

# **WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM**

**For Subaqueous Lands, Wetlands, Marina and  
401 Water Quality Certification Projects**

**State of Delaware  
Department of Natural Resources and Environmental Control  
Division of Water**

**Wetlands and Subaqueous Lands Section**



**APPLICATION FOR APPROVAL OF  
SUBAQUEOUS LANDS, WETLANDS, MARINA  
AND WATER QUALITY CERTIFICATION PROJECTS**

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY****Application Instructions:**

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.
2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.
3. All applications must have an original signature page and proof of ownership or permitted land use agreement.
4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee\* (prepared in separate checks) to:

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

\*Application and public notice fees are non-refundable regardless of the Permit decision or application status.

5. No construction may begin at the project site before written approval has been received from this office.

**Helpful Information:**

1. Tax Parcel Information:
 

New Castle County	(302) 395-5400
Kent County	(302) 736-2010
Sussex County	(302) 855-7878
2. Recorder of Deeds:
 

New Castle County	(302) 571-7550
Kent County	(302) 744-2314
Sussex County	(302) 855-7785
3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: <http://www.nap.usace.army.mil/Missions/Regulatory.aspx>.
4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

## 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<br>(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: Charles Baird Telephone #: 3028551948  
 Mailing Address: 210309 berlin road Unit 6 Fax #: \_\_\_\_\_  
georgetown, De 19947 E-mail: charles.baird@delaware.gov
2. Consultant's Name: Michael Case Company Name: DNREC Drainage Program  
 Mailing Address: 210309 berlin road 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: 23818 Shortly Rd, Georgetown, DE 19947 Telephone #: 3028562105  
 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):  
 this project will address the erosion occurring in the tax ditch channel at the road crossing where it is beginning to fail. this project will also allow the drainage ditch to function properly.

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

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

**Section 3: Project Location**

7. Project Site Address: woodenhawk road and Shirleys Road County:  N.C.  Kent  Sussex  
 Site owner name (if different from applicant): \_\_\_\_\_  
 Address of site owner: 4927 WOODENHAWK RD  
Greenwood, DE
8. Driving Directions: Start from 89 Kings Highway, Dover, DE. Head south on Kings Highway (DE-9) toward Forrest Avenue / DE-8. Turn right onto Forrest Avenue / DE-8 W. Continue on DE-8 W for a few miles, heading toward Camden.merge onto US-13 S toward Seaford.Take the exit / turn toward DE-36 W  
 (Attach a vicinity map identifying road names and the project location) Turn onto Woodenhawk Road.
9. Tax Parcel ID Number: 530-11-00-8.05 Subdivision Name: n/a  
~~530-8-00-32-00~~

<b>WSLS Use Only:</b>		<b>Permit #s:</b> _____							
Type	SP <input type="checkbox"/>	SL <input type="checkbox"/>	SU <input type="checkbox"/>	WE <input type="checkbox"/>	WQ <input type="checkbox"/>	LA <input type="checkbox"/>	SA <input type="checkbox"/>	MP <input type="checkbox"/>	WA <input type="checkbox"/>
<b>Corps Permit:</b> SPGP 18 <input type="checkbox"/> 20 <input type="checkbox"/>		<b>Nationwide Permit #:</b> _____		<b>Individual Permit #</b> _____					
<b>Received Date:</b> _____		<b>Project Scientist:</b> _____							
<b>Fee Received?</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>Amt: \$</b> _____		<b>Receipt #:</b> _____					
<b>Public Notice #:</b> _____		<b>Public Notice Dates:</b> ON _____ OFF _____							

**Section 3: Project Location (Continued)**

10. Name of waterbody at Project Location: Stafford Tax Ditch waterbody is a tributary to: Marshyhope

11. Is the waterbody:  Tidal  Non-tidal Waterbody width at mean low or ordinary high water 9 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):

~~DUNCAN JANE MARIE-4927 WOODENHAWK RD, GREENWOOD, DE~~

road, Greenwood, DE

Hale, Andrew TTEE REV TR - 3619 woodenhawk

~~CORDREY ROBERT LEE TTEE-12788 BLANCHARD RD, GREENWOOD, DE~~

Rigby John BTI - 19 E. Eighth St, Blades, DE

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:

Michael YOST- ACOE

Drainage program Team

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: bank stabilization NWP 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

I, Charles Baird, hereby designate and authorize Michael Case  
 (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.

Authorized Agent's Name: Michael Case Telephone #: 3028551939  
 Mailing Address: 210309 Berlin road Unit 6 Fax #: \_\_\_\_\_  
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.

  
 Agent's Signature

9/22/2025  
 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

9/22/2025  
 Date

Charles Jesse 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

9/22/25  
 Date

STEPHEN GUSY  
 Print Name

### Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:

- New Construction (un-stabilized shoreline)  
 Repair or Replacement of an Existing Rip-Rap Structure or Rubble  
 Repair or Replacement of an Existing Bulkhead  
 (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 191

3. Is the project a:  Standard rip-rap revetment  Free-standing sill

4. Describe the existing shoreline:

standard Tax ditch channel with erosion occurring at the road crossing of woodenhawk road.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. What is the total number of cubic yards of rip-rap that will be used? 155.4 CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.981 CY/LF  
 (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:

Armor stone: 20 lbs Core stone: \_\_\_\_\_

[If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]

Describe:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)

A. How many linear feet will the structure extend channelward of:

Mean High Water: \_\_\_\_\_ Mean Low Water: \_\_\_\_\_

Ordinary High Water: 191 (for non-tidal waters)

B. How many square feet of the structure will be located:

Channelward of Mean High Water: \_\_\_\_\_ Channelward of Mean Low Water: \_\_\_\_\_

Channelward of Ordinary High Water: 26136 (for non-tidal waters)

On vegetated wetlands: \_\_\_\_\_

C. Will the revetment be backfilled?  Yes  No

If yes, complete Appendix H and include it in your application.

D. Will filter cloth be used behind the rip-rap structure?  Yes  NoE. What is the average slope of the existing bank? 2:1F. What is the proposed slope of the rip-rap revetment? 2:1

(See page 3 for a guide to calculating slopes).

## 9. Sill Projects:

A. What is the base width of the proposed structure: \_\_\_\_\_

B. What is the top width of the proposed structure: \_\_\_\_\_

C. How many square feet of the structure will be located:

Channelward of Mean High Water: \_\_\_\_\_ Channelward of Mean Low Water: \_\_\_\_\_

Channelward of Ordinary High Water: \_\_\_\_\_ (for non-tidal waters)

On vegetated wetlands: \_\_\_\_\_

D. What will be the average height of the structure: \_\_\_\_\_

E. How much of the structure (in inches) will extend vertically above:

Mean High Water: \_\_\_\_\_ Ordinary High Water: \_\_\_\_\_ (for non-tidal waters)

F. Are breaks or notches proposed in the sill to allow for greater flushing?  Yes  NoG. Will fill material be placed behind the sill?  Yes  No If yes, complete appropriate appendix.H. Will wetland vegetation be planted behind the sill?  Yes  No

If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? \_\_\_ Yes  X  No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

See design plan- erosion control

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CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

$$0.5 * RUN * RISE * \text{Linear feet of shoreline stabilized}/27 = \text{Total Cubic Yards}$$

II. How to calculate cubic yards per running foot of shoreline:

$$\text{Total \# Cubic Yards}/ \text{Linear feet of shoreline} = \text{Cubic yards per running foot}$$

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

$$0.5 * 6 * 3 * 100/27 = 33.33 \text{ Total Cubic Yards}$$

$$\text{II. } 33.33/ 100= 0.333 \text{ Cubic Yards per running foot}$$

$$\text{III. } 6/3= \text{Slope of 2}$$

TAX MAP AND PARCEL #:  
530-11.00-8.05  
PREPARED BY & RETURN TO:  
Baird Mandalas Brockstedt LLC  
1413 Savannah Road, Suite 1  
Lewes, Delaware 19958  
File No. RE22-0728/RD

**NO NEW TITLE SEARCH OR SURVEY REQUESTED OR PERFORMED**

**THIS DEED**, made this 20th day of June, 2022,

- BETWEEN -

ANDREW HALE and BONNIE E. HALE A/K/A BONNIE L. HALE, of 3619  
Woodenhawk Road, Greenwood, DE 19950, parties of the first part,

- AND -

ANDREW HALE, TRUSTEE OF THE ANDREW HALE REVOCABLE TRUST  
DATED JUNE 20, 2022, as Grantor or his successor in trust, as to an undivided 50% interest,  
and BONNIE E. HALE, TRUSTEE OF THE BONNIE E. HALE REVOCABLE TRUST  
DATED JUNE 20, 2022, as Grantor or her successor in trust, as to an undivided 50% interest, of  
3619 Woodenhawk Road, Greenwood, DE 19950, parties of the second part.

**WITNESSETH:** That the said parties of the first part, for and in consideration of the sum  
of **One Dollar (\$1.00)**, lawful money of the United States of America, the receipt whereof is  
hereby acknowledged, hereby grant and convey unto the parties of the second part, and their  
successors and assigns, in fee simple, the following described lands, situate, lying and being in  
Sussex County, State of Delaware:

**ALL** that certain lot, piece or parcel of land, situate, lying and being in Northwest Fork  
Hundred, Sussex County, Delaware, binding on the northerly side of State Road No. 569, leading  
easterly from Highway No. 404 and dear Woodenhawk Bridge, and more fully described as  
follows, to wit:

**BEGINNING** at a point in the right of way line of said Road No. 569, said point being  
375 feet easterly, measured along said right of way line, from the southeasterly corner of lands  
now or formerly of William Smith, and runs northwesterly 675 feet to a point, this point being  
375 feet northeasterly from the said Smith line; thence northeasterly a distance of 75 feet to the  
center of a ditch; thence with the meanderings of the ditch, southeasterly to the center of said

Waters of the U.S. Data Sheet

Project: *Stafford Tax Ditch* Feature ID: *C* Stream Order:  
 Date: *10/11/22* State: *DE* Photos: *8876-8877*  
 Crew: *KSH, AB* County: *Sussex* Last Flag Number: *NA*

Feature Hydrologic Class (check one):

