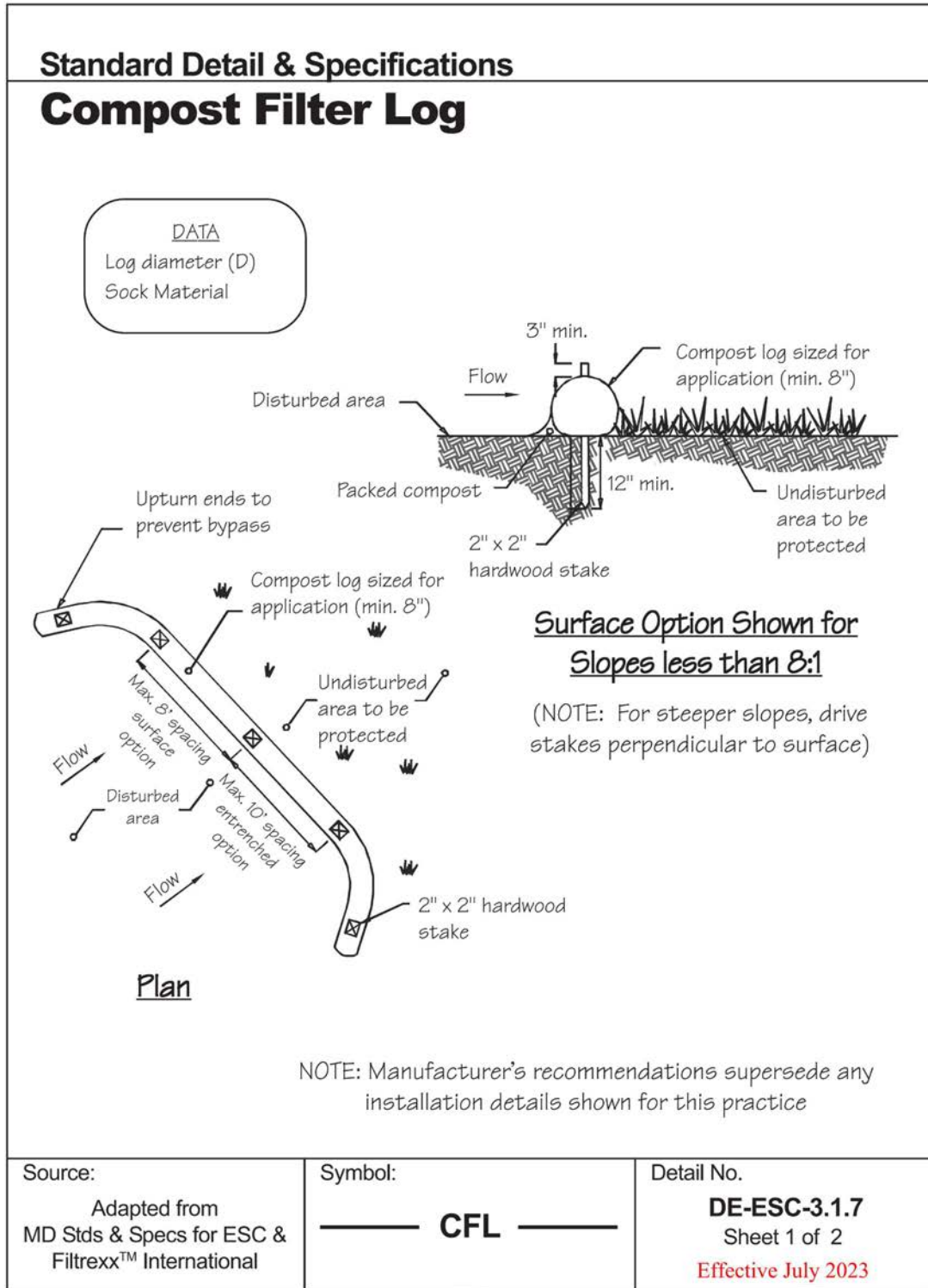
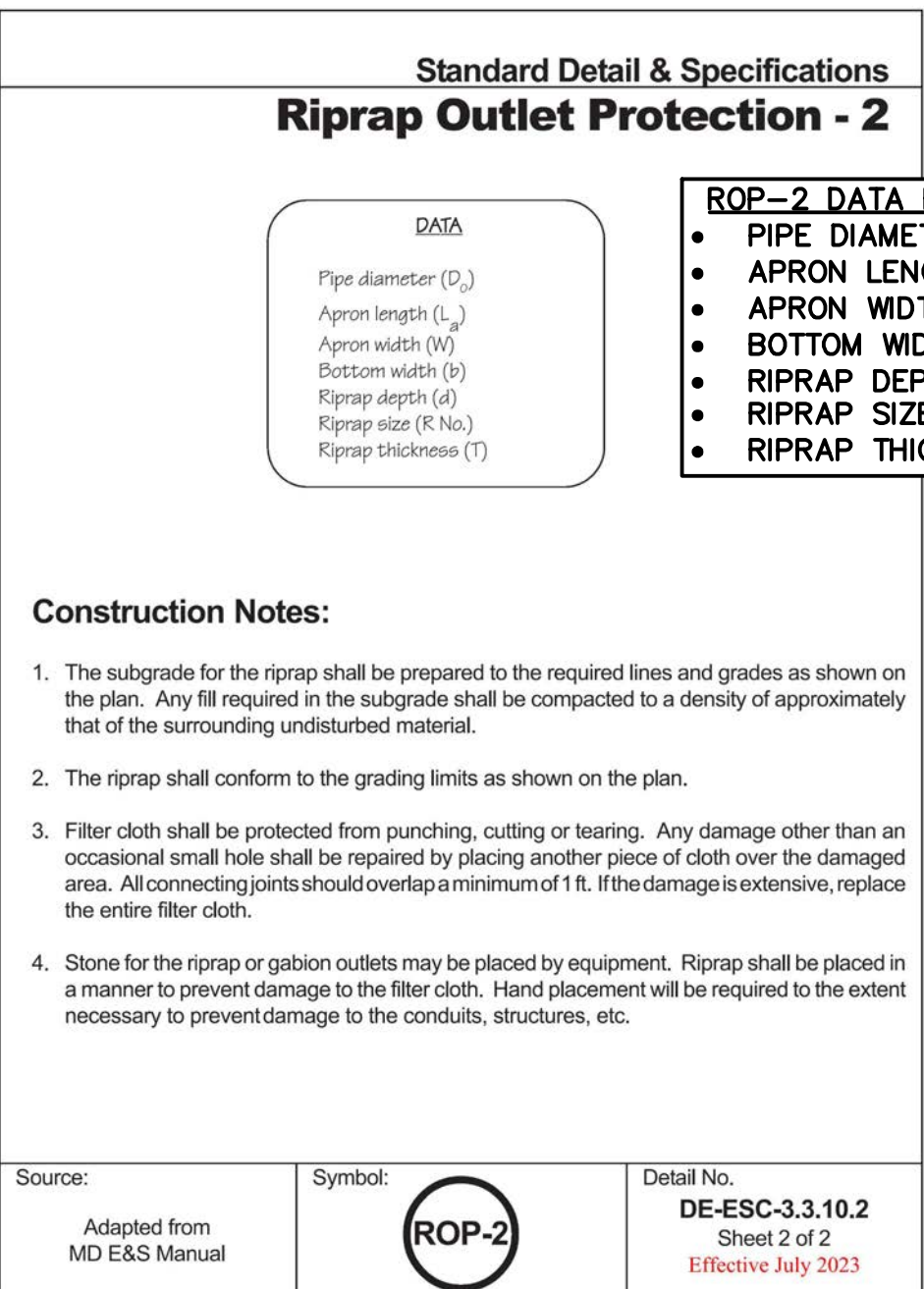
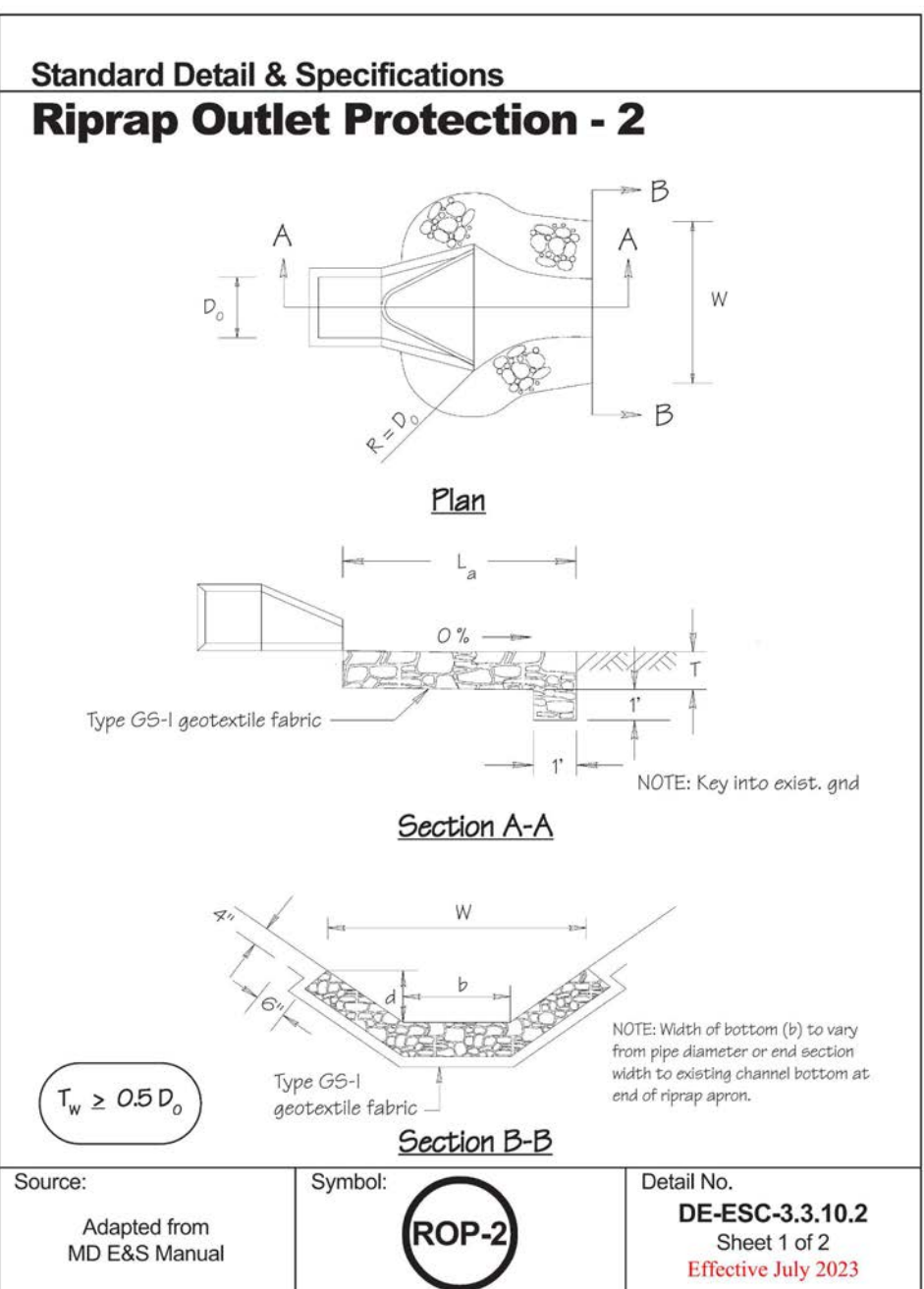
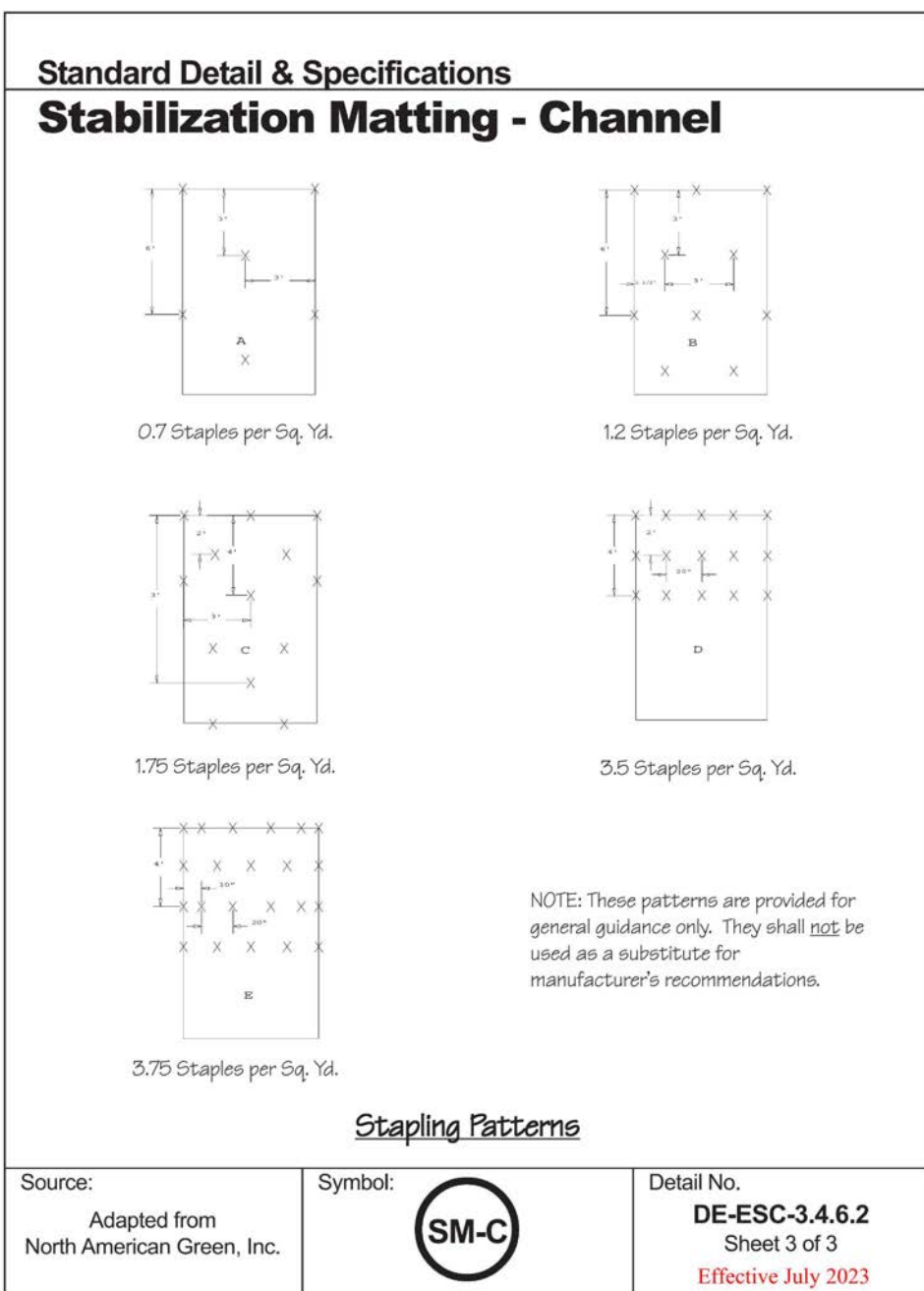
