

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?

- | | | |
|--------------------------|-----|--|
| <input type="checkbox"/> | Yes | BASIC APPLICATION |
| <input type="checkbox"/> | Yes | SIGNATURE PAGE (Page 3) |
| <input type="checkbox"/> | Yes | APPLICABLE APPENDICES |
| <input type="checkbox"/> | Yes | SCALED PLAN VIEW |
| <input type="checkbox"/> | Yes | SCALED CROSS-SECTION OR ELEVATION VIEW PLANS |
| <input type="checkbox"/> | Yes | VICINITY MAP |
| <input type="checkbox"/> | Yes | COPY OF THE PROPERTY DEED & SURVEY |
| <input type="checkbox"/> | Yes | THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET |
| <input type="checkbox"/> | 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: _____ Telephone #: _____
 Mailing Address: _____ Fax #: _____
 _____ E-mail: _____

2. Consultant's Name: _____ Company Name: _____
 Mailing Address: _____ Telephone #: _____
 _____ Fax #: _____
 _____ E-mail: _____
3. Contractor's Name: _____ Company Name: _____
 Mailing Address: _____ Telephone #: _____
 _____ Fax #: _____
 _____ E-mail: _____

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):

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 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: _____ County: N.C. Kent Sussex
 _____ Site owner name (if different from applicant): _____
 _____ Address of site owner: _____

8. Driving Directions: _____

 (Attach a vicinity map identifying road names and the project location)
9. Tax Parcel ID Number: _____ Subdivision Name: _____

WSLS Use Only:	Permit #s: _____
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"/>
Corps Permit: SPGP 18 <input type="checkbox"/> 20 <input type="checkbox"/>	Nationwide Permit #: _____ Individual Permit # _____
Received Date: _____	Project Scientist: _____
Fee Received? Yes <input type="checkbox"/> No <input type="checkbox"/>	Amt: \$ _____ Receipt #: _____
Public Notice #: _____	Public Notice Dates: ON _____ OFF _____

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: _____ waterbody is a tributary to: _____

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

12. Is the project: On public subaqueous lands? On private subaqueous lands?*

In State-regulated wetlands? In Federally-regulated ~~wetlands?~~ **waters**

*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):

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:

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: _____ 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, _____, 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.

Authorized Agent's Name: _____ Telephone #: _____
 Mailing Address: _____ Fax #: _____
 _____ E-mail: _____

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

 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.



 Applicant's Signature

 Date

 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.

 Contractor's Name

 Date

 Print Name



550 Bay Road
Dover, DE 19901
t 302.734.9188 centuryeng.com

September 2023

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

RE: Delaware Department of Natural Resources and Environmental Control
Division of Fish and Wildlife
Ingrams Pond Boat Ramp Replacement
DNREC Wetlands & Subaqueous Lands Permit Application

To Whom it May Concern,

On behalf of our client, the Delaware Department of Natural Resources Division of Fish and Wildlife, (DNREC-FW), Century Engineering, LLC. (Century) is pleased to inform the Wetlands and Subaqueous Lands Section about the Ingrams Pond Boat Ramp Replacement project (herein: project). This application package provides the documentation supporting a request for a Wetlands and Subaqueous Lands Permit.

DNREC is applying for authorization under USACE Nationwide Permit 36 for impacts to Waters of the U.S. located at the project. The project is located in Sussex County, DE, on Godwin School Road. The project area is a public access boat ramp and parking lot. See attached project mapping for location.

The project consists of replacement of the existing boat ramp and installation of a new fixed dock. The new boat ramp will be slightly longer and better aligned with the parking lot. The new fixed dock will run the length of the ramp to aid in launching and loading watercraft. Six timber piles will be driven to provide foundational support for the new fixed dock. Temporary sheet pile and dewatering will occur to complete in water work. Additional work outside of jurisdictional resources includes reconstruction of the parking lot and installation of a concrete pad and screen wall for portable restrooms. The parking lot will be resurfaced and striped to provide designated parking spaces for vehicles and vehicle/trailer parking. A Handicap designated parking space will also be created.

A Waters of the U.S. Delineation was performed in December 2021, map attached.

See Plans for impacts to non-mapped subaqueous lands. Impacts are identical to Federal impacts, map provided.

As such the DNREC - WSLS impacts are as follows:

IMPACT AREA ID	TYPE	VOLUME (CY)
Ramp	Concrete	15.0
Ramp	Stone	17.2
TOTAL FILL		32.2 CY

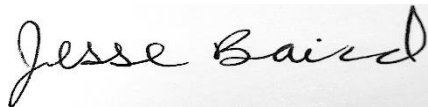
IMPACT ID	DESCRIPTION	IMPACT	Area (AC/LF)	Loss (AC)
1	12" Diameter Timber Piles (6 Total)	—	0.0001	—
2	Remove Existing Ramp, Install Riprap	Permanent	0.0006	—
3	Riprap	Permanent	0.0042	—
4	Remove Existing Ramp	Permanent	0.0016	—
5	Install New Ramp	Permanent	0.0002	0.0002
6	Install New Ramp	Permanent	0.0110	—
7	Construction Access, Dewater	Temporary	0.0150	—
8	Construction Access, Dewater	Temporary	0.0001	—
9	Temporary Sheetpile	—	125 LF	—
TOTAL PERMANENT WOUS IMPACTS			0.0176	— AC
TOTAL TEMPORARY WOUS IMPACTS			0.0151	— AC
TOTAL WOUS LOSS			0.0002	— AC

DNREC Water Quality Certification and Coastal Zone Management are issued for Nationwide Permit 36.

Rare, threatened, and endangered species coordination correspondence to date is provided. Historical/Archeological coordination is included.

No loss or compensation to DNREC-WSLS regulated resources is planned for the project. Please see the attachments for supporting information with the project.

Sincerely,



Jesse Baird
Environmental Scientist
Century Engineering, LLC

Attachments (3 Copies of the Following)

- DNREC-Basic Application
- USGS Topographic
Quadrangle Map, Aerial
Imagery, Vicinity Map and
Location Map (with Aerial)
- Subaqueous Lands Impact Map
- Waters of the U.S. Delineation
Map
- Appendix A Boat Docking Facilities
- Appendix B Boat Ramps (Ramp)
- Appendix H Fill
- Appendix I Rip-Rap Sills and
Revetments
- Appendix O Marinas
- Construction Plans
- Rare, Threatened, and
Endangered species
correspondence
- Historic/Archaeological
correspondence
- Photographs

Cc:

Jeremey Ashe, DNREC

Mike Yost, United States Army Corps of Engineers, Philadelphia

BOAT DOCKING FACILITIES

Any boat docking facility for more than four (4) vessels is considered a marina facility (see definitions and explanations section) and requires the applicant to complete Appendices N and O, and make application to the U. S. Army Corps of Engineers for approval.

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

1. Briefly describe the project. (Attach additional sheets as necessary.)

2. Please provide numbers and dimensions as follows:

Structure Type	Number of Support Pilings	Dimensions (Channelward of MHW or OHW)		Dimensions (Channelward of MLW- n/a for non-tidal water)		New, repair or maintain
		Width ____ ft.	Length ____ ft.	Width ____ ft.	Length ____ ft.	
Dock, Pier, Lift, gangway						
Freestanding Pilings	Number					

Mooring Buoy: How many moorings will be installed? _____
 What will be used for the anchor(s)? _____
 Anchor/Mooring Block Weight _____
 Anchor Line Scope (Length or Ratio) _____
 Water Depth at Mooring Location _____

Impounded OHW OHW

- 3. Approximately how wide is the waterway at this project site? _____ ft. (measured from ~~MLW~~ to ~~MLW~~)
- 4. What will be the ~~mean low~~ ^{OHW} water depth at the most channelward end of the mooring facility? _____ ft.
- 5. What type of material(s) will be used for construction of the mooring facility (e.g. salt treated wood, aluminum, fiberglass floats, etc.) Use of creosote-treated wood is prohibited.
- 6. Circle any of the following items that are proposed over subaqueous lands:
 Fish Cleaning Stations/Benches/Ladders/Water Lines/ Satellite/Electric Lines/ Handrails/Other (Describe)

If any of the items are circled above, include their dimensions and location on the application drawings.

7. What will be the distance from the most channelward end of the docking facility to the edge of any natural or man-made channel? _____ ft.
8. Describe the vessels that will be berthed at the docking facility. Please draw proposed vessel locations on plans and drawings.
- | | | | |
|------------------|--------------|-------------|-------------|
| Make/model _____ | length _____ | width _____ | draft _____ |
| Make/model _____ | length _____ | width _____ | draft _____ |
| Make/model _____ | length _____ | width _____ | draft _____ |
| Make/model _____ | length _____ | width _____ | draft _____ |
9. Please provide a copy of the current state registration or Coast Guard Certificate of Documentation for each motorized vessel listed above.
10. Give the number and type of each Marine Sanitation Device (e.g. MSD III, Portable toilet) that will be used on vessels to be docked at the facility.
11. Is there currently a residence on the property? _____ Yes _____ No
12. Do you plan to reach the boat docking facility from your own upland property? _____ Yes _____ No If "No", explain your proposed means of access and provide documentation of easement or documentation authorizing access if you intend to cross someone else's property.
13. Will any portion of the structure be located in privately owned underwater land (such as a pond or lagoon) owned by someone other than the applicant? _____ Yes _____ No.
If yes, written permission of the underwater land owner must be provided with this application.
14. What is the width of the waterfront property frontage adjacent to subaqueous lands? _____ ft.
Will any portion of the structure or any vessel be placed within 10 feet of your neighbor's property line?
_____ Yes _____ No
If yes, a letter of no objection from the adjacent property owner must be included with this application.

BOAT RAMPS

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

1. How many boat ramps will be constructed? _____

2. What are the dimensions of the proposed boat ramp(s)?

_____ Length _____ Width
 _____ Slope _____ Thickness

3. How many feet will the boat ramp(s) extend channelward of:

Tidal Waters: mean high water line? _____ ft.

Non-tidal Waters: ordinary high water line? _____ ft.

4. How many square feet of the boat ramp(s) will be located:

Below mean high water? _____ sq. ft.

On vegetated wetlands? _____ sq. ft.

5. Will any docking facilities be constructed alongside of the boat ramp(s)? _____ Yes _____ No
 If your answer is yes, complete Appendix A and show structure on plans.

6. What type of material(s) will be used for construction of the boat ramp(s) (e.g. concrete, timber, gravel, etc.)?

7. Will any fill be required? _____ Yes _____ No If yes, complete the appropriate appendix.

8. Amount of material to placed? _____ cubic yards below MHW
 _____ cubic yards below MLW

9. Will any dredging or excavation be required? _____ Yes _____ No If yes, complete the dredging appendix.

10. What boat ramp(s) do you now use in the area?

11. Will this ramp be: _____ public, _____ commercial, _____ private? If public or commercial, complete Appendix N (Marinas).

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? _____ ft.
 mean low water line? _____ ft.
 - b. Non-tidal waters: ordinary high water line? _____ ft.

2. What is the area of fill that will be located:
 - a. on subaqueous land (channelward of mean high water) _____ sq. ft.
 - b. on vegetated wetlands? _____ sq. ft.

3. What is the source of the fill?
 _____ 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? _____ cubic yards
 - a. What is the total fill per running foot of shoreline? _____ cubic yards

5. What method will be used to place the fill?

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

7. How will the fill be retained? Complete appropriate appendix.

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?

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

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? _____

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

4. Describe the existing shoreline:

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

6. What is the number of cubic yards of rip-rap per running foot of shoreline? _____

(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: _____ 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: _____ (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: _____ (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 ___ No

E. What is the average slope of the existing bank? _____

F. What is the proposed slope of the rip-rap revetment? _____

(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 ___ No

G. 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 ___ 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:

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:

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

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

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

MARINAS

Marina applicants must complete this appendix and any other appendices that may apply to the proposed project (see "List of Appendices").

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

1. Name of marina: _____

2. Complete mailing address for marina: _____

Telephone Number: _____

3. Name and complete address for Harbormaster, if applicable:

4. Check appropriate box: New Marina Alteration to Existing Marina

5. Number of Slips: Complete Appendix A for details of docking facilities.

	a. Wet Slips	Dry Storage Spaces
b. Existing	_____	_____
c. Proposed or Additional	_____	_____

- If this is an alteration to an existing marina, please be advised that the questions that follow pertain only to the altered portion(s) of the facility.

6. Shellfish Resources: Is any part of the marina located within or adjacent to a classified shellfish growing area? This information can be obtained from the Division of Watershed Stewardship, Watershed Assessment Section (302-739-9939)

____ Yes ____ No

If yes, how is the area currently classified?

____ Approved Area	____ Conditionally Restricted Area
____ Conditionally Approved Area	____ Prohibited Area
____ Restricted Area	

7. Submerged Aquatic Vegetation (SAV): Are any SAV beds located within the marina basin or adjacent areas? ____ Yes ____ No

8. Critical Habitats: Is the marina located within or adjacent to an area classified as a critical habitat by the Department's Division of Parks and Recreation? Critical habitat areas are those that are included in the Natural Areas Inventory, or that provide habitat for species included in the State Endangered Species Act (7 Del. C., Chapter 6). To obtain the locations of these areas, contact the Division of Parks and Recreation at (302) 739-5285. Yes No

9. Dredging and Dredged material Disposal: Complete Appendices R and/or S.

10. Shoreline Protection Structures: Complete appropriate Appendices.

11. Water Supply: Describe the existing or proposed water supply facilities for the project.

Public water system. Identify: _____

Private well. If existing, include the DNREC Well Permit Number: _____

If there are plans to construct a new well, a permit must be obtained from the Department's Water Supply Section prior to well construction.

12. Wastewater Facilities:

a. How many restroom facilities are planned for the marina? _____

If none, please explain:

b. How will the wastewater from the facility be handled?

Public sewer, identify: _____

On-site septic system

Other, describe:

c. Identify the permit numbers for any treatment, storage or disposal permits that have been obtained for the proposed wastewater facilities, including name and permit number for any waste transporters who will be transporting wastewater or septage.

d. If permits for the wastewater facilities have not yet been obtained, have permit applications been submitted? Yes No

If Yes, show the date and to whom the application was mailed. If no, describe all proposed plans for wastewater handling. Attach additional sheets as necessary.

13. Parking:

How many parking spaces will be provided? _____

Does the proposed parking plan conform to:

Local planning codes or requirements; (Contact the County Planning Department and/or local municipal government offices for this information). Yes No

The 0.5 spaces/slip rebuttable presumption from the Marina Regulations Yes No

If no, please explain:

14. Stormwater Management: Describe in detail the plans to detain the first one-half inch of stormwater run-off from the disturbed portion of the site and release it over a 24 hour period. Attach additional sheets and drawings as necessary.

15. Solid Waste Management:

How many trash receptacles/ recycling bins will be provided at the marina? _____

If trash receptacles will not be provided, what measures will be taken to ensure that solid wastes are properly disposed of?

16. Boat Maintenance Areas and Activities:

- a. Describe in detail how boat maintenance by-products, debris, residues, spills and run-off from maintenance areas will be controlled in accordance with the Marina Regulations. Attach separate sheets if necessary.
- b. Will special containers for waste oils and other maintenance wastes be provided? _____ Yes
_____ No Explain:
- c. Describe in detail how materials used in maintenance and repair operations will be handled and stored. Materials of concern include, but are not limited to, paints, solvents, oils, greases, preservatives, pesticides, epoxies and corrosive cleaners. Indicate whether local fire codes or national Fire Protection Association (NFPA) standards have been used in developing the proposed handling and storage. Attach separate sheets if necessary.

17. Fuel Storage and Delivery Facilities/Spill Contingency Plan:

- a. Describe in detail all procedures for storage, handling and dispensing of fuel. Indicate whether local fire codes or National Fire Protection Association (NFPA) standards have been used in developing proposed procedures. A permit from the Department's Underground Storage Tank Branch may also be required. Attach separate sheets as necessary.
- b. Describe in detail procedures that will be used to contain and clean any fuel spills that occur as a result of marina operations. Notification procedures should also be described. Attach separate sheets if necessary.

18. Fire Protection Systems: Describe the fire protection systems that are proposed for the facility. Indicate whether local fire codes or National Fire Protection Association (NFPA) standards have been used in choosing and designing the systems. Attach additional sheets as necessary.

19. Life Safety Equipment:

- a. For alterations to existing marinas: Does the alteration involve the addition of new water-based structures? Yes No If yes, complete 20 B. If no, skip to question 21.
- b. How many floatation devices will be provided around the marina and how far apart will they be located?

20. Fish Waste:

Will fish cleaning stations be provided? Yes No

If yes, how many? (Be sure to show their location on the engineering plans).

Will the marina provide a live bait concession? Yes No

21. Piers and Docks: Complete Appendix A.

22. **Drawing Requirements:** At a minimum, all marina applicants must submit at least the following drawings:

- a. Elevation or Section View
 - b. Vicinity Map
 - c. Plan View
- General Information for All Drawings: For all major structures, the structural dimensions and distance from the nearest property line, survey marker or permanent landmark should be shown.
 - Wherever possible, identify the materials used in construction. If dredging or filling is involved, show the volume and type of materials to be moved, and the grade to be used.

a. Elevation or Section View

The elevation or section view includes the following, as applicable: (check those which apply). Pre-checked items must be included.

Mean high and low water lines;

Construction details for all water-based structures (e.g. piers docks, pilings);

Construction details for all bulkheads, rip-rap and other shoreline protection structures;

Intake and outfall structures

Boat Ramps

Channel or basin modifications (proposed dredging areas)

Other

b. Vicinity Map

c. Plan View

The plan view should be prepared on 8 1/2" x 11" paper, and in a standard blue print size and format, and contain the locations of the following features, as applicable (Check all those which apply to the project and include these items on the plan view drawing):

- Property boundaries
- Shoreline
- Mean high and low water lines
- Direction of river flow/ebb and flow of tide
- Proposed channel
- Navigation Aids
- Piers, docks, pilings, bulkheads, moorings, anchorages, jetties, groins, breakwaters and other water-based structures
- Slips (Wet)
- Slips (Dry)
- Boat ramp(s)
- Buildings, other structures (identify each)(New fixed dock will be installed)
- Boat storage areas/facilities
- Boat maintenance area(s)
- Extent of roof coverage (e.g. over maintenance areas, boat storage areas, etc.)
- Roadways (identify surface, e.g. asphalt, gravel dirt, etc.) (Asphalt)
- Parking areas (identify surface, e.g. asphalt, gravel, dirt, grass, etc.) (Asphalt)
- Maintenance materials storage areas(s)
- Public telephone(s)
- Public restroom(s)
- Fish cleaning station(s)
- Life safety equipment station(s)
- Fuel dispensing pump(s) underground storage tank
- Septic tank
- Sewer connection/wastewater collection system
- Water supply well
- Portable fire extinguisher(s), fire hydrant(s)
- Spill containment equipment storage areas(s)
- Trash receptacle(s) waste oil - other waste receptacles
- Stormwater management facilities
- Compensation area for wetlands
- Other

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

[Greater Atlantic Regional Office](#)

[Atlantic Highly Migratory Species Management Division](#)

Query Results

Degrees, Minutes, Seconds: Latitude = 38° 35' 19" N, Longitude = 76° 40' 19" W


Decimal Degrees: Latitude = 38.589, Longitude = -75.328







The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** WARNING ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
		Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Clearnose Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Longfin Inshore Squid	Eggs	Mid-Atlantic	Atlantic Mackerel, Squid, & Butterfish Amendment 11
		Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
		Atlantic Butterfish	Adult	Mid-Atlantic	Atlantic Mackerel, Squid, & Butterfish Amendment 11

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Spiny Dogfish	Sub-Adult Female Adult Male	Mid-Atlantic	Amendment 3 to the Spiny Dogfish FMP
		Summer Flounder	Larvae Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Black Sea Bass	Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

All spatial data is currently available for the Mid-Atlantic and New England councils,

Secretarial EFH,

Bigeye Sand Tiger Shark,

Bigeye Sixgill Shark,

Caribbean Sharpnose Shark,

Galapagos Shark,

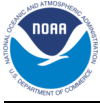
Narrowtooth Shark,

Sevengill Shark,

Sixgill Shark,

Smooth Hammerhead Shark,

Smalltail Shark



Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 2,197.28 acres

Aug 23 2023 15:03:23 Eastern Daylight Time



Summary

Name	Count	Area(acres)	Length(mi)
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



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: 2023-0003722
Project Name: Ingrams Pond Boat Ramp Replacement Project

August 23, 2023

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 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 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:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.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/program/migratory-bird-permit/what-we-do>.

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/library/collections/threats-birds>.

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/partner/council-conservation-migratory-birds>.

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.

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

PROJECT SUMMARY

Project Code: 2023-0003722

Project Name: Ingrams Pond Boat Ramp Replacement Project

Project Type: Boat Ramp - Maintenance/Modification

Project Description: The purpose of the project is to replace the existing concrete boat ramp and install a new fixed courtesy dock. This will realign and extend the existing boat ramp which will improve access to the pond. The existing boat ramp is in poor condition, the new ramp will be slightly longer and wider which will provide additional draft for larger vessels. Six (6) timber support piles will be driven to provide foundational support for the fixed courtesy dock. The fixed dock will run parallel the length of the ramp.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.588829649999994,-75.32806180116734,14z>



Counties: Sussex County, Delaware

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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, 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. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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.

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.

LAKE

- [L1UBHh](#)
-

IPAC USER CONTACT INFORMATION

Agency: State of Delaware
Name: Charles Baird
Address: 550 S Bay Road
City: Dover
State: DE
Zip: 19901
Email: jbaird@kleinfelder.com
Phone: 3022454374

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers
Name: Michael Yost
Email: Michael.D.Yost@usace.army.mil



United States Department of the Interior

U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575



Online Certification Letter

Today's date:

Project:

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife, Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor



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

June 21, 2023

Jeremey Ashe
 DNREC Division of Fish and Wildlife
 89 Kings Highway
 Dover, DE 19901

Re: CENTURY 2022 Ingrams Pond Boat Ramp Replace

Dear Jeremey:

Thank you for contacting the Species Conservation and Research Program (SCRP) 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>Anodonta implicata</i>	Alewife Floater	Invertebrate-Non Arthropods	S1	NL	Tier 2	NL
<i>Elliptio fisheriana</i>	Northern Lance	Invertebrate-Non Arthropods	S2	NL	Tier 2	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.

Freshwater Mussels

Alewife floater (*Anodonta implicata*) and northern lance (*Elliptio fisheriana*) are freshwater mussels that are a species of conservation concern in Delaware. Because freshwater mussels are filter feeders, and have a long lifespan and complex life cycle, they often serve as excellent indicators of water quality. Impacts to this population of freshwater mussels can be minimized by taking measures to decrease downstream sedimentation during construction activities.

Fisheries

Sunfish

The Division manages the fish community in Ingrams Pond and the pond supports a popular recreational freshwater fishery. To minimize impacts to the gamefish community, in-water work should not take place during the spawning period (typically **April 1st to July 15th**) to benefit nest building species that utilize shallow water. During this time, water level fluctuations should be kept to a minimum. Also, during hot, dry periods in the summer it is important to maintain dissolved oxygen levels in the pond and in the receiving stream below the dam to minimize the potential for a fish kill. Typically, dissolved oxygen levels are maintained by the natural flow of water through the pond and over the dam. If there is no outflow from the pond and the aquatic vegetation density is high, dissolved oxygen levels can become too low to support fish.

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.

Delaware Ecological Network

Habitat on this parcel has been identified as ecologically important by the Delaware Ecological Network (DEN) and is classified as a core area. The DEN, although non-regulatory, is a statewide conservation network developed using GIS and field collected datasets that help to identify and prioritize ecologically important areas for natural resource protection. The DEN includes ecologically important areas such as forests, wetlands, streams, habitat that supports rare species and areas of especially high quality. The DEN includes the following key elements: 1) Core areas – which contain relatively intact natural ecosystems, and provide high-quality habitat for native plants and animals, 2) Hubs – which are slightly fragmented aggregations of core areas with contiguous natural cover and 3) Corridors – which link core areas together, allowing wildlife movement and seed and pollen transfer between them. The DEN can be accessed through First Map: [Delaware Ecological Network 2.0 | Delaware Ecological Network 2.0 | State of Delaware \(arcgis.com\)](#). We recommend that this DEN designated area be protected to the fullest extent possible.

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,

A handwritten signature in cursive script that reads "Danielle Ellis".

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

November 18, 2022

Melody Abbott
Cultural Preservation Specialist
Division of Parks and Recreation
Delaware Department Natural Resources and Environmental Control
89 Kings Highway,
Dover, DE 19901

**Project: Ingrams Pond Boat Ramp Replacement
SHPO Project Review #2022.10.17.02**

Dear Ms. Abbott:

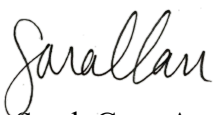
Thank you for the letter received regarding the above cited undertaking. We understand the Delaware Department of Natural Resources and Environmental Control's (DNREC) Division of Fish and Wildlife is proposing to replace the boat ramp at Ingrams Pond along Godwin School Road in Millsboro, Delaware. The proposed undertaking involves the reconstruction of the boat ramp, installation of a fixed courtesy dock, and installation of a concrete pad for portable restrooms. The existing parking lot will be expanded and repaved. As this undertaking is receiving monies through the US Fish and Wildlife Service Sport Fishing Grant, it is subject to Section 106 of the National Historic Preservation Act of 1966 (as amended).

DNREC is proposing to define the area of potential effect (APE) as the area surrounding the existing parking lot and boat launch footprint, with a 50' buffer into the water on the south corner to allow for the boat ramp construction. This includes the limits of disturbance as well as staging, stockpiling, and access. DE SHPO concurs with the APE.

There are no known recorded historic structures within the APE. There is one recorded historic building within a half-mile of the APE. However, this building was previously determined not eligible for the National Register of Historic Places (NRHP). There are no known archaeological sites in the APE. There is one known sites within a half-mile radius. Due to distance, there is low potential for the proposed undertaking to impact known sites. Due to previous disturbance from road construction and the existing boat launch, there is low potential for any intact archaeological sites within the APE.

Therefore, this Office finds there to be No Historic Properties Affected by the proposed undertaking. If plans change additional consultation may be necessary. If you have any questions, please feel free to contact me at (302)-736-7431 or at sarah.carr@delaware.gov.

Sincerely,



Sarah Carr, Archaeologist

Cultural Preservation Specialist

cc: Gwen Davis, SHPO
Jeremy Ashe, DNREC



Ingrams Pond Photo Log

Existing boat ramp looking south into the pond



Existing parking lot looking northeast toward Godwin School road



Looking south toward pond from trail

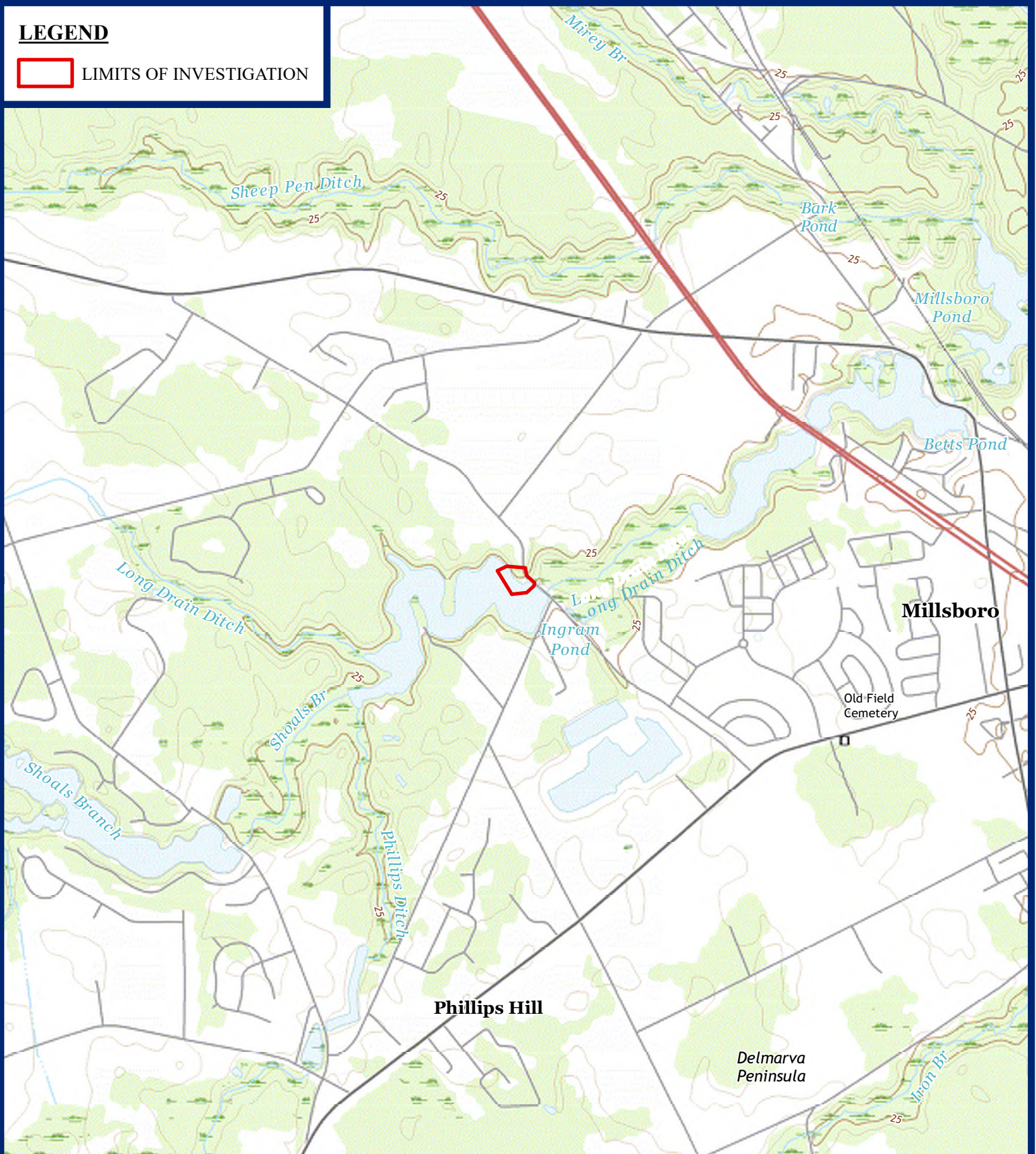


East side of pond along Godwin School road



LEGEND

 LIMITS OF INVESTIGATION



550 Bay Road
Dover, DE 19901
P: 302.734.9188

USGS TOPOGRAPHIC
QUADRANGLE MAP

INGRAMS POND BOAT
RAMP REPLACEMENT

SUSSEX COUNTY, DELAWARE

USGS Topo Quads:
MILLSBORO (DE)

Area: 3.74 +/- AC
Latitude: 38° 35' 19.6"N
Longitude: 75° 19' 40.6"W
Elevation: ~15 – 31 feet
Scale: 1:24,000