Tidal	Perennial	Intermittent (SNE)	Ephemeral (SNE)
TNW (Subject to ebb and flow) X Describe <i>rational</i> <i>Water in channel - ditched</i> for hydrologic class: <i>No Recent rain</i>	TNW - Perennial (Flowing year round)	RPW - Flow $\geq$ 3 months	Non-RPW draining uplands
	RPW - Perennial (Flowing year round)	Non-RPW - Flow < 3 months	Non-RPW erosional feature Non-RPW with abutting wetland Non-RPW with adjacent wetland Non-RPW wetland adjacent or abutting upstream (outside of study area)
Hydrologic Connectivity - <i>Upstream: Outside Study Area</i>		Downstream: <i>Waters D</i>	Adjacent/Abutting: <i>Wetland A, B, E, K</i>

Feature Description: (check all that apply)

Shape (with respect to OHW)	Substrate			Vegetation Cover Type (MBSS)
Natural Channel Shape Width: <i>15'</i> Depth: <i>4"-24"</i> Bank Erosion/stability: <i>minor erosion</i>	<input checked="" type="checkbox"/> Silts <input type="checkbox"/> Cobbles <input type="checkbox"/> Bedrock	<input checked="" type="checkbox"/> Sands <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete	<input checked="" type="checkbox"/> Muck Other:	RB: <i>VS - Meadow</i> <i>DS - Maintained Lawn</i> LB: <i>VS - Meadow</i> <i>DS - Maintained Lawn</i>
Other:	Side slope: <input checked="" type="checkbox"/> $\geq$ 1:1 <input type="checkbox"/> 2:1 <input type="checkbox"/> 3:1 <input type="checkbox"/> $\leq$ 4:1			

Weather/Precipitation Conditions:

Monthly Drought Condition		NCDC Regional PDSI		Month: <i>Aug</i>	Year: <i>2022</i>
X No rain Light rain Heavy Rain	0-0.5 0.5-1 >1	X -3 -2 -1 0 1	Moderate Drought Normal	2 3 4 5 6	Moderately Wet Severely Wet

Non-tidal tributary has: (check all that apply; include photos for each & list photo #)

Bed and Banks		Ordinary High Water Mark	
X Yes No	Clear, natural line impressed on the bank Changes in the character of soil Shelving Vegetation matted down, bent, or absent Leaf litter disturbed	Sediment deposition Water staining Presence of flood litter/debris Destruction of terrestrial veg. Presence of wrack line	Sediment sorting Scour Observed/predicted flow events Abrupt change in plant community Other:

Tidal tributary has: (check all that apply; include photos for each & list photo #)

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
Oil or scum line along shore objects Fine shell or debris deposits (foreshore) Physical markings/characteristics Tidal gauges	Survey to available datum Physical markings Vegetation lines/changes in types	Water is clear Water is discolored Oily film Other:			

Notes:



STATE OF DELAWARE  
**DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL**

DIVISION OF FISH & WILDLIFE  
 RICHARDSON & ROBBINS BUILDING  
 89 KINGS HIGHWAY  
 DOVER, DELAWARE 19901

**DIRECTOR'S  
 OFFICE**

PHONE  
 (302) 739-9910

December 9, 2022

Anna Buchanan  
 Rummel, Klepper & Kahl, LLP  
 700 East Pratt Street  
 Suite 500  
 Baltimore, MD 21202

*Re: RK&K 2022 Stafford Tax Ditch*

Dear Anna:

Thank you for contacting the Species Conservation and Research Program (SCRCP) about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

*State Natural Heritage Site*

A review of our database indicates that the following state-rare or federally-listed plants, animals or natural communities occur at or adjacent to the project site:

Scientific Name	Common Name	Taxon	State Rank	State Status	SGCN Tier	Federal Status
<i>Enneacanthus chaetodon</i>	Blackbanded sunfish	Fish	S2	E	Tier 1	NL

**State Rank:** **S1** – Extremely rare within the state (typically 5 or fewer occurrences); **S2** – Very rare within the state (6 to 20 occurrences); **S3** – Rare to uncommon in Delaware; **S4** – Apparently secure, at fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors; **S5** – Demonstrably secure, at very low risk of extinction or extirpation due to a very extensive range, abundant populations or occurrences, or little to no concern from declines or threats; **SX** – Extirpated or presumed extirpated from the state. All historical locations and/or potential habitat have been surveyed; **SH** – Historically known, but not verified for an extended period (usually 15+ years); there are expectations that the species may be rediscovered; **SE** – Non-native in the state (introduced through human influence); not a part of the native flora or fauna; **SNR** – Not yet ranked in Delaware; **SN** – Occurrences in DE of limited conservation value, \*\*of concern due to a restricted range; **SU** – Status uncertain within the state. Usually, an uncommon species which is believed to be of conservation concern, but there is inadequate data to determine the degree of rarity; **B** – Breeding; **M** – Migratory; **N** – Nonbreeding.

**State Status:** **E** – Endangered, i.e., designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state pursuant to State of Delaware Code (7 Del. §601 *et seq.*) and implementing regulation (Title 7, 3900, 16.0 Endangered Species); **NA** – Plants are not included in Title 7; **NL** – Not listed.

**SGCN Tiers:** **Tier 1** – Species of Greatest Conservation Need (SGCN) that are most in need of conservation action in order to sustain or restore their populations. They are the focus of the Delaware Wildlife Action Plan (DEWAP), which is based on analyzing threats to their populations and habitats, and on developing conservation actions to eliminate, minimize, or compensate for these threats; **Tier 2** – SGCN that are also in need of conservation action, although not with the urgency of Tier 1 species. Their distribution across the landscape will help determine where DEWAP conservation actions will be implemented on the ground; **Tier 3** – These species are for the most part still relatively common in Delaware, but are listed as SGCN for various reasons, including documented population declines, high responsibility of the Northeast region for

the global population, or continued need for monitoring and/or management. This tier also includes non-breeding species that are uncommon in Delaware. **NA** – Plants are not addressed in DEWAP.

**Federal Status:** **E** – Endangered, i.e., designated by the U.S. Fish and Wildlife Service as being in danger of extinction throughout its range; **T** – Threatened, i.e., designated by USFWS as being likely to become endangered in the foreseeable future throughout all or a significant portion of its range; **C** – Candidate, i.e., taxa for which the U.S. Fish and Wildlife Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species. NOAA Managed Candidate: **SC** – Species of Concern, i.e., species about which NOAA's National Marine Fisheries Service (NMFS) has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA; **NL** – Not listed.

While one or more state-rare species were identified near the project location, at present, this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve, which are two criteria used to identify “Designated Critical Resource Waters” in the Army Corps of Engineers (ACOE) Nationwide Permit General Condition No. 22. A copy of this letter shall be included in any permit application or pre-construction notification submitted to the Army Corps of Engineers for activities on this property.

### *Fisheries*

#### Blackbanded Sunfish

According to our database, blackbanded sunfish (*Enneacanthus chaetodon*), a state-listed endangered species, was documented just downstream of the project site during past surveys. If habitat conditions have remained relatively stable, the population likely persists. Habitat suitable for spawning includes sandy or mud bottoms beneath aquatic vegetation, in masses of algae, or in hollows beneath plant roots. This type of habitat occurs in proximity to and within Stafford Ditch; therefore, in-water work should not take place **May 1<sup>st</sup> to June 30<sup>th</sup>** to protect this species during spawning activities.

#### Largemouth Bass

There is a largemouth bass (*Micropterus salmoides*) population in Marshyhope Creek which supports one of the state’s most popular recreational fisheries. Surveys conducted by the Division confirm presence of this species in proximity to the project site. Although Stafford Ditch was not part of the Division's bass surveys, suitable spawning habitat likely exists. Bass build nests and spawn in relatively shallow water in areas out of the main current, such as ditches, coves, and back eddy areas. Spawning habitat is limited in the Nanticoke River system; therefore, it is important to protect spawning of this species for the population remains viable to support the heavy fishing pressure. In-water work should not take place from **April 1<sup>st</sup> to June 30<sup>th</sup>** to protect spawning bass and fry. Furthermore, because sedimentation can smother eggs and larvae, land-based project activities should adhere to stringent sediment and erosion control practices as well.

#### Stream Modification

A preliminary risk assessment is required to identify and examine potential risks that could permanently impact 1) functional project objectives such as: flow velocities, channel morphology, and subsequent passage of migratory or resident fishes, and 2) aquatic habitat, specifically from the downstream redistribution of sediment as a result of stream modification (e.g., coir logs, rock vanes, weirs, deflectors, crib walls, gabions, sandbags, cement bags, etc.). Findings from the assessment and recommendations to minimize identified risks, if warranted, must be reviewed and approved by DNREC prior to commencing any in-water work.

Additionally, a DNREC approved adaptive management plan is required that summarizes an inspection/monitoring plan to evaluate post-project conditions and to establish corrective

measures, if necessary, to ensure the success of project goals and minimize potential impacts to the aquatic environment. Inspection/monitoring should be interactive in design and be conducted annually, at a minimum, for a period of 3 to 5 years after stream modifications depending on annual findings and the necessity for corrective measures.

#### *Soil Erosion and Sedimentation*

Due to the nature of this project, there is high potential for soil erosion and sedimentation into the adjacent or nearby stream. Appropriate erosion and sediment control measures should be taken during construction activities to minimize potential impacts to the stream system. For erosion control, we recommend (if feasible) using materials that are biodegradable and that do not include plastic netting or have welded-joint poly-based matting. Wildlife entanglement in rolled erosion control products (RECP), especially those that contain plastic netting, is well documented (references available upon request). For additional information, contact the Sediment and Storm Water Management Program within the Division of Watershed Stewardship at (302) 739-9921.

#### *Key Wildlife Habitat*

The early successional habitat and non-tidal coastal plain stream, Stafford Ditch, are mapped as Key Wildlife Habitat (KWH) in the Delaware Wildlife Action Plan (DEWAP) because they can support an array of plant and animal species across the landscape. Although designation as KWH is non-regulatory, these maps are intended to help guide site-specific conservation planning efforts. Impacts to KWH should be minimized to the greatest extent practicable.

The DEWAP is a comprehensive strategy for conserving the full array of native wildlife and habitats, common and uncommon, as vital components of the state's natural resources. This document can be viewed via the [Division of Fish and Wildlife's website](#).