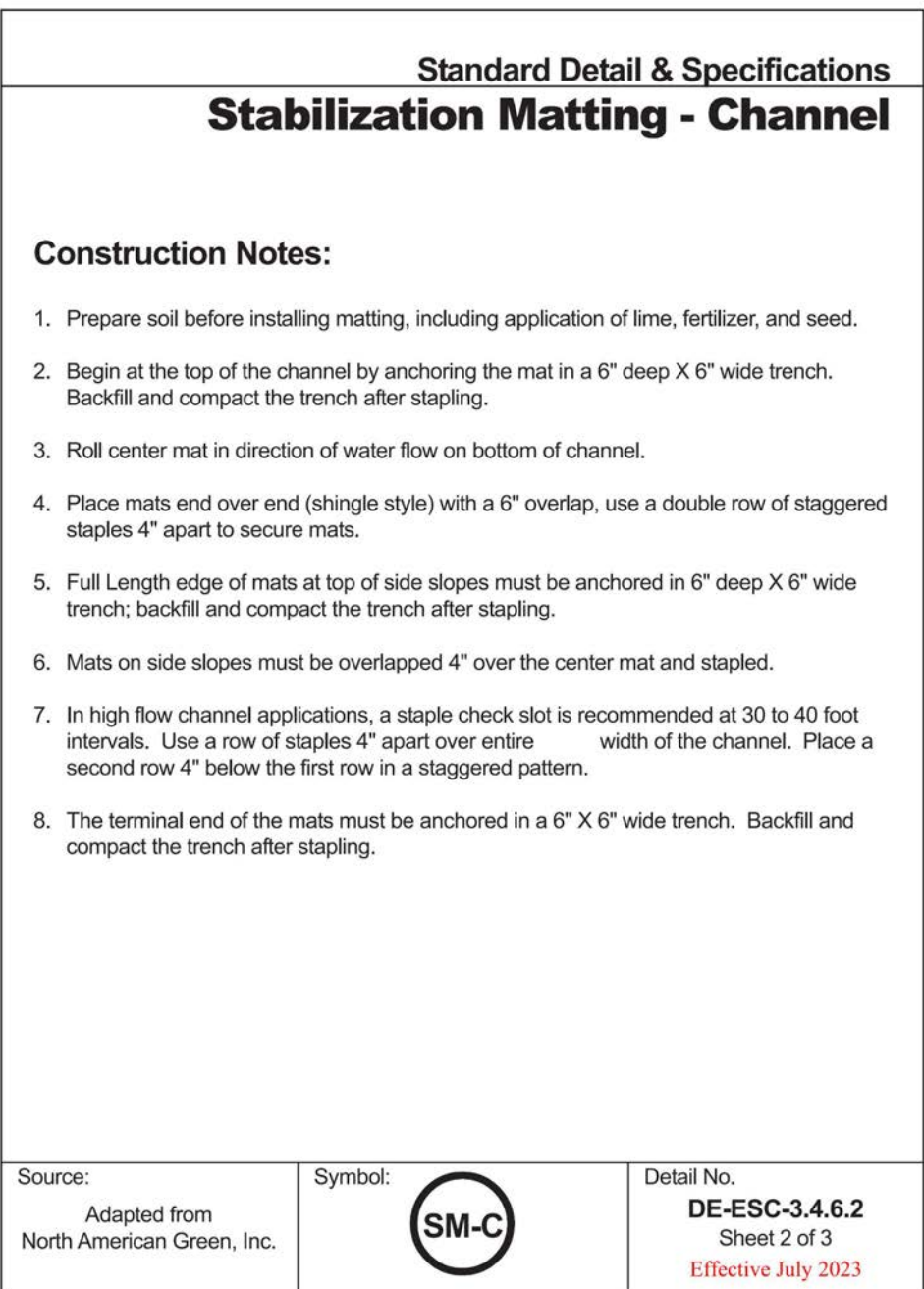
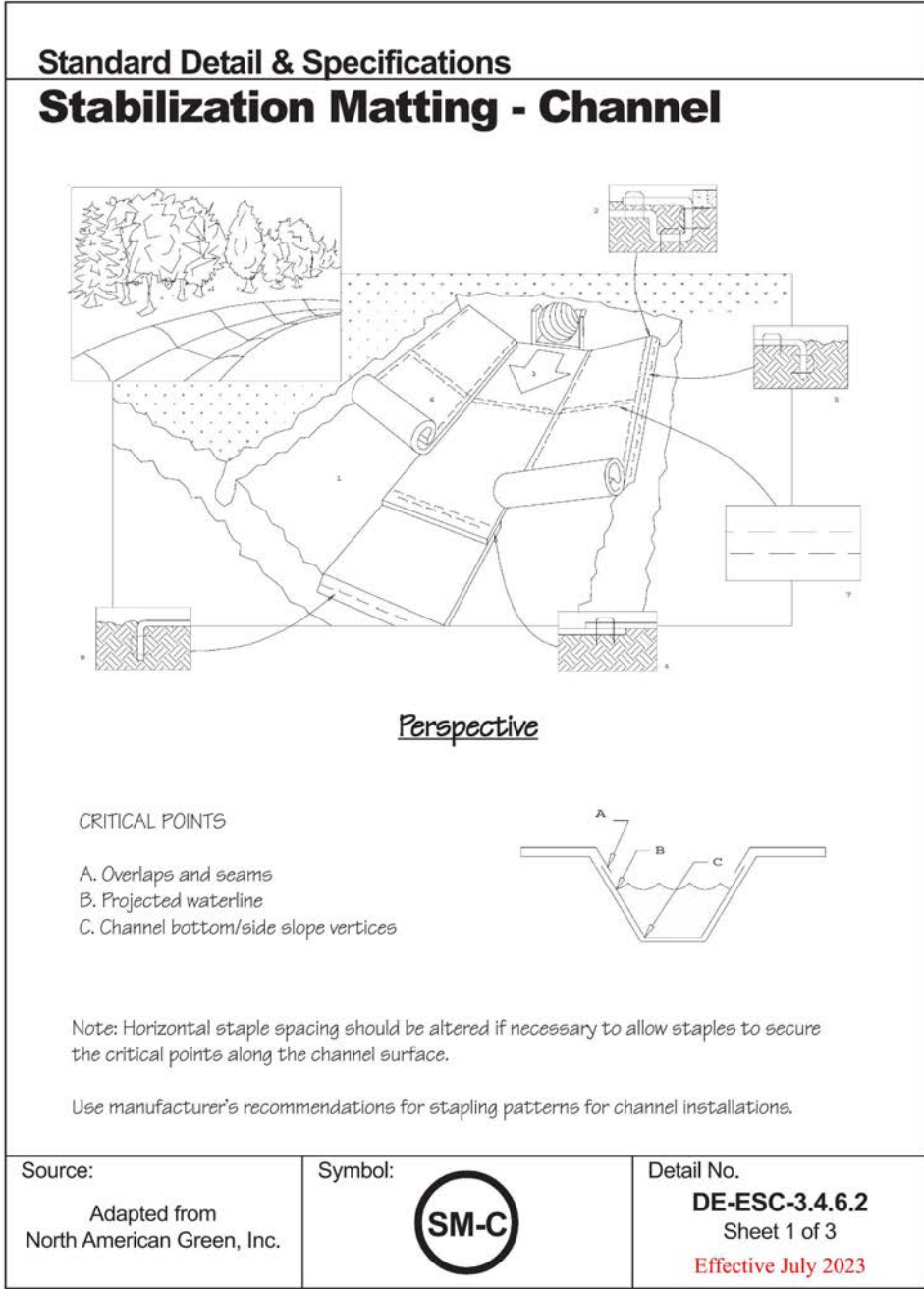
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REVISIONS		DATE	DESCRIPTION
		1-22-25	ADDITIONAL DI AT INTERSECTION
		2-06-2025	ADDITIONAL UTILITY INFO-WATER
		5-05-2025	drawing clean up
		5-06-2025	SITE VISIT
		5-06-2025	LANDOWNER COMMENTS
		12-2025	WETLAND COMMENTS
		3-2026	WETLAND COMMENTS