LEGEND

 LIMITS OF INVESTIGATION



550 Bay Road
Dover, DE 19901
P: 302.734.9188

AERIAL IMAGERY

INGRAMS POND BOAT
RAMP REPLACEMENT

SUSSEX COUNTY, DELAWARE

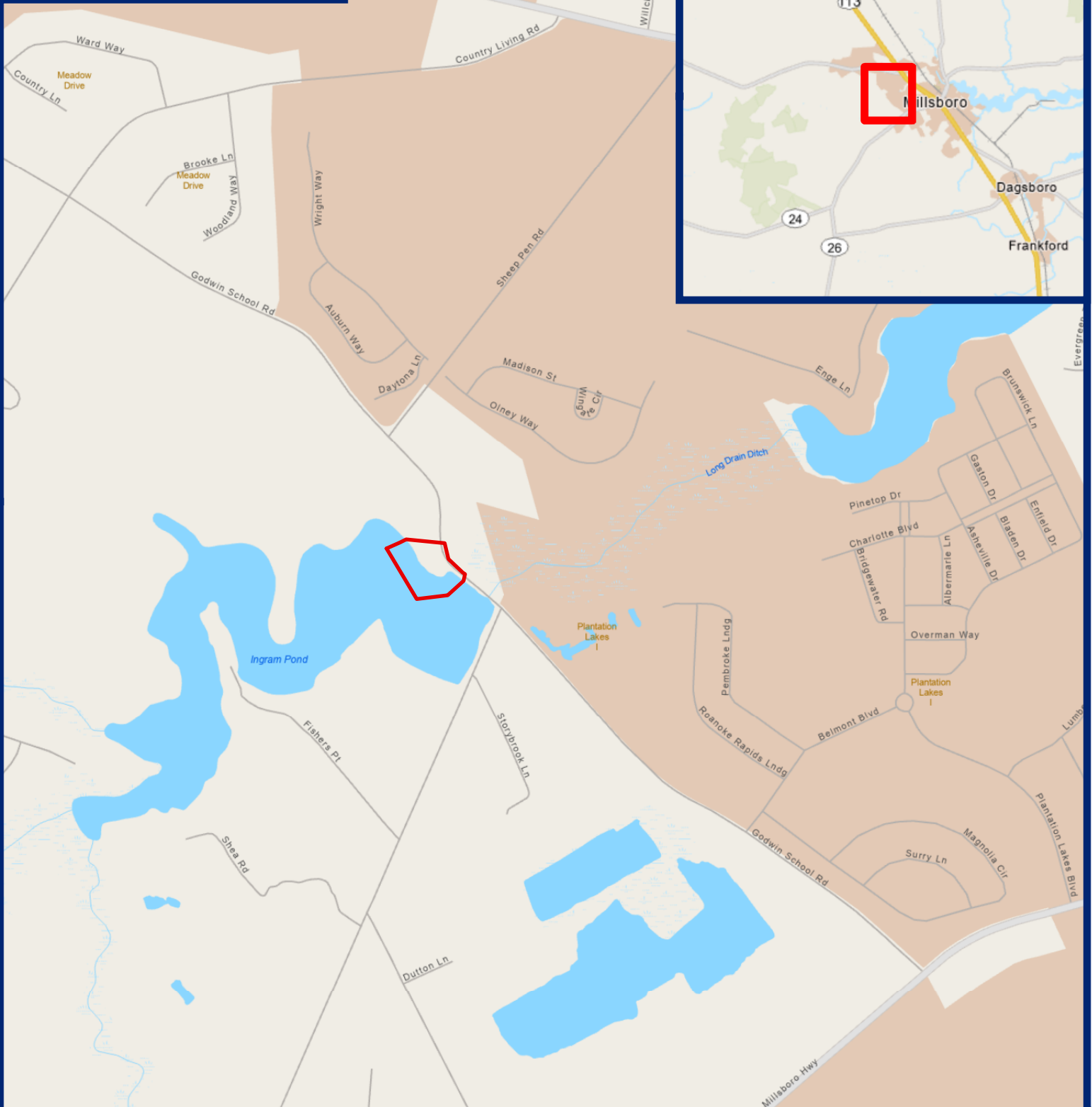
Aerial Imagery Source: FirstMap (2017)
ArcGIS Online



1 inch = 100 feet

LEGEND

 LIMITS OF INVESTIGATION



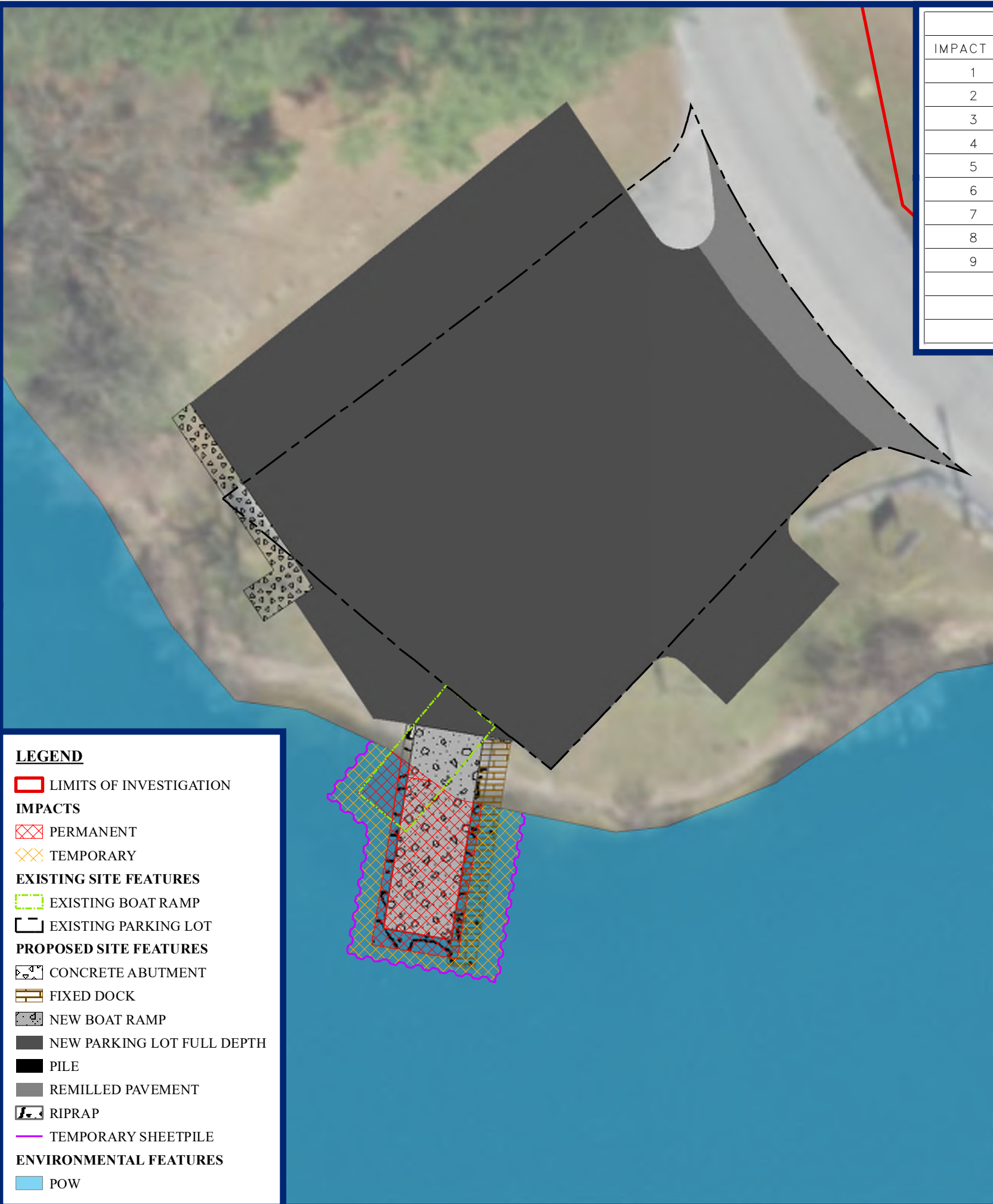
550 Bay Road
Dover, DE 19901
P: 302.734.9188

VICINITY MAP
INGRAMS POND BOAT
RAMP REPLACEMENT
SUSSEX COUNTY, DELAWARE

Base Map Source: FirstMap
ArcGIS Online

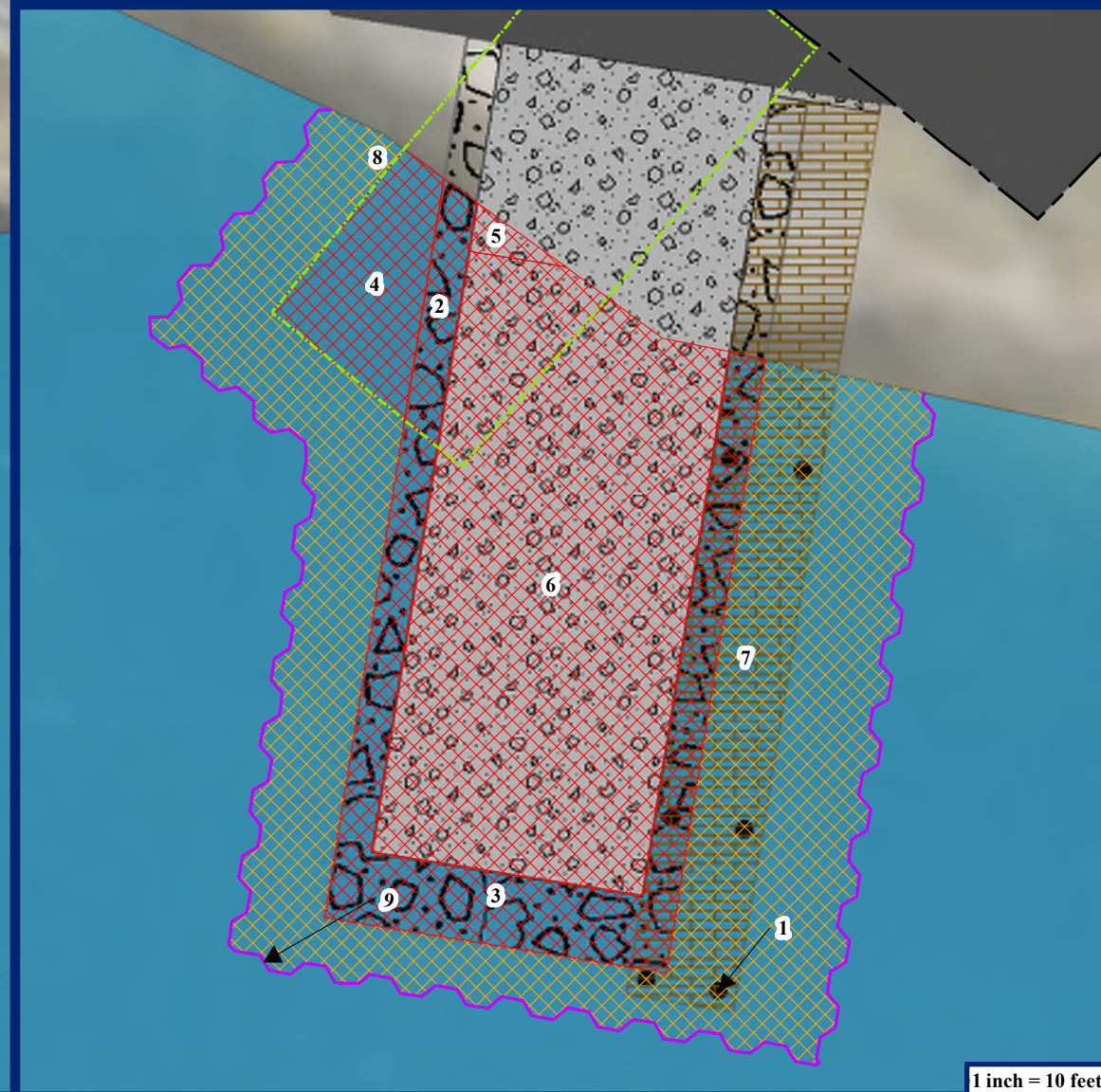


1 inch = 1,000 feet



PALUSTRINE OPEN WATER IMPACTS				
IMPACT ID	DESCRIPTION	IMPACT	AREA (AC/LF)	LOSS (AC)
1	12"-DIA TIMBER PILES (6 TOTAL)	—	0.0001	—
2	REMOVE EXISTING RAMP, INSTALL RIPRAP	PERMANENT	0.0006	—
3	RIPRAP	PERMANENT	0.0042	—
4	REMOVE EXISTING RAMP	PERMANENT	0.0016	—
5	INSTALL NEW RAMP	PERMANENT	0.0002	0.0002
6	INSTALL NEW RAMP	PERMANENT	0.0110	—
7	CONSTRUCTION ACCESS, DEWATER	TEMPORARY	0.0150	—
8	CONSTRUCTION ACCESS, DEWATER	TEMPORARY	0.0001	—
9	TEMPORARY SHEETPILE	—	125 LF	—
TOTAL PERMANENT WOUS IMPACTS			0.0176-AC	
TOTAL TEMPORARY WOUS IMPACTS			0.0151-AC	
TOTAL WOUS LOSS			0.0002-AC	

- LEGEND**
- LIMITS OF INVESTIGATION
 - IMPACTS**
 - PERMANENT
 - TEMPORARY
 - EXISTING SITE FEATURES**
 - EXISTING BOAT RAMP
 - EXISTING PARKING LOT
 - PROPOSED SITE FEATURES**
 - CONCRETE ABUTMENT
 - FIXED DOCK
 - NEW BOAT RAMP
 - NEW PARKING LOT FULL DEPTH
 - PILE
 - REMILLED PAVEMENT
 - RIPRAP
 - TEMPORARY SHEETPILE
 - ENVIRONMENTAL FEATURES**
 - POW



CENTURY

ENGINEERING

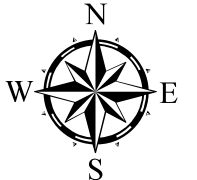
A Kleinfelder Company

550 Bay Road | Dover, DE 19901 | P: 302.734.9188

INGRAMS POND BOAT RAMP
RAMP REPLACEMENT PROJECT

WATERS OF THE U.S. IMPACTS

SUSSEX COUNTY, DELAWARE



1 inch = 25 feet

Project Manager:	AS
Drawn:	TA
Job Number:	175013.81
Revisions:	NONE

NOTES:
 1. BASE MAPPING OBTAINED FROM CENTURY ENGINEERING, INC.
 2. LIMITS OF WETLAND AND STREAMS DEPICTED ON THIS MAP WERE SURVEYED BY DELDOT.
 3. WETLANDS ARE DELINEATED IN ACCORDANCE WITH THE ROUTINE DETERMINATION FOR AREAS SMALLER THAN FIVE (5) ACRES AS OUTLINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. OTHER WATERS OF THE U.S. & DELAWARE ARE DELINEATED BASED ON THE PRESENCE OF AN ORDINARY HIGH WATER MARK, AS IDENTIFIED BY THE U.S. ARMY CORPS OF ENGINEERS DEFINITION OF WATERS OF THE U.S.

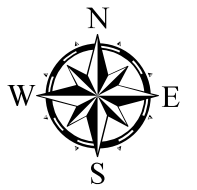
SITE DATA:
 TOTAL PARCEL SIZE = 3.74 +/- AC
 TOTAL WATERS OF THE U.S. = 2.3126 +/- AC

WATERS
 TOTAL POW = 2.3126 +/- AC
 TOTAL WATERS = 2.3126 +/- AC



550 S Bay Road
 Dover, DE 19901
 P: 302.734.9188

INGRAMS POND BOAT RAMP
 RAMP REPLACEMENT PROJECT
 WATERS OF THE U.S. DELINEATION
 SUSSEX COUNTY, DELAWARE



1 inch = 60 feet

Project Manager:	AS
Drawn:	TA
Job Number:	175013.81
Revisions:	NONE



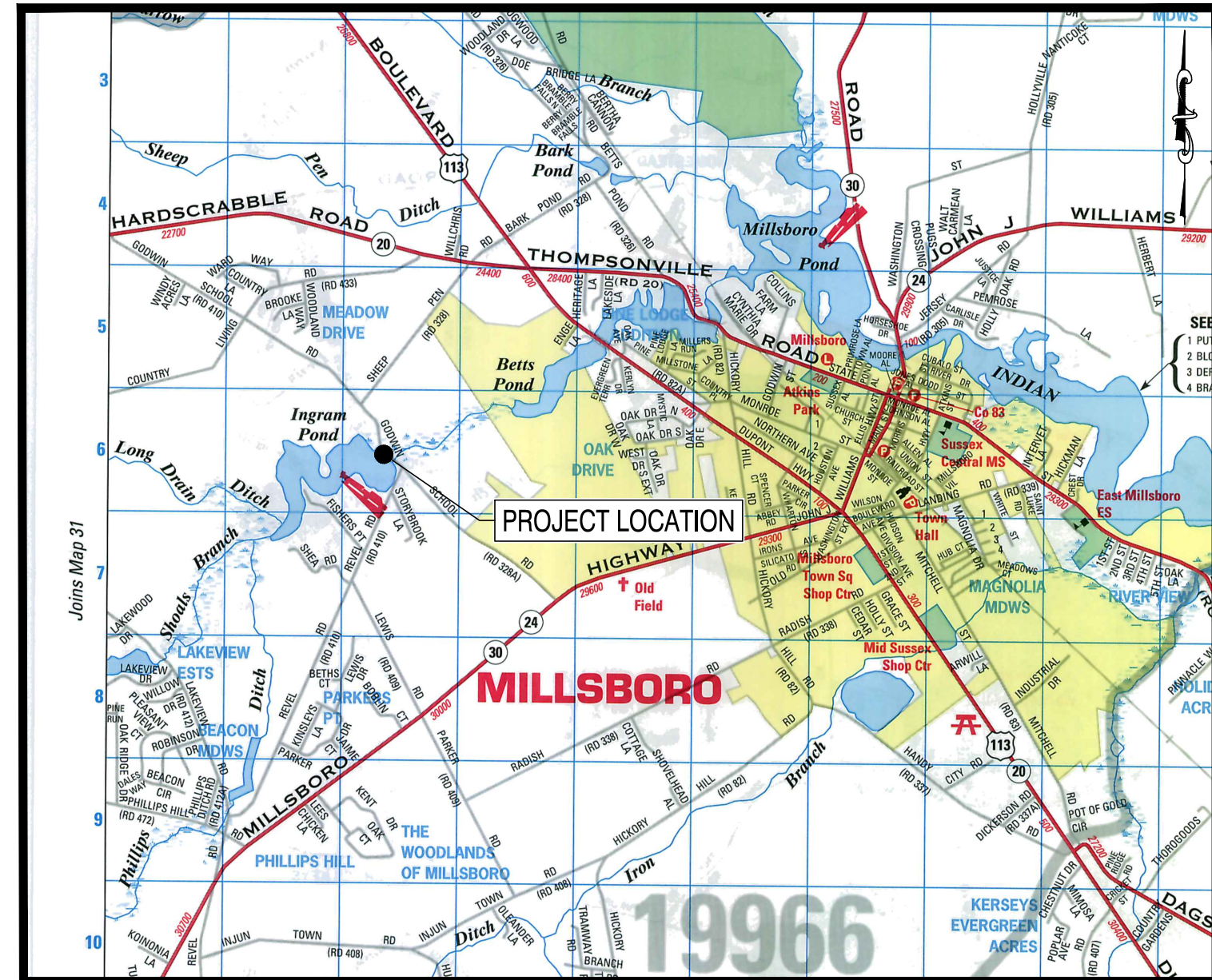
LEGEND

- LIMITS OF INVESTIGATION
- FLAGS
- UPLAND DATA POINT
- WATERS (POW)

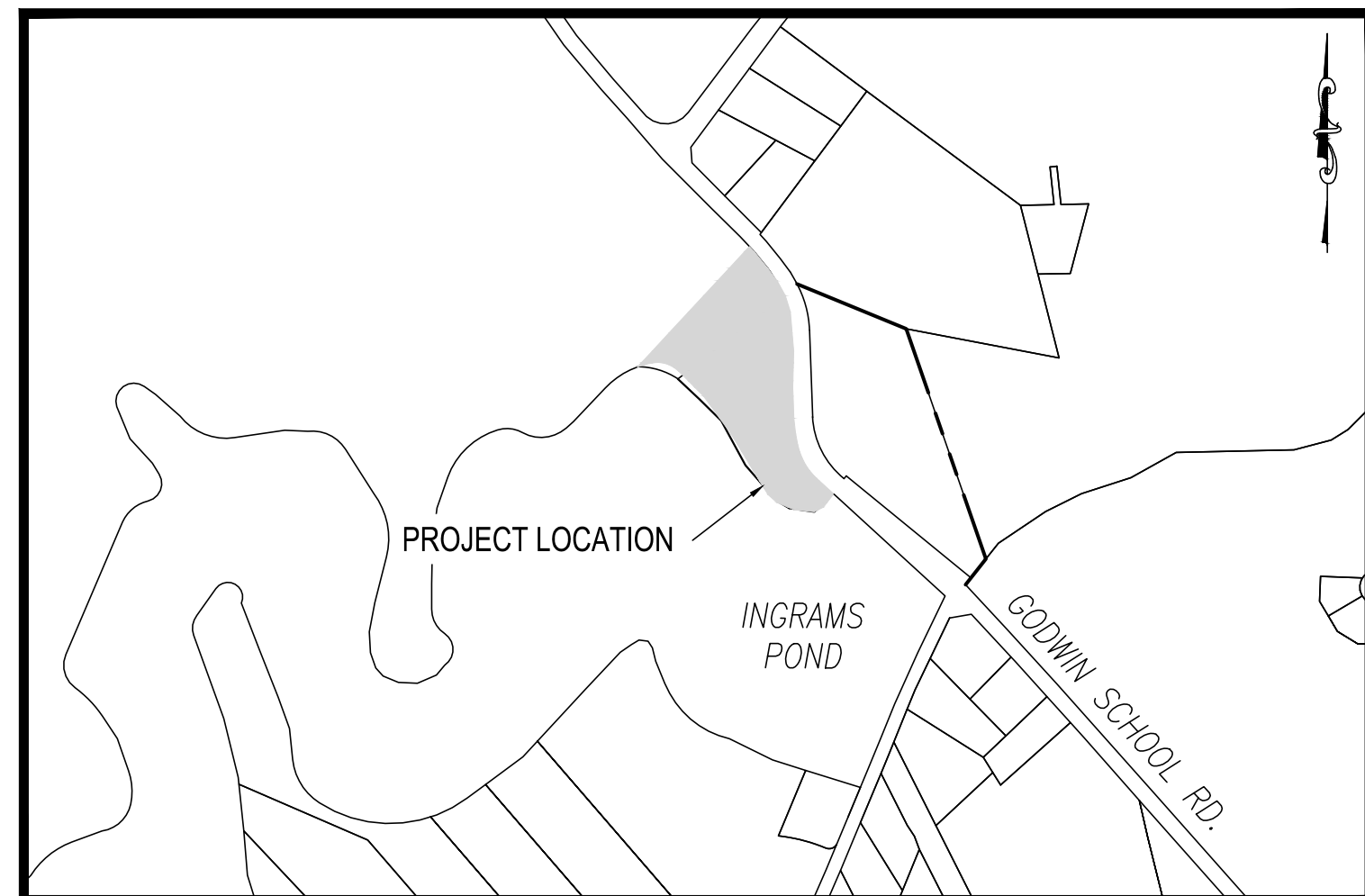
STATE OF DELAWARE
 DIVISION OF FISH AND WILDLIFE
INGRAMS POND
BOAT RAMP RECONSTRUCTION

MILLSBORO, SUSSEX COUNTY, DELAWARE

DFW CONTRACT #NAT 202201-INGRAMSPONDRAAMP
 100% FINAL DESIGN REVIEW - NOT FOR CONSTRUCTION



LOCATION MAP SCALE: NTS



SITE MAP SCALE: 1" = 500'



INDEX OF SHEETS	
C100	COVER SHEET
C101	NOTES & LEGEND
C102	EXISTING CONDITIONS & DEMOLITION PLAN
C103	SITE LAYOUT & GRADING PLAN
C104	STRIPING & SIGNING PLAN
C105	BOAT RAMP DETAILS
C106	FIXED DOCK DETAILS
C107	SITE DETAILS
C108	EROSION & SEDIMENT CONTROL PLAN
C109	EROSION & SEDIMENT CONTROL DETAILS
C110	EROSION & SEDIMENT CONTROL DETAILS
C111	EROSION & SEDIMENT CONTROL DETAILS
C112	EROSION & SEDIMENT CONTROL DETAILS
C113	EROSION & SEDIMENT CONTROL DETAILS

DATA COLUMN	
1. TAX PARCEL NUMBER:	133-16.00-80.00
2. TAX PARCEL AREA:	8.01 ACRES
3. ADDRESS OF SITE:	INGRAM'S POND, GODWIN SCHOOL RD. MILLSBORO, DE 19966
4. DATUM:	VERTICAL - NAVD83 HORIZONTAL - NAD83
5. FLOODPLAIN MAP:	PER FEMA MAP NO. 10005C0454K, DATED MARCH 16, 2015 THE ENTIRE PROJECT AREA IS DETERMINED TO BE WITHIN ZONE AE (BASE FLOOD ELEVATION DETERMINED: ELEV. 23)
6. SITE BREAKDOWN (0.40 ACRE LOO/LOC):	EXISTING SITE IMPERVIOUS: 9,125± S.F. OPEN SPACE: 330,231± S.F. OVERALL TOTAL: 348,916± S.F. PROPOSED SITE IMPERVIOUS: 12,992± S.F. OPEN SPACE: 335,924± S.F. OVERALL TOTAL: 348,916± S.F. PROPOSED INCREASE IN IMPERVIOUS AREA: 0.09 ACRES
7. TOTAL LAND DISTURBANCE:	THE TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 0.40± ACRES (17,618± S.F.)
8. TOPOGRAPHY:	TOPOGRAPHY TAKEN FROM SITE SURVEY PERFORMED BY CENTURY ENGINEERING, LLC. IN DECEMBER 2021
9. WETLANDS:	A SITE INVESTIGATION PERFORMED BY CENTURY ENGINEERING, LLC. ON DECEMBER 2021, FOUND THAT STATE AND FEDERALLY REGULATED WETLANDS AND WATERS WERE LOCATED WITHIN THE SITE AREA.
10. OWNER/DEVELOPER:	STATE OF DELAWARE DIVISION OF FISH AND WILDLIFE 89 KINGS HIGHWAY DOVER, DE 19901
11. APPLICANT:	STUDIO/MADE
12. ENGINEER:	CENTURY ENGINEERING, LLC. 550 BAY ROAD DOVER, DE 19901 ALEX SCHMIDT, P.E. (302) 734-9188 / ASCHMIDT@KLEINFELDER.COM

REVISIONS:	DATE:	DESCRIPTION:	BY:

INGRAMS POND
BOAT RAMP RECONSTRUCTION
COVER SHEET

SEAL:

CIVIL ENGINEER:
CENTURY ENGINEERING
 A Kleinfelder Company



DESIGNED BY:
DLG

DRAWN BY:
DMK

CHECKED BY:
AES

DATE:
SEPTEMBER 2023

SCALE:
AS SHOWN

SHEET NO.:
C100

PROJECT NO.:
175013.81

WETLAND DELINEATION
 THIS PROPERTY, TAX MAP 134-20.00-10.00, HAS BEEN EXAMINED BY CENTURY ENGINEERING, LLC. FOR THE PRESENCE OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS (SECTION 404 AND SECTION 10), STATE SUBAQUEOUS LANDS AND STATE REGULATED WETLANDS AS ESTABLISHED BY THE REVIEWING AGENCIES IN THE FORM OF MANUALS, POLICIES AND PROCEDURES IN PLACE AT THE TIME THAT THE INVESTIGATION WAS CONDUCTED. THE WETLAND INFORMATION CONTAINED IN THIS PLAN SET IS IN ACCORDANCE WITH THIS CRITERIA. THE WETLAND DELINEATION FOR THIS PROJECT WAS COMPLETED BY CENTURY ENGINEERING, LLC.

TJ AUSTIN, PWS
 CENTURY ENGINEERING, LLC.
 550 BAY ROAD
 DOVER, DELAWARE 19901
 PHONE: (302) 734-9188 / FAX: (302) 734-4589

DATE

CIVIL ENGINEER
 PREPARED BY:
CENTURY ENGINEERING
 A Kleinfelder Company

SIGNATURE _____ DATE _____

OWNER
DIVISION OF FISH AND WILDLIFE
 89 KINGS HIGHWAY
 DOVER, DELAWARE 19901
 (302) 739-9231
 (302) 739-7026 (FAX)

SIGNATURE _____ DATE _____

C:\Projects\175013.81 - DFWEC 2017 Engineering\02\175013.81 - Ingrams Pond Ramp\175013.81 - Ingrams Pond Ramp\Construction Plans\C100_Cover_Sheet.dwg, 9/14/2023, 11:39 AM

MANMADE ROADSIDE FEATURES table with columns: FEATURE DESCRIPTION, EXISTING, PROPOSED, ID. Rows include: BOLLARD - STEEL POLE, BOLLARD - WOOD POST, CURB, TYPE 1 AND TYPE 3, CURB, TYPE 2, CURB & GUTTER, TYPE 1, CURB & GUTTER, TYPE 2, CURB & GUTTER, TYPE 3, FENCE - CHAINLINK OR STRANDED, FENCE, FLAG POLE, GUARDRAIL - STEEL BEAM, TYPE 1, LAMP AND POST, MAILBOX, PAVEMENT, PILLAR OR MISCELLANEOUS POST, TRAFFIC SIGN AND POST.

DRAINAGE FEATURES table with columns: FEATURE DESCRIPTION, EXISTING, PROPOSED, ID. Rows include: BIOFILTRATION SWALE, DITCH OR STREAM CENTERLINE, DIRECTIONAL STREAM FLOW ARROW, DRAINAGE INLET, DRAINAGE JUNCTION BOX, DRAINAGE MANHOLE, DRAINAGE PIPE AND FLOW ARROW, FLARED END SECTION, RIPRAP - AREA FEATURE, SAFETY END SECTION, UNDERDRAIN, UNDERDRAIN OUTLET.

PAVEMENT SECTION(S) table with columns: PAVEMENT SECTION(S), MILL AND OVERLAY - SEE TYPICAL SECTIONS FOR MATERIAL AND DEPTHS, FULL DEPTH PAVEMENT.