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,



Danielle Ellis  
*Environmental Review Coordinator*  
Phone: (302) 223-2446  
6180 Hay Point Landing Road  
Smyrna, DE 19977

(See invoice on next page)

**INVOICE - PAYMENT DUE**

It is our policy to charge a fee for this environmental review service. This letter constitutes an invoice for \$70.00 (\$35.00/hour for a minimum of one hour). Please make your check payable to “Delaware Division of Fish and Wildlife” and submit to:

DE Division of Fish and Wildlife  
97 Commerce Way  
Suite 106  
Dover, DE 19901  
ATTN: DFW Fiscal

**In order for us to properly process your payment, you must reference  
“RK&K 2022 Stafford Tax Ditch” on your check.**

cc: Division of Fish and Wildlife Fiscal (dnrec\_dfw\_payroll@delaware.gov); Code to 72900

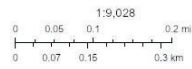
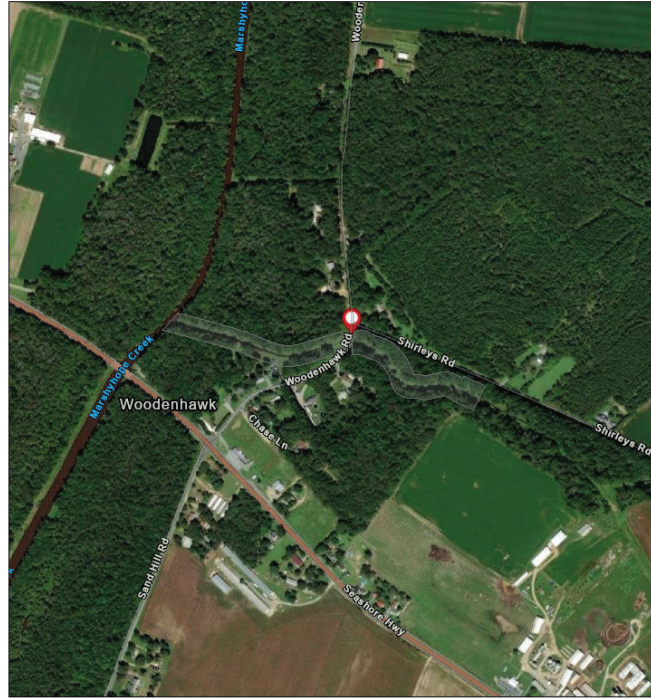


# Drawn Action Area & Overlapping S7 Consultation Areas

## Area of Interest (AOI) Information

Area : 2,009.02 acres

Oct 26 2022 15:36:31 Eastern Daylight Time



Maxar, Esri Community Maps Contributors, County of Sussex, DE, Delaware FirstMap, VGI, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, Swireidrup, GeoTechnology, Inc., METRANGA, USGS, EPA, NPS, US Census Bureau, USDA

Summary

Name	Count	Area(acres)	Length(mi)
Study_Area	2	7.77	N/A
Atlantic Sturgeon	0	0	N/A
Shortnose Sturgeon	0	0	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

Study\_Area

#	FID	Id	Area(acres)
1	1	0	3.95



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Chesapeake Bay Ecological Services Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307  
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To:  
Project Code: 2023-0009235  
Project Name: Stafford Tax Ditch Restoration

October 26, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

## To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Wetlands
-

## **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Chesapeake Bay Ecological Services Field Office**

177 Admiral Cochrane Drive

Annapolis, MD 21401-7307

(410) 573-4599

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## Project Summary

Project Code: 2023-0009235  
Project Name: Stafford Tax Ditch Restoration  
Project Type: Restoration / Enhancement of Waterbody  
Project Description: RKK will provide the restoration design of Stafford Tax Ditch main channel for Delaware Department of Natural Resources and Environmental Control (DNREC). DNREC's Division of Watershed Stewardship's goals is to improve the existing Stafford Tax Ditch channel, starting approximately at Prong 1, downstream to Woodenhawk Road, west of Greenwood, DE.

### Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.79493305,-75.69111475710676,14z>



Counties: Sussex County, Delaware

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## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> <li>▪ The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: <a href="https://www.fws.gov/savethemonarch/FAQ-Section7.html">https://www.fws.gov/savethemonarch/FAQ-Section7.html</a>).</li> </ul> Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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## Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

### FRESHWATER FORESTED/SHRUB WETLAND

- [Palustrine](#)

### RIVERINE

- [Riverine](#)
-

## **IPaC User Contact Information**

Agency: RKK

Name: Anna Buchanan

Address: 700 E Pratt St

City: Baltimore

State: MD

Zip: 21202

Email: abuchanan@rkk.com

Phone: 4104629105

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November 9, 2022

Ms. Suzanne Savery  
State Historic Preservation Officer  
Delaware Division of Historical and Cultural Affairs  
29 N. State Street  
Dover, DE 19901

Project: Stafford Tax Ditch Restoration  
Sussex County, DE

Subject: Request for Project Review and Comment

Dear Ms. Savery:

On behalf of the Delaware Department of Natural Resources and Environmental Control (DNREC), RK&K is conducting engineering and environmental services for the restoration design of Stafford Tax Ditch main channel starting at Prong 1, downstream to Woodenhawk Road, west of Greenwood, DE (Figures 1 and 2). The improvements will encompass approximately 1,000 linear feet of the tax ditch and are intended to replace the need for maintenance dredging with a sustainable morphology which improves conveyance and enhances overbank wetlands. The proposed services will also include an evaluation of possible flood reduction improvements from downstream of Woodenhawk Road to the confluence with the Marshyhope Tax Ditch.

The project will require a permit authorization from the United States Army Corps of Engineers (USACE) and Delaware Department of Natural Resources and Environmental Control (DNREC), and, therefore, requires consultation with DCHA under Section 106 of the National Historic Preservation Act (NHPA). A review of the archaeological and historic architecture information on CHRIS indicates that there are no archaeological sites or historic architectural resources located in the project study area or within its immediate vicinity.

We request information concerning historic or archaeological resources within the vicinity of the project area and as to whether the DHCA will require cultural resource studies within the project area. Please send your response to the attention of Karen Hutchins-Keim, 700 East Pratt Street, Suite 500, Baltimore, MD 21202, or via email to [khutchins-keim@rkk.com](mailto:khutchins-keim@rkk.com). If you have any questions concerning this project or require additional information to complete your review, please contact me by email or phone at (410) 462-9236. Thank you for your assistance.

Sincerely,  
**RK&K, LLP**

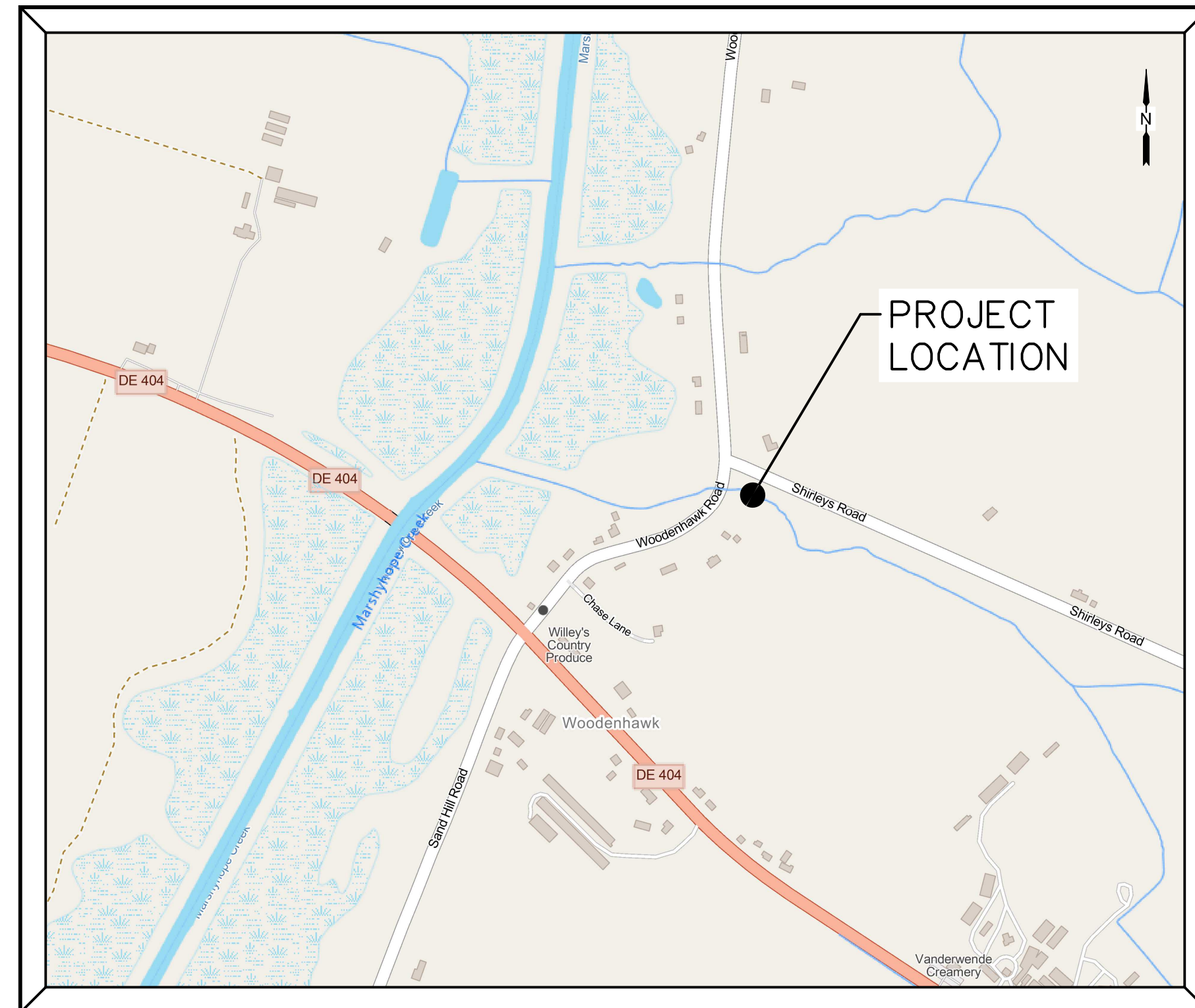


Karen Hutchins-Keim, PhD, RPA  
Technical Manager – Cultural Resources

Encl: Figures  
Cc: Tyler Brown – DNREC Division of Watershed Stewardship  
Justin Reel, Lucia Noya, Karl Hellmann, and Anna Buchanan – RKK

# STAFFORD TAX DITCH

## BANK STABILIZATION PROJECT MARSHY HOPE / CHESAPEAKE BAY WATERSHED GREENWOOD, DELAWARE



PLAN INDEX MAP

### SHEET INDEX

SHEET NO.	TITLE
C-000	COVER SHEET
C-100	EX-CONDITIONS SITE PLAN
C-101	PR-CONDITIONS SITE PLAN
C-200	TAX DITCH PROFILE PLAN
C-300	SECTION VIEW PLAN
C-700	EROSION & SEDIMENT CONTROL PLAN
C-701	EROSION & SEDIMENT CONTROL DETAILS & NOTES
C-702	EROSION & SEDIMENT CONTROL DETAILS & NOTES
C-703	EROSION & SEDIMENT CONTROL DETAILS & NOTES
C-704	EROSION & SEDIMENT CONTROL DETAILS & NOTES