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SUSSEX CONSERVATION DISTRICT 23818 SHORTLY RD., GEORGETOWN, DE 19957 PHONE: (302) 686-2105 FAX: (302) 686-0951	DNREC - Division of Watershed Stewardship Drainage Program Dover Office 285 Baser Blvd., Suite 102 Dover, DE 19901
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	BAY VIEW ROAD - MAHON WATER MANAGEMENT PROJECT REHOBOTH BAY / INLAND BAY WATERSHED REHOBOTH BEACH, DELAWARE
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EROSION & SEDIMENT CONTROL DETAILS & NOTES
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Date: 4.01.2026
Designed: AR - JLE
Planned: TB - KW - JG
Drawn: JLE

Sheet No. C-703

GRADING NOTES:

1. BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUMS FOR RELATIVELY DRY, STABLE EARTH CONDITIONS. ADDITIONAL BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES AND WET AREAS. CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO PROVIDE SUCH ADDITIONAL BEDDING AS MAY BE REQUIRED TO PROPERLY CONSTRUCT THE WORK.
2. COMPACTION OF THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D698). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES IN COMPACTED FILL THICKNESS. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. MATERIAL THAT CANNOT BE COMPACTED AS REQUIRED SHALL BE BROUGHT TO THE ATTENTION OF A GEO–TECHNICAL ENGINEER, OVER EXCAVATED, AND THEN REPLACED WITH SUITABLE FILL
3. THE CONTRACTOR WILL INSURE THAT POSITIVE AND ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, REPLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR REGRADING AS REQUIRED BY THE ENGINEER, EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.
4. THE CONTRACTOR SHALL PROVIDE ANY AND ALL EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL TESTS. ALL ARRANGEMENTS AND SCHEDULING FOR THE TESTING SHALL BE THE CONTRACTOR’S RESPONSIBILITY.
5. SOILS TESTING AND ON–SITE INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT GEO–TECHNICAL ENGINEER. THE SOILS ENGINEER SHALL PROVIDE COPIES OF TEST REPORTS TO THE CONTRACTOR, THE OWNER AND THE OWNER’S REPRESENTATIVE AND SHALL PROMPTLY NOTIFY THE OWNER, HIS REPRESENTATIVE AND THE CONTRACTOR, SHOULD WORK PERFORMED BY THE CONTRACTOR FAIL TO MEET BUILDING STANDARDS.
6. CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES AROUND THE WORK AREA AND SHALL PROVIDE PROTECTION AGAINST WATER DAMAGE AND SOIL EROSION.
7. VERTICAL ELEVATIONS ARE BASED ON NAVD 88.
8. ALL SLOPES MAXIMUM 3:1 UNLESS OTHERWISE NOTED.
9. HDPE PIPE SHALL COMPLY WITH AASHTO M252, M294, MP7, AND ASTM 3350. PIPE SHALL BE INSTALLED PER ASTM D2321 AND AS RECOMMENDED BY THE MANUFACTURER. ALL HDPE SHALL HAVE SOIL TIGHT CONNECTIONS.
10. DRAINAGE INLETS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST STANDARDS OF DELDOT’S STANDARD CONSTRUCTION DETAILS UNLESS NOTED OTHERWISE ON THE PLANS.
11. ALL HDPE PIPE SHALL MEET OR EXCEED THAT AASHTO M–330 PIPE SPECIFICATION.
12. CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING OF EXCESS DIRT FROM THE SITE. THIS CAN BE COORDINATED WITH OWNER TO DETERMINE IF LONG TERM STORAGE ON SITE IS APPLICABLE.
13. CONTRACTOR IS RESPONSIBLE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING FOR ALL PROPOSED IMPROVEMENTS ALONG WITH NOT NEGATIVE IMPACTING EXISTING CONDITIONS.
14. CONTRACTOR MUST DISCUSS WITH THE DNREC, SCD, AND DESIGN ENGINEER IF FIELD ISSUES ARISE. HE IS NOT TO PROCEED UNTIL THE ISSUE HAS BEEN RECTIFIED.
15. CONTRACTOR IS RESPONSIBLE FOR PROJECT STAKE OUT.

CONSTRUCTION NOTES:

1. THE SITE SHALL BE GRADED TO THE FINAL ELEVATIONS SHOWN ON THE STORMWATER MANAGEMENT, GRADING, EROSION AND SEDIMENT CONTROL PLAN PREPARED BY SCD. THE CONTRACTOR SHALL PERFORM GRADING TO PROVIDE POSITIVE DRAINAGE AND PRECLUDE PONDING OF WATER.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEARING AND GRADING AND GRUBBING THE SITE TO LIMITS SHOWN ON THE PLANS. THIS WILL INCLUDE THE REMOVAL AND DISPOSAL OF ANY EXISTING PAVEMENT, FENCES, BUILDING DEBRIS AND TRASH ON THE SITE. DISPOSAL WILL BE OFFSITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS; AND AT THE CONTRACTOR’S EXPENSE.
3. THE CONTRACTOR SHALL EXERCISE CARE AND CONSIDERATION IN CONSTRUCTION IN THE VICINITY OF ADJACENT PROPERTY OWNERS.
4. ALL DISTURBED R.O.W./PROPERTY CORNER MONUMENTS ARE TO BE VERIFIED BY A PROFESSIONAL ENGINEER OR A REGISTERED PROFESSIONAL LAND SURVEYOR AT THE CONTRACTOR’S EXPENSE AND REPLACED/RESET IF NEEDED.
5. RIPRAP ROCK SHALL AS A MINIMUM: D50 STONE SIZE = 6”, DEPTH = 18”.
6. DUST CONTROL DURING DEMOLITION AND CONSTRUCTION – CONTRACTOR IS RESPONSIBLE FOR WETTING DUST GENERATING DEBRIS FROM TIME OF FIRST CONTACT UNTIL PLACING INTO APPROPRIATE WASTE OR HAULING CONTAINERS OR TRUCKS. DEBRIS SHALL NOT BE ALLOWED TO DRY BEFORE REMOVED FROM SITE. REFER TO DETAIL DE–ESC 3.4.8 SHEET CS8502 FOR ADDITIONAL INFORMATION. THIS PRACTICE SHALL ALSO BE FOLLOWED FOR ANY BARE SOIL LEFT EXPOSED PRIOR TO PROPER VEGETATION OCCURS.
7. ALL MATERIALS AND WORKMANSHIP WITHIN THE STATE OF DELAWARE RIGHT–OF–WAY SHALL BE IN ACCORDANCE WITH CURRENT STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SUPPLEMENTAL SPECIFICATIONS, STANDARD CONSTRUCTION DETAILS, SPECIAL PROVISIONS, PAS MANUAL AND DESIGN GUIDANCE MEMORANDUMS.
8. ALL NYLOPLAST BASINS AND INLINE DRAIN BASINS INSTALLED W/IN THE DeIDOT RIGHT–A–WAY SHALL BE INSTALL PER THE NYLOPLAST H–20 TRAFFIC LOADING INSTALLATION DETAIL W/ CONC. COLLAR.
9. ALL DRIVEWAYS SHALL BE REPLACED AND OR REPAIRED IN KIND. COORDINATE WITH OWNER TO MAINTAIN ACCESS TO RESPECTIVE PROPERTIES.
10. ALL MAILBOXES SHALL BE REPLACED AND OR REPAIRED IN KIND. COORDINATE WITH OWNER TO MAINTAIN MAIL SERVICE DURING CONSTRUCTION.
11. ELEVATIONS ARE BASED ON NAVD 88, AND DE STATE PLANE COORDINATE SYSTEM NAD 83 HORIZONTAL DATUM.
12. UNLESS SPECIFICALLY STATED OR SHOWN HEREON TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:

12.1. RIGHTS OR INTEREST OF THE UNITED STATES OF AMERICA OR STATE OF DELAWARE OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER, BUT NO LONGER VISIBLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MARINE OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OR ANY FEDERAL, STATE, OR LOCAL AGENCY.