UTILITY FEATURES table with columns: FEATURE DESCRIPTION, EXISTING, PROPOSED. Rows include: CABLE TV DISTRIBUTION BOX, COMMUNICATIONS - UNDERGROUND, ELECTRIC - UNDERGROUND, ELECTRIC MANHOLE, ELECTRIC METER, ELECTRIC TRANSFORMER, GAS - UNDERGROUND, GAS MANHOLE, GAS METER, GAS VALVE, GAS PUMP - SERVICE STATION, IRRIGATION - UNDERGROUND, ITMS - UNDERGROUND, LIGHTING - UNDERGROUND, LUMINAIRE - POLE MOUNTED, MANHOLE - UNDETERMINED OWNER, RAILROAD TRACKS, SANITARY - UNDERGROUND, SANITARY SEWER MANHOLE, SANITARY SEWER VALVE, SANITARY SEWER CLEANOUT OR VENT, SEPTIC DRAIN FIELD, SIGNALIZATION - UNDERGROUND, SOIL BORING LOCATION, TELEPHONE BOOTH, TELEPHONE MANHOLE, TELEPHONE TEST POINT, TRAFFIC - CONDUIT JUNCTION WELL, TRAFFIC - LIGHT POLE AND BASE, TRAFFIC - PEDESTRIAN POLE & BASE, TRAFFIC - SIGNAL CABINET & BASE, TRAFFIC - SIGNAL POLE AND BASE, UTILITY BOX, UTILITY POLE GUY WIRE ANCHOR, UTILITY POLE, UTILITY TEST HOLE LOCATION, WATER - UNDERGROUND, WATER - FIRE HYDRANT, WATER METER, WATER VALVE, WATER - FIRE DEPARTMENT CONNECTION, WELL HEAD.

NATURAL ROADSIDE FEATURES table with columns: FEATURE DESCRIPTION, EXISTING, PROPOSED. Rows include: HEDGEROW OR THICKET, MARSH BOUNDARY LINE, TREE - CONIFEROUS, TREE - DECIDUOUS, TREE STUMP, SHRUBBERY, WETLAND BOUNDARY - DELINEATED, WOODS LINE BOUNDARY.

RIGHT-OF-WAY FEATURES table with columns: FEATURE DESCRIPTION, EXISTING, PROPOSED. Rows include: DENIAL OF ACCESS, EASEMENT - OTHERS, PERMANENT EASEMENT, PROPERTY LINE, PROPERTY MARKER - CONCRETE, PROPERTY MARKER - IRON PIPE, RIGHT-OF-WAY BASELINE, RIGHT-OF-WAY LINE, RIGHT-OF-WAY & DENIAL OF ACCESS, RIGHT-TO-ENTER, TEMPORARY CONSTRUCTION EASEMENT, CLEAR ZONE, HORIZONTAL CLEARANCE.

SURVEY CONTROL & MONUMENTATION table with columns: FEATURE DESCRIPTION, EXISTING. Rows include: SURVEY BENCHMARK LOCATION, SURVEY TIE POINT LOCATION, SURVEY TRAVERSE POINT.

MISCELLANEOUS FEATURES table with columns: FEATURE DESCRIPTION, PROPOSED. Rows include: BUTT JOINT, CLEAR ZONE, CONSTRUCTION BASELINE, LIMIT OF CONSTRUCTION, DEMOLITION, P.C.C. SIDEWALK, 6" P.C.C. SIDEWALK, PAVEMENT PATCH.

IDENTIFIERS table with columns: FEATURE DESCRIPTION, ID. Rows include: ABANDON BY CONTRACTOR, ABANDON BY OTHERS, ADJUST BY CONTRACTOR, ADJUST BY OTHERS, BEST MANAGEMENT PRACTICE, BUS STOP PAD / TYPE, BUS STOP WITH SHELTER PAD / TYPE, CONCRETE SAFETY BARRIER, CONVERT TO JUNCTION BOX, CONVERT TO DRAINAGE MANHOLE, DO NOT DISTURB, ENERGY DISSIPATOR, FILL WITH FLOWABLE FILL, LANDSCAPE PLANTINGS, PEDESTRIAN CONNECTION / TYPE, RELOCATE BY CONTRACTOR, RELOCATE BY OTHERS, RELOCATE BY PROPERTY OWNER, REMOVE BY CONTRACTOR, REMOVE BY OTHERS, REMOVE BY TRAFFIC CONTRACTOR, RIGHT-OF-WAY MONUMENT.

EROSION & SEDIMENT CONTROL FEATURES table with columns: FEATURE DESCRIPTION, PROPOSED. Rows include: LIMIT OF DISTURBANCE, PORTABLE SEDIMENT TANK, PUMPING PIT, SILT FENCE, COMPOST FILTER LOG.

PROJECT SPECIFICATION HIERARCHY

ELEMENTS UNDER THIS CONTRACT SHALL BE CONSTRUCTED UTILIZING THE FOLLOWING INFORMATION IN THE HIERARCHY LISTED BELOW:

1. CONTRACT AGREEMENT BETWEEN OWNER AND CONTRACTOR.
2. APPROVED PLANS.
3. PROJECT MANUAL AND ENCLOSED TECHNICAL SPECIFICATIONS.
4. STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL EROSION AND SEDIMENT CONTROL HANDBOOK, FEBRUARY 2019 OR MOST CURRENT AT DATE OF ADVERTISEMENT.
5. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS, 2020, OR MOST CURRENT AT ADVERTISEMENT.
6. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS FOR BRIDGE AND ROAD CONSTRUCTION, 2020, OR MOST CURRENT AT DATE OF ADVERTISEMENT.
7. NO DEMOLISHED MATERIAL OR STORED MATERIALS SHALL BE SOLD ON SITE.
8. DEMOLITION SHALL INCLUDE THE REMOVAL, TRANSPORTATION, AND LEGAL DISPOSAL OF ALL MATERIALS AS INDICATED ON THE DRAWINGS, INCLUDING ALL RELATED DEBRIS, ETC.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL EXCESS MATERIAL OFF SITE AND/OR PROVIDING ADDITIONAL FILL MATERIAL AS REQUIRED. THIS PROJECT IS ANTICIPATED TO GENERATE EXCESS MATERIAL.
10. NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE UNLESS SPECIFICALLY NOTED WITHIN THESE PLANS OR SPECIFICATIONS.
11. BLASTING SHALL NOT BE ALLOWED.
12. THERE ARE NO KNOWN HAZARDOUS MATERIALS WITHIN AREAS TO BE EXCAVATED ON THE SITE. IN THE EVENT THAT ANY HAZARDOUS MATERIALS MAY BE ENCOUNTERED WITHIN EXCAVATIONS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK AND CONTACT DNREC.
13. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ALL THE PROPER SEDIMENT AND STORMWATER APPROVALS AND/OR PERMITS THROUGH THE DESIGNATED DELEGATED AGENCY WHICH WILL BE DETERMINED BY THE LOCATION OF THE OFF-SITE MATERIAL STOCKPILE AREA. ALL COSTS ASSOCIATED WITH OFF-SITE STOCKPILE AREAS SHALL BE INCIDENTAL TO THE CONTRACT.
14. THERE IS NO CONTRACTOR STOCKPILE AREA AVAILABLE WITHIN THE LIMITS OF CONSTRUCTION FOR THE PROJECT SITE. THE CONTRACTOR SHALL REMOVE ALL EXCAVATED MATERIALS FROM THE PROJECT SITE. IF THE CONTRACTOR INTENDS TO STAGE OR STORE MATERIALS OFF-SITE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR OBTAINING ALL THE PROPER SEDIMENT AND STORMWATER APPROVALS AND/OR PERMITS THROUGH THE DESIGNATED DELEGATED AGENCY WHICH WILL BE DETERMINED BY THE LOCATION OF THE OFF-SITE MATERIAL STOCKPILE AREA. ALL COSTS ASSOCIATED WITH OFF-SITE STOCKPILE AREAS SHALL BE INCIDENTAL TO THE CONTRACT.
15. THE CONTRACTOR SHALL LOAD TEST ALL SUBGRADE SOIL AREAS PRIOR TO PLACEMENT OF NEW GRADED AGGREGATE BASE COURSE FOR ALL PAVED AREAS. ANY AREAS OF UNSUITABLE MATERIAL SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL AND BACKFILLED WITH APPROVED MATERIAL. DELOOT ITEM NO. 209002 - BORROW TYPE B, SHALL BE UTILIZED FOR BACKFILL OF ALL UNDERCUT LOCATIONS AS DIRECTED BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELOOT STANDARD SPECIFICATIONS. SITE ELEMENTS WITHIN THIS PLAN FOLLOW DELAWARE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS. SIX (6) DIGIT ITEM NUMBER PROVIDED REFERS TO SPECIFICATION SECTION.
16. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 2 WORKING DAYS IN ADVANCE OF THE PROPOSED WORK TO INSPECT THE WORK AT THE FOLLOWING MILESTONES:
 - 1) SUBGRADE PROF-ROLL TESTING
 - 2) FIRST TIMBER PILE PLACEMENT
 - 3) BOAT RAMP REBAR PLACEMENT
 - 4) FIRST HOT-MIX PLACEMENT
17. THE DRAWINGS INDICATE REQUIRED SURFACE GRADE ELEVATIONS AT PAVED ACCESSIBLE PARKING STALLS AND ACCESSIBLE ROUTES BETWEEN THE ACCESSIBLE PARKING, THE RESTROOM FACILITY, AND THE ALUMINUM FIXED DOCK. THE CONTRACTOR SHALL CONSTRUCT THE NEW PAVEMENTS IN STRICT CONFORMANCE WITH THE INDICATED GRADES. IN ADDITION, THE SURFACE TRANSITIONS BETWEEN ASPHALT PAVEMENT, CONCRETE SIDEWALKS, CONCRETE DOCK ABUTMENT AND THE ALUMINUM FIXED DOCK SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT REGARDING ALLOWABLE DIMENSIONS FOR SURFACE GRADIENTS AND CHANGES IN LEVEL AT TRANSITIONS AND GAPS WITHIN THE ACCESSIBLE ROUTE. SEE PLAN DETAILS FOR ALLOWABLE DIMENSIONS.

GENERAL NOTES

1. THE INGRAMS POND BOAT RAMP WILL BE CLOSED TO PUBLIC ACCESS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR WILL HAVE PRIMARY ACCESS AND CONTROL OF THE SITE DURING THE CONSTRUCTION PERIOD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE CONSTRUCTION SITE FROM ACCESS BY THE PUBLIC DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR'S PROCEDURES AND METHODS FOR LIMITING PUBLIC ACCESS SHALL BE SUBMITTED TO AND APPROVED BY DNREC PRIOR TO THE START OF WORK. THE COST TO INSTALL, RELOCATE, AND MAINTAIN SITE SECURITY SHALL BE INCIDENTAL TO THE CONTRACT.
3. AS A MINIMUM, THE CONTRACTOR SHALL CLOSE PUBLIC ACCESS TO THE CONSTRUCTION SITE BY PROVIDING CONSTRUCTION BARRICADES AT THE ENTRANCE TO THE CONSTRUCTION SITE.
4. WHERE, AT ALL TIMES, CONSTRUCTION VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE WITHIN THE DELDOT RIGHT-OF-WAY, OR LESS THAN SIX (6) FEET FROM THE EDGE OF BUT NOT ENCROACHING THE TRAVELWAY, THE CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC ALONG GODWIN SCHOOL ROAD IN ACCORDANCE WITH THE DELAWARE TRAFFIC CONTROL MANUAL, LATEST EDITION. TYPICAL APPLICATION CASE "SHORT DURATION OR MOBILE OPERATION ON A SHOULDER OF A TWO-LANE ROAD (TA-4)", AND ALSO PROVIDE TWO TRAFFIC CONTROL FLAGGERS, ONE FOR EACH DIRECTION OF TRAVEL ON GODWIN SCHOOL ROAD.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION AND SHALL BE IN COMPLIANCE WITH NCHRP 350.
6. THE CONTRACTOR SHALL PROVIDE AND PLACE A MINIMUM OF TWO SIGNS INFORMING THE PUBLIC OF UPCOMING CONSTRUCTION ACTIVITIES AND AREA CLOSURE. THE SIGNS SHALL BE A MINIMUM OF 8.5" X 11" LAMINATED PAPER AND SHALL SAY "NOTICE TO THE PUBLIC: THIS AREA WILL BE CLOSED FROM (INSERT DATE) TO (INSERT DATE) DUE TO CONSTRUCTION ACTIVITIES. PLEASE CALL THE DIVISION OF FISH & WILDLIFE FISHERIES SECTION AT 302-739-9914 WITH ANY QUESTIONS". SIGNS SHALL BE POSTED A MINIMUM OF TWO WEEKS BEFORE THE CONSTRUCTION CLOSURE. SIGN LOCATIONS AND CLOSURE DATES SHALL BE COORDINATED WITH THE FISHERIES PROJECT MANAGER.
7. THE CONTRACTOR SHALL CONDUCT THE WORK WITH CONSIDERATION GIVEN TO THE EXISTING CONDITIONS AND FEATURES AT THE SITE. THE CONTRACTOR SHALL PROTECT ALL FEATURES NOT DESIGNATED TO BE REMOVED. FEATURES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION OR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO DNREC.
8. THE CONTRACTOR SHALL PROVIDE ITS OWN FACILITIES AS NECESSARY DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION TRAILER, STORAGE FACILITIES, AND RESTROOMS.
9. THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER AND ANY OTHER ATTENDEES REQUESTED BY THE OWNER A MINIMUM OF 1 WEEK IN ADVANCE OF MOBILIZATION TO THE SITE.
10. THE CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER AT LEAST 48 HOURS PRIOR TO ALL MEETINGS, INCLUDING PRE-CONSTRUCTION MEETINGS, AS REQUIRED IN THE CONSTRUCTION SPECIFICATIONS.
11. THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS NECESSARY FOR THE WORK.
12. IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR AN APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE FEDERAL, STATE AND MUNICIPAL REGULATIONS, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.
14. THESE DRAWINGS DO NOT INCLUDE NECESSARY ELEMENTS OF CONSTRUCTION SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY, ALL CONSTRUCTION, INCLUDING EXCAVATION, BACKFILLING, DEMOLITION, AND INSTALLATION, MUST BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, CFR 1926.652(d)(2), AND ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR CONSTRUCTION SITE AND WORKER SAFETY.
15. THE TERM "ENGINEER," NOTED THROUGHOUT THE CONTRACT PLANS AND SPECIFICATIONS SHALL REFER TO DNREC, OR THEIR APPOINTED REPRESENTATIVE.
16. THE CONTRACTOR SHALL PROVIDE DNREC A MINIMUM TWO WORKING DAY ADVANCE NOTICE OF ANY PROPOSED UTILITY DISRUPTION OR OUTAGE FOR APPROVAL.
17. THE CONTRACTOR SHALL MAINTAIN A CLEAN SET OF NEATLY DRAWN "AS-BUILT" DRAWINGS LABELED IN RED INK THAT ACCURATELY ILLUSTRATE ALL FIELD CHANGES. FINAL "AS-BUILT" DRAWINGS SHALL BE DATED AND SIGNED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER AT THE END OF THE PROJECT FOR RECORDATION.
18. PORTIONS OF THE WORK ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (STANDARD SPECIFICATIONS) REVISION # 2 DATED JUNE 2022 INCLUDING ALL REVISIONS UP TO ADVERTISEMENT OF THIS PROJECT, UNLESS NOTED OTHERWISE IN THESE PLANS OR THE SPECIFICATIONS. SITE ELEMENTS WITHIN THIS PLAN FOLLOW DELAWARE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS. SIX (6) DIGIT ITEM NUMBER PROVIDED REFERS TO SPECIFICATION SECTION.
19. THIS PROJECT IS SUBJECT TO THE BUILD AMERICA, BUY AMERICA ACT (BABA), ENACTED AS PART OF THE BIPARTISAN INFRASTRUCTURE LAW (BIL) REQUIRES IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS USED IN INFRASTRUCTURE PROJECTS FINANCED BY FEDERAL FINANCIAL ASSISTANCE TO BE PRODUCED IN THE UNITED STATES. ALL MATERIALS THAT WILL BE PERMANENTLY INCORPORATED INTO THIS PROJECT WILL MEET THE BABA MATERIAL REQUIREMENTS. THE CONTRACTOR IS REQUIRED TO CERTIFY AND PROVIDE DOCUMENTATION THAT CONSTRUCTION MATERIALS ARE COMPLIANT WITH BABA REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SITE NOTES :

1. ON-SITE WORK SHALL ONLY BE ALLOWED DURING THE PERIOD FROM OCT 1 THROUGH MAY 1. NO "IN-WATER" WORK SHALL BE ALLOWED DURING THE PERIOD FROM APRIL 1 THROUGH JULY 15.
2. THE BASE SURVEY, INCLUDING ALL CONTOURS AND ELEVATIONS, IS BASED ON CONVENTIONAL SURVEY TAKEN IN THE FIELD. A BOUNDARY SURVEY WAS NOT PERFORMED. THE WETLAND DELINEATIONS WERE TAKEN FROM THE DNREC STATE REGULATED WETLANDS MAP INDEX AND FIELD VERIFIED.
3. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES IN THE FIELD. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY OWNERS INVOLVED TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION AND ELEVATION. ALL COSTS OF UTILITY LOCATING SHALL BE INCIDENTAL TO THE CONTRACT.
4. TO LOCATE EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A LOCATE REQUEST TO MISS UTILITY OF DELAWARE (EASTERN SHORE MARYLAND AND DELAWARE). NO EXCAVATION WORK SHALL BEGIN UNTIL ALL UTILITIES AS IDENTIFIED THROUGH THE MISS UTILITY LOCATE REQUEST HAVE EITHER BEEN CLEARED OR MARKED IN THE FIELD. TO LOCATE PRIVATELY OWNED UTILITIES THE CONTRACTOR SHALL CONTACT AND ARRANGE WITH THE UTILITY OWNER TO MARK THE PRIVATE UTILITIES IN THE FIELD. IF THE PRIVATE UTILITY OWNER DOES NOT MARK THEIR UTILITIES IN THE FIELD, THE CONTRACTOR SHALL EMPLOY A PRIVATE UTILITY COMPANY TO MARK THE UTILITIES.
5. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BEGIN WITHOUT NOTIFYING THEIR OWNERS AT LEAST 48-HOURS IN ADVANCE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE TO THE MAXIMUM EXTENT POSSIBLE. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT UTILITY COMPANY OR UTILITY OWNER REQUIREMENTS. ANY DAMAGE DONE TO EXISTING UTILITIES DUE TO CONTRACTOR'S NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED TO THE SATISFACTION OF THE UTILITY OWNER AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES. THE PERSON RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CERTIFIED BY DNREC FOR EROSION AND SEDIMENT CONTROL RESPONSIBILITY (CERTIFIED CONSTRUCTION REVIEWER - BLUE CARD).
7. THE CONTRACTOR SHALL ONLY WORK WITHIN THE DESIGNATED LIMIT OF CONSTRUCTION (LOC). ALL RUTS AND DEPRESSIONS CAUSED BY CONSTRUCTION ACTIVITY SHALL BE FILLED, TOPSOILED, SEEDED AND MULCHED TO MATCH THE ADJACENT AREA. IMPACTS TO WETLANDS OR WORK OUTSIDE OF THE LIMIT OF CONSTRUCTION IS STRICTLY PROHIBITED.
8. THE AREAS OF SITE WORK ARE GENERALLY SHOWN. HOWEVER, THE EXTENT OF RESTORATION IS NOT NECESSARILY LIMITED TO THESE AREAS. THE CONTRACTOR SHALL RESTORE ALL PAVING, SIDEWALKS, OR NON-PAVED AREAS AFFECTED BY THE CONSTRUCTION TO A CONDITION COMPARABLE TO THAT EXISTING PRIOR TO CONSTRUCTION, AND TO THE SATISFACTION OF DNREC.
9. THE CONTRACTOR SHALL REGRADE AND RESTORE ALL AREAS DISTURBED BY THE CONSTRUCTION AS NECESSARY TO PROVIDE A UNIFORM, GRADUAL TRANSITION BETWEEN NEW FINISHED GRADES AND EXISTING GRADES, TO CREATE A NATURAL APPEARANCE AND TO PROVIDE POSITIVE DRAINAGE AWAY FROM PAVED AREAS AND BUILDINGS. SUCH GRADING AND RESTORATION SHALL BE DONE TO THE SATISFACTION OF DNREC. THE COST FOR SITE RESTORATION SHALL BE INCIDENTAL TO THE CONTRACT.
10. EXISTING SOILS, CONSTRUCTION MATERIALS, DEBRIS, CONCRETE, MASONRY, CONDUIT, PIPE, ETC. REMOVED DURING CONSTRUCTION, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF SITE.

REVISIONS: BY: DATE: DESCRIPTION:

INGRAMS POND BOAT RAMP RECONSTRUCTION

NOTES & LEGEND

DESIGNED BY: DLD

DRAWN BY: DMK

CHECKED BY: AES

DATE: JUNE 2023

SCALE: NTS

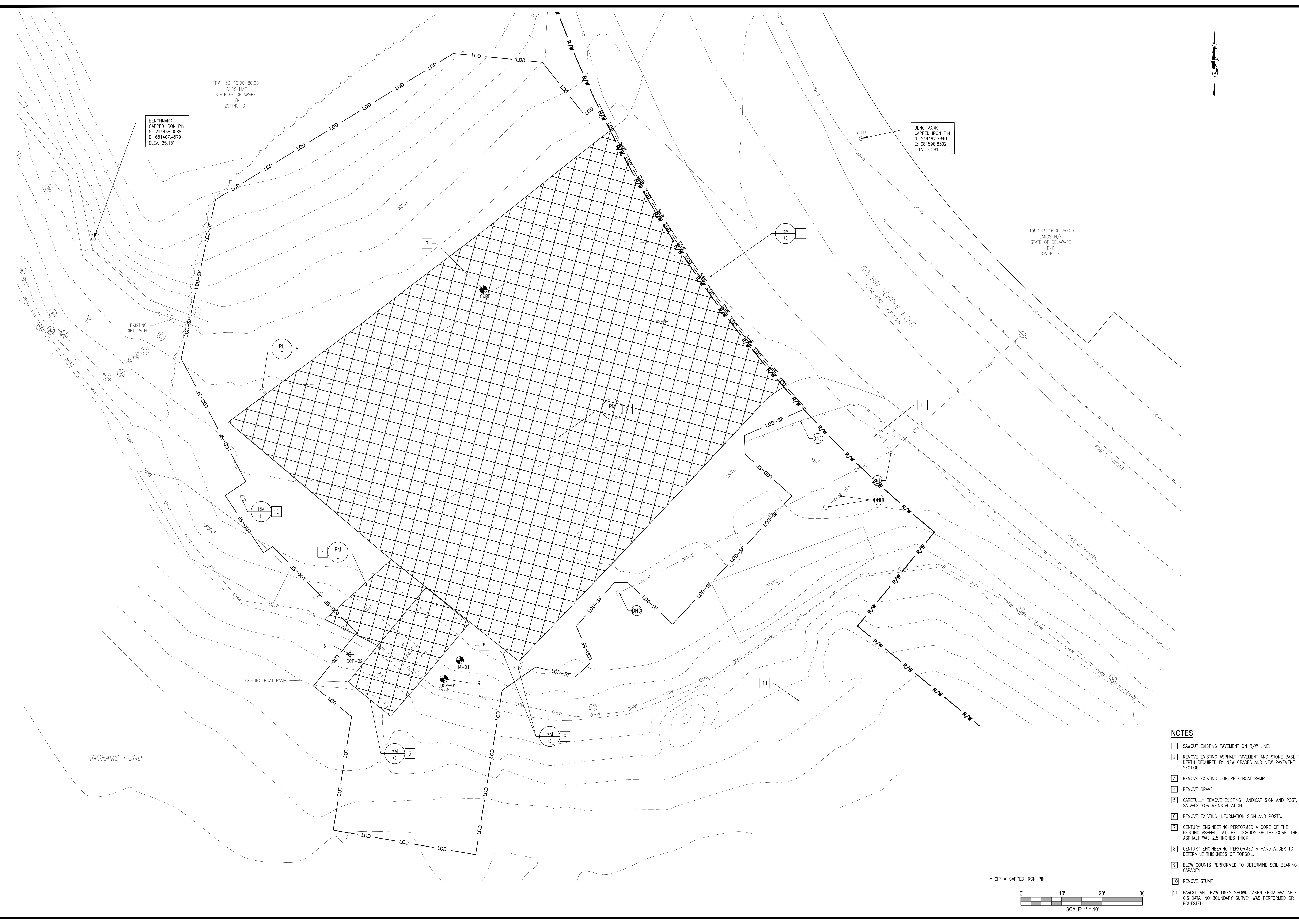
SHEET NO.: C101

PROJECT NO.: 175013.81

CENTURY ENGINEERING A Kleinfelder Company

DELAWARE DEPARTMENT OF TRANSPORTATION

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BENCHMARK
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E: 681407.4579
ELEV: 25.15'

BENCHMARK
CAPPED IRON PIN
N: 214492.7840
E: 681596.8302
ELEV: 23.91

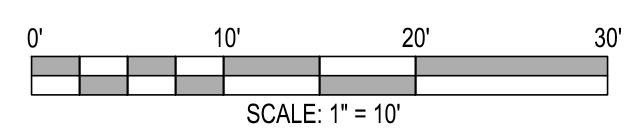
TP# 133-16.00-80.00
LANDS N/F
STATE OF DELAWARE
D/R
ZONING: ST



TP# 133-16.00-80.00
LANDS N/F
STATE OF DELAWARE
D/R
ZONING: ST

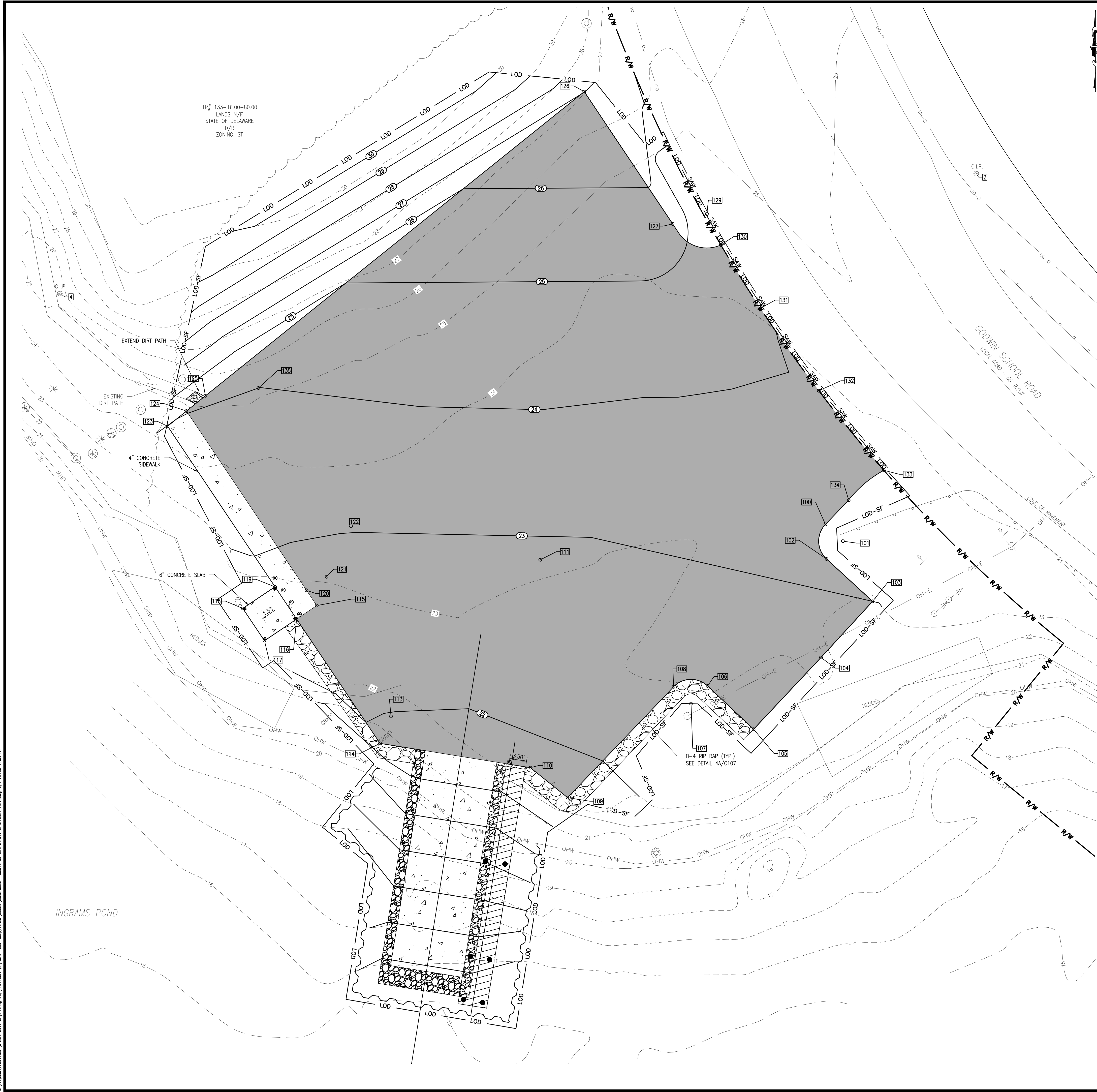
NOTES

- 1 SAWCUT EXISTING PAVEMENT ON R/W LINE.
- 2 REMOVE EXISTING ASPHALT PAVEMENT AND STONE BASE TO DEPTH REQUIRED BY NEW GRADES AND NEW PAVEMENT SECTION.
- 3 REMOVE EXISTING CONCRETE BOAT RAMP.
- 4 REMOVE GRAVEL.
- 5 CAREFULLY REMOVE EXISTING HANDICAP SIGN AND POST, SALVAGE FOR REINSTALLATION.
- 6 REMOVE EXISTING INFORMATION SIGN AND POSTS.
- 7 CENTURY ENGINEERING PERFORMED A CORE OF THE EXISTING ASPHALT. AT THE LOCATION OF THE CORE, THE ASPHALT WAS 2.5 INCHES THICK.
- 8 CENTURY ENGINEERING PERFORMED A HAND AUGER TO DETERMINE THICKNESS OF TOPSOIL.
- 9 BLOW COUNTS PERFORMED TO DETERMINE SOIL BEARING CAPACITY.
- 10 REMOVE STUMP
- 11 PARCEL AND R/W LINES SHOWN TAKEN FROM AVAILABLE GIS DATA. NO BOUNDARY SURVEY WAS PERFORMED OR REQUESTED.