EXISTING		PROPOSED	
BUILDING		BUILDING	
BRIDGE		BRIDGE	
BOTTOM WIDTH LEFT		BOTTOM WIDTH LEFT	
BOTTOM WIDTH RIGHT		BOTTOM WIDTH RIGHT	
CENTERLINE DITCH		CENTERLINE DITCH	
CENTERLINE DITCH STATION MAJOR		CENTERLINE DITCH STATION MAJOR	
CENTERLINE DITCH STATION MINOR		CENTERLINE DITCH STATION MINOR	
CENTERLINE ROAD		CONTOUR MAJOR	
CONTOUR MAJOR		CONTOUR MINOR	
CONTOUR MINOR		CONCRETE	
CONCRETE		EASEMENT	
EASEMENT		EDGE OF PAVEMENT	
EDGE OF PAVEMENT		EDGE OF GRAVEL	
EDGE OF GRAVEL		FENCELINE	
FENCELINE		GEOMORPHOLOGY FEATURE	
GEOMORPHOLOGY FEATURE		GRADE PROFILE	
HYDROLOGIC DRAINAGE AREA		HYDROLOGIC DRAINAGE AREA	
HYDROLOGIC SOIL TYPE		HYDROLOGIC DRAINAGE AREA HATCH	
HYDROLOGIC SOIL GROUP		LANDUSE	
HYDROLOGIC TIME OF CONCENTRATION		HYDROLOGIC TIME OF CONCENTRATION	
MAILBOX		NORMAL WATER SURFACE ELEVATION	
MARSHLINE		RIPRAP	
ORDINARY HIGH WATER		SIDEWALK	
PROPERTY LINE		SIGN	
RAILROAD TRACKS		STORMWATER PIPE	
RIPRAP		STORMWATER STRUCTURE	
SHEETPILE		TAX DITCH RIGHT-OF-WAY	
SIDEWALK		TAX DITCH SPECIAL RIGHT-OF-WAY	
SIGN		TOP OF BANK LEFT	
STORMWATER PIPE		TOP OF BANK RIGHT	
STORMWATER STRUCTURE		TREE	
TAX DITCH RIGHT-OF-WAY		TEXT	
TAX DITCH SPECIAL RIGHT-OF-WAY		WATERSHED DRAINAGE AREA	
TOP OF BANK LEFT		WOODSLINE	
TOP OF BANK RIGHT		ESTIMATED CUT	
TREE		ESTIMATED FILL	
TEXT		COMPOST LOG	
UTILITY: COMMUNICATION CABLE		LIMIT OF DISTURBANCE	
UTILITY: OVERHEAD WIRE		TEMPORARY CONSTRUCTION - EASEMENT	
UTILITY: POLE		SILT FENCE	
UTILITY: ELECTRIC		SUPER SILT FENCE	
UTILITY: GAS		PLANTING AREA	
UTILITY: SANITARY SEWER		SEEDING AREA	
UTILITY: WATER			
WATERSHED DRAINAGE AREA			
ORDINARY HIGH WATER LEVEL (OHWL)			
WOODSLINE			



LOCATION MAP

### PERMITTEE CERTIFICATION:

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING AND CONSTRUCTION SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E., BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION. IN ADDITION, I GRANT THE DEPARTMENT OR DELEGATED INSPECTION AGENCY THE RIGHT TO CONDUCT ON-SITE INSPECTIONS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

### LICENSED PROFESSIONAL CERTIFICATION

I CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE. THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

AMELIA S. REED, PE \_\_\_\_\_ DNREC ENGINEER PROGRAM MANAGER I \_\_\_\_\_  
NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

REVISIONS	DESCRIPTION
DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
23818 SHORTLY RD. GEORGETOWN, DE 19957  
PHONE: 002-856-2105 FAX: 002-856-0951

**DNREC - Division of Watershed Stewardship**  
Drainage Program  
Georgetown Office  
2109 Berlin Rd. Unit 6 Phone: 302-854-1950  
Dover DE 19901 Fax: 302-739-6724 Georgetown DE 19947 Fax: 302-677-7059



**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

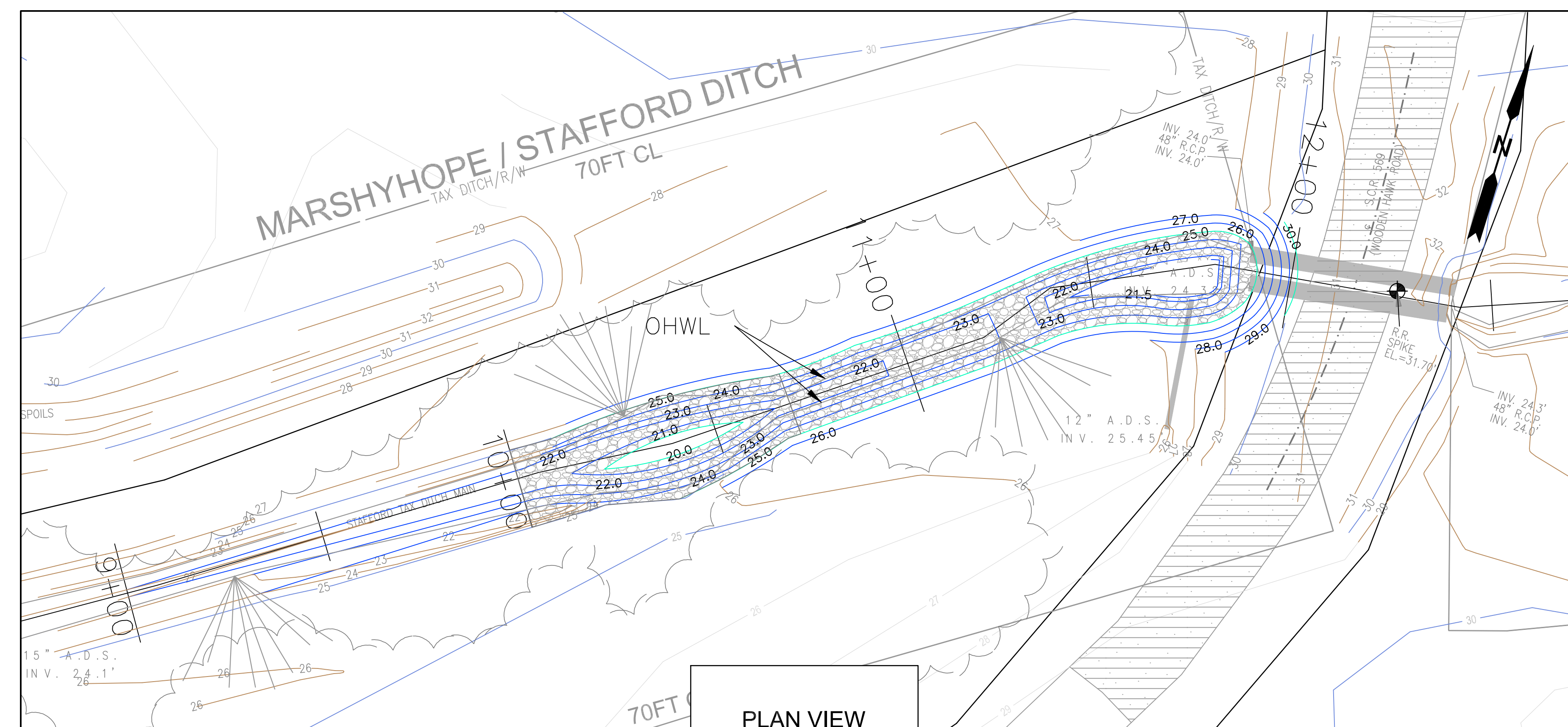
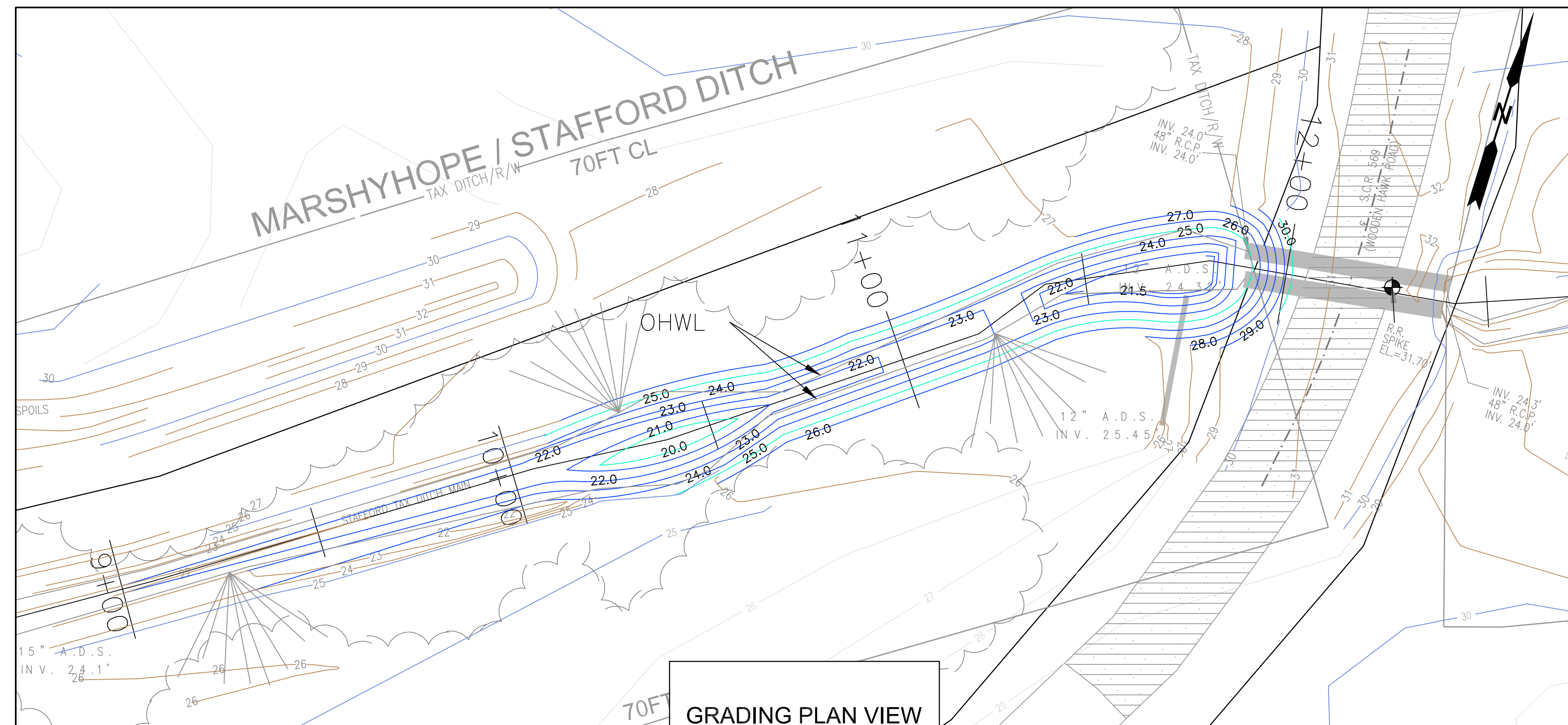
Sheet No. **C-000**

COVERSHEET



**CONSTRUCTION NOTES:**

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTION STAKE OUT.
2. THE PROPOSED BANK STABILIZATION WILL BE FACILITATED BY USING 75% R5 RIPRAP CHINKED IN WITH 25% R4 RIPRAP.
3. THE RIPRAP BANK STABILIZATION SHALL BE 22" THICK OVER MIRAFI 600X.



DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE 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

Dover Office: Georgetown Office  
285 Belair Blvd., Suite 102 Phone: (302) 739-9921 21309 Berlin Rd. Unit 6 Phone: (302) 858-1930  
Dover, DE 19901 Fax: (302) 739-9724 Georgetown, DE 19947 Fax: (302) 877-7859

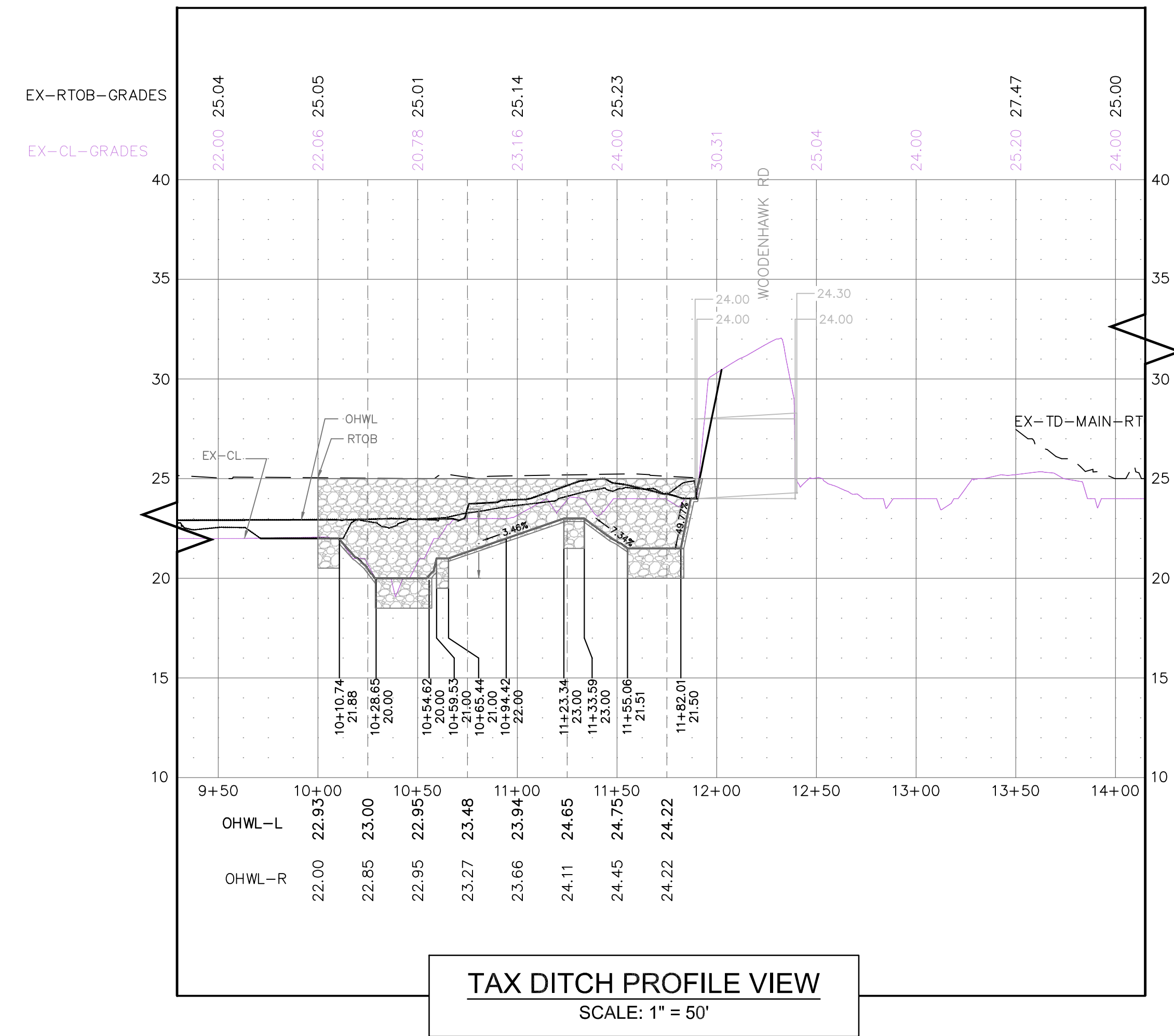


**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

**PR-CONDITIONS SITE PLAN**

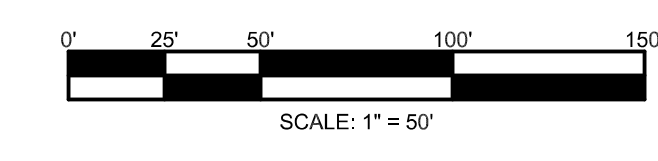
Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

Sheet No. **C-101**



**PROFILE LINE LEGEND**

EX-CL GRADE	— — — — —
EX-TOB	— — — — —
PR-CL GRADE	—————



**REVISIONS**

DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
23818 SHORTLY RD., GEORGETOWN, DE 19957  
PHONE: (302) 856-2065 FAX: (302) 856-0951

**DNREC - Division of Watershed Stewardship**  
Drainage Program

Dover Office: Georgetown Office  
285 Beaver Blvd., Suite 102 Phone: (302) 739-9921 21309 Berlin Rd. Unit 6 Phone: (302) 854-1930  
Dover, DE 19901 Fax: (302) 739-9724 Georgetown, DE 19947 Fax: (302) 677-7059