12.2. BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.

12.3. ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING, BUT NOT LIMITED TO MINERAL OR MINING RIGHTS, OR THE LOCATION OF OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN–MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
13. UTILITY NOTES:

13.1. THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE. LOCATIONS OF UTILITIES AS SHOWN AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.

13.2. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.

13.3. 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..

13.4. THE CONTRACTORS SHALL TEST PIT TO VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.

13.5. IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
14. STATE WETLAND FLAG SHOWN WAS PER DNREC DRAINAGE SECTION DELINEATION.
- REFERENCE:

15. EXISTING CONDITIONS SURVEY PERFORMED BY **DNREC**.
16. THE PARCEL BOUNDARY LINES ARE FROM BEST AVAILABLE GIS DATA.

EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION:

1. NOTIFY THE DNREC DRAINAGE PROGRAM 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. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES, OR GRADING, A PRE–CONSTRUCTION MEETING MUST BE CONDUCTED WITH THE CONSTRUCTION SITE REVIEWER. THE LANDOWNER, CONTRACTOR AND CERTIFIED CONSTRUCTION REVIEWER ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE–CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE(S) AS INDICATED ON THE PLAN, FOLLOWED BY THE PERIMETER CONTROLS (I.E., BERMS, SILT FENCE, COMPOST LOGS) AND INLET PROTECTION ON ANY EXISTING INLETS. MARK THE LIMITS OF SENSITIVE AREAS, SUCH AS PRESERVED TREES, INFILTRATION AREAS, AND OTHER SECTIONS THAT ARE NOT TO BE DISTURBED WITH A PHYSICAL BARRIER. ONLY CLEAR WOODS THAT ARE NEEDED TO INSTALL THE PERIMETER CONTROLS.
4. SCHEDULE A PERIMETER CONTROL REVIEW WITH THE DNREC CONSTRUCTION SITE REVIEWER.
5. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE DNREC CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
6. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT 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 SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST, REPAIR OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE DNREC CONSTRUCTION SITE REVIEWER.
7. CLEAR AND GRUB THE CONSTRUCTION PROJECT LOD AREA AFTER COORDINATING WITH DNREC AND LANDOWNERS.
8. STOCKPILE TOPSOIL AND EXCAVATED SUBSOILS. STOCKPILES SHOULD BE SURROUNDED WITH A PERIMETER CONTROL, LOCATED ON LAND WITH SLIGHT TO NO SLOPE, AND STABILIZED ONCE INACTIVE.
9. CONSTRUCT THE STORMWATER CONVEYANCE SYSTEM, STARTING AT THE LOWEST ELEVATION WITHIN THE NETWORK AND WORKING UPWARDS. INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PROTECTION AS SHOWN ON PLAN.
10. DIP OUT EXISTING DITCH TO THE GRADES SHOWN.
11. INSTALL THE PROPOSED STORM DRAIN SYSTEM STARTING FROM PO–1 TO DI–3. INSTALL WITH APPROPRIATE BEDDING PER DELDOT STANDARD D–8.
12. SAW CUT BAY VIEW RD. PER DELDOT STANDARDS AND REMOVE AND REPLACE EXISTING CMP WITH PIPE PER THE PROFILE.
13. INSTALL PIPE P3 AND DI–4 PER THE PLAN.
14. INSTALL PIPE P4 AND DI–5 PER THE PLAN.
15. PROVIDE A ROAD PATCH PER DELDOT STANDARD P–4.
16. FINAL GRADE ALL DITCHES AND DISTURBED AREAS AND APPLY PERMANENT SEEDING AND STABILIZATION AS SOON AS FINAL GRADE IS ACHIEVED.
17. THE EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE DNREC CONSTRUCTION SITE REVIEWER. COORDINATE THE INSPECTION, AND AFTER THE WRITTEN APPROVAL, REMOVE THE REMAINING CONSTRUCTION SITE CONTROLS.
18. TERMINATE COVERAGE OF THE CONSTRUCTION GENERAL PERMIT, WHICH REQUIRES 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, ACCEPTANCE OF THE FINAL OPERATION AND MAINTENANCE PLAN, AND SUBMITTAL OF THE NOTICE OF TERMINATION.

EROSION AND SEDIMENT CONTROL GENERAL 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 RE–DISTURBANCE, 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, OR IF A MORE RESTRICTIVE REQUIREMENT’S NOTED ON THE PLANS.
3. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
4. 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.
5. APPROVED PLANS REMAIN VALID FOR 5 YEARS FROM THE DATE OF APPROVAL.
6. THE NOTICE OF INTENT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NPDES GENERAL PERMIT FOR THIS PROJECT IS #_____ . AT ANY TIME THE OWNERSHIP FOR THIS PROJECT CHANGES, A TRANSFER OF AUTHORIZATION OR A CO–PERMITTEE APPLICATION MUST BE SUBMITTED TO DNREC. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY DNREC. [OR] A NOTICE OF INTENT IS NOT REQUIRED FOR THIS PROJECT SINCE DISTURBANCE IS LESS THAN 1 ACRE.
7. THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT ASSOCIATED WITH THE PROJECT, INCLUDING, BUT NOT LIMITED TO, PERFORMING WEEKLY SITE INSPECTIONS DURING CONSTRUCTION AND AFTER RAIN EVENTS, AND MAINTAINING WRITTEN LOGS OF THESE INSPECTIONS.
8. 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 AND/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 SITE REVIEWER.
9. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL C. CH 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.
10. 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 AND THE STANDARDS AND SPECIFICATIONS OF THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE DEPARTMENT OF THE DELEGATED AGENCY SHALL HAVE THE DISCRETION TO REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATION PROVIDED WITHIN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

REVISIONS

DATE	DESCRIPTION
1-22-25	ADDITIONAL DI AT INTERSECTION
2-06-2025	ADDITIONAL UTILITY INFO-WATER
5-05-2025	dredging clean up
5-06-2025	SITE VISIT
5-06-2025	LANDOWNER COMMENTS
12-2025	WETLAND COMMENTS
3-2026	WETLAND COMMENTS



SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD., GEORGETOWN, DE 19557
PHONE: (302)856-2105 FAX: (302)856-0951

SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD., GEORGETOWN, DE 19557
PHONE: (302)856-2105 FAX: (302)856-0951

DNREC - Division of Watershed Stewardship
Drainage Program
Dover Office
21109 Berlin Rd. Unit 6 Phone: (302) 855-1930
285 Besser Blvd., Suite 102 Phone: (302) 739-9921
Dover DE, 19901 Fax: (302) 739-6724



BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

EROSION & SEDIMENT CONTROL
DETAILS & NOTES

Date:	4.01.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

Sheet No. **C-704**

Notes for Figure 6H-10—Typical Application 10
Lane Closure on a Two-Lane Road Using Flaggers
(Delaware Revision)

Option:

- 1. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).
- 2. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short-duration operations.
- 3. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

- 4. The buffer space should be extended so that the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.

Standard:

- 5. At night, flagger stations shall be illuminated, except in emergencies.

Guidance:

- 6. When used, the BE PREPARED TO STOP sign should be located between the Flagger symbol (or FLAGGER AHEAD) sign and the ONE LANE ROAD sign.
- 7. Where drivers emerging from an intersecting roadway will not encounter an advance warning sign prior to the work zone, additional signs should be placed on the intersecting road.
- 8. When a grade crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the grade crossing, the TTC zone should be extended so that the transition area precedes the grade crossing (see Figure 6H-46).
- 9. When a grade crossing equipped with active warning devices exists within the activity area, provisions should be made for keeping flaggers informed as to the activation status of these warning devices (see Figure 6H-46).
- 10. When a grade crossing exists within the activity area, drivers operating on the left-hand side of the normal center line should be provided with comparable warning devices as for drivers operating on the right-hand side of the normal center line (see Figure 6H-46).
- 11. Early coordination with the railroad company or light rail transit agency should occur before work starts (see Figure 6H-46).