* CIP = CAPPED IRON PIN



REVISIONS:	DATE: _____ DESCRIPTION: _____ BY: _____
INGRAMS POND BOAT RAMP RECONSTRUCTION EXISTING CONDITIONS & DEMOLITION PLAN	
SEAL: _____	
CIVIL ENGINEER: _____	
 CENTURY ENGINEERING <small>A Kleinfelder Company</small>	
	
DESIGNED BY: DLD	
DRAWN BY: DMK	
CHECKED BY: AES	
DATE:	JUNE 2023
SCALE:	1" = 10'
SHEET NO.:	C102
PROJECT NO.:	175013.81



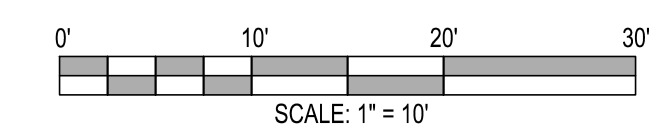
TP# 133-16.00-80.00
LANDS N/F
STATE OF DELAWARE
D/R
ZONING: ST

SITE LAYOUT



POINT NO.	NORTHING	EASTING	ELEVATION	RADIUS
100	214420.2773	681565.6737	23.61	
101	214416.8193	681569.2851	23.42	
102	214413.1383	681565.9014	23.40	5.00
103	214404.3841	681575.4246	23.00	
104	214392.7758	681564.7537	22.96	
105	214377.9608	681550.8354	22.63	
106	214386.8985	681541.3219	22.57	
107	214383.2544	681537.8984	22.92	5.00
108	214386.7169	681534.2912	22.53	
109	214363.8374	681512.3851	21.80	
110	214370.0190	681504.6968	21.78	
111	214412.9708	681506.7485	24.39	
113	214380.6028	681475.8951	21.97	
114	214375.0331	681473.6305	21.87	
115	214403.5130	681460.5472	22.68	
116	214400.7331	681456.3877	22.64	
117	214396.2760	681449.7444	22.64	
118	214402.9224	681445.2918	22.64	
119	214407.3750	681451.9383	22.77	
120	214406.6642	681458.4362	22.71	

SITE LAYOUT

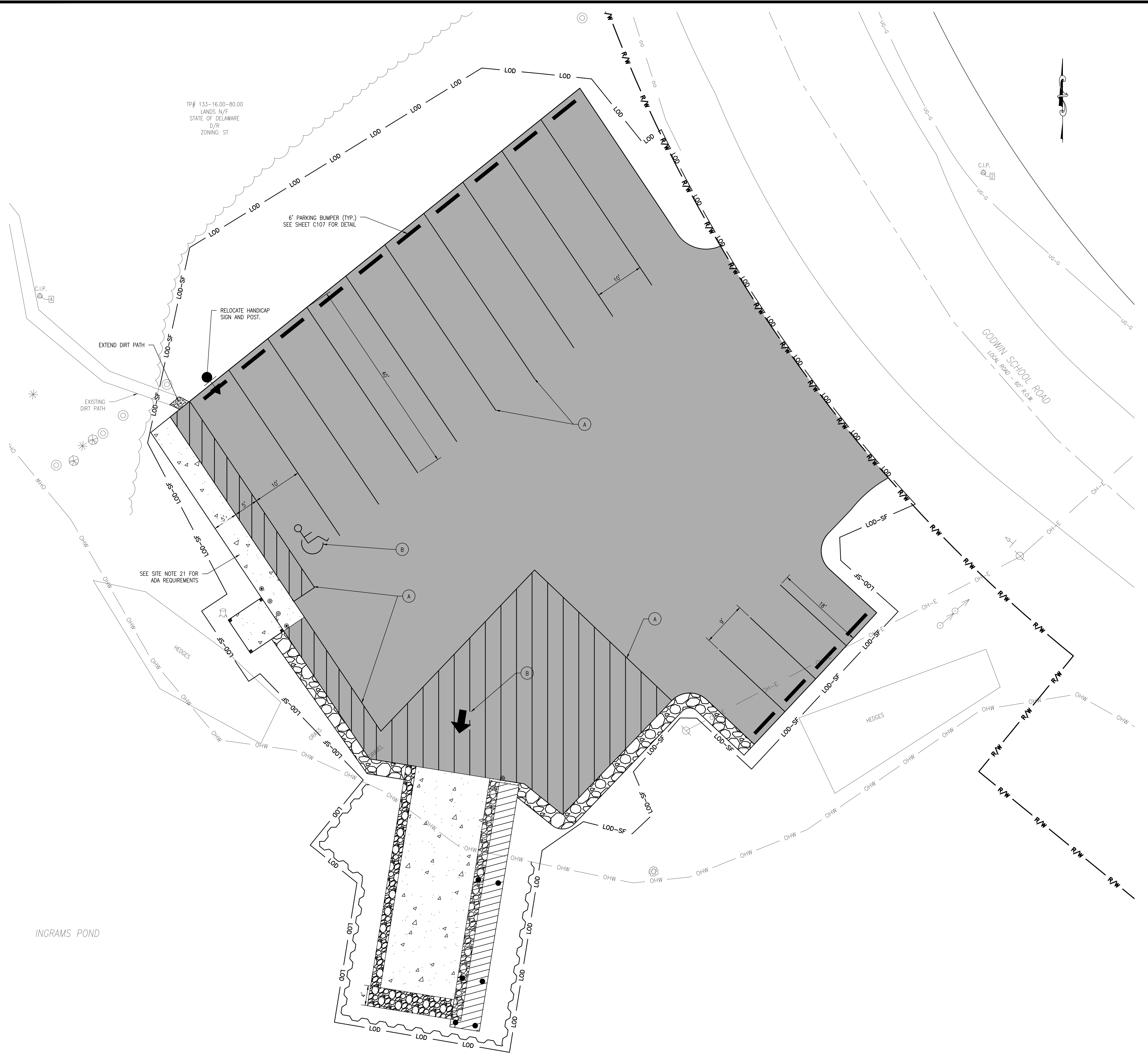
POINT NO.	NORTHING	EASTING	ELEVATION	RADIUS
121	214409.4486	681462.5926	22.78	
122	214419.8886	681467.6386	23.04	
123	214440.5676	681429.7278	23.97	
124	214443.6978	681433.6267	24.02	
125	214446.8388	681437.5442	24.06	
126	214509.6982	681515.8332	27.03	
127	214482.3709	681534.1005	25.61	
129	214484.3907	681541.1703	25.37	5.00
130	214478.0149	681544.0599	0.00	
131	214464.9162	681552.2267	0.00	
132	214447.8982	681564.2950	0.00	
133	214431.4621	681577.7408	0.00	
134	214425.3011	681570.4840	23.72	
135	214448.4632	681448.4960	24.00	



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DATE:	DESCRIPTION:	BY:																				
<p>SEAL:</p>																						
<p>CIVIL ENGINEER:</p>																						
 <p>CENTURY ENGINEERING A Kleinfelder Company</p>																						
																						
<p>DESIGNED BY: DLD</p>																						
<p>DRAWN BY: DMK</p>																						
<p>CHECKED BY: AES</p>																						
<p>DATE: JUNE 2023</p>																						
<p>SCALE: 1" = 10'</p>																						
<p>SHEET NO.: C103</p>																						
<p>PROJECT NO.: 175013.81</p>																						

TP# 133-16.00-80.00
LANDS N/F
STATE OF DELAWARE
D/R
ZONING: ST



SITE LAYOUT

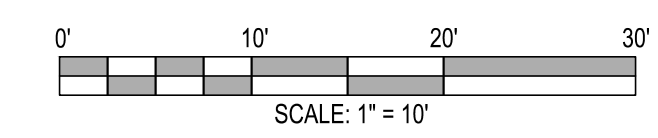
POINT NO.	NORTHING	EASTING	ELEVATION	RADIUS
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101	214416.8193	681569.2851	23.42	
102	214413.1383	681565.9014	23.40	5.00
103	214404.3841	681575.4246	23.00	
104	214392.7758	681564.7537	22.96	
105	214377.9608	681550.8354	22.63	
106	214366.8985	681541.3219	22.57	
107	214383.2544	681537.8984	22.92	5.00
108	214386.7169	681534.2912	22.53	
109	214363.8374	681512.3851	21.80	
110	214370.0190	681504.6968	21.78	
111	214412.9708	681506.7485	24.39	
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115	214403.5130	681460.5472	22.68	
116	214400.7331	681456.3877	22.64	
117	214396.2760	681449.7444	22.64	
118	214402.9224	681445.2918	22.64	
119	214407.3750	681451.9383	22.77	
120	214406.6642	681458.4362	22.71	

SITE LAYOUT

POINT NO.	NORTHING	EASTING	ELEVATION	RADIUS
121	214409.4486	681462.5926	22.78	
122	214419.8886	681467.6386	23.04	
123	214440.5676	681429.7278	23.97	
124	214443.6978	681433.6267	24.02	
125	214446.8388	681437.5442	24.06	
126	214509.6982	681515.8332	27.03	
127	214482.3709	681534.1005	25.61	
129	214484.3907	681541.1703	25.37	5.00
130	214478.0149	681544.0599	0.00	
131	214464.9162	681552.2267	0.00	
132	214447.8982	681564.2950	0.00	
133	214431.4621	681577.7408	0.00	
134	214425.3011	681570.4840	23.72	
135	214448.4632	681448.4960	24.00	

PAVEMENT MARKINGS LEGEND

SYMBOL	ITEM
(A)	4" SOLID WHITE THERMOPLASTIC EPOXY PAVEMENT STRIPING
(B)	WHITE THERMOPLASTIC EPOXY SYMBOL/LEGEND



PLAN VIEW
SCALE 1" = 10'

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REVISIONS:

DATE:	DESCRIPTION:	BY:

**INGRAMS POND
BOAT RAMP RECONSTRUCTION
STRIPING & SIGNING PLAN**

SEAL:

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company



DESIGNED BY:
DLD

DRAWN BY:
DMK

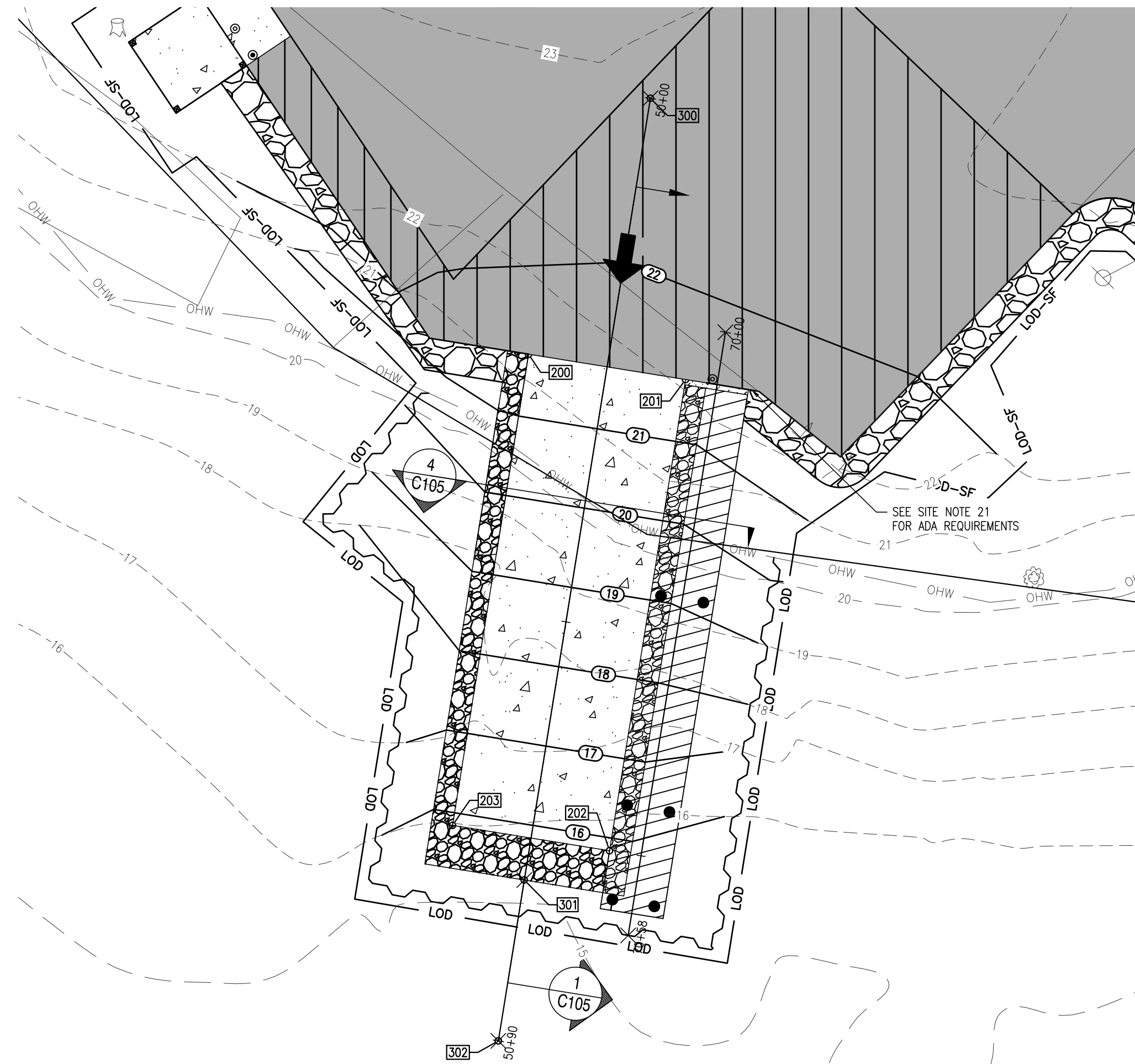
CHECKED BY:
AES

DATE:
JUNE 2023

SCALE:
1" = 10'

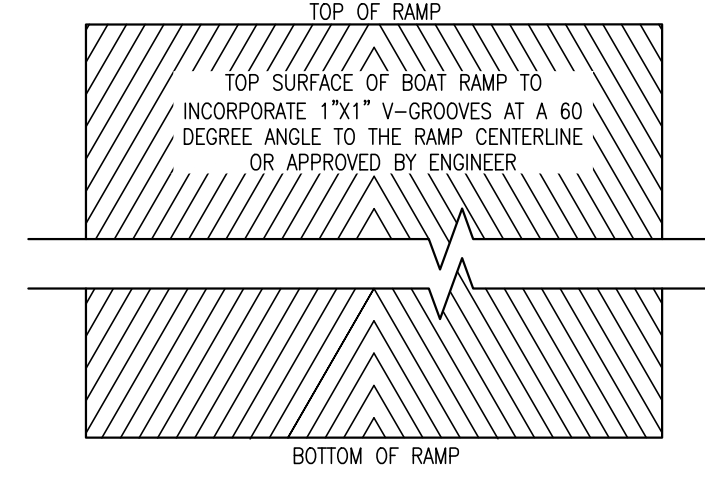
SHEET NO.:
C104

PROJECT NO.:
175013.81

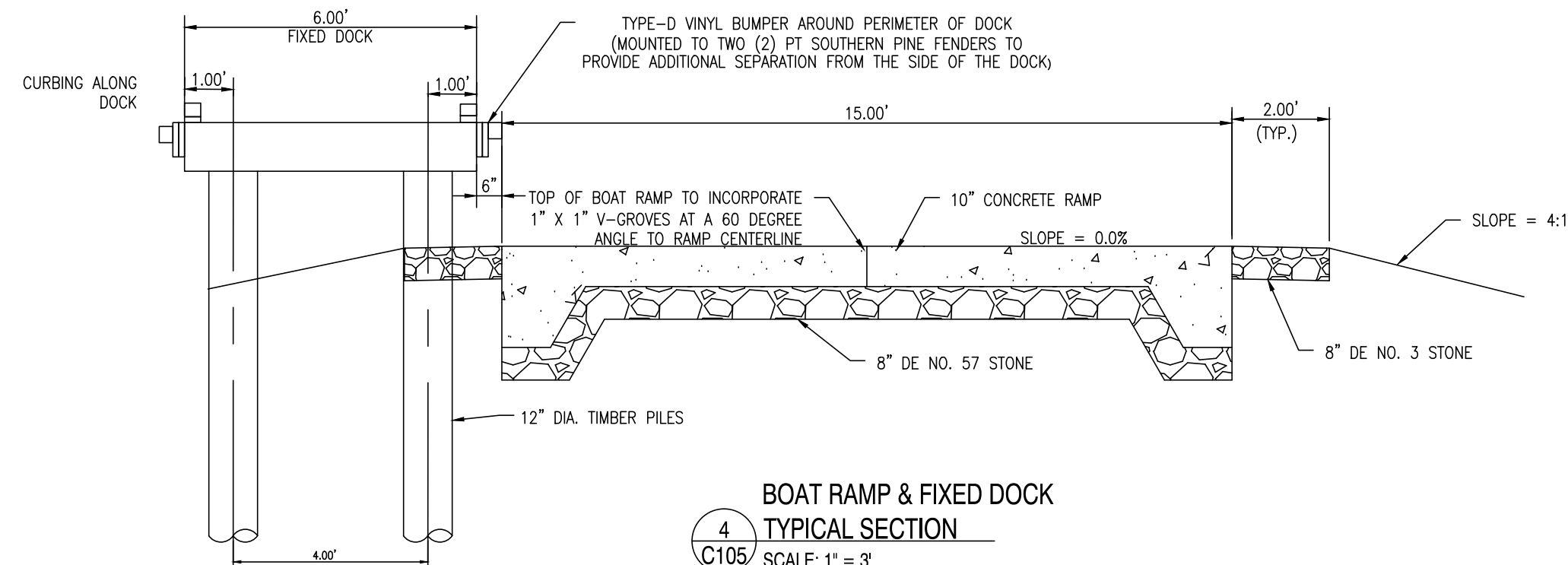


PLAN VIEW
SCALE: 1" = 10'

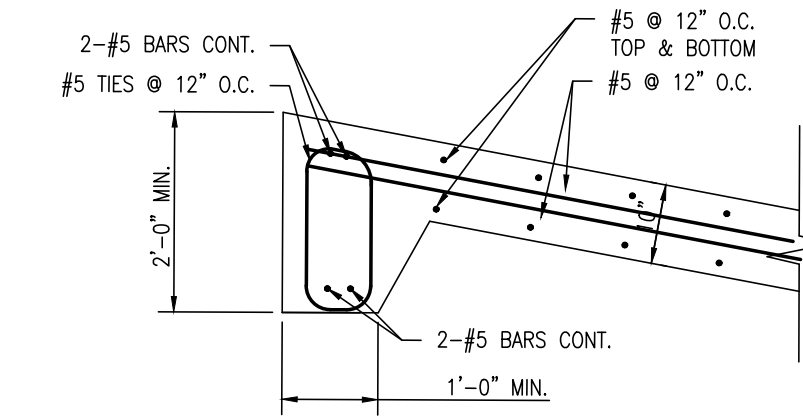
POINT NO.	NORTHING	EASTING	ELEVATION
200	214373.5244	681482.9779	21.78
201	214371.1344	681497.7862	21.78
202	214326.7093	681490.6161	15.84
203	214329.0993	681475.8077	15.84



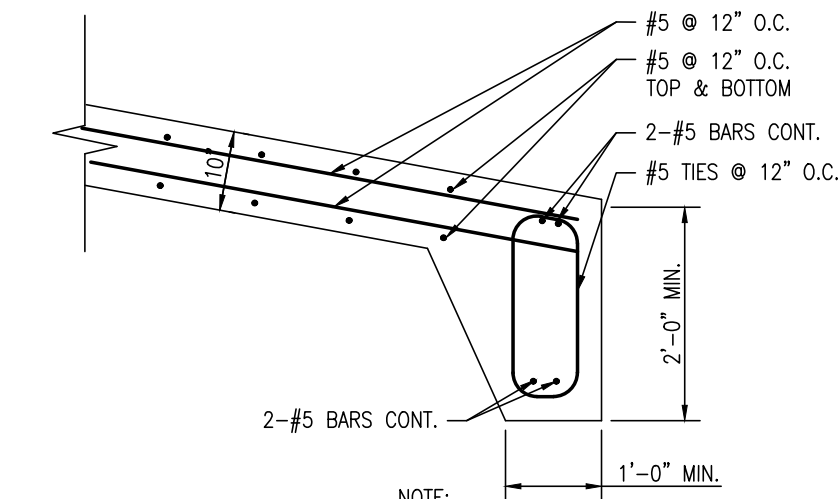
3 RAMP SURFACE FINISH
SCALE: 1" = 5'



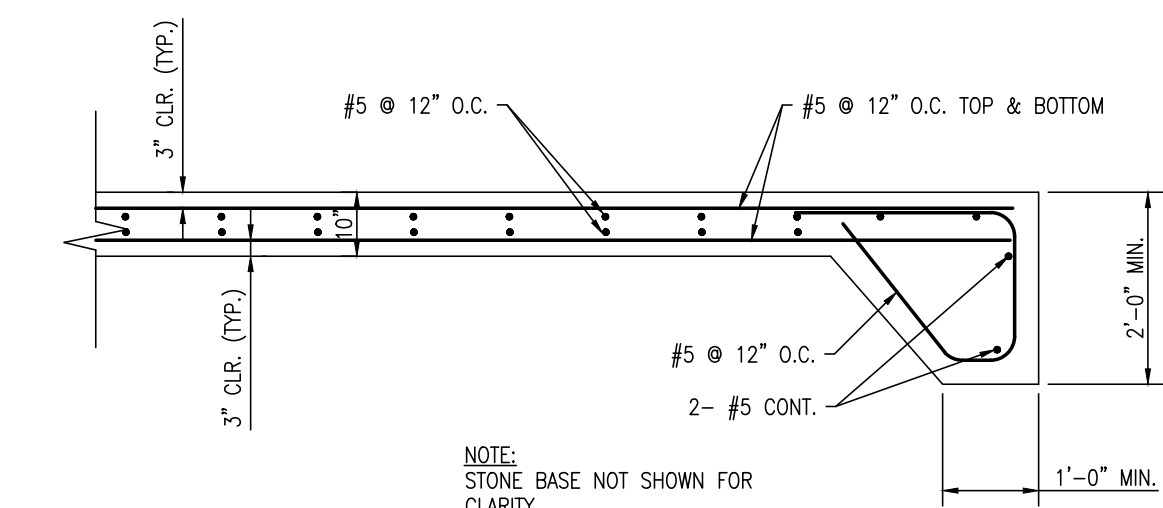
4 BOAT RAMP & FIXED DOCK
TYPICAL SECTION
SCALE: 1" = 3'



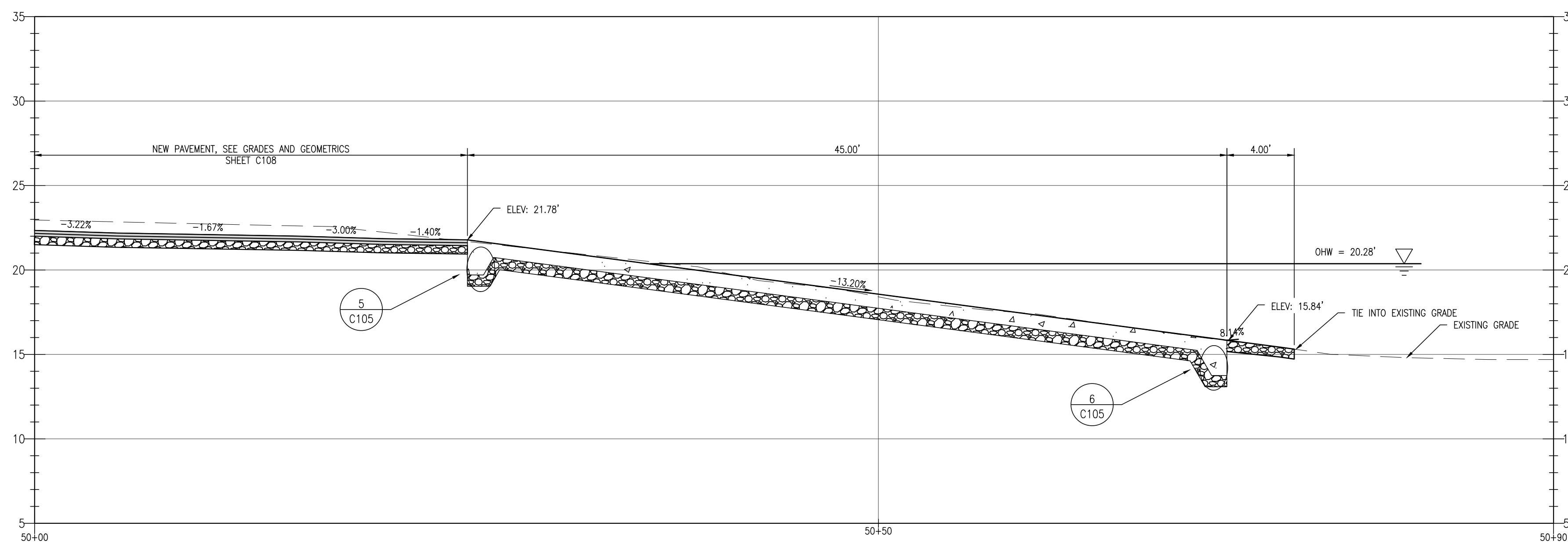
5 UPPER RAMP TURNDOWN DETAIL
SCALE: 1/2" = 1'-0"



6 LOWER RAMP TURNDOWN DETAIL
SCALE: 1/2" = 1'-0"

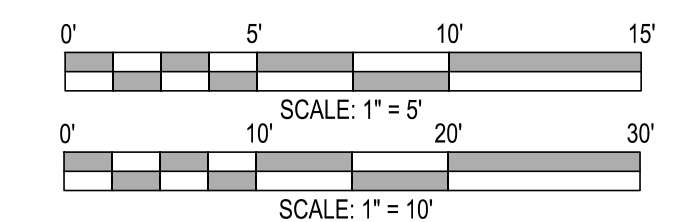


7 RAMP EDGE DETAIL
SCALE: 1/2" = 1'-0"



1 TYPICAL SECTION - BOAT RAMP PROFILE
SCALE: 1" = 5'

POINT #	STATION	OFFSET	NORTHING	EASTING
300	50+00	0.000	214397.6477	681494.4684
301	50+74.65	0.000	214323.9554	681482.5746
302	50+90	0.000	214308.7882	681480.1266

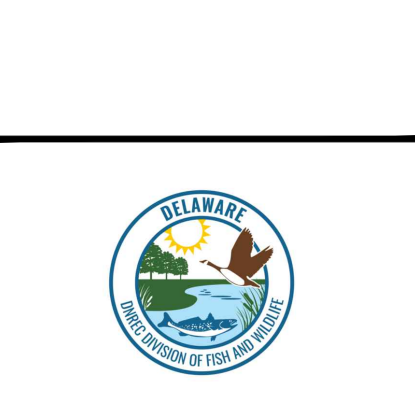


REVISIONS:	DATE:	DESCRIPTION:	BY:

**INGRAMS POND
BOAT RAMP RECONSTRUCTION
BOAT RAMP DETAILS**

SEAL:

CIVIL ENGINEER:



DESIGNED BY:
DLD

DRAWN BY:
DMK

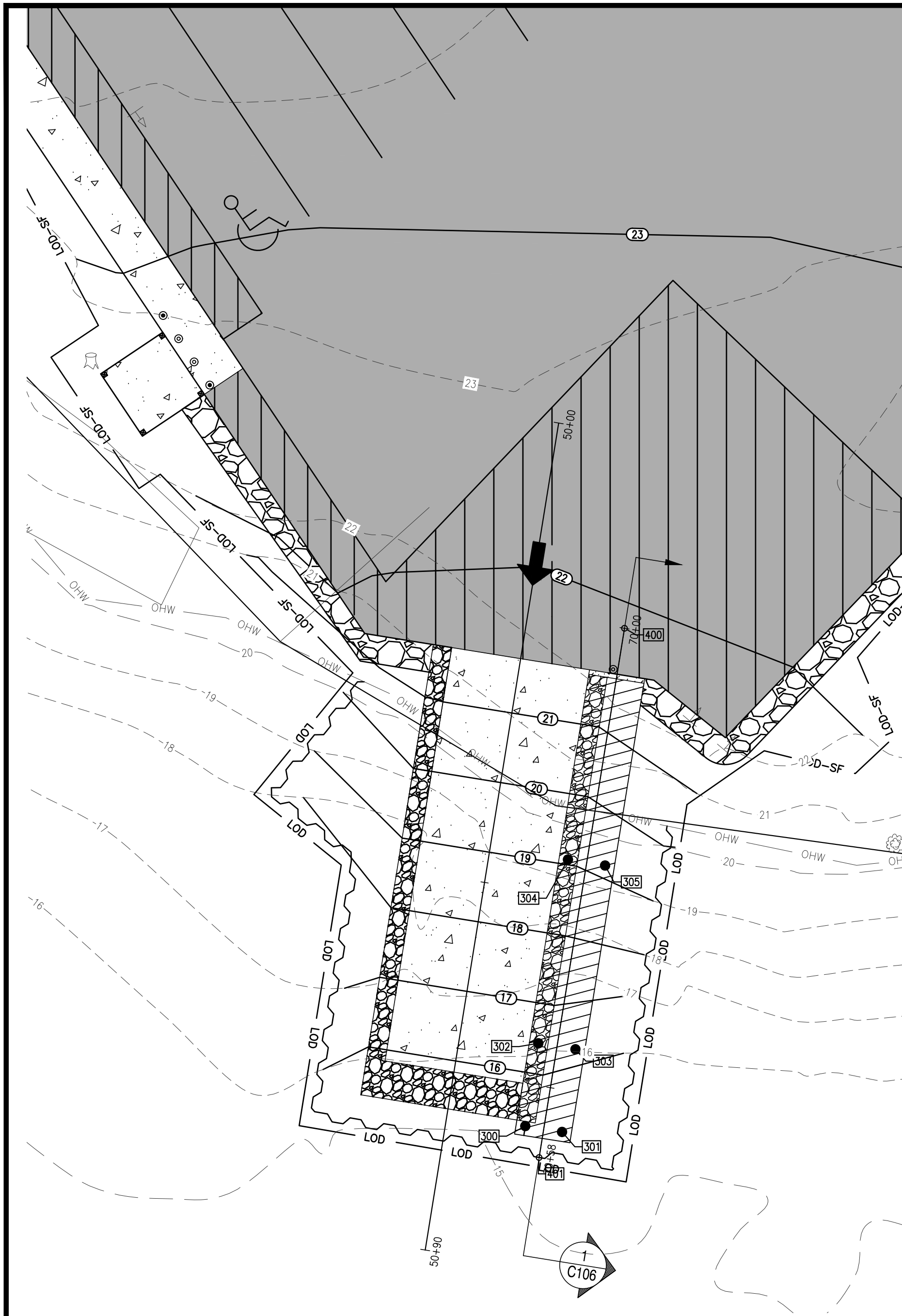
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DATE:
JUNE 2023