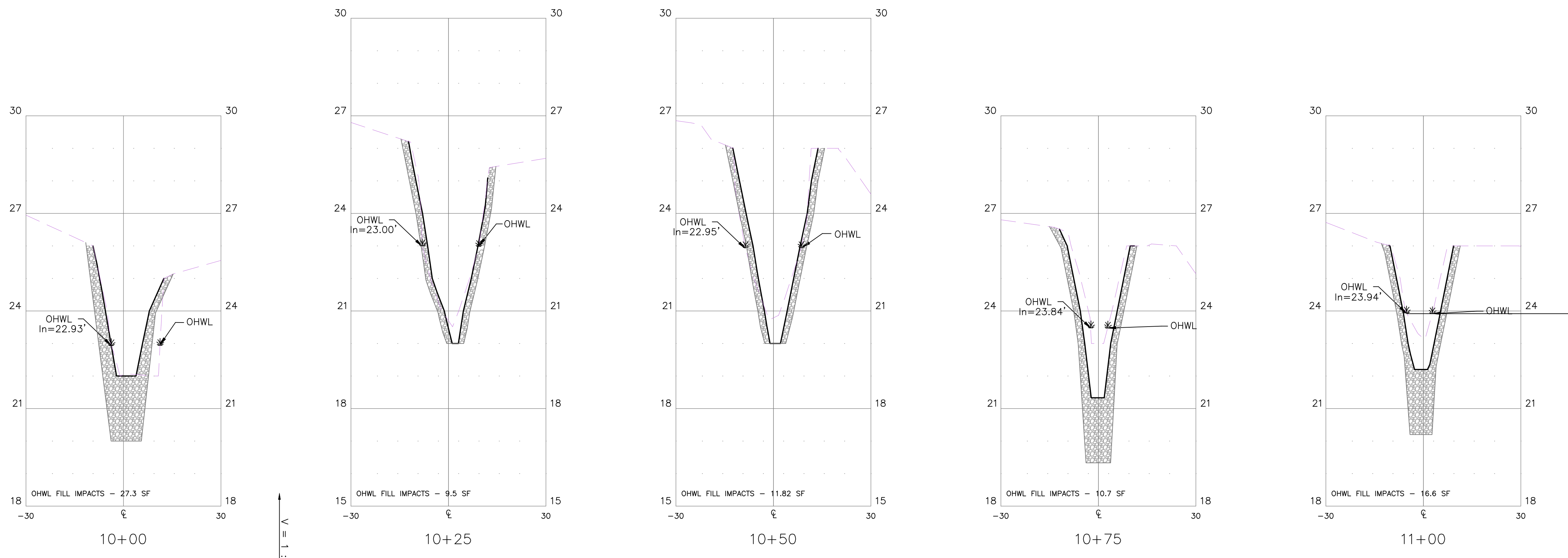


**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

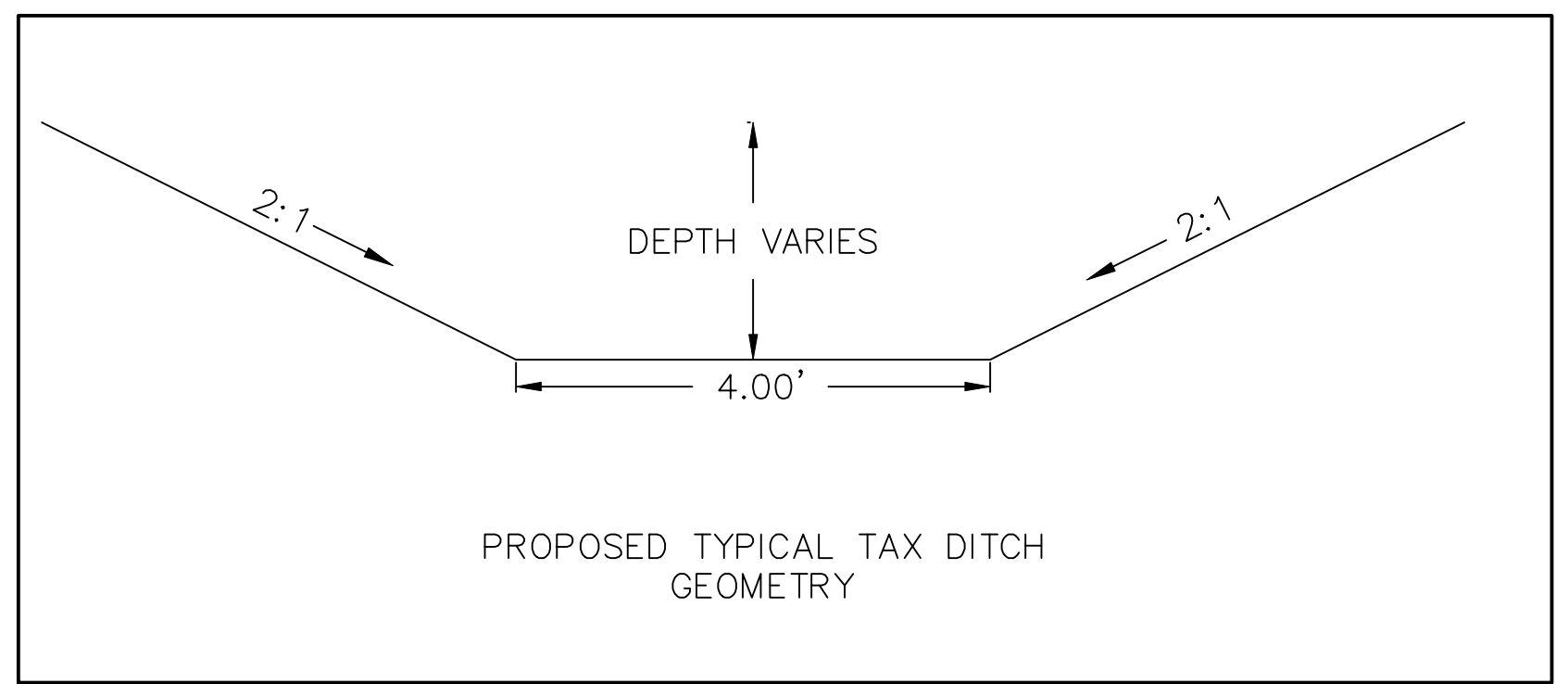
**TAX DITCH PROFILE PLAN**

Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

Sheet No. **C-200**



V = 1 : 2  
H = 1 : 20



THE HIGHER BANK ELEV. FOR THE OHWL WAS USED FOR BOTH SIDES IN THE SECTION VIEWS. THIS WAS USED TO DETERMINE THE OHWL FILL IMPACTS.  
Project Name: STAFFORD TAX DITCH

**END AREA VOLUME CALCULATION**  
(from section views)

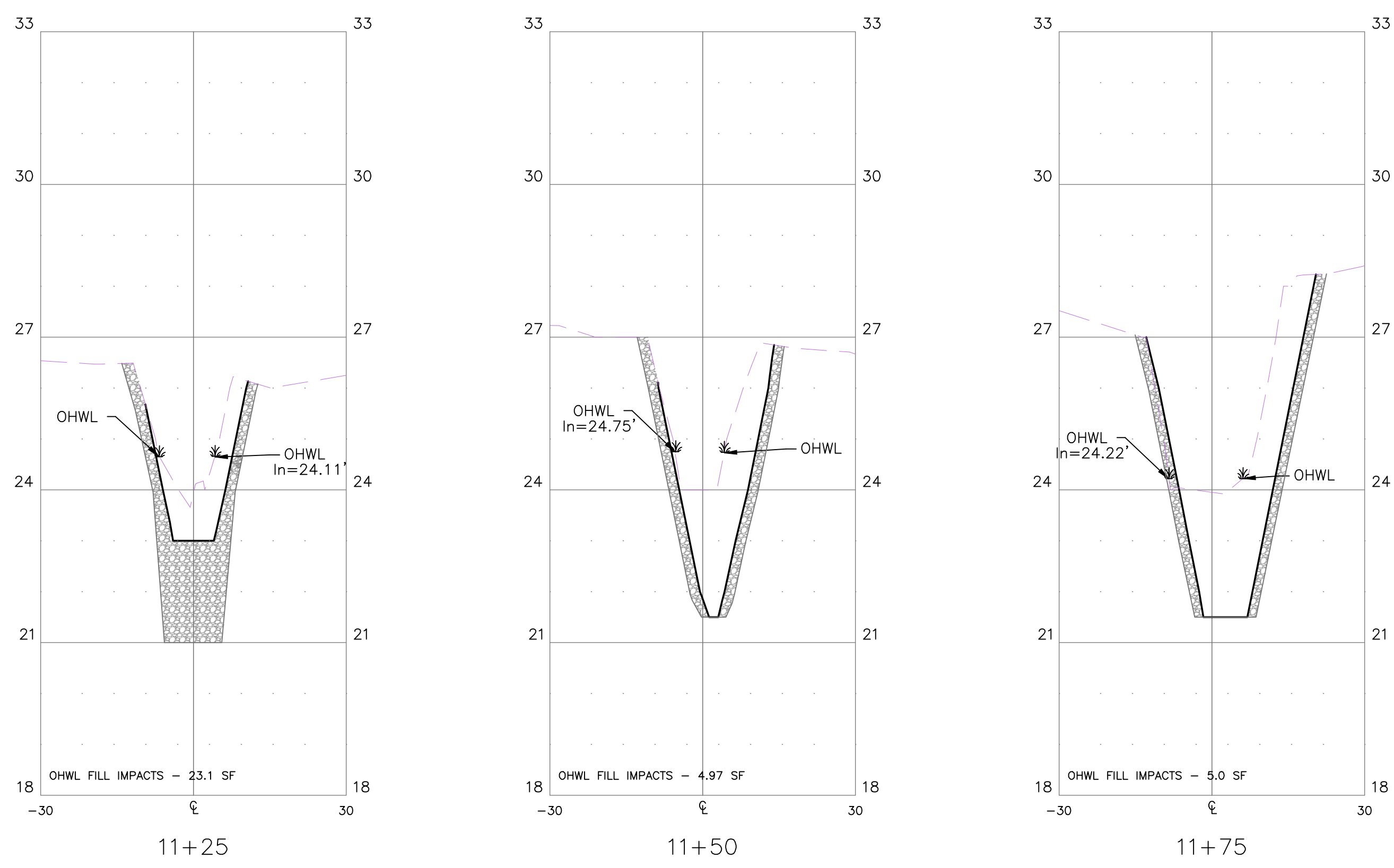
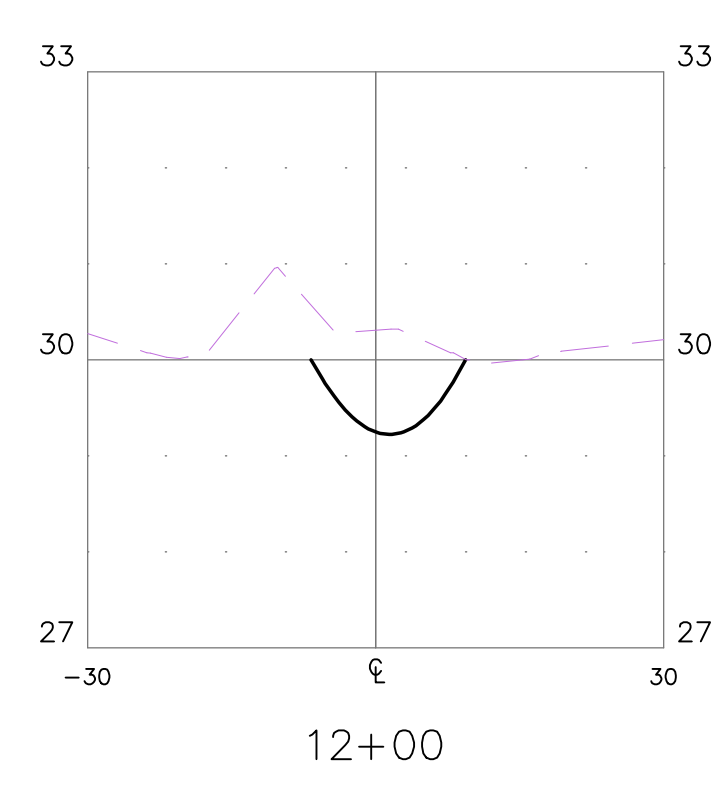
STATION	END AREA (SF)	VOLUME (CF)
1000	27.3	
1025	9.5	460
1050	10.7	252.5
1075	9.44	251.75
1100	16.6	325.5
1125	23.1	496.25
1150	4.97	350.875
1175	5	124.625

CUM. VOLUME (CF)	2261.50
CY	83.75925926
WETLAND FILL (CY/FT)	0.48

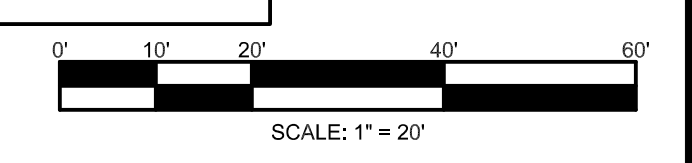
$((s1 + s2) * length) / 2$

**PROFILE LINE LEGEND**

EX-CL GRADE	---
PR-CL GRADE	—



**TAX DITCH SECTION VIEW**  
SCALE: 1" = 20'



**REVISIONS**

DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
23818 SHORTLY RD., GEORGETOWN, DE 19857  
PHONE: (302) 856-2105 FAX: (302) 856-0981

**DNREC - Division of Watershed Stewardship**  
Drainage Program  
Georgetown Office  
21309 Berlin Rd. Unit 6 Phone: (302) 855-1930  
Dover Office  
285 Baker Blvd., Suite 102 Phone: (302) 739-9721  
Dover, DE, 19901 Fax: (302) 739-9724