Option:

- 12. A flagger or a uniformed law enforcement officer may be used at the upstream side of the grade crossing to minimize the probability that vehicles are stopped within 50 feet of the grade crossing, measured from both sides of the outside rails (see Figure 6H-46).

Standard:

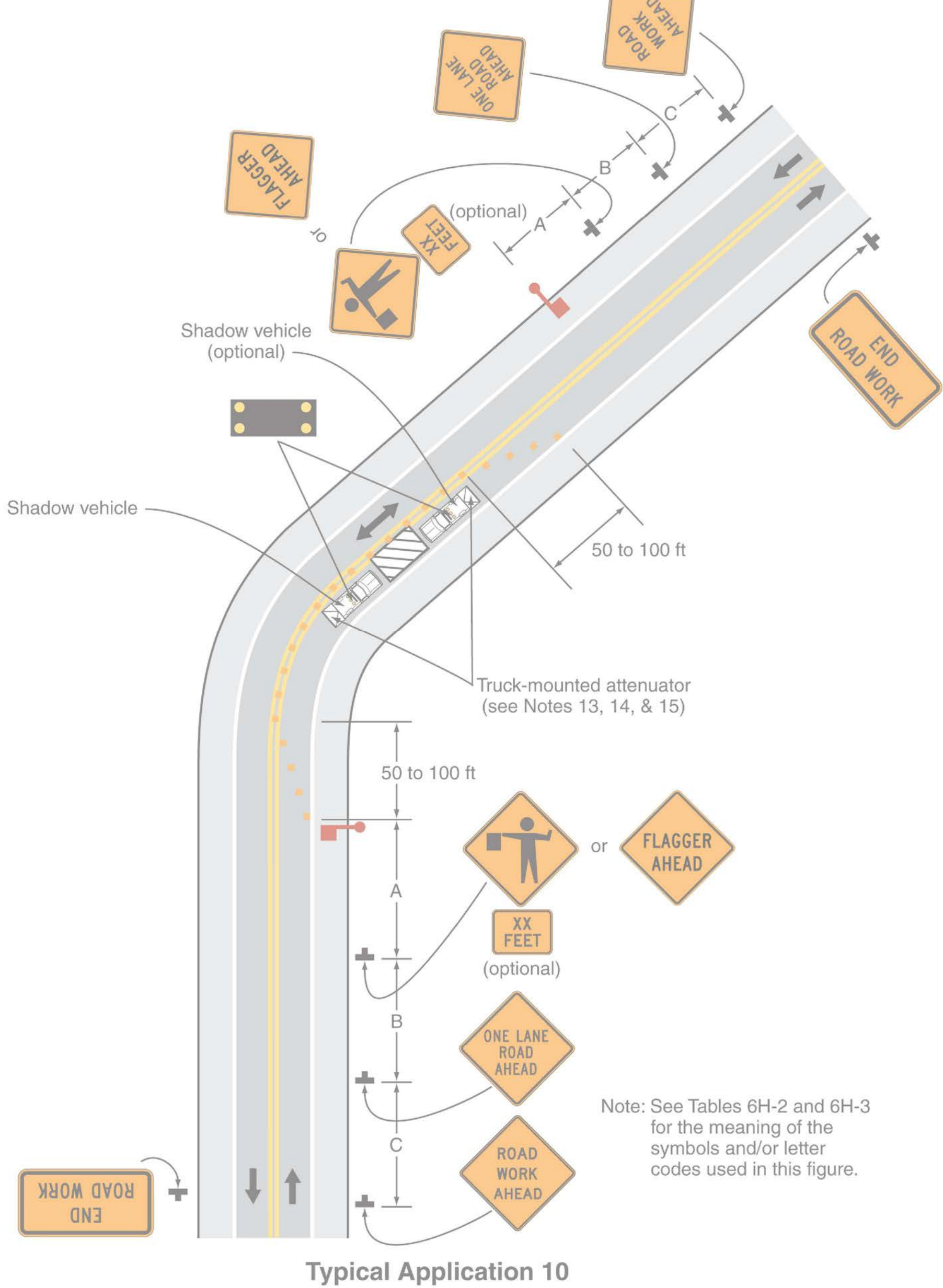
- 13. For long-term, intermediate-term, and short-term operations, a truck-mounted attenuator shall be used on roadways with a posted speed limit or 85th-percentile speed greater than 40 mph.

Option:

- 14. For short duration operations along roadways with a posted speed limit or 85th-percentile speed greater than 40 mph, a truck-mounted attenuator may be omitted if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
- 15. Truck-mounted attenuators may be used for all operations along roadways with a posted speed limit or 85th-percentile speed less than or equal to 40 mph.

Revision 3, May 2018

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)
(Delaware Revision)



Revision 3, May 2018

REVISIONS	
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SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD, GEORGETOWN, DE 19957
PHONE (302) 856-2016 FAX (302) 856-0951

DNREC - Division of Watershed Stewardship
Drainage Program

Georgetown Office
21309 Berlin Rd, Unit 6 Phone (302) 855-1930
Dover DE 19901 Fax (302) 857-7159