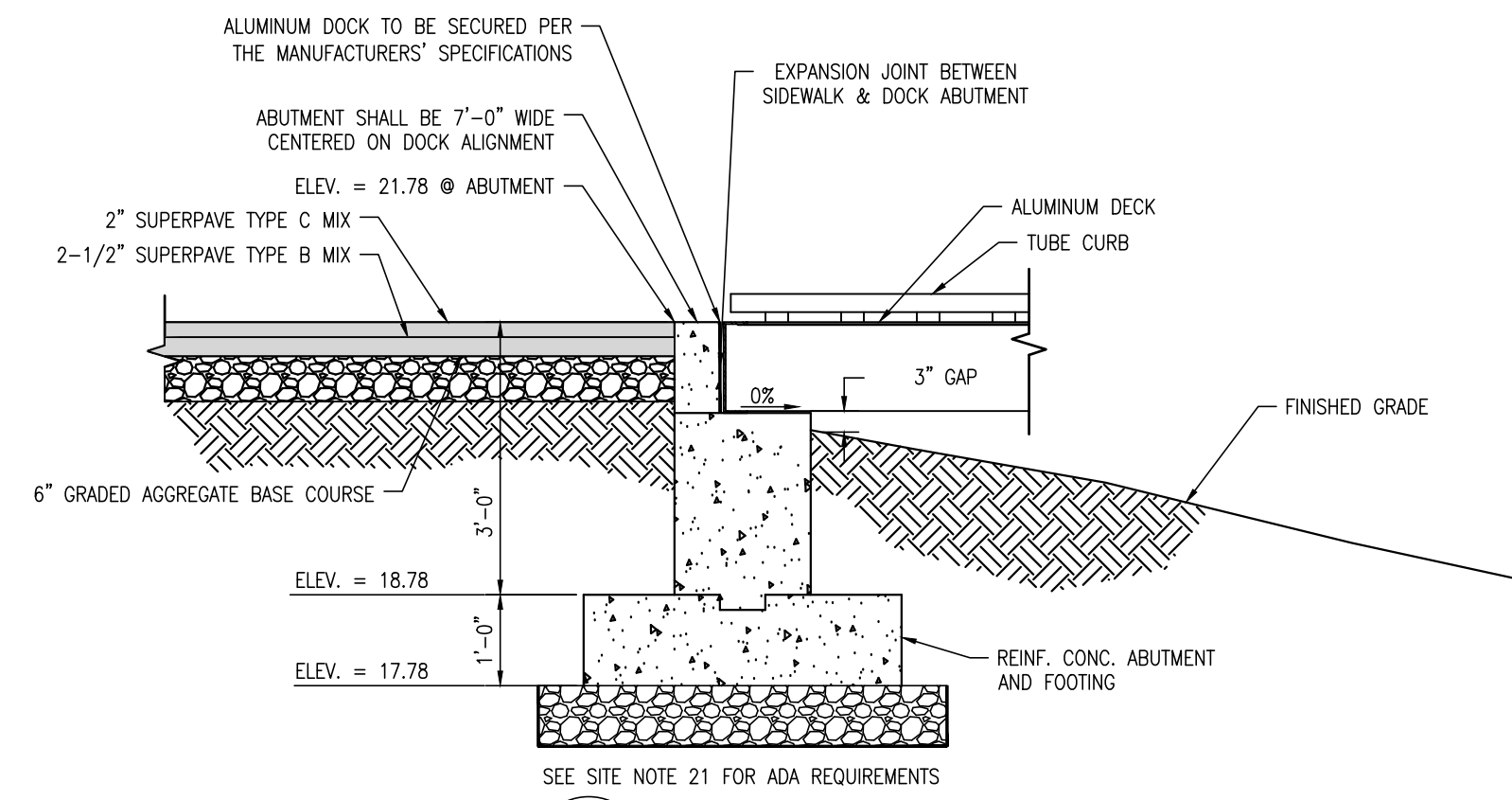
SCALE:
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SHEET NO.:
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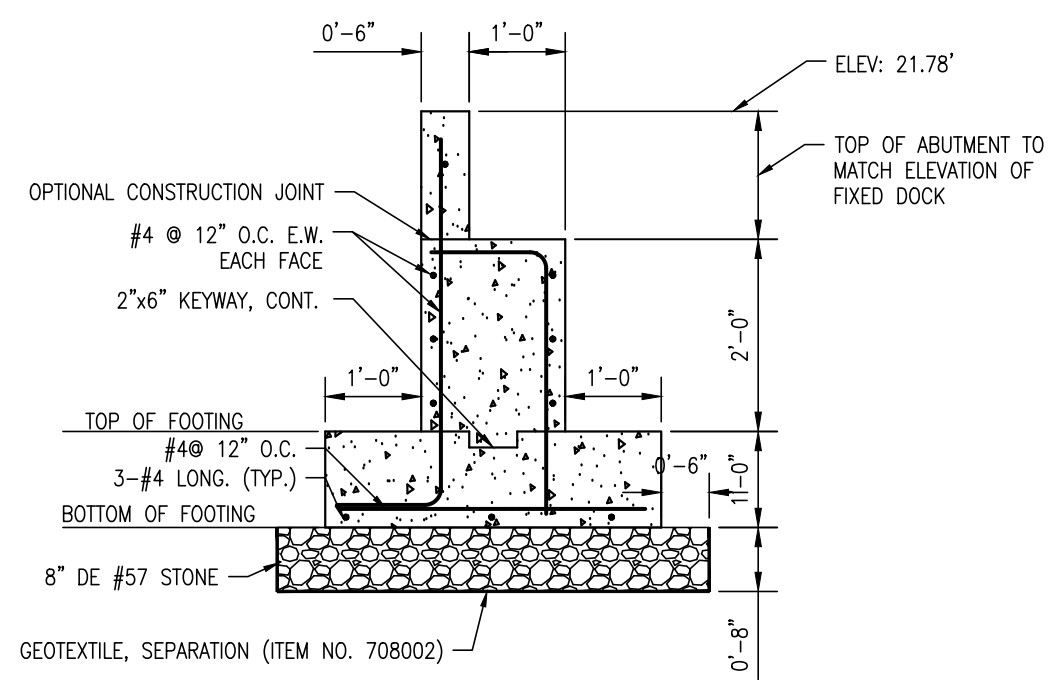
PROJECT NO.:
175013.81



PLAN VIEW
SCALE: 1" = 10'



2 DOCK ABUTMENT / PAVEMENT INTERFACE
SCALE: 1/2" = 1'-0"

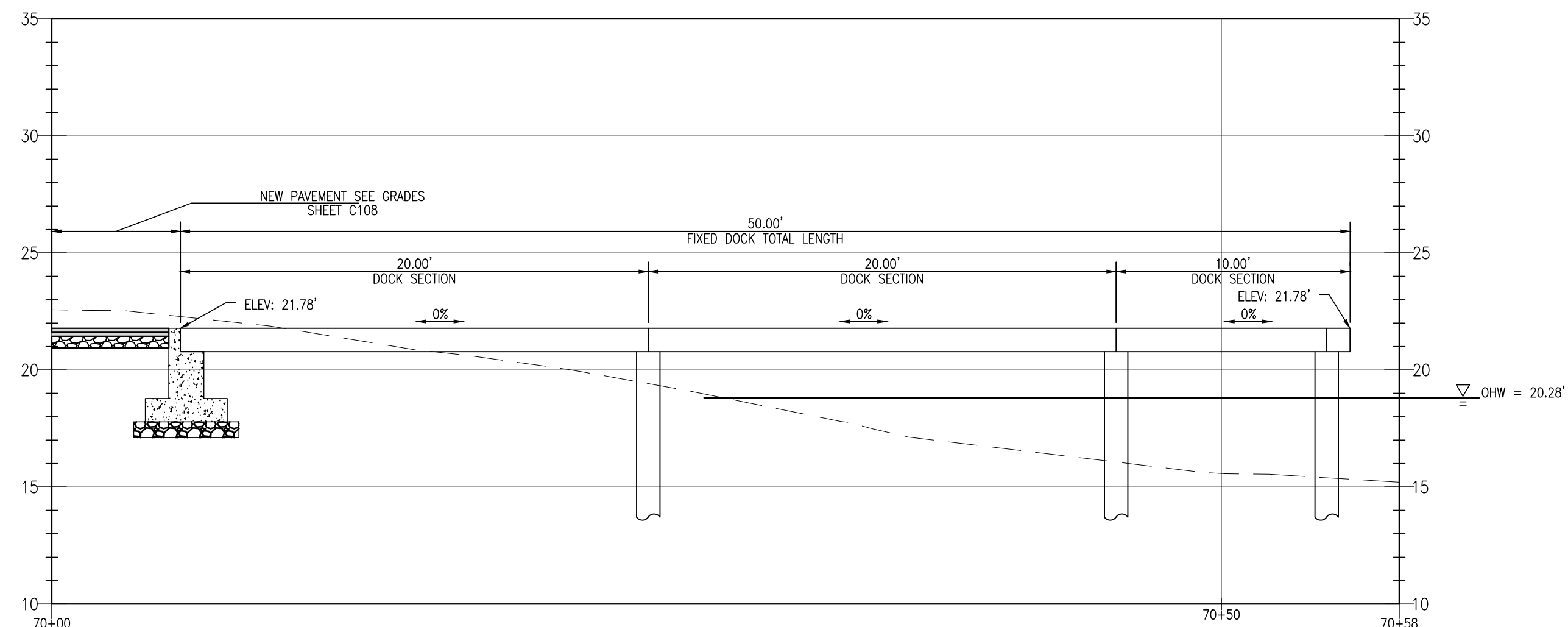


3 DOCK ABUTMENT DETAIL
SCALE: 1/2" = 1'-0"

* NOTE: CONTRACTOR MAY CONSTRUCT DOCK ABUTMENT AS MONOLITHIC POUR

TIMBER PILE LAYOUT						
PILE NO.	NORTHING	EASTING	TOP ELEV.*	EST. TIP ELEV.	MIN. EMBEDMENT	PILE LENGTH** (FT)
300	214322.1091	681490.8866	20.61'	3.00'	12.00'	20.00'
301	214321.4717	681494.8355	20.61'	3.00'	12.00'	20.00'
302	214331.0007	681492.2799	20.61'	4.00'	12.00'	20.00'
303	214330.3565	681496.2712	20.61'	4.00'	12.00'	20.00'
304	214350.7452	681495.4666	20.61'	7.00'	12.00'	20.00'
305	214350.0993	681499.4579	20.61'	7.00'	12.00'	20.00'

FIXED DOCK ALIGNMENT TABLE				
POINT #	STATION	OFFSET	NORTHING	EASTING
400	70+00	0.000	214375.5925	681501.5446
401	70+58	0.000	214318.7279	681492.3688

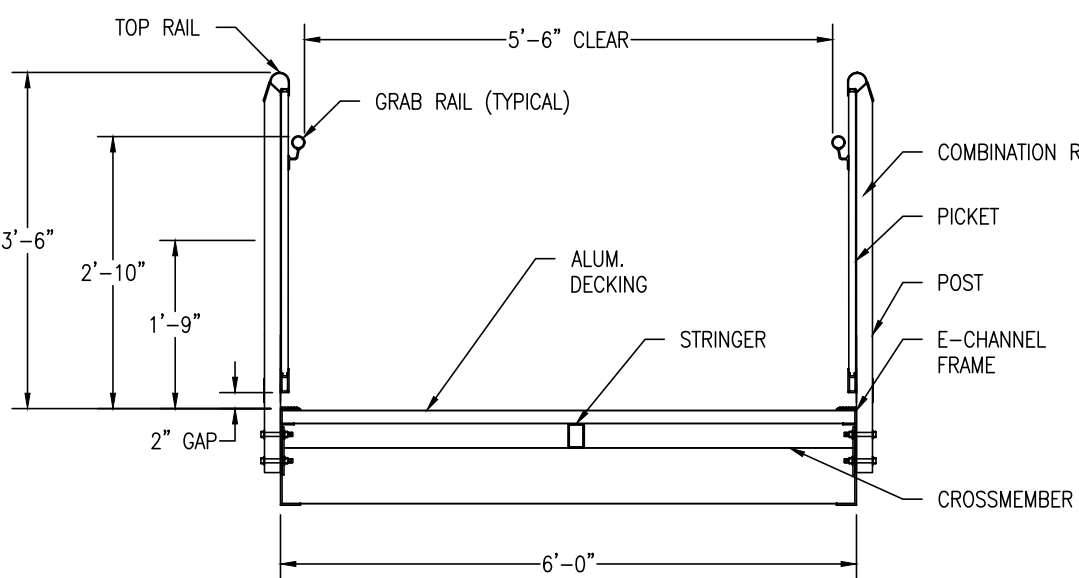


1 TYPICAL SECTION - FIXED DOCK PROFILE
SCALE: 1" = 5'

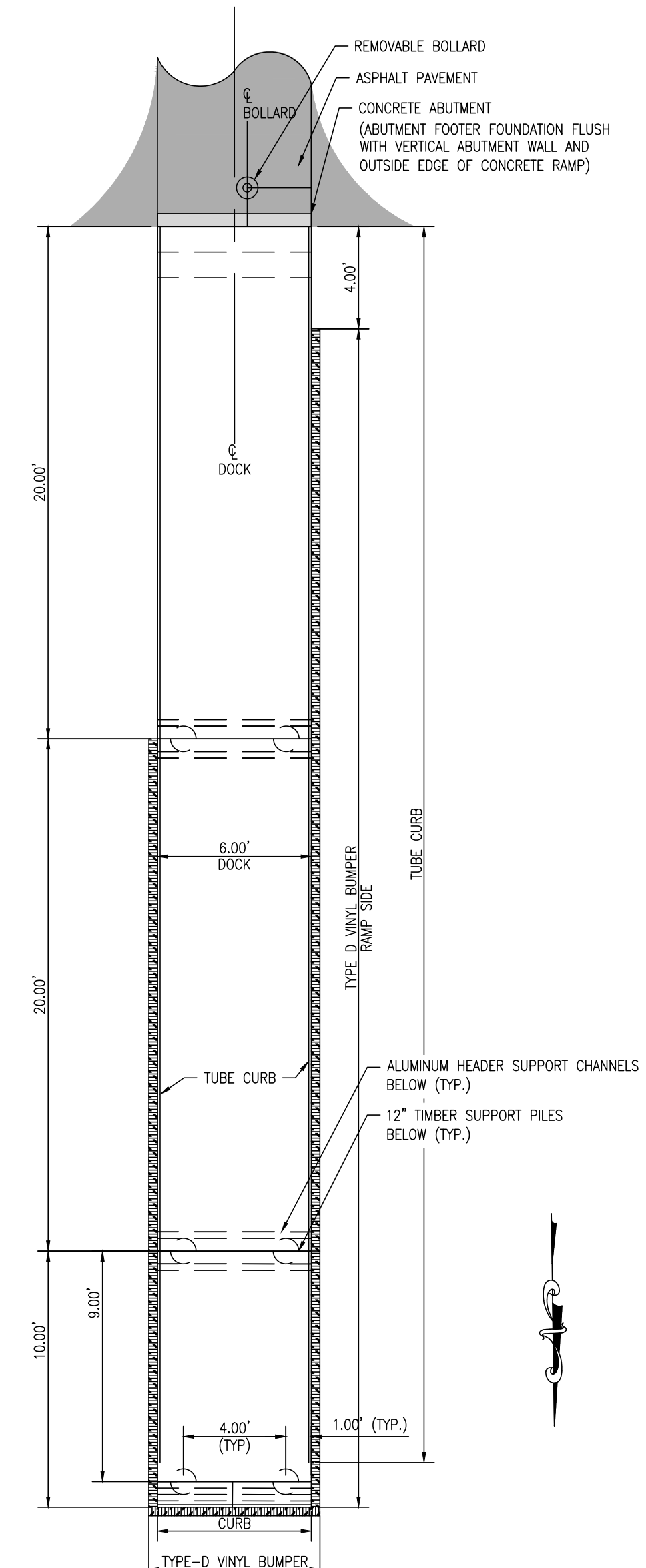
FIXED DOCK NOTES

1. THE GATOR DOCK COMPONENTS OF THE NEW FIXED ALUMINUM FISHING PIERS ARE SHOWN ON THESE PLANS ARE FOR GENERAL INFORMATION ONLY.
2. THE OWNER WILL PROVIDE, AND THE CONTRACTOR SHALL SCHEDULE THE DELIVERY OF, HANDLE, STORE, AND INSTALL, ALL NEW FIXED ALUMINUM FISHING PIER COMPONENTS MANUFACTURED BY GATOR DOCK, INCLUDING DECKS, FISHING RAILS, RAMPS, RAILINGS, HEADERS, AND MISCELLANEOUS COMPONENTS AS INDICATED ON THE GATOR DOCK SHOP DRAWINGS SEPARATELY PROVIDED BY OWNER FOR THIS PROJECT.
3. TOP AND TIP ELEVATIONS OF TIMBER PILES FOR FIXED DOCK PROVIDED ON THIS SHEET.
4. ALL DOCKS, HEADER CHANNELS, AND ANCILLARY ITEMS SHALL BE PROVIDED BY THE OWNER. HEADER CHANNELS WILL BE ONE (1) FOOT WIDER THAN THE PLAN LENGTH AND CUT IN THE FIELD BY THE CONTRACTOR.
5. FIXED DOCK TIMBER PILES SHALL BE DRIVEN TO MINIMUM EMBEDMENT REQUIREMENTS.
6. WOOD PILES, CLASS B, SOUTHERN PINE MEETING REQUIREMENTS OF ASTM D25, PRESSURE IMPREGNATED WITH CHROMATED COPPER ARSENATE (CCA) IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARD C3.
7. SEE MANUFACTURER'S SHOP DRAWINGS FOR ADDITIONAL ALUMINUM DOCK DETAILS.
8. REFER TO STRUCTURAL DETAILS FOR TIMBER PILE INSTALLATION NOTES.
9. WORK WITHIN COFFERDAMS THAT FULLY ENCLOSE AND DEWATER THE PROJECT AREA CAN PROCEED ANY TIME DURING THE YEAR PROVIDED THAT THE COFFERDAMS ARE INSTALLED OR REMOVED OUTSIDE OF THE IN-WATER WORK RESTRICTION PERIOD.
10. IF PILE DRIVING IS OCCURRING DURING THE IN-WATER WORK RESTRICTIONS A SOFT START IS REQUIRED. IT IS PREFERRED THAT VIBRATORY PILE INSTALLATION METHODS ARE USED. IF VIBRATORY PILE INSTALLATION CAN NOT BE COMPLETED IMPACT PILE DRIVING IS ALLOWED.
11. FOR VIBRATORY PILE INSTALLATION: PILE DRIVING WILL BE INITIATED FOR 15 SECONDS AT REDUCED ENERGY FOLLOWED BY A ONE-MINUTE WAITING PERIOD. THIS SEQUENCE OF 15 SECONDS OF REDUCED ENERGY DRIVING - ONE-MINUTE WAITING PERIOD WILL BE REPEATED TWO ADDITIONAL TIMES, FOLLOWED IMMEDIATELY BY PILE-DRIVING AT FULL RATE AND ENERGY.
12. FOR IMPACT PILE DRIVING: PILE DRIVING WILL COMMENCE WITH AN INITIAL SET OF THREE STRIKES BY THE HAMMER AT 40% ENERGY, FOLLOWED BY A ONE-MINUTE WAIT PERIOD, THEN TWO SUBSEQUENT 3-STRIKE SETS AT 40% ENERGY, WITH ONE-MINUTE WAITING PERIODS, BEFORE INITIATING CONTINUOUS IMPACT DRIVING.
13. IN ADDITION TO USING A SOFT START AT THE BEGINNING OF THE WORK DAY FOR PILE DRIVING, ONE MUST ALSO BE USED AT ANY TIME FOLLOWING CESSATION OF PILE DRIVING FOR A PERIOD OF 30 MINUTES OR LONGER.
14. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.

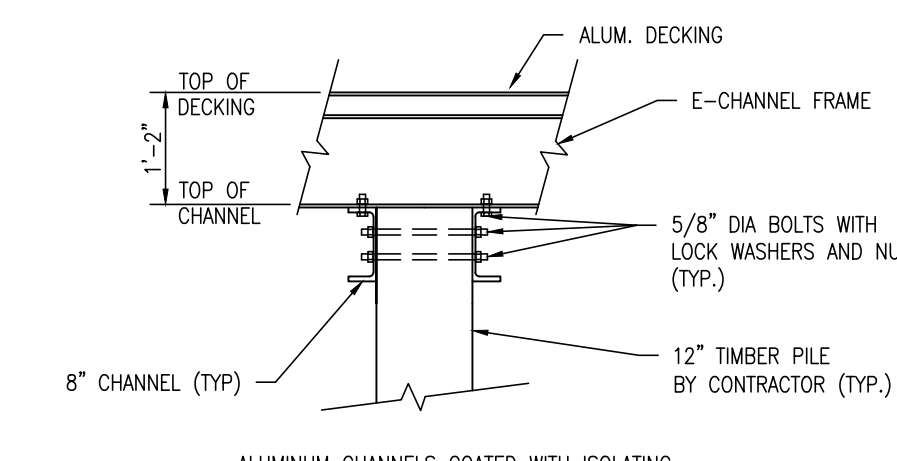
* NOTE: CONTRACTOR SHALL VERIFY THE TOP OF PILE ELEVATIONS WITH THE FIELD CONDITIONS AND DOCK MANUFACTURER DESIGN REQUIREMENTS
** NOTE: PILE LENGTH COLUMN INDICATES MINIMUM PILE LENGTH TO BE ORDERED BY THE CONTRACTOR. CONTRACTOR SHALL INSTALL PILE TO MEET MINIMUM EMBEDMENT REQUIREMENTS. EXCESS PILE LENGTHS SHALL BE TRIMMED AS NEEDED. IF A VIBRATORY HAMMER IS USED IN-STEAD OF AN IMPACT HAMMER, AN ADDITIONAL FIVE (5) FEET OF EMBEDMENT SHALL BE REQUIRED. ADDITIONAL PILE LENGTH MAY BE ORDERED AT THE CONTRACTOR'S DISCRETION AND EXPENSE TO ENSURE EMBEDMENT CRITERIA IS SATISFIED WHEN USING A VIBRATORY HAMMER.



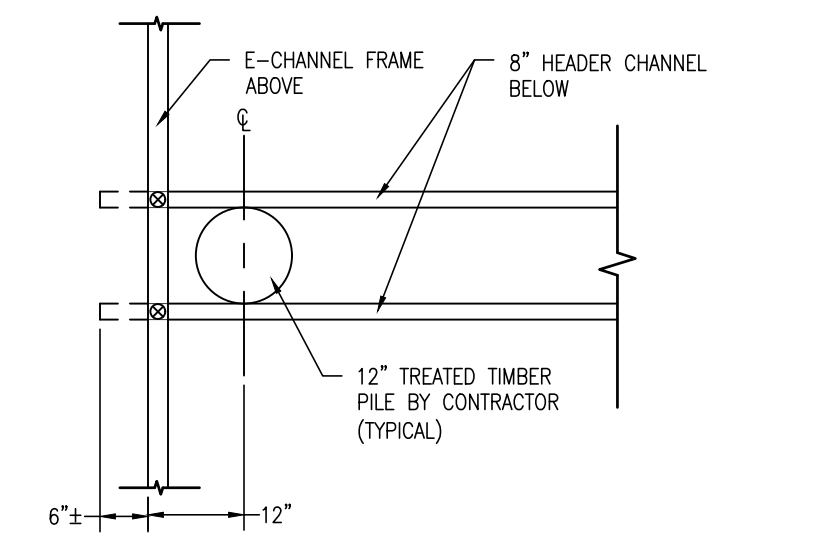
5 TYPICAL ALUMINUM RAMP SECTION
SCALE: 1/2" = 1'-0"



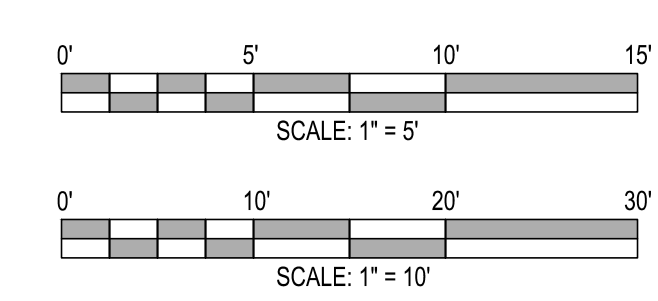
4 FIXED DOCK PLAN VIEW
SCALE: 1" = 5'



6 ALUMINUM HEADER KIT DETAIL
SCALE: 1/2" = 1'-0"



6A ALUMINUM HEADER - PLAN DETAIL
SCALE: 1/2" = 1'-0"



REVISIONS:

DATE:	DESCRIPTION:

BY: _____

DATE: _____

INGRAMS POND
BOAT RAMP RECONSTRUCTION
FIXED DOCK DETAILS

SEAL: _____

CIVIL ENGINEER:

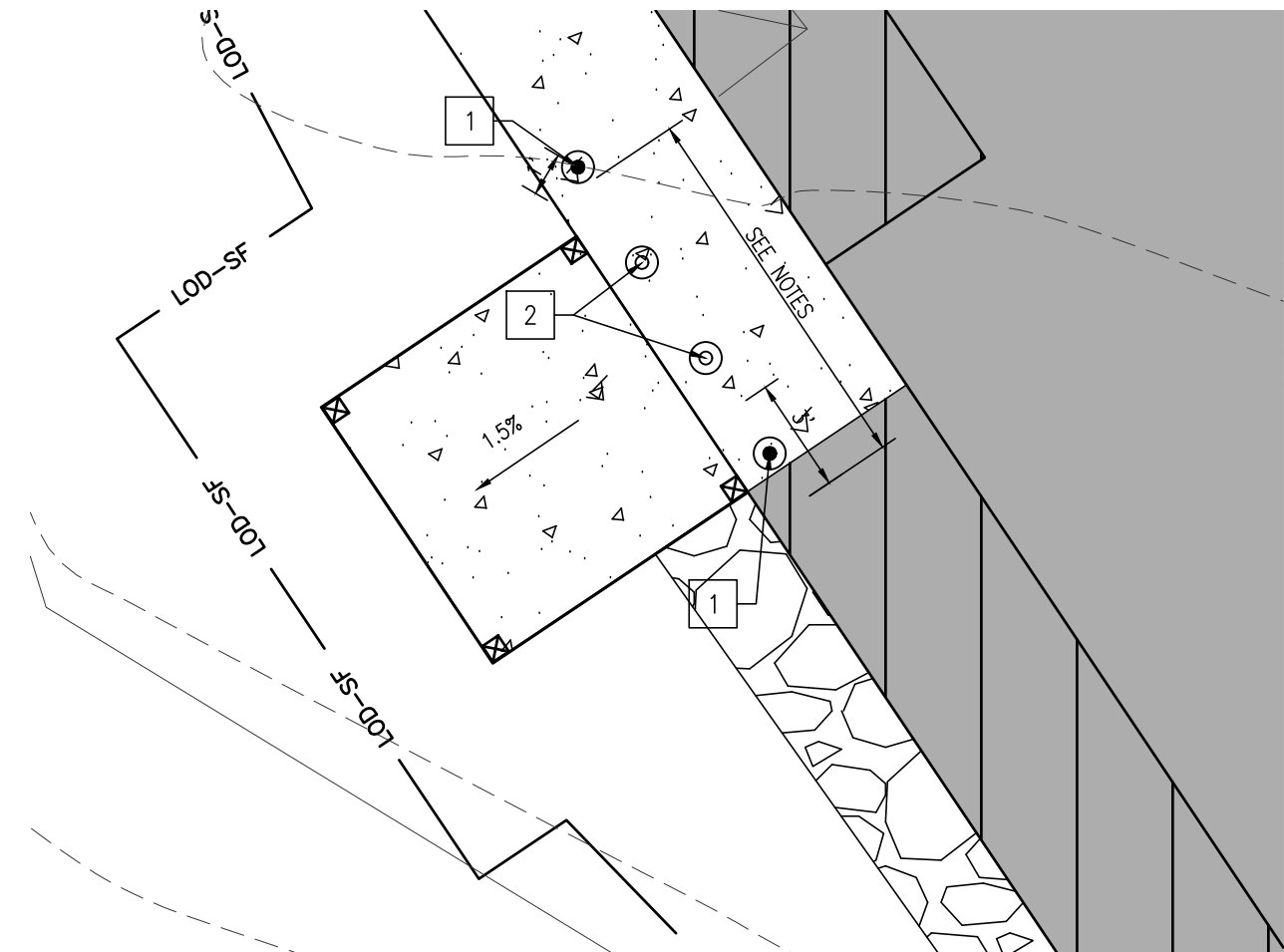
CENTURY ENGINEERING
A Kleinfelder Company