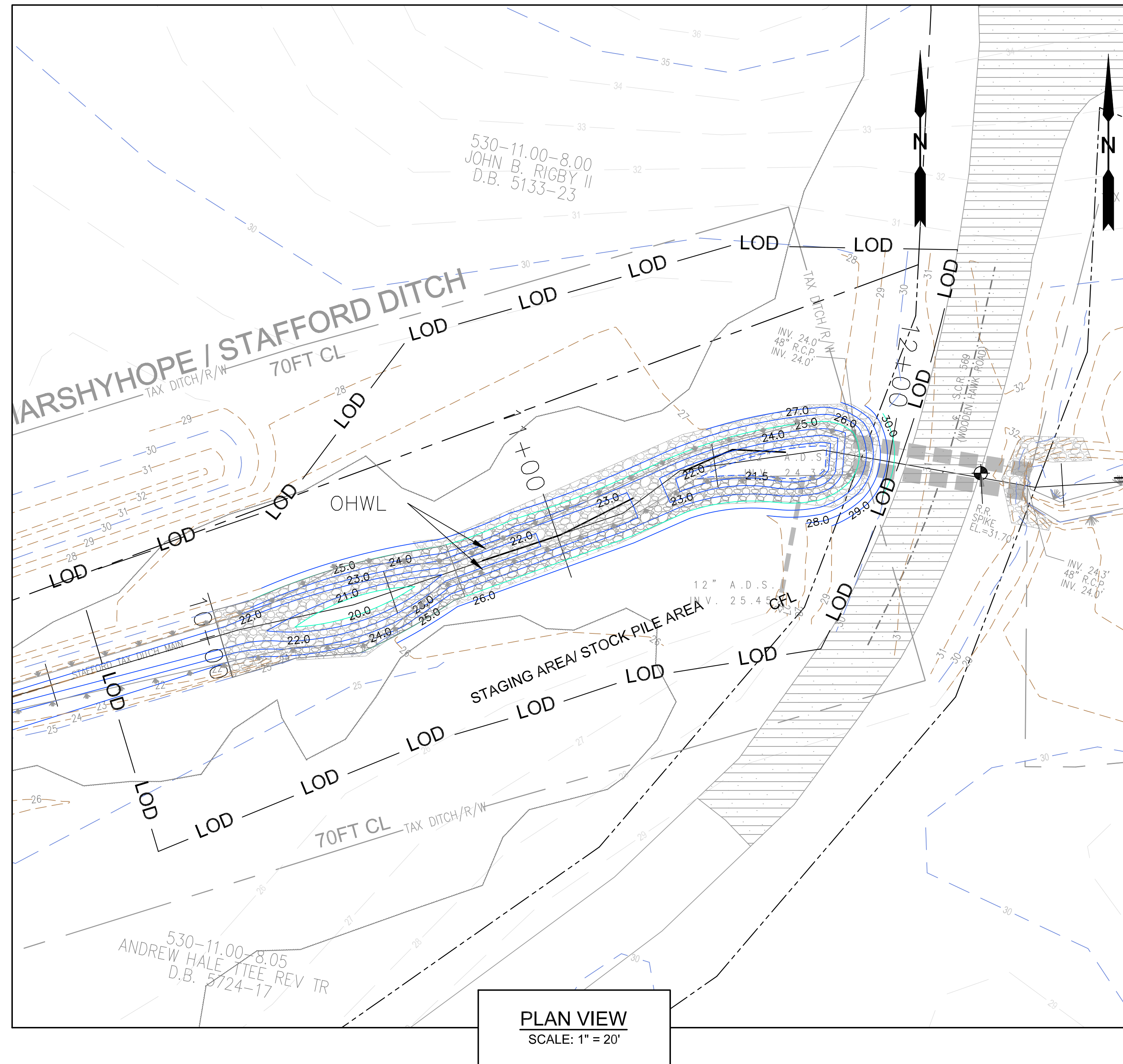


**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

SECTION VIEWS

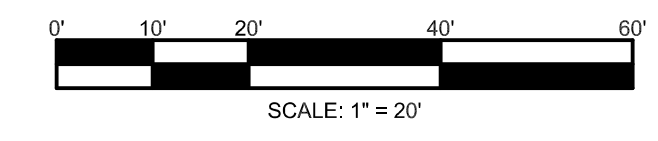
Date: 3.12.2026  
Designed: AR - JLE  
Planned: TB - KW - JG  
Drawn: JLE

Sheet No. **C-300**



**PLAN VIEW**  
SCALE: 1" = 20'

**EROSION & SEDIMENT CONTROL NOTES:**  
1. PROJECT LOD ACREAGE = 0.60 ACRES.



DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE 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

Dover Office: Georgetown Office  
285 Basor Blvd., Suite 102 Phone: (302) 739-9921 21309 Berlin Rd. Unit 6 Phone: (302) 853-1930  
Dover, DE 19901 Fax: (302) 739-6724 Georgetown, DE 19947 Fax: (302) 677-7859



**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

**EROSION & SEDIMENT CONTROL PLAN - 1**

Date: 3.12.2026  
Designed: AR - JLE  
Planned: TB - KW - JG  
Drawn: JLE

Sheet No. **C-700**

### Standard Detail & Specifications Construction Site Pollution Prevention

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

((Project Name))  
((NOI Permit Number))  
((Agency Plan Approval ID))  
((Contact Name & Number for Additional Site Information))  
((Contact Name & Number to Obtain Copy of Approved Plan))

If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbody, call the DNREC Spill Notification 24 HR Hotline at  
**1-800-662-8802**

*Example Construction General Permit (CGP) Signage*

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

Source: Delaware ESC Handbook	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.6.1</b> Sheet 1 of 4 Effective July 2023
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### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes:**  
The Construction Site Pollution Prevention Plan includes the following elements:

**1. Material Inventory**  
Document the storage and use of the following materials:  
a. Concrete  
b. Detergents  
c. Paints (enamel and latex)  
d. Cleaning solvents  
e. Pesticides  
f. Wood scraps  
g. Fertilizers  
h. Petroleum based products

**2. Good housekeeping practices**  
a. Store only enough product required to do the job.  
b. Store all materials in a neat, orderly manner in their original labeled containers and covered.  
c. Do not mix different substances.  
d. When possible, use all of a product prior to disposal of the container.  
e. Manufacturers' instructions for disposal should be strictly adhered to.  
f. Designate someone to inspect all BMPs daily.

**3. Waste management practices**  
a. Collect and store all waste materials in securely lidded dumpsters in a location that does not drain to a waterbody.  
b. Salvage and/or recycle waste materials whenever possible.  
c. The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.6.1</b> Sheet 2 of 4 Effective July 2023
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### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes (cont.)**

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

**4. Equipment maintenance practices**  
a. If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.  
b. If performed on-site, wash vehicles with high-pressure water spray without detergents in an area contained by an impervious berm.  
c. Use drip pans for all equipment maintenance.  
d. Inspect equipment for leaks on a daily basis.  
e. Direct washout from concrete trucks into a temporary pit for hardening and proper disposal.  
f. Equip fuel nozzles with automatic shut-off valves.  
g. Dispose of all used products such as oil, antifreeze, solvents and tires in accordance with manufacturers' recommendations and local, state and federal laws and regulations.

**5. Spill prevention practices**  
a. Identify potential spill areas and contain them in covered areas with no connection to the storm drain system.  
b. Post warning signs in hazardous material storage areas.  
c. Perform preventive maintenance on all tanks, valves, pumps, pipes and other equipment as necessary.  
d. Prioritize low or non-toxic substances for use.

Source: Adapted from USEPA Pub. 840-B-92-002	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.6.1</b> Sheet 3 of 4 Effective July 2023
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### Standard Detail & Specifications Construction Site Pollution Prevention

**Notes (cont.)**

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

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

**CONTACT INFORMATION**

**DNREC 24-Hour Toll Free Number 800-662-8802**  
**DNREC Solid & Hazardous Waste Management Section 302-739-9403**

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

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.7.3</b> Sheet 1 of 2 Effective July 2023
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### Standard Detail & Specifications Soil Stockpile

**Construction Notes:**

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

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.7.3</b> Sheet 2 of 2 Effective July 2023
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### Standard Detail & Specifications Fueling & Spill Control

Source: Delaware ESC Handbook	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.6.4</b> Sheet 1 of 2 Effective July 2023
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### Standard Detail & Specifications Fueling & Spill Control

**Pollution Prevention – Fueling & Spill Control**

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

**CLEAN UP SPILLS**

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

**LEAKS AND DRIPS**

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

Source: Delaware ESC Handbook	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.6.4</b> Sheet 2 of 2 Effective July 2023
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REVISIONS	DESCRIPTION
DATE	ACOE COMMENTS
12.02.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
23818 SHORTLY RD., GEORGETOWN, DE 19527  
PHONE: (302) 666-2218 FAX: (302) 666-9091

**DNREC - Division of Watershed Stewardship**  
Drainage Program

Georgetown Office  
21309 Hedden Rd. Unit 6  
Georgetown DE 19847 Fax: (302) 677-7059

Dover Office  
248 Reiter Blvd., Suite 102  
Dover DE, 19901 Fax: (302) 739-6724



**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

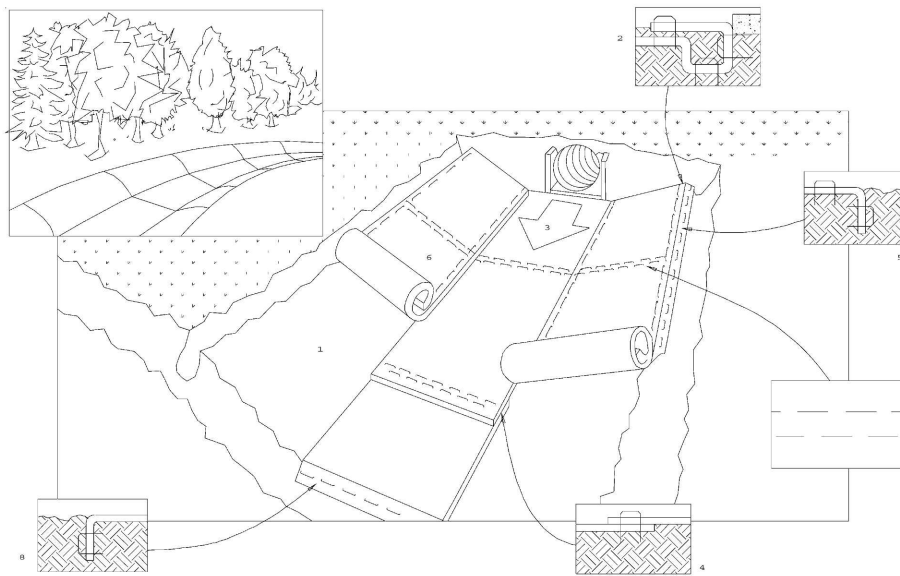
**EROSION & SEDIMENT CONTROL  
DETAILS & NOTES**

Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

Sheet No. **C-701**



**Standard Detail & Specifications**  
**Stabilization Matting - Channel**




*Perspective*

CRITICAL POINTS

A. Overlaps and seams  
B. Projected waterline  
C. Channel bottom/side slope vertices

Note: Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.