DELAWARE DEPARTMENT OF NATURAL RESOURCES

BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

DELDOT MOT PLAN

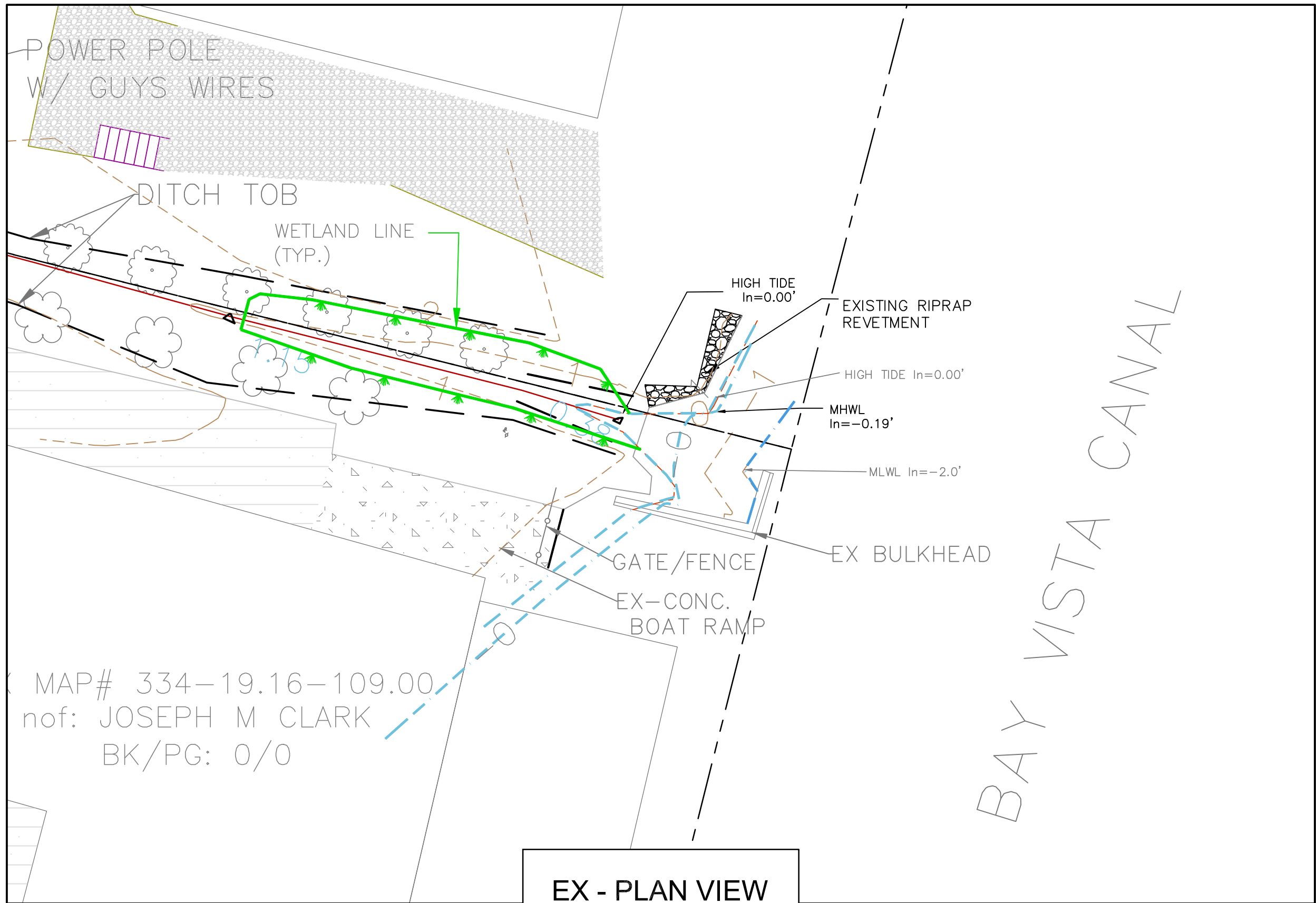
Date: 4.01.2026

Designed: AR - JLE

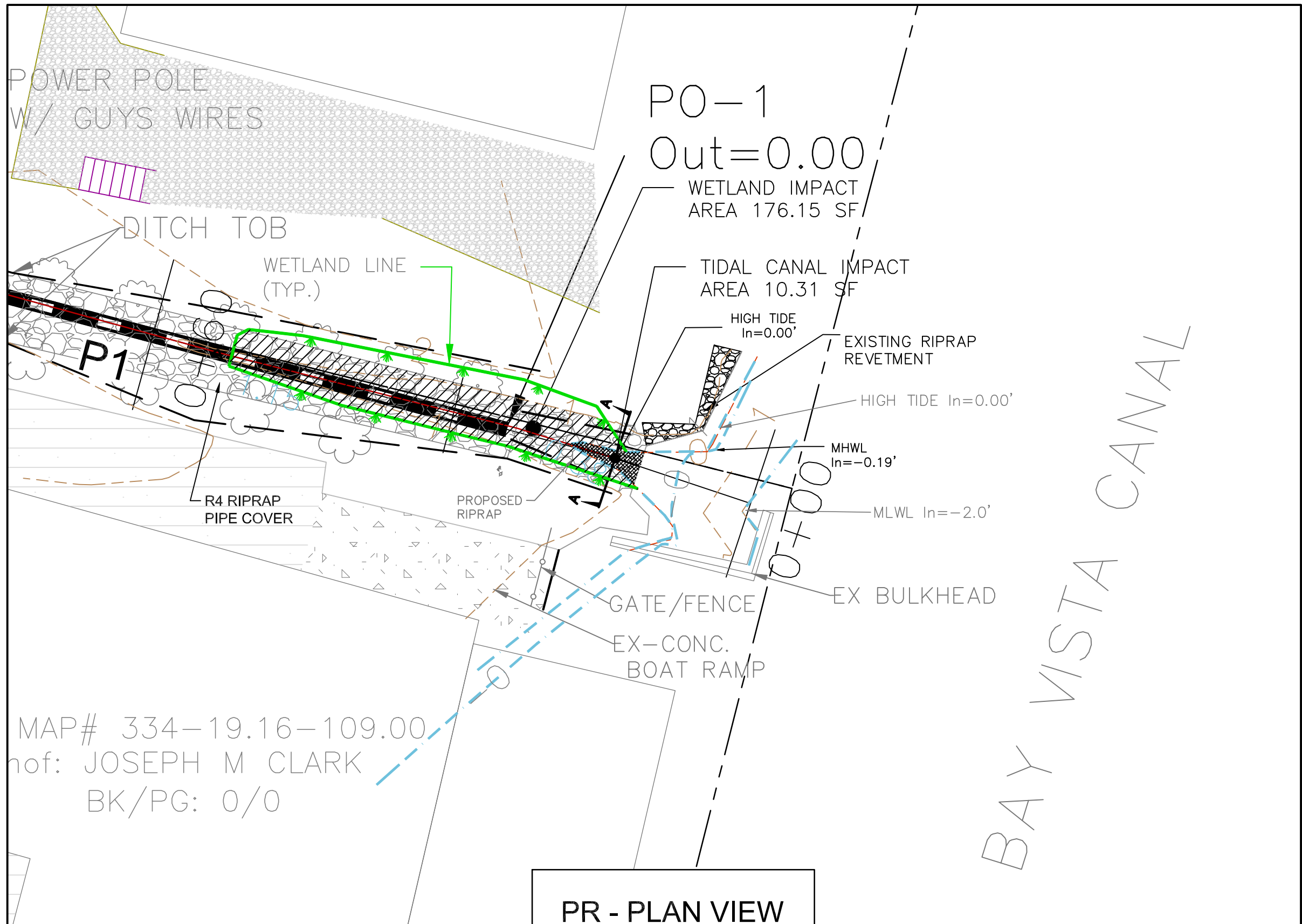
Planned: TB - KW - JG

Drawn: JLE

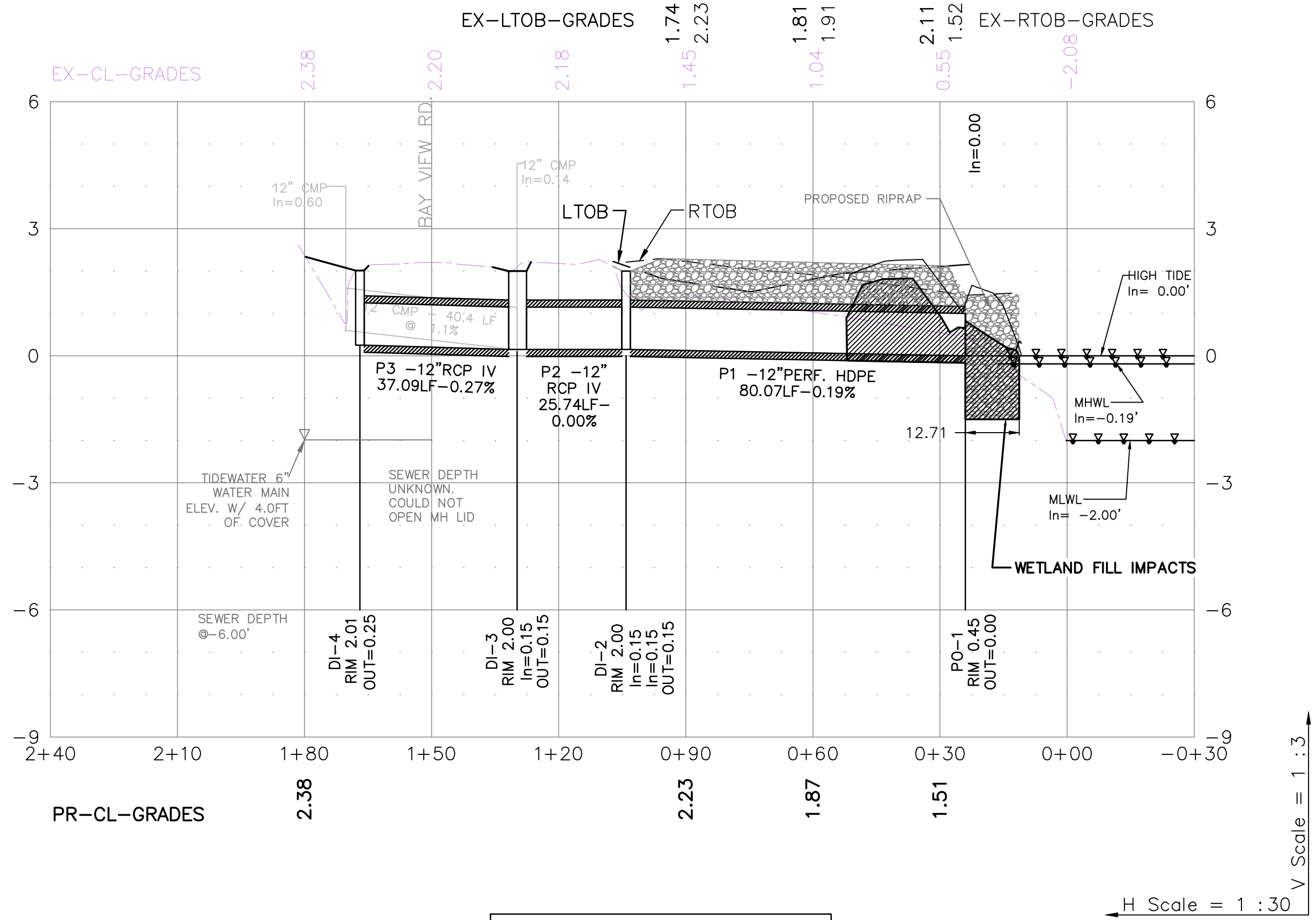
Sheet No. **C-800**



EX - PLAN VIEW
SCALE: 1" = 10'



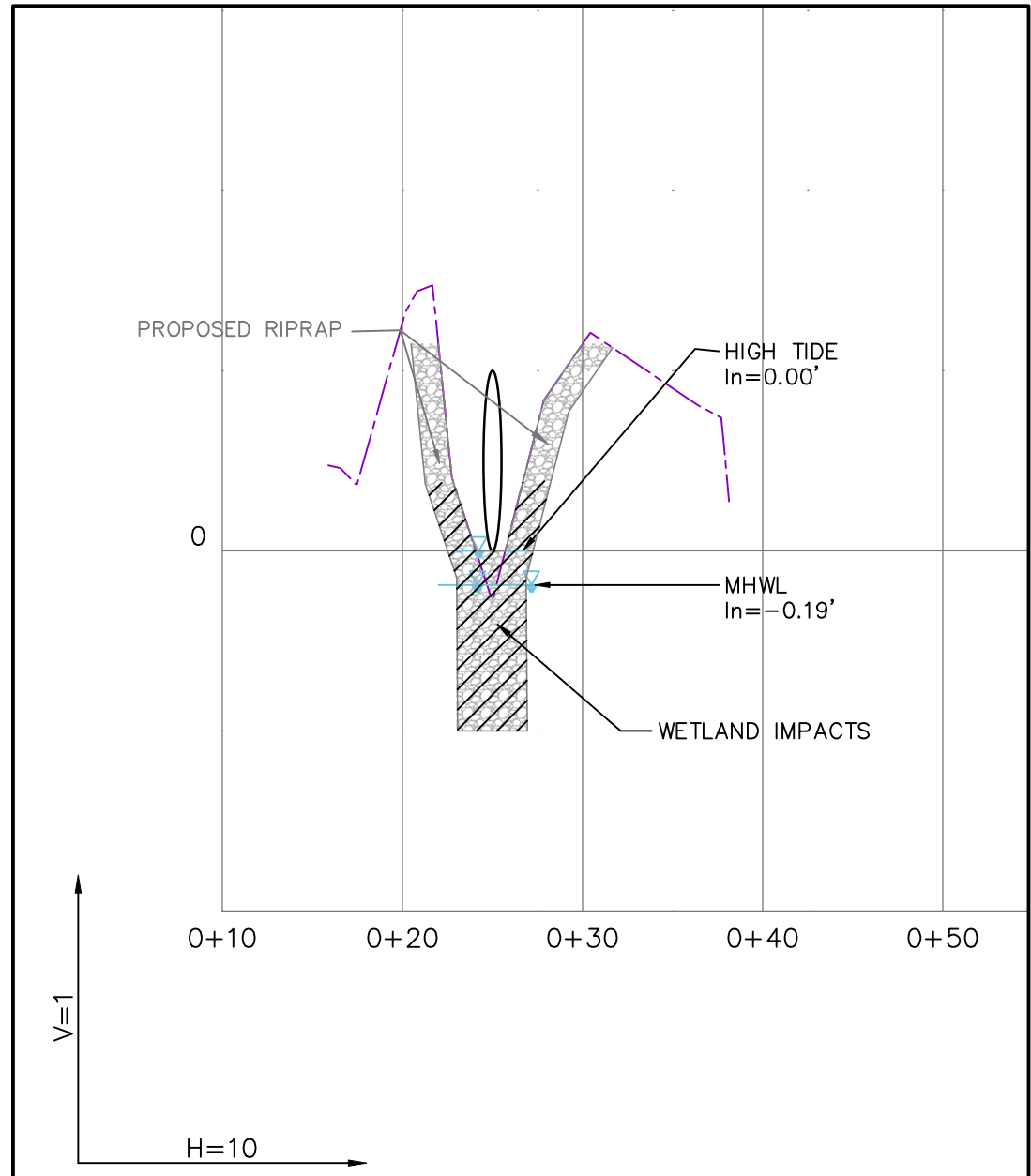
PR - PLAN VIEW
SCALE: 1" = 10'



SD DI-4 TO PO-1
PROFILE VIEW
SCALE: 1" = 30'

CONSTRUCTION NOTES:

1. COORDINATE WITH DNREC AND LANDOWNERS PRIOR TO CLEARING AND GRUBBING PROJECT LOD AREA.
2. COORDINATE WITH DNREC AND LANDOWNERS FOR STAGING AND STOCKPILE AREAS
3. REMOVE AND REPLACE EXISTING 12" CMP PIPE WITH PIPE SHOWN IN PROFILE.
4. ALL SPOILS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN AN APPROVED MANNER.
5. ROAD PATCH SHALL BE IN ACCORDANCE WITH DELDOT STANDARD P-4.
6. PIPE BEDDING SHALL BE IN ACCORDANCE WITH DELDOT STANDARD D-8.
7. ALL CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DELDOT STANDARD D-4 & D-5.
8. CBs DI-2 AND DI-4 SHALL BE 24X24 DRAINAGE INLET WITH A TYPE 6 FRAME & GRATE COMBO.