DESIGNED BY: DLD
DRAWN BY: DMK
CHECKED BY: AES

DATE: JUNE 2023
SCALE: AS SHOWN

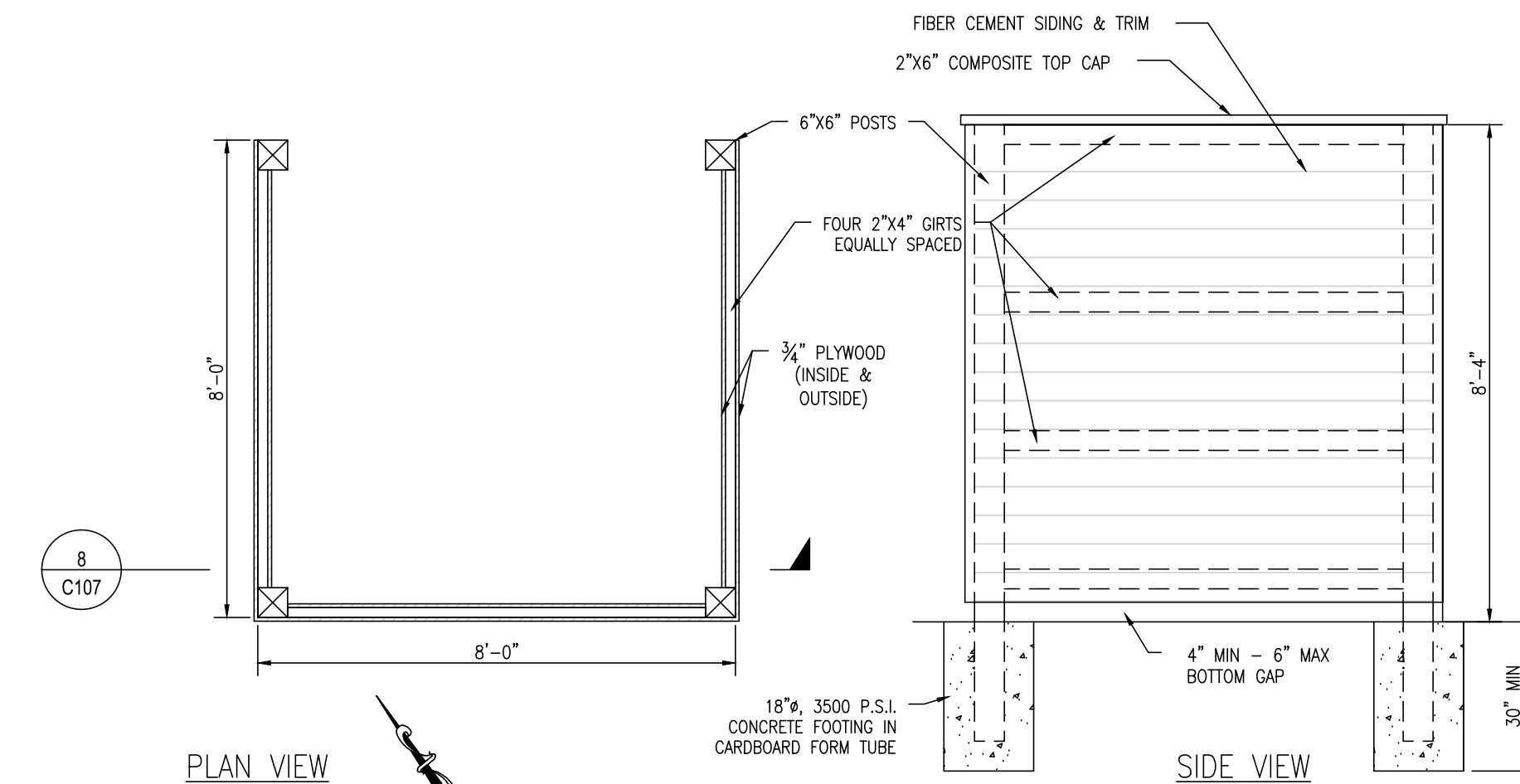
SHEET NO.: C106
PROJECT NO.: 175013.81

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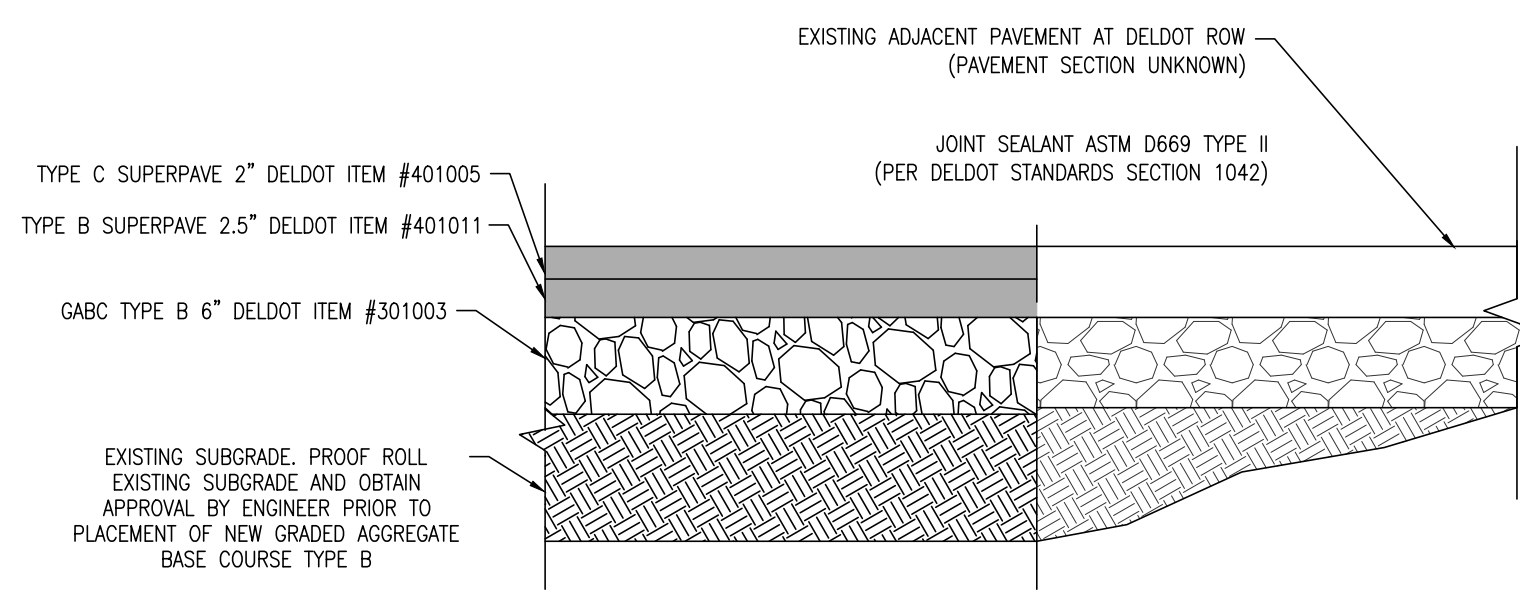
1 PORTABLE RESTROOM PLAN
SCALE: 1"=5'-0"

- NOTES:
- 1 LOCATION OF FIXED BOLLARD AS SHOWN
 - 2 ESTABLISH LOCATIONS OF REMOVABLE BOLLARD BY COORDINATING WITH DNR/FISH & WILDLIFE DURING CONSTRUCTION

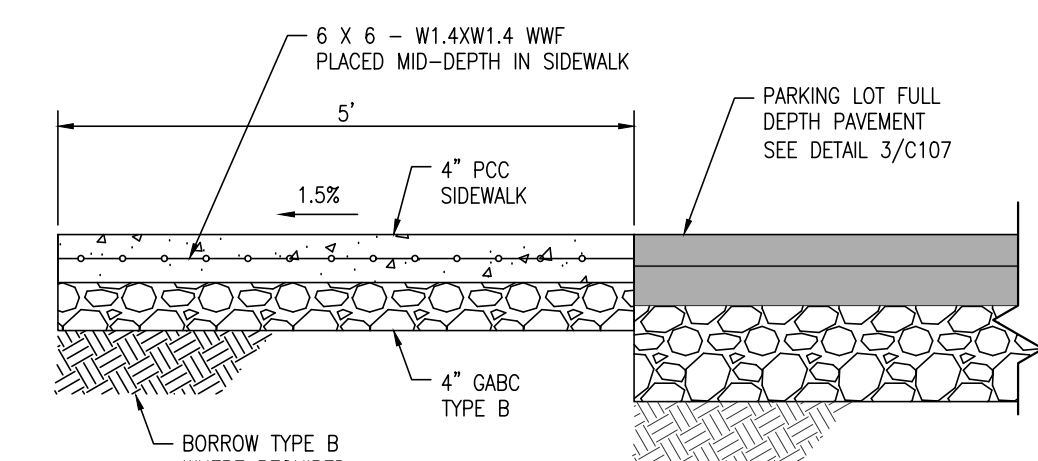


2 PORTABLE RESTROOM SCREEN WALL DETAILS
SCALE: 3/8"=1'-0"

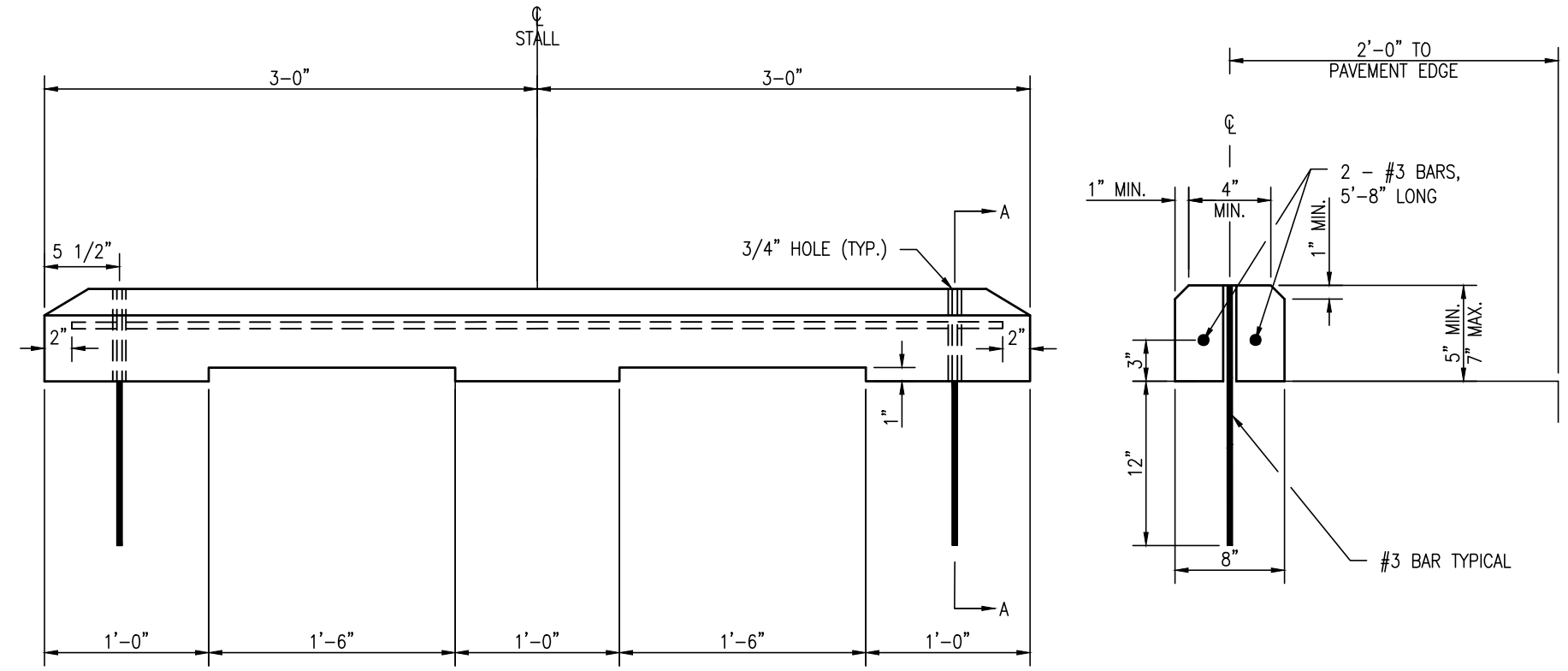
- PORTABLE RESTROOM SCREEN WALL NOTES:
1. ALL WOOD SHALL BE PRESSURE TREATED.
 2. FIBER CEMENT SIDING SHALL BE HARDIE PLANK LAP SIDING, SELECT CEDARMILL (NATURAL CEDAR LOOK) "PRIMED FOR PAINT" COLLECTION, AS MANUFACTURED BY JAMES HARDIE INDUSTRIES, OR APPROVED EQUAL. LAP SIDING SHALL HAVE A 6-INCH EXPOSURE. FIBER CEMENT TRIM SHALL BE HARDIE TRIM BOARDS 4/4 RUSTIC (WOOD LIKE TEXTURE) "PRIMED FOR PAINT" COLLECTION, AS MANUFACTURED BY JAMES HARDIE INDUSTRIES, OR APPROVED EQUAL. TRIM SHALL BE NOMINAL 1" X 4". INSTALL ALL SIDING AND TRIM IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S PRINTED INSTRUCTIONS AND RECOMMENDATIONS, INCLUDING THE CAULKING OF JOINTS.
 3. STRUCTURE TO BE PAINTED THE FOLLOWING COLORS:
6"X6" POSTS, FIBER CEMENT SIDING, & PLYWOOD:
SHERWIN WILLIAMS OR APPROVED EQUAL
- | COLORANT | OZ | 32 | 64 | 128 |
|--------------|----|----|----|-----|
| B1-BLACK | - | 19 | - | 1 |
| G2-NEW GREEN | - | 28 | - | 1 |
| R2-MAROON | - | 4 | 29 | - |
| Y3-DEEP GOLD | - | 2 | 49 | - |
- TOP CAP & TRIM:
SHERWIN WILLIAMS OR APPROVED EQUAL
- | COLORANT | OZ | 32 | 64 | 128 |
|--------------|----|----|----|-----|
| W1-WHITE | - | 7 | - | 1 |
| B1-BLACK | - | 47 | - | - |
| G2-NEW GREEN | - | 10 | 11 | - |
| N1-RAW UMBER | - | 3 | - | - |
| Y3-DEEP GOLD | - | 11 | - | - |
4. CONFIRM ALL PAINT COLOR WITH OWNER PRIOR TO ORDERING.



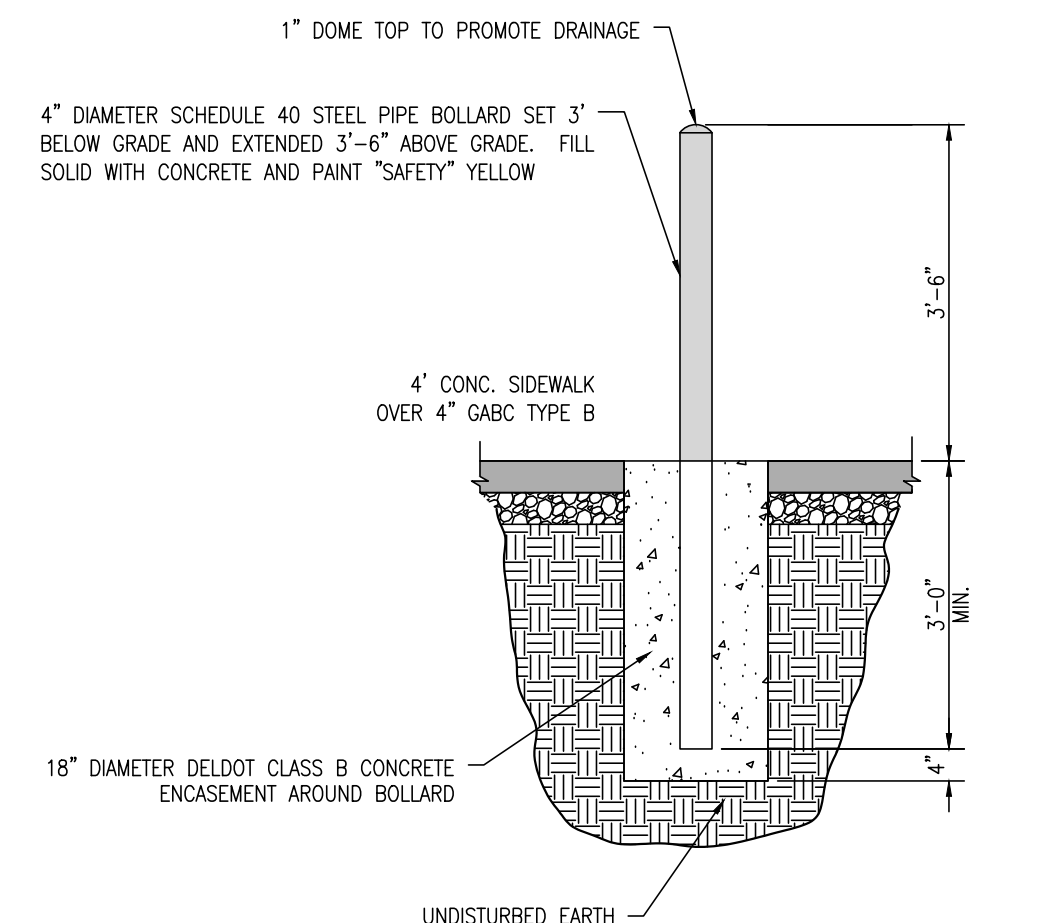
3 TYPICAL SECTION - FULL DEPTH PAVEMENT
SCALE: 1"=1'-0"



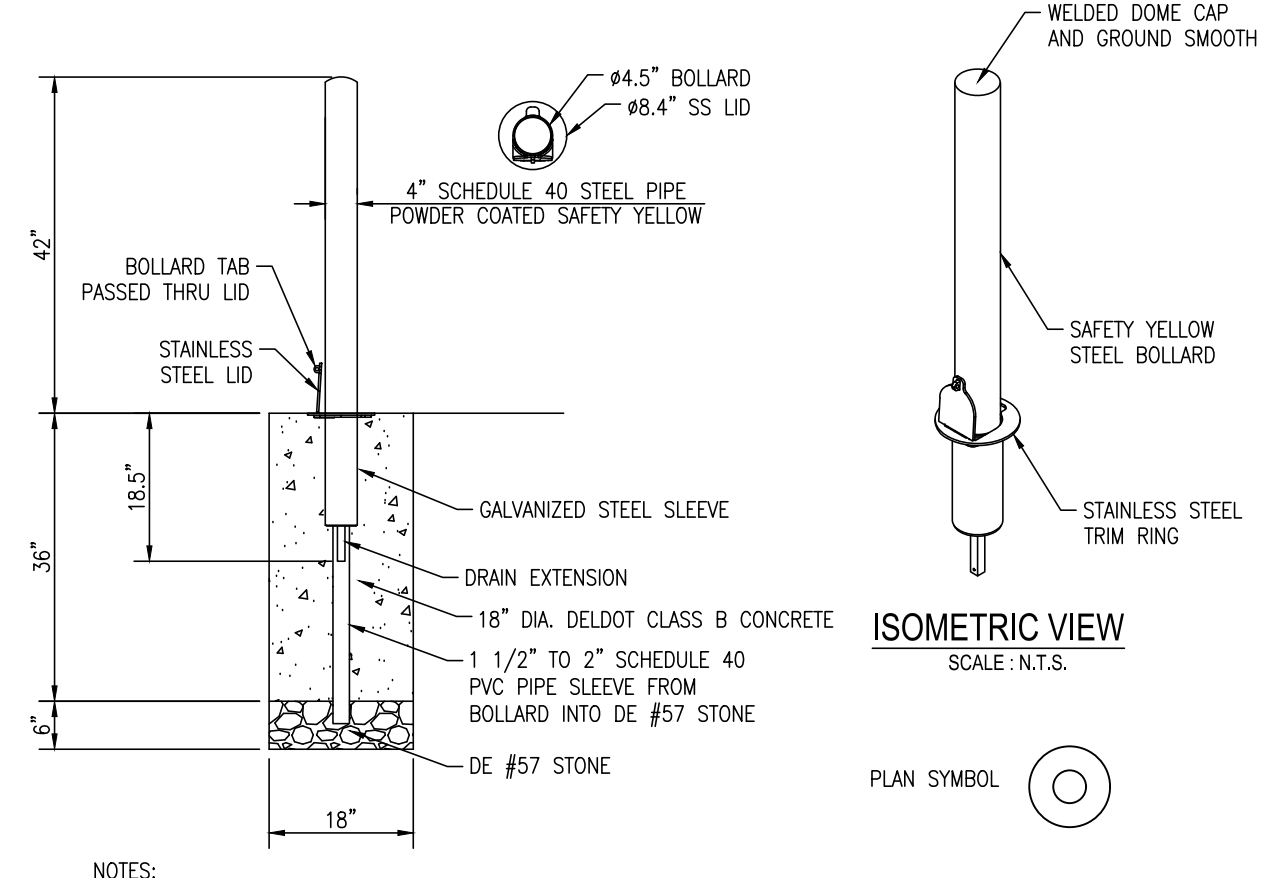
4 TYPICAL SECTION SIDEWALK DETAIL
SCALE: 1"=1'-0"



10 CONCRETE PARKING BUMPER DETAIL
SCALE: 1"=1'-0"

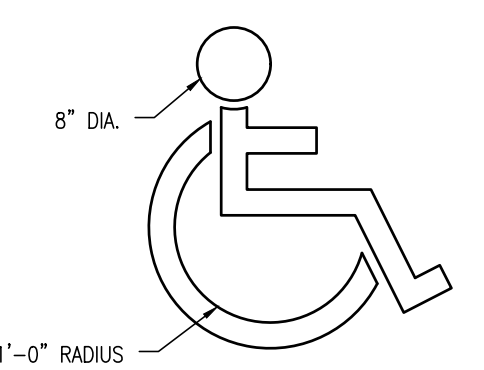


5 FIXED BOLLARD
SCALE: 1/2"=1'-0"

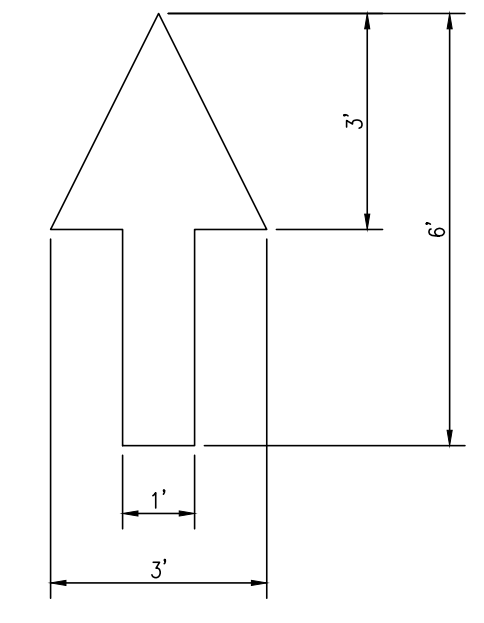


7 REMOVABLE BOLLARD DETAIL
SCALE: 1/2"=1'-0"

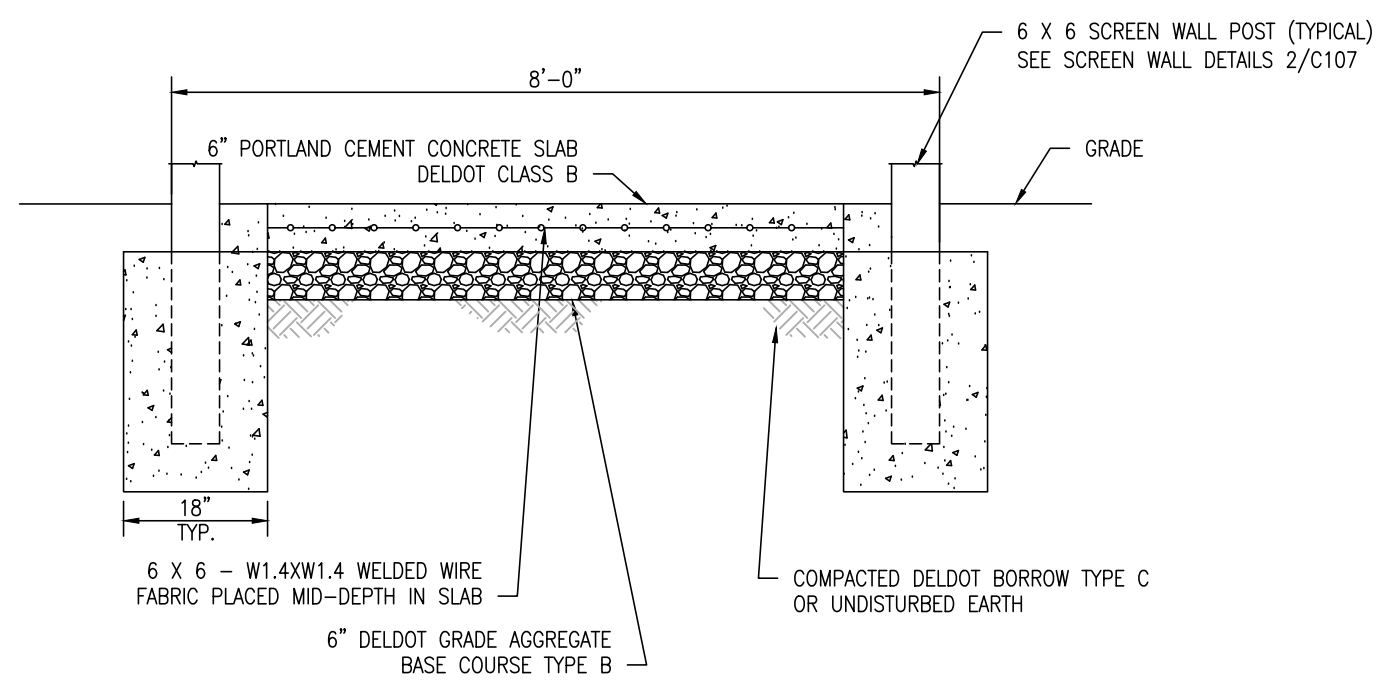
- NOTES:
1. BOLLARDS SHALL BE 4.5"x4.2" REMOVABLE BOLLARD, MODEL NO. 4X4 ERB, AS MANUFACTURED BY BOLLARDPROS, OR APPROVED EQUAL.
 2. BOLLARDS SHALL BE CONSTRUCTED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND DETAILS.



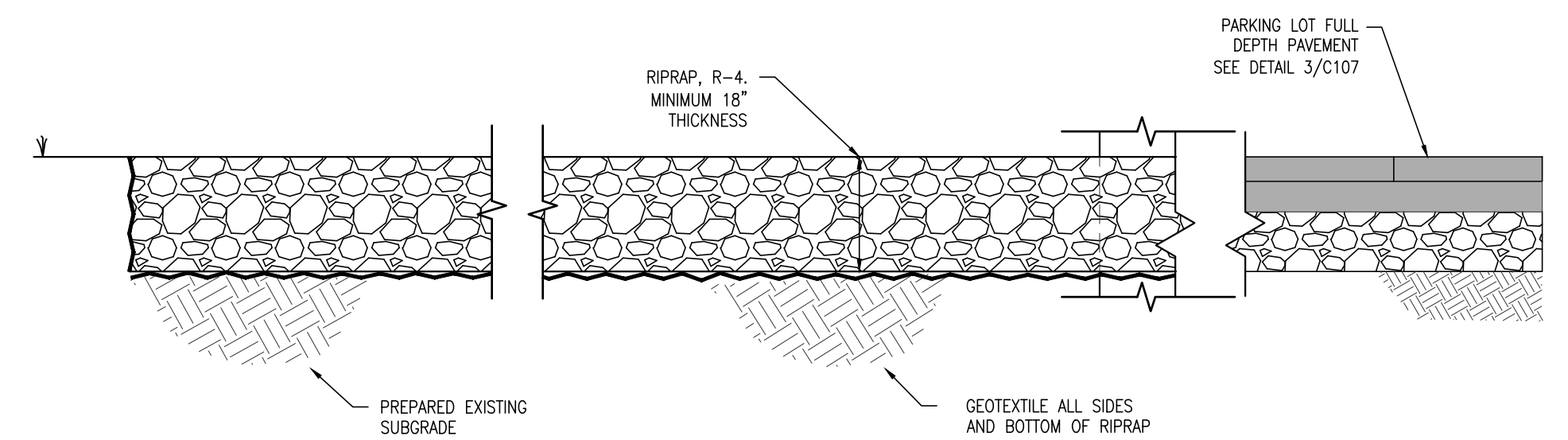
9 WHEELCHAIR HANDICAP DETAIL
SCALE: 1"=2'



11 PARKING LOT ARROW MARKING
SCALE: 3/8"=1'-0"



8 PORTABLE RESTROOM FOUNDATION
SCALE: 1/2"=1'-0"



4A RIPRAP BELOW RAMPS
SCALE: 1/2"=1'-0"
RIPRAP SHALL BE PLACED 10" WIDE CENTERED ON RAMP.

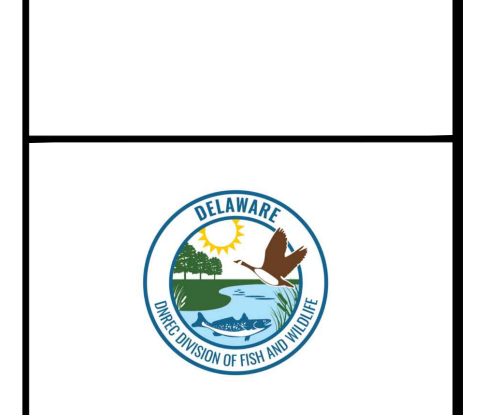
REVISIONS:

DATE:	DESCRIPTION:

INGRAMS POND
BOAT RAMP RECONSTRUCTION
SITE DETAILS

SEAL:

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kieferle Company



DESIGNED BY:
DLD

DRAWN BY:
DMK

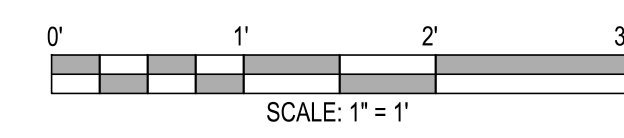
CHECKED BY:
AES

DATE:
JUNE 2023

SCALE:
AS SHOWN

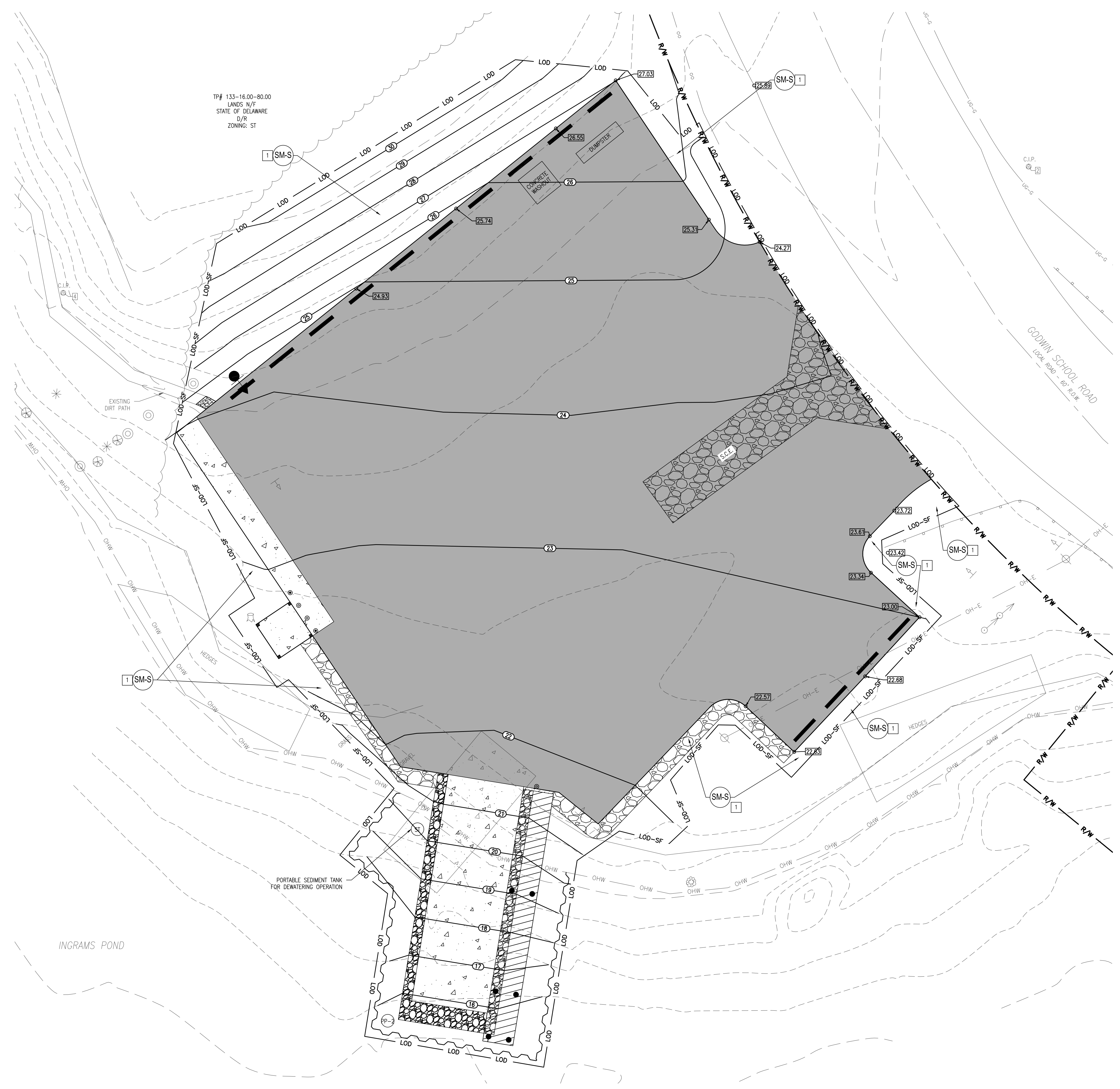
SHEET NO.:
C107

PROJECT NO.:
175013.81



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 STATE OF DELAWARE
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EXISTING DIRT PATH

HEDGES

PORTABLE SEDIMENT TANK FOR DEWATERING OPERATION

INGRAMS POND

GODWIN SCHOOL ROAD
 Lock road rd. Rte.