Use manufacturer's recommendations for stapling patterns for channel installations.

Source: Adapted from North American Green, Inc.	Symbol: 	Detail No. <b>DE-ESC-3.4.6.2</b> Sheet 1 of 3 <i>Effective July 2023</i>
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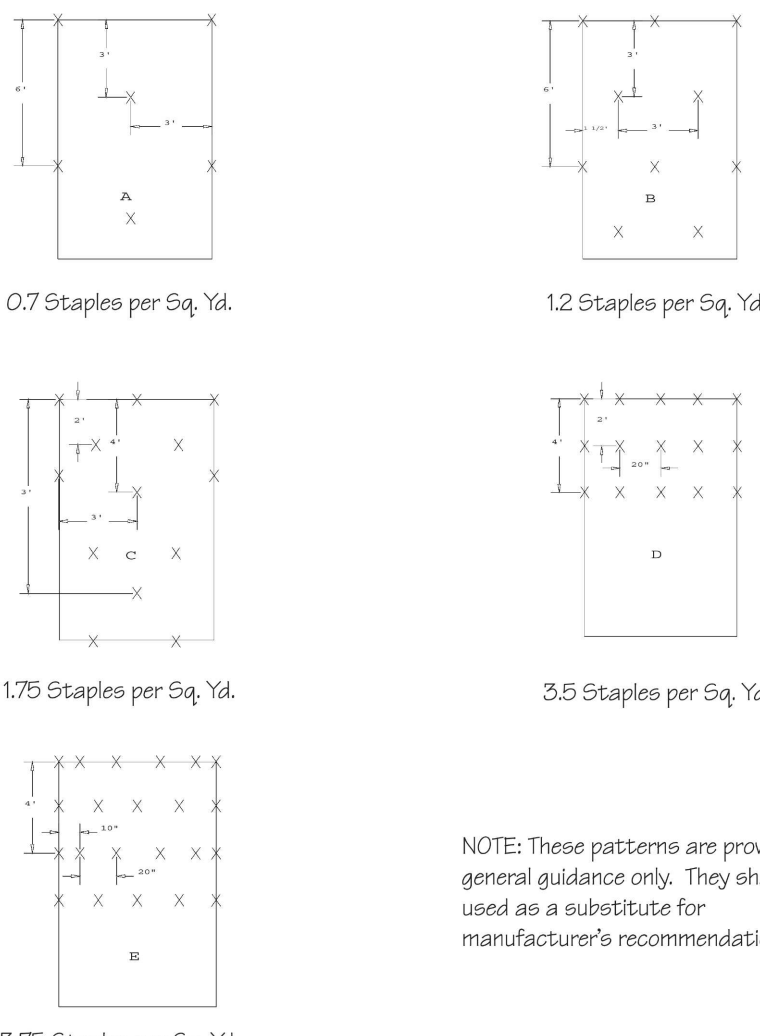
**Standard Detail & Specifications**  
**Stabilization Matting - Channel**

**Construction Notes:**

1. Prepare soil before installing matting, including application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact the trench after stapling.
3. Roll center mat in direction of water flow on bottom of channel.
4. Place mats end over end (shingle style) with a 6" overlap, use a double row of staggered staples 4" apart to secure mats.
5. Full Length edge of mats at top of side slopes must be anchored in 6" deep X 6" wide trench; backfill and compact the trench after stapling.
6. Mats on side slopes must be overlapped 4" over the center mat and stapled.
7. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4" apart over entire width of the channel. Place a second row 4" below the first row in a staggered pattern.
8. The terminal end of the mats must be anchored in a 6" X 6" wide trench. Backfill and compact the trench after stapling.


Source: Adapted from North American Green, Inc.	Symbol: 	Detail No. <b>DE-ESC-3.4.6.2</b> Sheet 2 of 3 <i>Effective July 2023</i>
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**Standard Detail & Specifications**  
**Stabilization Matting - Channel**



*Stapling Patterns*

NOTE: These patterns are provided for general guidance only. They shall not be used as a substitute for manufacturer's recommendations.

Source: Adapted from North American Green, Inc.	Symbol: 	Detail No. <b>DE-ESC-3.4.6.2</b> Sheet 3 of 3 <i>Effective July 2023</i>
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REVISIONS	DESCRIPTION
DATE	DESCRIPTION
1.20.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
23818 SHORTLY RD., GEORGETOWN, DE 19957  
PHONE: (302) 855-2105 FAX: (302) 855-0951

**DNREC - Division of Watershed Stewardship**  
Drainage Program  
Dover Office  
285 Beiser Blvd., Suite 102 Phone: (302) 739-9921 21309 Betha Rd. Unit 6 Phone: (302) 855-1930  
Dover, DE 19901 Fax: (302) 739-6724 Georgetown, DE 19947 Fax: (302) 677-7659



**STAFFORD TAX DITCH**  
BANK STABILIZATION PROJECT  
MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
GREENWOOD, DELAWARE

**EROSION & SEDIMENT CONTROL**  
DETAILS & NOTES

Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE

Sheet No. **C-703**

**GRADING NOTES:**

- 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.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES AROUND THE WORK AREA AND SHALL PROVIDE PROTECTION AGAINST WATER DAMAGE AND SOIL EROSION.
- VERTICAL ELEVATIONS ARE BASED ON NAVD 88.
- ALL SLOPES MAXIMUM 3:1 UNLESS OTHERWISE NOTED.
- 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.
- DRAINAGE INLETS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST STANDARDS OF DELDOT'S STANDARD CONSTRUCTION DETAILS UNLESS NOTED OTHERWISE ON THE PLANS.
- ALL HDPE PIPE SHALL MEET OR EXCEED THAT AASHTO M-330 PIPE SPECIFICATION.
- 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.
- CONTRACTOR IS RESPONSIBLE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING FOR ALL PROPOSED IMPROVEMENTS ALONG WITH NOT NEGATIVE IMPACTING EXISTING CONDITIONS.
- 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.
- CONTRACTOR IS RESPONSIBLE FOR PROJECT STAKE OUT.

**CONSTRUCTION NOTES:**

- 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.
  - 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.
  - THE CONTRACTOR SHALL EXERCISE CARE AND CONSIDERATION IN CONSTRUCTION IN THE VICINITY OF ADJACENT PROPERTY OWNERS.
  - 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.
  - RIPRAP ROCK SHALL AS A MINIMUM: D50 STONE SIZE = 6", DEPTH = 18".
  - 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.
  - 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.
  - 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.
  - ALL DRIVEWAYS SHALL BE REPLACED AND OR REPAIRED IN KIND. COORDINATE WITH OWNER TO MAINTAIN ACCESS TO RESPECTIVE PROPERTIES.
  - ALL MAILBOXES SHALL BE REPLACED AND OR REPAIRED IN KIND. COORDINATE WITH OWNER TO MAINTAIN MAIL SERVICE DURING CONSTRUCTION.
  - ELEVATIONS ARE BASED ON NAVD 88, AND DE STATE PLANE COORDINATE SYSTEM NAD 83 HORIZONTAL DATUM.
  - UNLESS SPECIFICALLY STATED OR SHOWN HEREON TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:
    - 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.
    - 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.
    - 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.
  - UTILITY NOTES:
    - 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.
    - COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
    - 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..
    - THE CONTRACTORS SHALL TEST PIT TO VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
    - IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
  - STATE WETLAND FLAG SHOWN WAS PER DNREC DRAINAGE SECTION DELINEATION.
- REFERENCE:
- EXISTING CONDITIONS SURVEY PERFORMED BY **DNREC/KCD**.
  - THE PARCEL BOUNDARY LINES ARE FROM BEST AVAILABLE GIS DATA.

**EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION:**

- 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.
- 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.
- 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.
- SCHEDULE A PERIMETER CONTROL REVIEW WITH THE DNREC CONSTRUCTION SITE REVIEWER.
- ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE DNREC CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
- 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.
- CLEAR AND GRUB THE CONSTRUCTION LOD AREA NECESSARY FOR THE CONSTRUCTION OF THE ACCESS / CONSTRUCTION ROAD.
- 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.
- CLEAR AND GRUB STREAM CHANNEL.
- REGRADE CHANNEL TO THE GRADE AND GEOMETRY SHOWN IN THE PROFILE AND SECTION VIEWS.
- CONSTRUCT POOLS AND RIFLES WORKING IN A DOWNSTREAM TO UPSTREAM DIRECTION.
- INSTALL RIPRAP AND BANK STABILIZATION.
- FINAL GRADE ALL DITCHES AND DISTURBED AREAS AND APPLY PERMANENT SEEDING AND STABILIZATION AS SOON AS FINAL GRADE IS ACHIEVED.
- 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.
- 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:**

- 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.
- 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.
- IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC.
- 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.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- 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.
- APPROVED PLANS REMAIN VALID FOR 5 YEARS FROM THE DATE OF APPROVAL.
- 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.
- 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.
- 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.
- 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.
- 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	DESCRIPTION
DATE	ACOE COMMENTS
1.20.206	ACOE COMMENTS
3.12.206	ACOE COMMENTS



**SUSSEX CONSERVATION DISTRICT**  
 23818 SHORTLY RD., GEORGETOWN, DE 19557  
 PHONE: (302) 858-2105 FAX: (302) 858-0951

**DNREC - Division of Watershed Stewardship**  
**Drainage Program**

Dover Office: Georgetown Office  
 285 Beher Blvd., Suite 102 Phone: (302) 739-9921 21309 Beher Rd. Unit 6 Phone: (302) 855-1930  
 Dover DE, 19901 Fax: (302) 739-6724 Georgetown DE, 1947 Fax: (302) 671-7659



**STAFFORD TAX DITCH**  
 BANK STABILIZATION PROJECT  
 MARSHY HOPE RIVER / CHESAPEAKE BAY WATERSHED  
 GREENWOOD, DELAWARE

**EROSION & SEDIMENT CONTROL**  
**DETAILS & NOTES**

Date:	3.12.2026
Designed:	AR - JLE
Planned:	TB - KW - JG
Drawn:	JLE