9. DI-3 SHALL BE A PWBD-1 DRAINAGE INLET OR 34X18 TYPE B DRAINAGE INLET.
10. ANY PROPERTY CORNER MONUMENTS THAT BECOME DISTURBED SHALL BE VERIFIED AND OR RESET BY A DE PROFESSIONAL LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
11. COORDINATE WITH DNREC AND LANDOWNERS FOR THE REMOVAL OF LANDSCAPE VEGETATION.
12. INSTALL P1 PER PROFILE AND DETAIL VIEW ON C-501.
13. ROP2 SHALL EXTEND TO LIMITS OF REVETMENT.
14. INSTALL CONCRETE APRONS ON DI-4, DI-2, AND DI-5. APRON DETAIL ON C-501.



SECTION VIEW A-A
SCALE: 1" = 10'

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SUSSEX CONSERVATION DISTRICT
23818 SHORTLY RD, GEORGETOWN, DE 19957
PHONE: (302) 856-2105 FAX: (302) 856-0951

DNREC - Division of Watershed Stewardship
Drainage Program
Georgetown Office
21309 Berlin Rd. Unit 6 Phone: (302) 855-1930
Georgetown DE 19947 Fax: (302) 877-7059

Dover Office
285 Baister Blvd., Suite 102 Phone: (302) 739-9921
Dover DE 19901 Fax: (302) 739-6724



BAY VIEW ROAD - MAHON
WATER MANAGEMENT PROJECT
REHOBOTH BAY / INLAND BAY WATERSHED
REHOBOTH BEACH, DELAWARE

WETLAND EXHIBIT

Date: 4.01.2026
Designed: AR - JLE
Planned: TB - KW - JG
Drawn: JLE

Sheet No. WTL-1