DNREC SEDIMENT & STORMWATER NOTES

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM (OR DELEGATED AGENCY) SHALL BE NOTIFIED IN WRITING 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 DELAWARE 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 OR THE DELEGATED AGENCY.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHOULD BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
7. APPROVAL OF A SEDIMENT AND STORMWATER MANAGEMENT PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
8. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
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 DNREC POLICIES, PROCEDURES, AND GUIDANCE.



SEQUENCE OF CONSTRUCTION

1. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES, OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED. THE LANDOWNER/DEVELOPER AND CONTRACTOR ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
2. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
3. INSTALL TEMPORARY SHEET PILE COFFERDAM. THE SILT-FENCE TO COFFERDAM.
4. INSTALL SITE POLLUTION PREVENTION DEVICES PER DNREC STANDARD DETAILS & SPECIFICATIONS, INCLUDING CONCRETE WASHOUT, INSTALL SUMP PIT AND PORTABLE SEDIMENT TANK FOR DEWATERING OPERATION AT THE BOAT RAMP.
5. CLEAR AREAS AS NEEDED WITHIN LOC. REMOVE EXISTING CONCRETE BOAT RAMP.
6. INSTALL TIMBER SUPPORT PILES FOR THE FIXED DOCK.
7. PERFORM ROUGH GRADING AT THE PROPOSED BOAT RAMP.
8. PLACE STONE FOUNDATION AND CONCRETE FOR BOAT RAMP.
9. CONSTRUCT CONCRETE SLAB AND SCREEN WALLS FOR PORTABLE RESTROOM.
10. INSTALL FIXED AND REMOVABLE BOLLARDS.
11. CONSTRUCT SIDEWALK.
12. PLACE R-4 RIPRAP ADJACENT TO PAVED AREA AND #3 STONE SURROUNDING CONCRETE RAMP.
13. INSTALL HEADER KITS ON TIMBER PILES AND INSTALL ALUMINUM FIXED DOCK AND ALL ASSOCIATED COMPONENTS.
14. REMOVE TEMPORARY SHEET PILE COFFERDAM.
15. CONSTRUCT FULL DEPTH PAVEMENT.
16. PLACE ALL PAVEMENT MARKINGS AND SIGNAGE.
17. STABILIZE ALL UNPAVED DISTURBED AREAS WITH MINIMUM 6" TOPSOIL, DNREC APPROVED SEED MIX, AND MULCHING.
18. EROSION & SEDIMENT CONTROL DEVICES SHALL BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE OWNER.

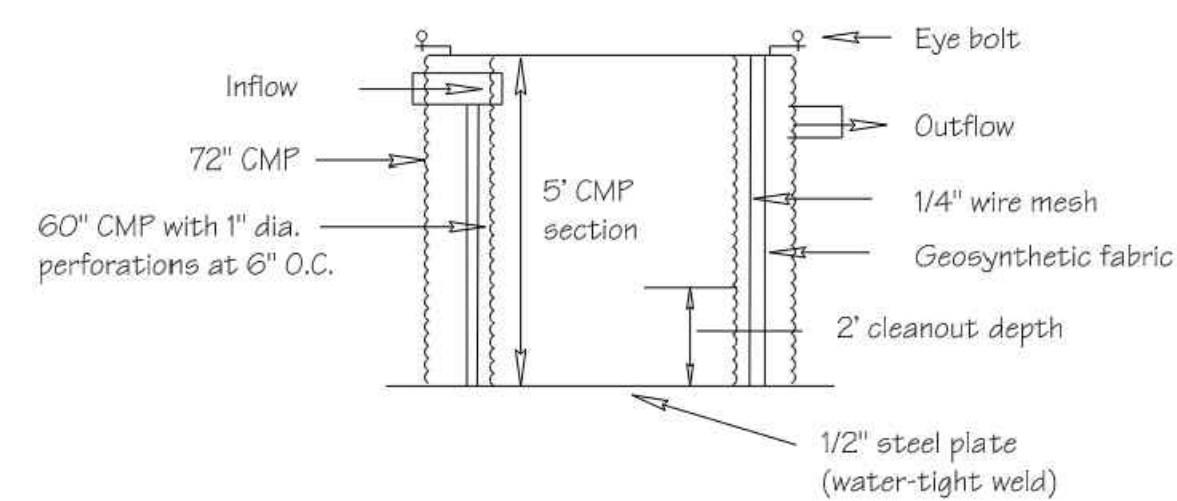
GENERAL NOTES

- 1. CONTRACTOR SHALL INSTALL SM-S MATTING (NORTH AMERICAN GREEN S75BN) OR APPROVED EQUAL TO ALL DISTURBED TURF AREAS ON SITE.

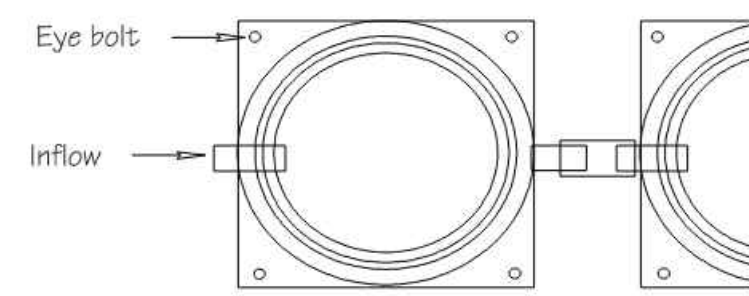


REVISIONS: DATE: _____ DESCRIPTION: _____	BY: _____ _____ _____ _____ _____
INGRAMS POND BOAT RAMP RECONSTRUCTION EROSION & SEDIMENT CONTROL PLAN	
SEAL: _____	
CIVIL ENGINEER: _____	
	
	
DESIGNED BY: DLD	
DRAWN BY: DMK	
CHECKED BY: AES	
DATE: JUNE 2023	
SCALE: 1" = 10'	
SHEET NO.: C108	
PROJECT NO.: 175013.81	

Standard Detail & Specifications
Portable Sediment Tank



Section



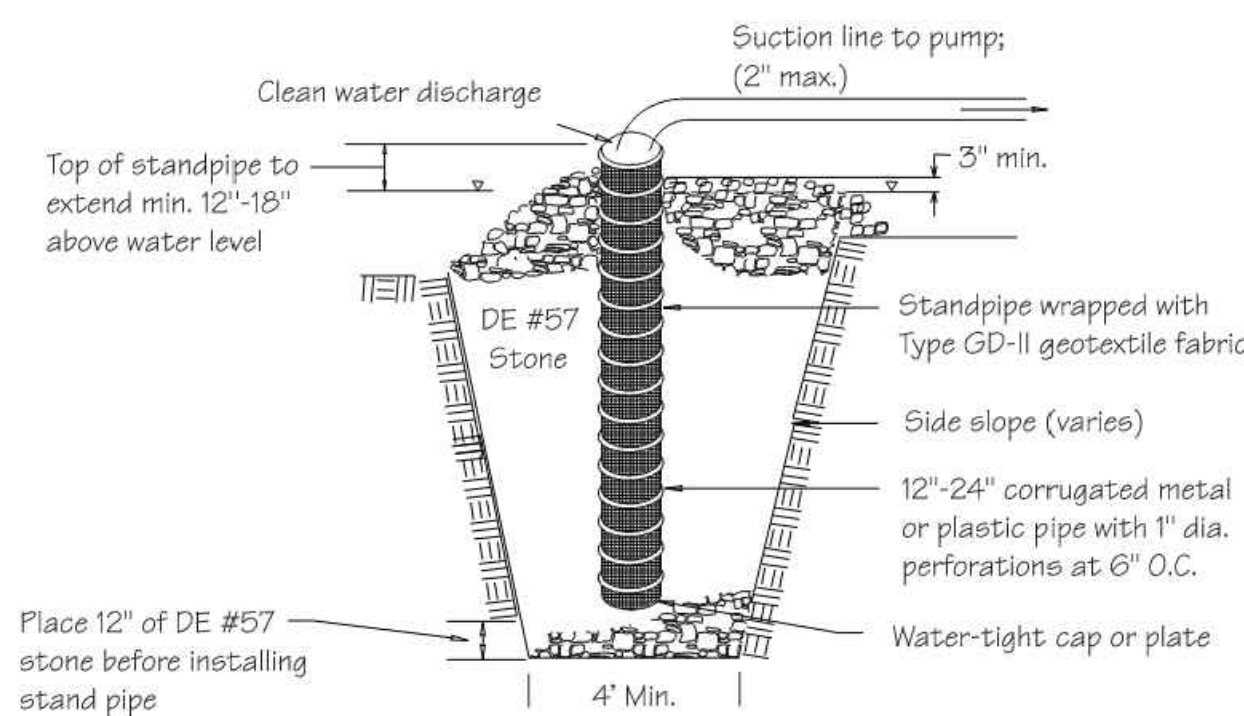
Plan

Construction Notes:

1. Required storage volume = 1 c.f. storage/1 gpm pump discharge.
2. Tanks may be connected in series to provide required storage.

Source: Adapted from MD Stds. & Specs. for ESC	Symbol: ST	Detail No. DE-ESC-3.2.1.1 Sheet 1 of 1 Effective July 2023
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Standard Detail & Specifications
Pumping Pit - Type 1



Section

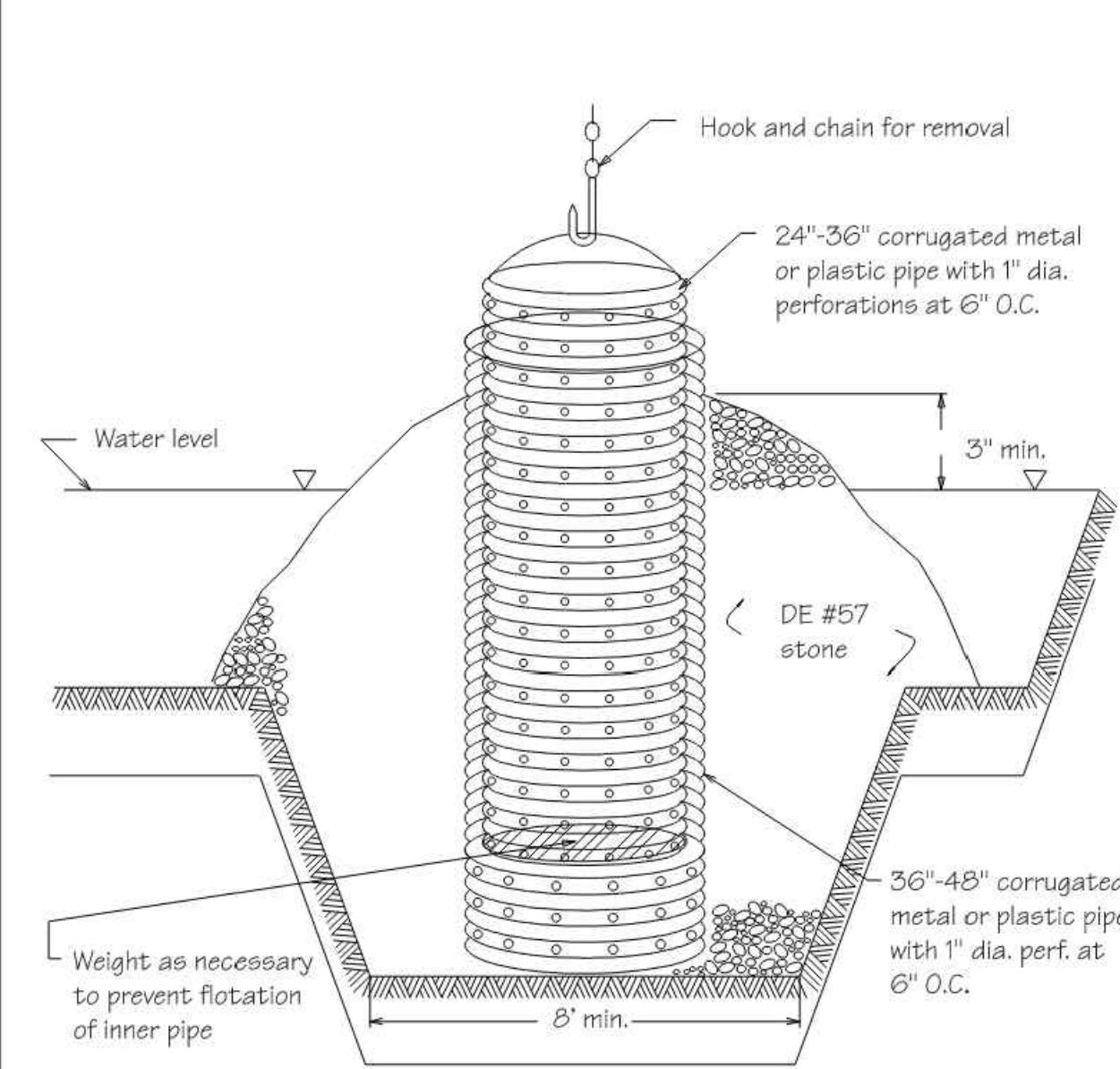
Construction Notes:

1. Pit dimensions are variable.
2. The standpipe should be constructed by perforating a 12" to 24" diameter corrugated or PVC pipe. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center.
3. A base of DE #57 aggregate should be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe should then be backfilled with DE #57 aggregate.
4. The standpipe should extend 12" to 18" above the lip of the pit or riser crest elevation (basin dewatering).

NOTE: If discharge will be pumped directly to a storm drainage system, the standpipe must be wrapped with Type GD-II geotextile fabric before installation. If desired, 1/2" hardware cloth may be placed around the standpipe, prior to attaching the geotextile fabric. This will increase the rate of water seepage into the pipe.

Source: Adapted from MD Stds. & Specs. for ESC	Symbol: PP-1	Detail No. DE-ESC-3.2.2.1 Sheet 1 of 1 Effective July 2023
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Standard Detail & Specifications
Pumping Pit - Type 2



Section

Source: Adapted from MD Stds. & Specs. for ESC	Symbol: PP-2	Detail No. DE-ESC-3.2.2.2 Sheet 1 of 2 Effective July 2023
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Standard Detail & Specifications
Pumping Pit - Type 2

Construction Notes:

1. Pit shall have a minimum bottom width of 8'.
2. The inside standpipe should be constructed by perforating a 24" to 36" diameter corrugated or PVC pipe. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center.
3. The outside pipe shall be at least 12" larger in diameter than the inside pipe.
4. After installing the standpipes, the pit surrounding the standpipes should then be backfilled with DE #57 aggregate. The height of the stone shall be a min. 3" above the design high water elevation in the trap or basin.
5. The standpipes should extend 12" to 18" above the design high water elevation in the trap or basin.

NOTE: If discharge will be pumped directly to a storm drainage system, the standpipe must be wrapped with Type GD-II geotextile fabric before installation. If desired, 1/2" hardware cloth may be placed around the standpipe, prior to attaching the geotextile fabric. This will increase the rate of water seepage into the pipe.

Source: Adapted from MD Stds. & Specs. for ESC	Symbol: PP-2	Detail No. DE-ESC-3.2.2.2 Sheet 2 of 2 Effective July 2023
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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 at 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: ST	Detail No. DE-ESC-3.4.1 Sheet 1 of 2 Effective July 2023
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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.

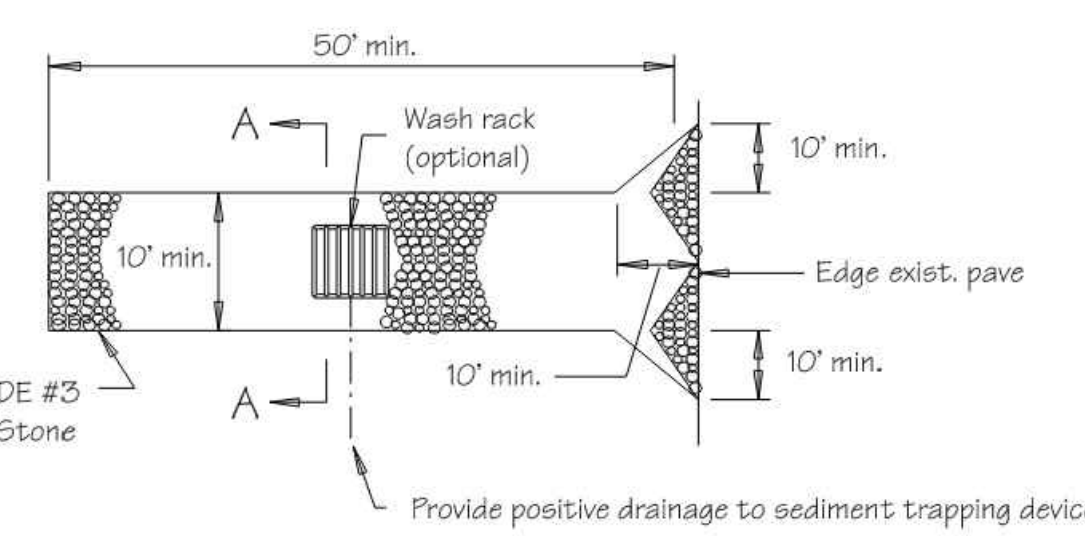
- b. **Grading** - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling 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.

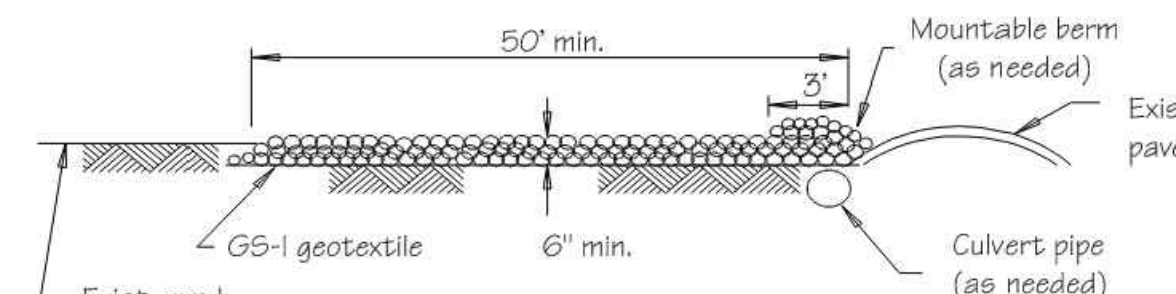
Compost amendments that are intended to meet specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments.**

Source: USDA - NRCS	Symbol: ST	Detail No. DE-ESC-3.4.1 Sheet 2 of 2 Effective July 2023
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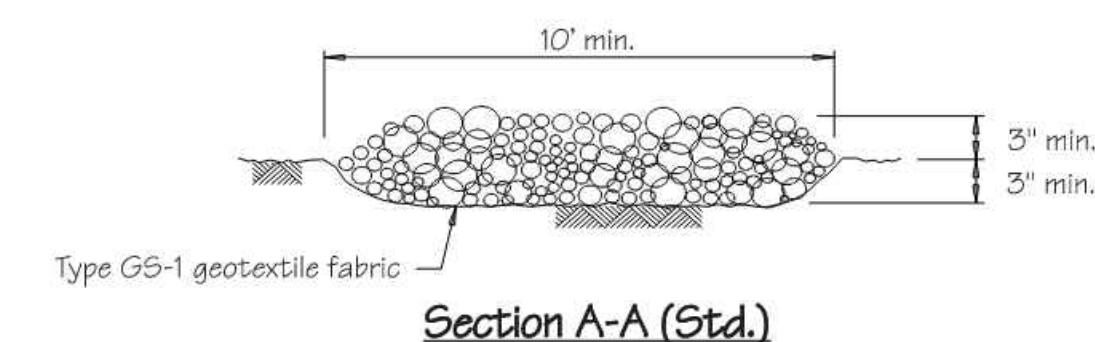
Standard Detail & Specifications
Stabilized Construction Entrance



Plan



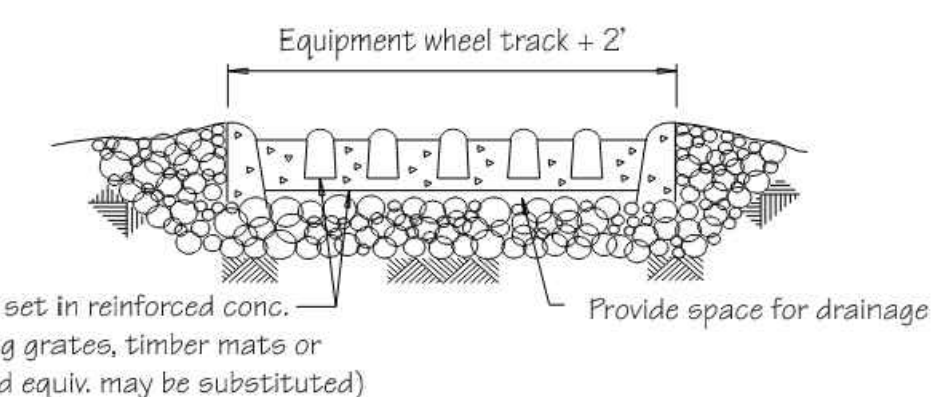
Profile



Section A-A (Std.)

Source: Adapted from VA ESC Handbook	Symbol: SCE	Detail No. DE-ESC-3.4.7 Sheet 1 of 2 Effective July 2023
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Standard Detail & Specifications
Stabilized Construction Entrance



Section A-A (Opt.)

Construction Notes:

1. **Stone size** - Use DE #3 stone.
2. **Length** - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. **Thickness** - Not less than size (6) inches.
4. **Width** - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. **Geotextile** - Type GS-1; placed over the entire area prior to placing of stone.
6. **Surface Water** - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. **Maintenance** - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. **Washing** - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. **Inspection** - Periodic inspection and needed maintenance shall be provided after each rain.

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

INGRAMS POND
BOAT RAMP RECONSTRUCTION
EROSION & SEDIMENT CONTROL DETAILS

SEAL:

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

DESIGNED BY:
DLD

DRAWN BY:
DMK

CHECKED BY:
AES

DATE:
JUNE 2023

SCALE:
NTS

SHEET NO.:
C109

PROJECT NO.:
175013.81

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Standard Detail & Specifications Vegetative Stabilization

REQUIRED FOR THIS PROJECT

Mix #	Species ⁵	Seeding Rate	Optimum Seeding Dates ¹									Planting Depth ³
			O = Optimum Planting Period; A = Acceptable Planting Period									
			Coastal Plain			Piedmont			All ⁴			
	Certified Seed	lb/Ac ⁴	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	7/5/1-7/31	8/1-10/31	10/31-2/1		
1	Barley	125	4	O	A	O	O	A	O		1-2 inches 2-3" sandy soils	
2	Oats	125	4	O	A	A	O	A	A		1-2 inches 2-3" sandy soils	
3	Rye	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils	
4	Perennial Ryegrass	125	4	O	A	O	O	A	O		0.5 inches 1-2" sandy soils	
5	Annual Ryegrass	125	4	O	A	O	O	A	O	A	0.5 inches 1-2" sandy soils	
6	Winter Wheat	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils	
7	Foxtail Millet	30 PLS	0.7		O			O			0.5 inches 1-2" sandy soils	
8	Pearl Millet	20 PLS	0.5		O			O			0.5 inches 1-2" sandy soils	

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

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

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

Standard Detail & Specifications Vegetative Stabilization

Mix No.	Certified Seed ²	Seeding Rate ¹	Optimum Seeding Dates ¹									Remarks
			O = Optimum Planting Period; A = Acceptable Planting Period									
			Coastal Plain			Piedmont			All ⁴			
	Well Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	7/31-10/31	10/31-2/1			
1	Tall Fescue Canada Wild Rye	140 10	3.2 0.23	O	A	O	A	O	A	Add 100 lbs./ac. Winter Rye	Good erosion control mix. Tolerant of low fertility soils. Good for droughty sites.	
2	Deer Tongue Sheep Fescue White Clover	30 30 10	0.69 0.69 0.35	A	O	A	O	A	O	Add 100 lbs./ac. Winter Rye	Good erosion control mix. Tolerant of low fertility soils. Legume that fixes atmospheric N into soil.	
3	Tall Fescue (Turf-type) or Strong Creeping Red Fescue or Perennial Ryegrass	50 50 50	1.15 1.15 1.15	O	A ¹	O	O	A ¹	O	Add 100 lbs./ac. Winter Rye	Good erosion control mix. Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Flatpeas to suppress woody vegetation.	
4	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Redtop	100 70 15 5	2.3 1.61 0.35 0.11	O	A ¹	O	O	A ¹	O	Add 100 lbs./ac. Winter Rye	Suitable waterway mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.	
5	Switchgrass ³ or Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	10 10 5 5 5	0.23 0.23 0.11 0.11 0.1			O			O		Native warm-season mixture. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds.	
6	Tall Fescue (Turf-type) (Blend of 3 cultivars)	150	3.5	O	A ¹	O	O	A ¹	O		Managed filter strip for nutrient uptake.	
7	Tall Fescue Ky. Bluegrass (Blend) Perennial Ryegrass	150 20 46 25	3.5 0.46 0.46 0.46	O	A ¹	O	O	A ¹	O		Three cultivars of Kentucky Bluegrass. Traffic tolerant.	
8	Big Bluestem ⁷ Indian Grass ⁷ Little Bluestem ⁷ Creeping Red Fescue plus one of: Partridge Pea Bush Clover Wild Indigo Shoaty Tick-Trefoil	10 10 8 30 5 3 3 2	0.23 0.23 0.18 0.69 0.11 0.07 0.07 0.05	O	A ¹	O	O	A ¹	O		All species are native. Indian Grass and Bluestem have luffy seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.	

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

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

Standard Detail & Specifications Vegetative Stabilization

REQUIRED FOR THIS PROJECT

Mix No.	Certified Seed ²	Seeding Rate ¹	Optimum Seeding Dates ¹									Remarks
			O = Optimum Planting Period; A = Acceptable Planting Period									
			Coastal Plain			Piedmont			All ⁴			
	Poorly Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	7/31-10/31	10/31-2/1			
9	Redtop Creeping Bentgrass Sheep Fescue Rough Bluegrass	75 35 30 45	1.72 0.6 0.69 1	O	A ¹	O	O	A ¹	O	Add 100 lbs./ac. Winter Rye	Quick stabilization of disturbed sites and waterways.	
10	Switchgrass ³	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 2.3	2.3 0.57 0.3	O	A ¹	O	O	A ¹	O		Moderate value, low maintenance, traffic tolerant.	
13	Creeping Red Fescue Chewings Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 4	1.15 1.15 0.4 0.4	O	A ¹	O	O	A ¹	O		Shade tolerant, moderate traffic tolerance, moderate maintenance.	
14	Creeping Red Fescue Rough Bluegrass Chewings Fescue	50 90 2.1	1.15 0.9 0.4	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 along in lawns. Discouraged.	

- When hydroseeding is the chosen method of application, the total rate of seed should be increased by 25%.
- 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.
- 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.
- Turf-type species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
- It is recommended that all leguminous seed be inoculated.
- Warm season grass mix and Switchgrass cannot be mowed more than 4 times per year.
- 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:	Symbol:	Detail No.
Delaware ESC Handbook		DE-ESC-3.4.3 Sheet 3 of 4 Effective July 2023

Standard Detail & Specifications Vegetative Stabilization

Construction Notes:

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

- Soil Amendments
 - Lime - Apply liming materials based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
 - Fertilizer - Apply fertilizer based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soils.

- Seeding
 - For temporary stabilization, select a mixture from Sheet 1. For a permanent stabilization, select a mixture from Sheet 2 or Sheet 3 depending on the conditions. Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.
 - Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
 - Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
- Mulching

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

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

Standard Detail & Specifications Mulching

1. Materials and Amounts

- 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.
- 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).
- Hydraulically applied mulch - The following conditions apply to hydraulically applied mulch:
 - Definitions:
 - 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.
 - 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.
 - 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. BFMs shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.
 - Refer to Figure 3.4.5a for conditions and limitations of use for each of the above categories of hydraulic mulch.
 - 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.
 - Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
 - Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.
 - 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:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrex TM International		DE-ESC-3.4.5 Sheet 1 of 3 Effective July 2023

Standard Detail & Specifications Mulching

- Application:
 - Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.
 - Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.
 - 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.
 - 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.
 - 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.
- 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.
- Compost blanket (CB) - Loosely applied with a pneumatic blower so that a 1" compost blanket uniformly covers the soil with 100% coverage. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrex TM International		DE-ESC-3.4.5 Sheet 2 of 3 Effective July 2023

Standard Detail & Specifications Mulching

Product/Slipage Rate (lbs/1000 sq ft)	MULCHING MATERIAL SELECTION GUIDE				
	Dec 1 to Feb 28	March 1 to May 31	June 1 to Aug 31	Sept 1 to Nov 30	Dec 1 to Feb 28
Wood Fiber @ 2000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 3000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 4000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 5000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 6000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 7000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 8000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 9000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 10000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 11000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 12000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 13000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 14000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 15000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 16000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 17000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 18000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 19000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 20000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 21000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 22000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 23000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 24000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 25000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 26000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 27000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 28000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 29000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 30000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 31000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 32000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 33000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 34000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 35000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 36000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 37000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 38000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 39000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 40000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 41000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 42000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 43000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 44000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 45000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 46000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 47000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 48000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 49000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 50000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 51000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 52000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 53000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 54000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 55000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 56000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 57000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 58000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 59000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 60000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 61000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 62000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 63000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 64000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 65000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 66000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 67000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 68000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 69000 lbs/ac min.	OK	OK	OK	OK	OK
BPM @ 70000 lbs/ac min.	OK	OK	OK	OK	OK

Standard Detail & Specifications Construction Site Pollution Prevention

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

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

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

1-800-662-8802

Example Construction General Permit (CGP) Signage

NOTES:

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

Source: Delaware ESC Handbook	Symbol:	Detail No. DE-ESC-3.6.1 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:

- Concrete
- Detergents
- Paints (enamel and latex)
- Cleaning solvents
- Pesticides
- Wood scraps
- Fertilizers
- Petroleum based products

2. Good housekeeping practices

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

3. Waste management practices

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

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

Notes (cont.)

- Dispose of all trash in accordance with all applicable Delaware laws.
 - Littering is strictly prohibited. Trash cans should be placed at all lunch spots and recycle bins should be placed near the construction trailer.
 - If fertilizer bags can not be stored in a weather-proof location, they should be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.
- #### 4. Equipment maintenance practices
- If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
 - If performed on-site, wash vehicles with high-pressure water spray without detergents in an area contained by an impervious berm.
 - Use drip pans for all equipment maintenance.
 - Inspect equipment for leaks on a daily basis.
 - Direct washout from concrete trucks into a temporary pit for hardening and proper disposal.
 - Equip fuel nozzles with automatic shut-off valves.
 - Dispose of all used products such as oil, antifreeze, solvents and tires in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- #### 5. Spill prevention practices
- Identify potential spill areas and contain them in covered areas with no connection to the storm drain system.
 - Post warning signs in hazardous material storage areas.
 - Perform preventive maintenance on all tanks, valves, pumps, pipes and other equipment as necessary.
 - Prioritize low or non-toxic substances for use.

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

Notes (cont.)

- Prominently post contact information for reporting spills through the DNREC 24-Hour Toll Free Number.
- #### 6. Education
- Include Best Management Practices (BMPs) for construction site pollution control as part of regular progress meetings.
 - Information regarding waste management, equipment maintenance and spill prevention should be prominently posted in the construction trailer.

CONTACT INFORMATION

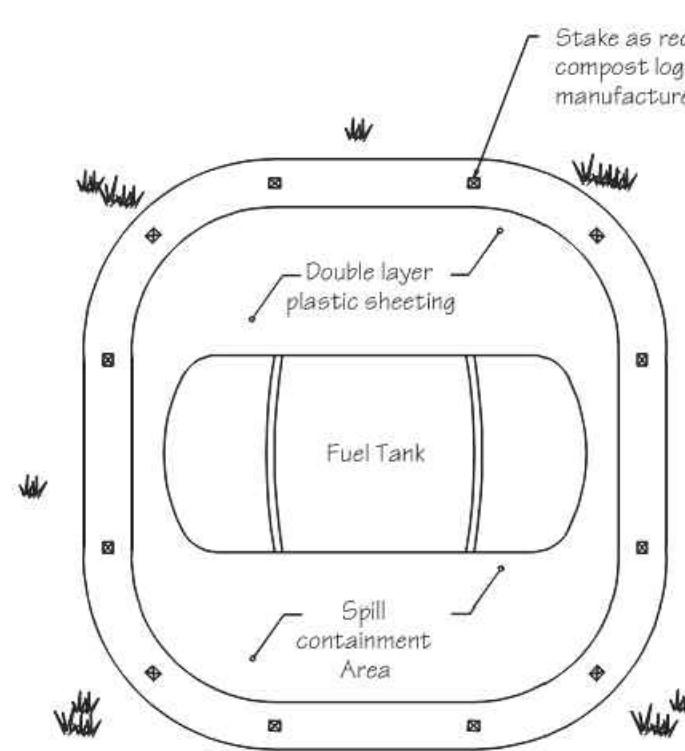
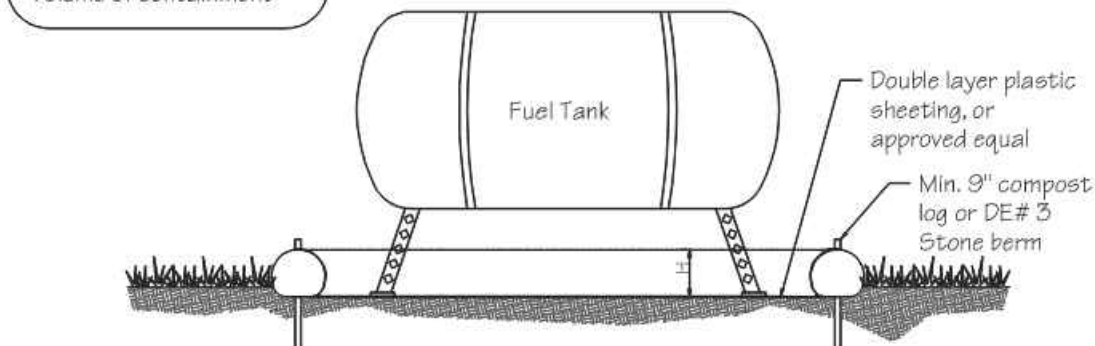
DNREC 24-Hour Toll Free Number **800-662-8802**
 DNREC Solid & Hazardous Waste Management Section **302-739-9403**

Source: Adapted from USEPA Pub. 840-B-92-002	Symbol:	Detail No. DE-ESC-3.6.1 Sheet 4 of 4 Effective July 2023
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Standard Detail & Specifications Fueling & Spill Control

DATA TO BE PROVIDED

Volume of Potential Pollution
 Height of containment
 Area of containment
 Volume of containment



NOTE: Double-walled tanks with proper labeling meet EPA requirements for secondary containment.

Source: Delaware ESC Handbook	Symbol:	Detail No. DE-ESC-3.6.4 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

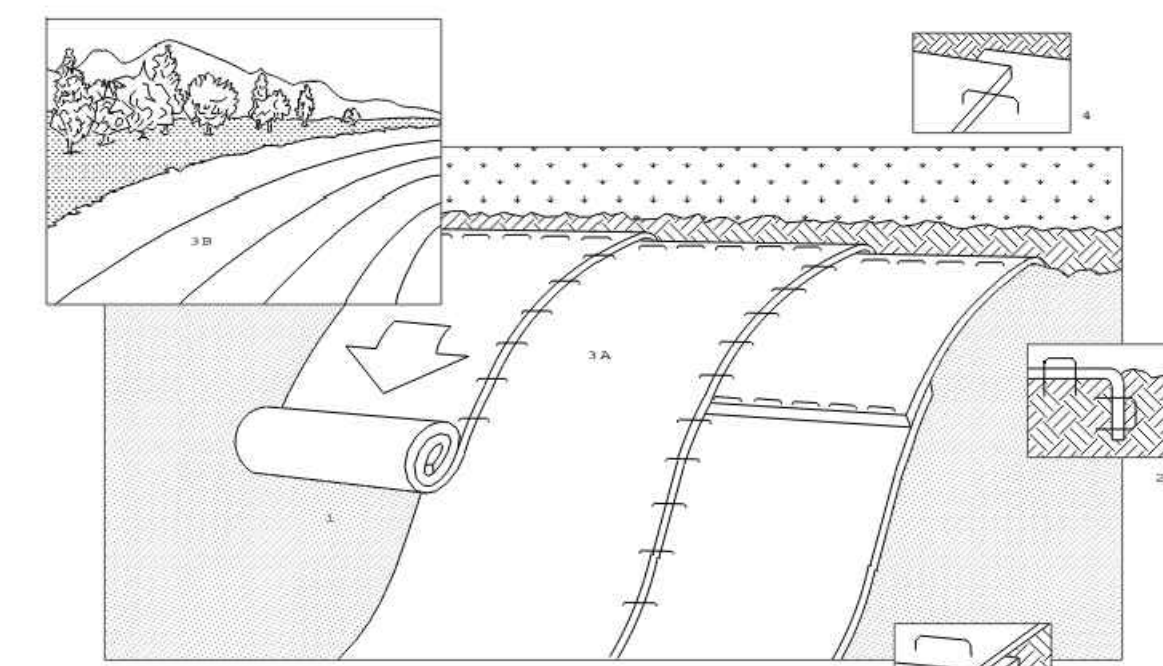
- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

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:	Detail No. DE-ESC-3.6.4 Sheet 2 of 2 Effective July 2023
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Standard Detail & Specifications Stabilization Matting - Slope



Note: Use manufacturer's recommendations for stapling patterns for slope installations.

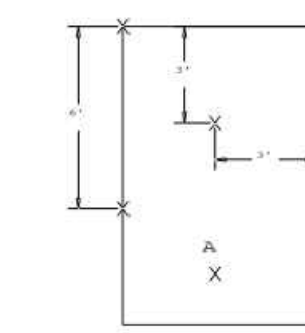
Perspective

Construction Notes:

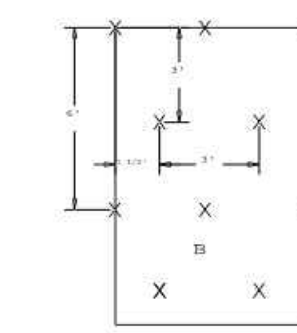
- Prepare soil before installing matting, including application of lime, fertilizer, and seed.
- Begin at the top of the slope by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact trench after stapling.
- Roll the mats (A) down or (B) horizontally across the slope.
- The edges of parallel mats must be stapled with approx. 2" overlap.
- When mats must be spliced down the slope, place mats end over end (shingle style) with approx. 4" overlap. Staple through overlapped area, approx. 12" apart.

Source: Adapted from North American Green, Inc.	Symbol: SM-S	Detail No. DE-ESC-3.4.6.1 Sheet 1 of 2 Effective July 2023
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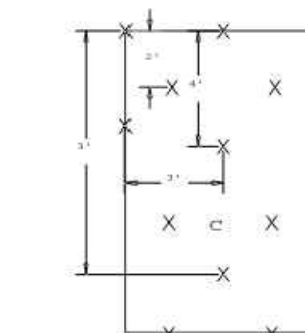
Standard Detail & Specifications Stabilization Matting - Slope



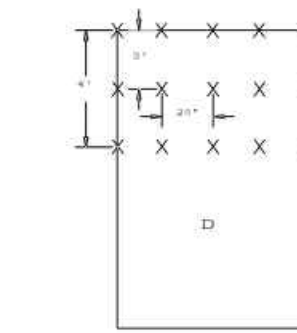
0.7 Staples per Sq. Yd.



1.2 Staples per Sq. Yd.



1.75 Staples per Sq. Yd.



3.5 Staples per Sq. Yd.

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

Stapling Patterns

Source: Adapted from North American Green, Inc.	Symbol: SM-S	Detail No. DE-ESC-3.4.6.1 Sheet 2 of 2 Effective July 2023
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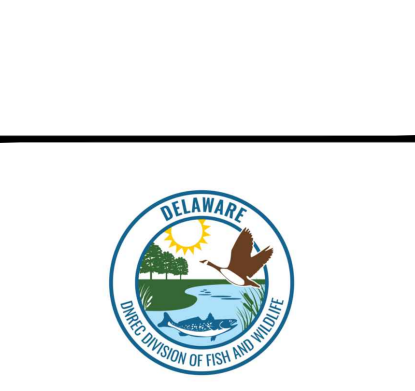
REVISIONS:	DATE:	DESCRIPTION:	BY:

INGRAMS POND
 BOAT RAMP RECONSTRUCTION
 EROSION & SEDIMENT CONTROL DETAILS

SEAL:

CIVIL ENGINEER:

CENTURY ENGINEERING
 A Kleinfelder Company



DESIGNED BY:
DLD

DRAWN BY:
DMK

CHECKED BY:
AES

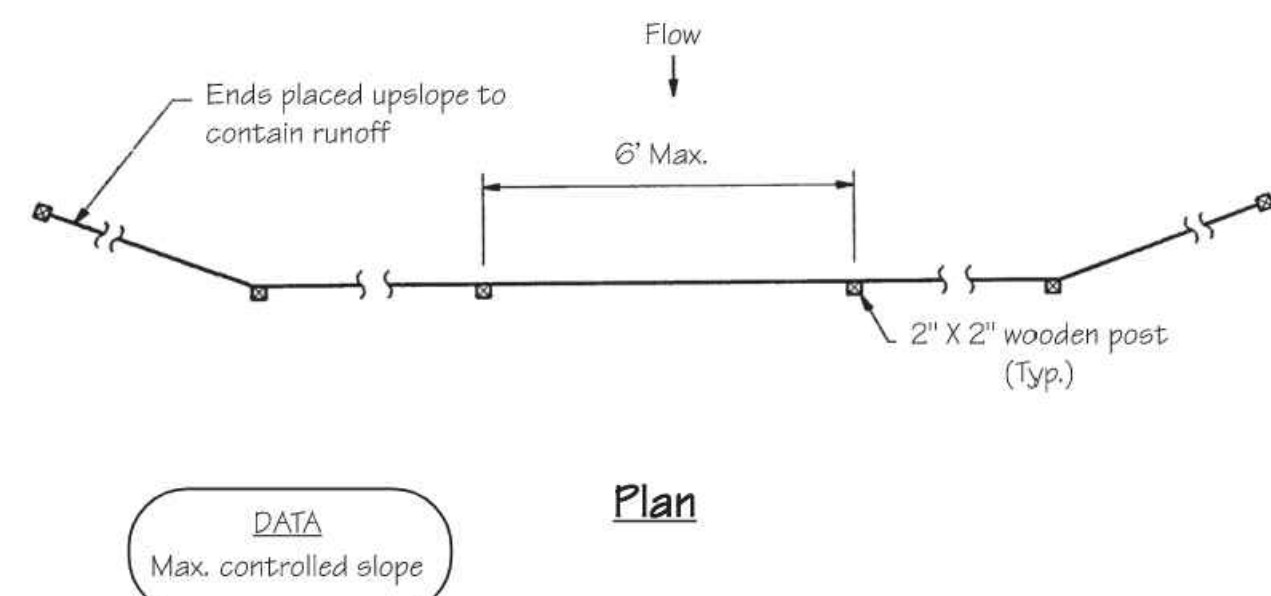
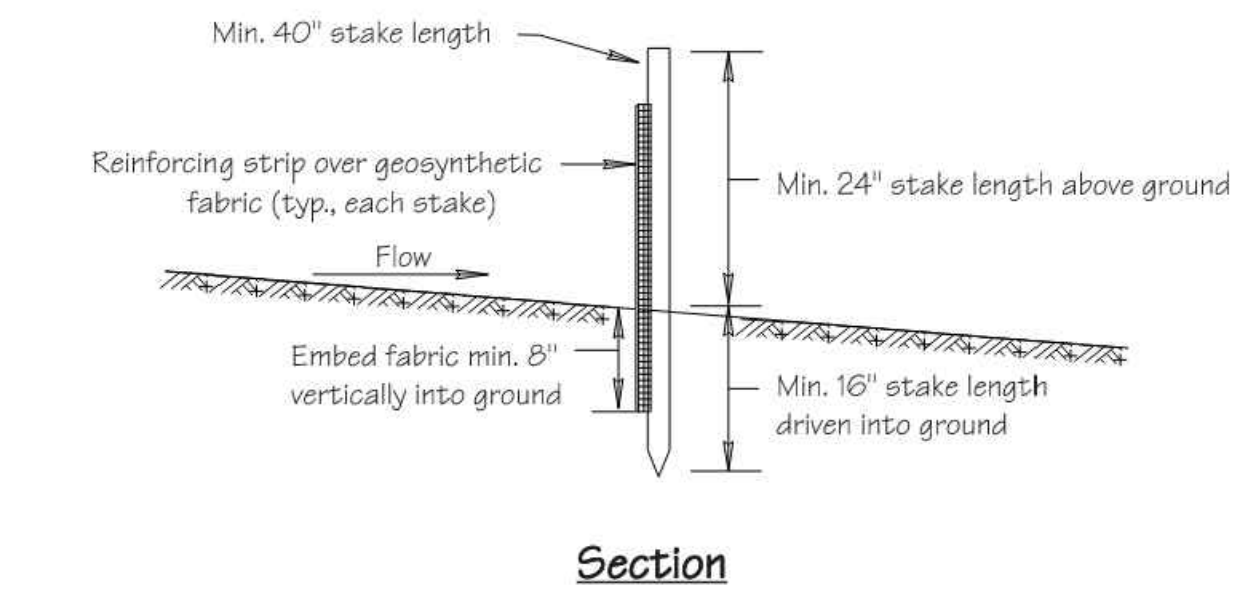
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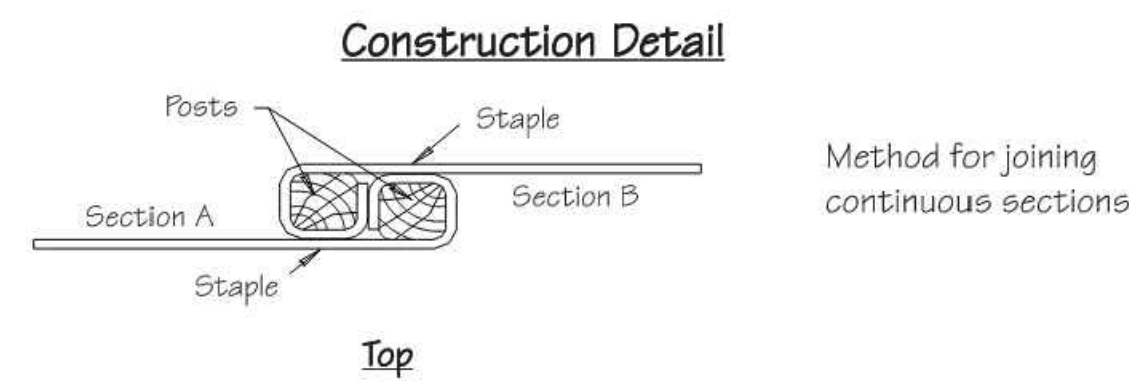
PROJECT NO.:
175013.81

Standard Detail & Specifications
Silt Fence



Source: Adapted from MD Stds. & Specs. for ESC	Symbol: SF	Detail No. DE-ESC-3.1.2.1 Sheet 1 of 2 Effective July 2023
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Standard Detail & Specifications
Silt Fence

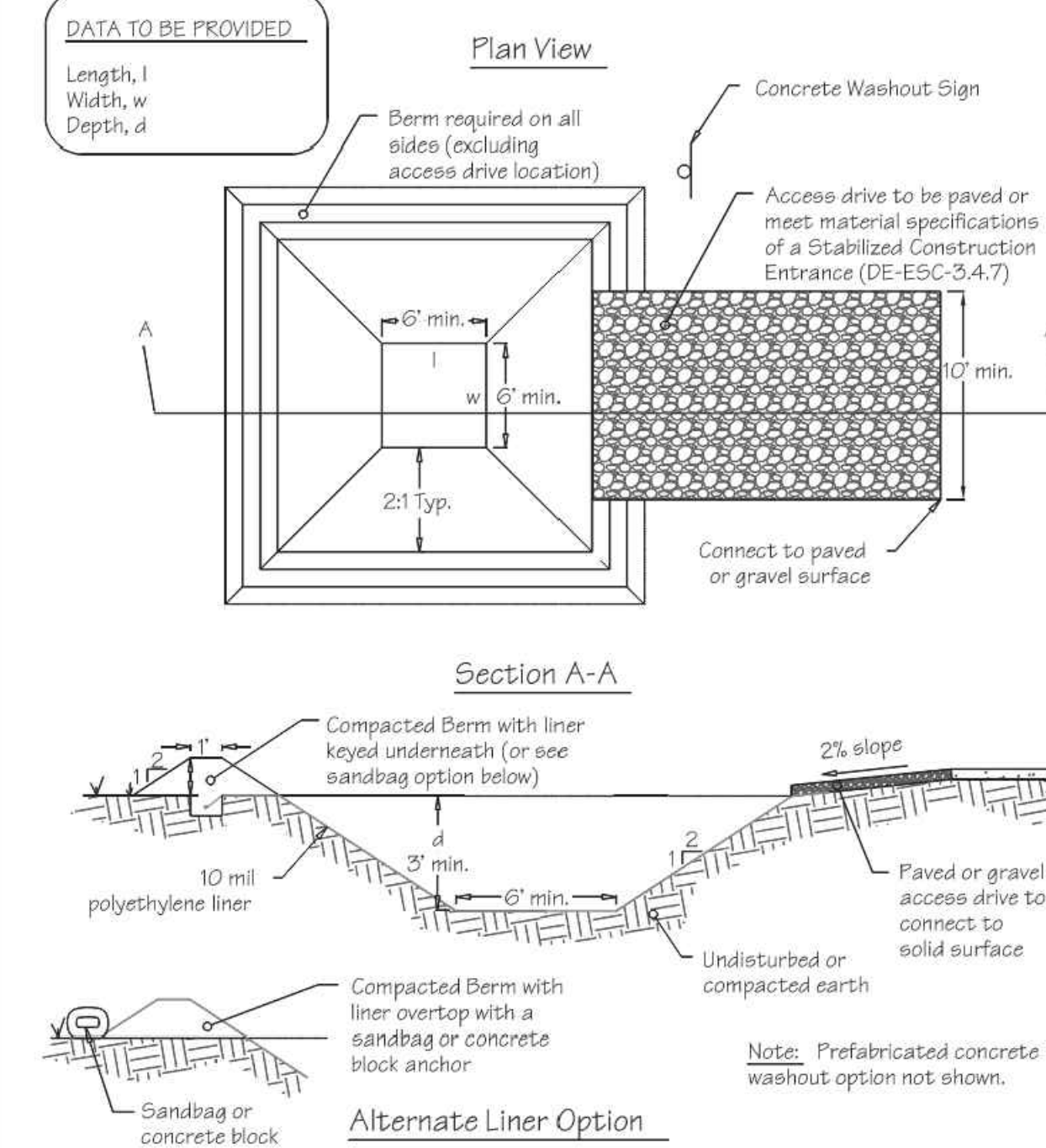


- Construction Notes:**
- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
 - When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
 - Maintenance shall be performed as needed and material removed when "bulges" develop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

- Materials:**
- Stakes: Steel (either T or U) or 2" x 2" hardwood
 - Geosynthetic Fabric: Type GD-1
 - Reinforcing strip: Wooden lath or plastic strip

Source: Adapted from MD Stds. & Specs. for ESC	Symbol: SF	Detail No. DE-ESC-3.1.2.1 Sheet 2 of 2 Effective July 2023
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Standard Detail & Specifications
Concrete Washout



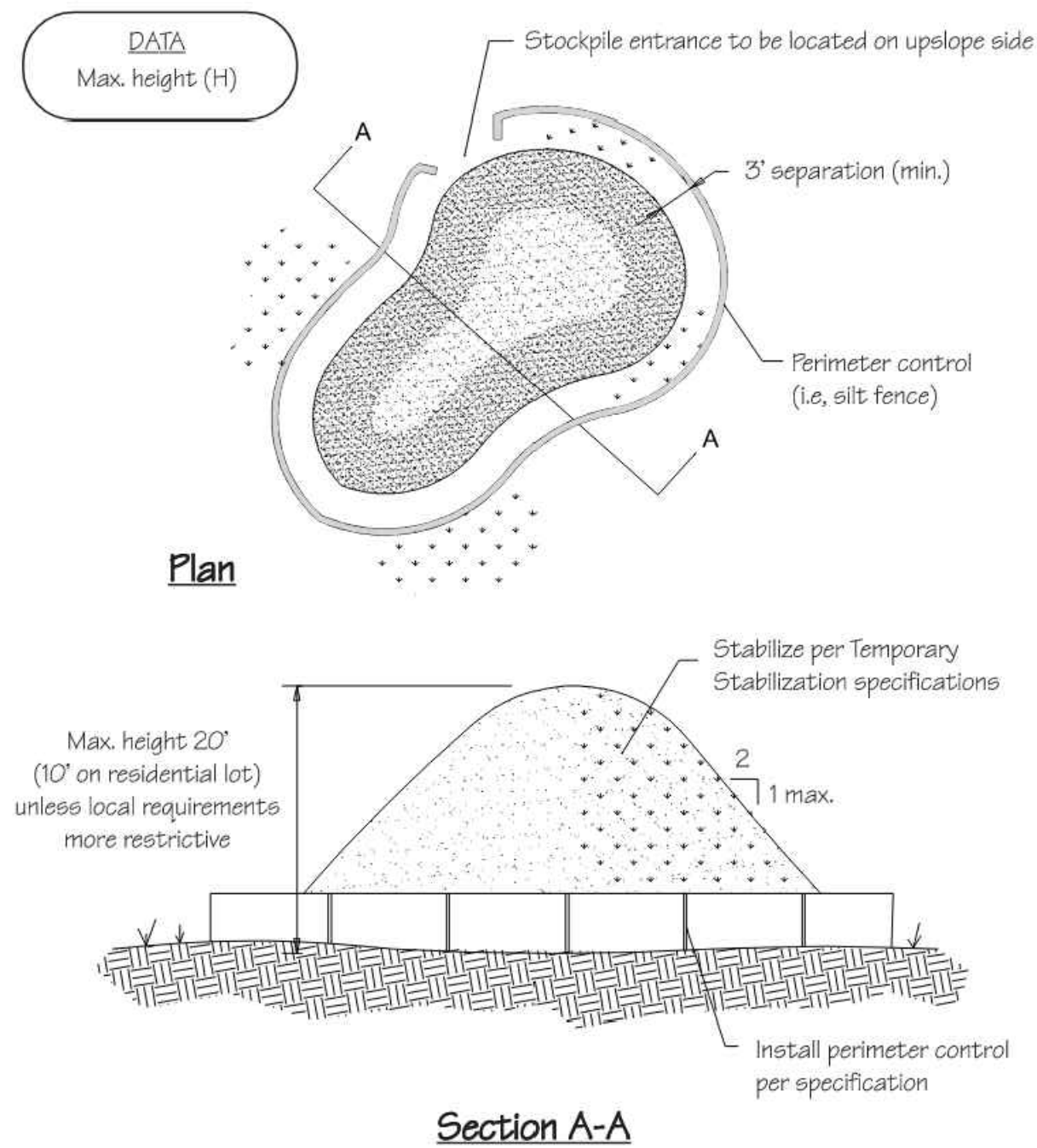
Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: CW	Detail No. DE-ESC-3.6.2 Sheet 1 of 2 Effective July 2023
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Standard Detail & Specifications
Concrete Washout

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

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



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

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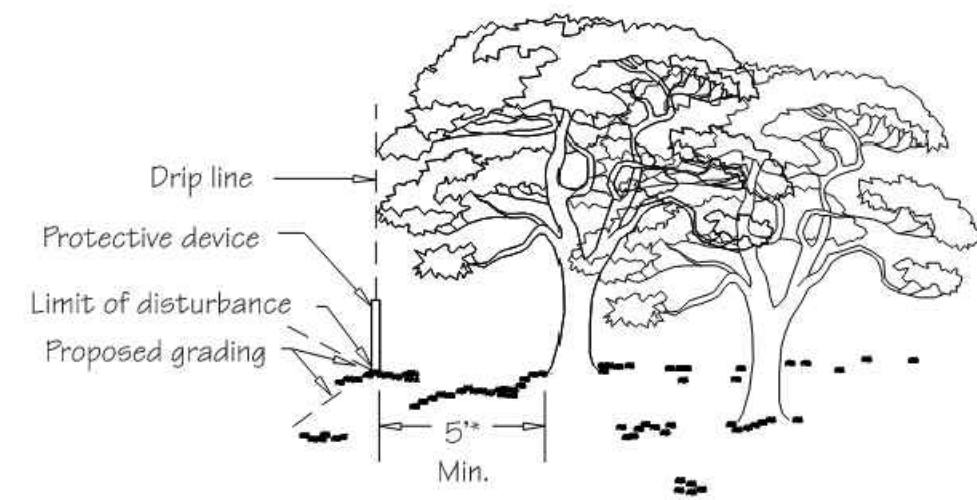
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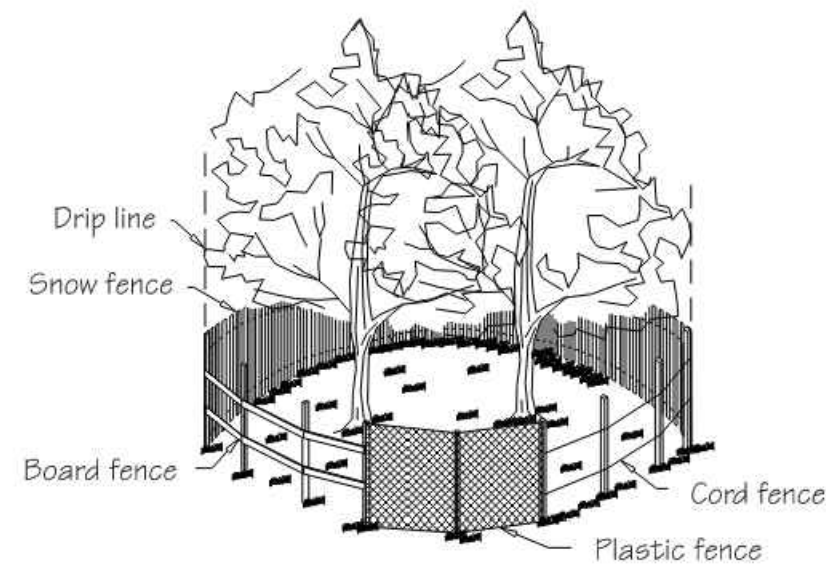
PROJECT NO.:

Standard Detail & Specifications
Sensitive Area Protection



*5' min. setback applies to all sensitive areas covered by this specification.

Location of Sensitive Area Protection



Methods of Sensitive Area Protection

Source: Adapted from VA ESC Handbook	Symbol: SAP	Detail No. DE-ESC-3.7.2 Sheet 1 of 3 Effective July 2023
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Standard Detail & Specifications
Sensitive Area Protection

Construction Notes:

Fencing shall be installed at the extents of all sensitive areas. For trees, the fencing shall be installed outside the dripline (mature canopy) and at no time within 5 feet of the trunk. Personnel must be instructed to honor protective devices. The devices described are suggested only, and are not intended to exclude the use of other devices which will protect the trees to be retained. If silt fence is to be used for demarcation purposes, appropriate signage shall be provided a minimum of every 20 feet denoting the area as a sensitive area protection zone.

Materials:

- Snow Fence** - Standard 40-inch high snow fence shall be placed at the limits of clearing or construction on standard steel posts set 6 feet apart.
- Board Fence** - Board fencing consisting of 4-inch square posts set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with a minimum of two horizontal boards between posts. For tree protection, if it is not practical to erect a fence at the drip line, construct a triangular fence nearer the trunk. The limits of clearing will still be located at the drip line, since the root zone within the drip line will still require protection.
- Plastic Fencing** - 40-inch high "international orange" plastic (polyethylene) web fencing secured to conventional metal "T" or "U" posts driven to a minimum depth of 18 inches on 6-foot minimum centers shall be installed at the limits of clearing. The fence should have the following minimum physical qualities:
 - Tensile yield: Average 2,000 lbs. per 4-foot width (ASTM D638)
 - Ultimate tensile yield: Average 2,900 lbs. per 4-foot width (ASTM D638)
 - Elongation at break (%): Greater than 1000% (ASTM D638)
 - Chemical resistance: Inert to most chemicals and acids

Source: Adapted from VA ESC Handbook	Symbol: SAP	Detail No. DE-ESC-3.7.2 Sheet 2 of 3 Effective July 2023
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Standard Detail & Specifications
Sensitive Area Protection

- Cord Fence** - Posts with a minimum size of 2 inches square or 2 inches in diameter set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with two rows of cord 1/4-inch or thicker at least 2 feet apart running between posts with strips of colored surveyor's flagging tied securely to the string at intervals no greater than 3 feet.
- Earth Berms** - Temporary earth berms shall be constructed according to specifications for a Temporary Earth Dike with the base of the berm on the sensitive area side located along the limits of clearing. Earth berms may not be used for this purpose if their presence will conflict with drainage patterns.
- Trunk Armoring (Tree Protection Only)** - As a last resort, a tree trunk can be armored with burlap wrapping and 2-inch studs wired vertically no more than 2 inches apart to a height of 5 feet encircling the trunk. If this alternative is used, the root zone within the drip line will still require protection. Nothing should ever be nailed to a tree.

Maintenance:

Fencing and armoring devices shall be in place before any excavation or grading is begun, shall be kept in good repair for the duration of construction activities, and shall be the last items removed during the final cleanup after the completion of the project.

Source: Adapted from VA ESC Handbook	Symbol: SAP	Detail No. DE-ESC-3.7.2 Sheet 3 of 3 Effective July 2023
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DATE: _____
DESCRIPTION: _____
BY: _____

INGRAMS POND
BOAT RAMP RECONSTRUCTION

EROSION & SEDIMENT CONTROL DETAILS

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PROJECT NO.:

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