



December 15, 2010

Sarah Marsala
VWP Permit Writer
Virginia Water Protection Permit Program
Virginia Department of Environmental Quality
Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

**Subject: Part I (Wetlands & Streams) Joint Permit Application No. 10-1256
Addendum 3, Response to Additional Regulatory Information Requests
Virginia Electric and Power Company (Dominion)
North Anna Power Station - Proposed Unit 3
Louisa County, Virginia**

Dear Ms. Marsala,

In an email from you dated November 5, 2010, and during an agency meeting held on November 22, 2010, Dominion received requests for additional information regarding the Joint Permit Application (JPA) submitted on July 16, 2010, and Addendum 2 to the JPA submitted on November 5, 2010. Addendum 1 was submitted previously and is not the topic of this response. Requests for additional information have also been received by Dominion from Virginia Marine Resource Commission (VMRC), and Virginia Institute of Marine Science (VIMS).

This Addendum 3 provides responses to the additional information requests from these agencies.

VDEQ COMMENTS

- 1. Clarify and confirm the linear feet of temporary stream impacts at Walkerton. The revised impacts table provided in Addendum 2 indicates 515 linear feet of stream channel will be temporarily impacted at this location. However, response No. 1 of Addendum 2 states the total linear feet to be temporarily impacted are 420 (210 + 100 + 150 - 40 = 420 linear feet).**

The roll-off component will temporarily impact approximately 308 linear feet of stream channel due to a temporary cofferdam and temporary shoreline protection. The cofferdam will temporarily impact approximately 195 linear feet of stream channel and the shoreline protection will temporarily impact approximately 113 linear feet of

shoreline. The combined stream impacts (cofferdam and shoreline protection) parallel to the shoreline total approximately 308 linear feet.

The linear footage of stream impact has been revised from previous submittals to account for the angle of the cofferdam relative to the shoreline. The revised temporary stream impacts total approximately 308 linear feet and are included within Table 6. The revised table is located in Attachment A.

Both the cofferdam and the shoreline protection will be removed at the end of project activities.

- 2. Three areas are depicted for placement of dolphin/timber piles on the two plan views that depict the Walkerton off-loading site activities (Grid 13 and Figure 1 Grid 13 – Plan View). These three areas are outside the surface water impact limits depicted at this location. DEQ has jurisdiction over activities that occur in surface waters, which include the installation of these piles. Update the impacts table and map to depict these areas as additional impact.**

Depict scour protection to the existing bottom of the Mattaponi River on Grid 13 – Cross Section D – D’.

The impact table and relevant figures have been updated to account for impacts associated with the proposed dolphins. The temporary impacts associated with the dolphins have been calculated and incorporated into Table 6 (see Attachment A). The roll-off facility will include 5 dolphins that will temporarily impact approximately 75 square feet (0.002 acres) of open water. The 5 dolphins include the 3 originally depicted in addition to 2 dolphins to be placed adjacent to the end of the cofferdam. Table 6 also includes the temporary open water impacts associated with the cofferdam and shoreline protection. The cofferdam will temporarily impact approximately 24,312 square feet (0.56 acres) of open water and the shoreline protection will temporarily impact approximately 1,396 square feet (0.03 acres) of open water. The cofferdam, shoreline protection, and dolphins will temporarily impact a total of 25,783 square feet (0.59 acres) of open water. Revised Grid Sheets for the roll-off facility are included in Attachment B.

Cross section details depicting the proposed scour protection have been updated to show that rip- rap material will intersect the existing bottom of the Mattaponi River. See Figure 5 Grid 13 – Cross Section D – D’ in Attachment B.

VMRC/VIMS COMMENTS

- 1. Look into reducing the slopes/footprint for the shoreline protection at the roll-off facility and possibly moving the shoreline protection up-gradient of the SAV and out of Wetland Impact #s 15 and 16. Determine the necessity of shoreline protection.**

Shoreline protection is proposed upstream of the cofferdam structure to protect the shoreline from eddy formations that may occur during high flow events. Due to the solid construction of the cofferdam, water that would have flowed parallel to the shoreline pre-construction will likely be partially directed toward the shoreline after construction. The proposed rip-rap protection for the shoreline will be placed on the existing 10:1 slope to protect the existing bathymetry of the river. The rip-rap is extended above the MHW but not to the MLW as these erosive velocities in the river will occur during higher flow rates and flood stages in the river.

The proposed protection should not be shifted to the land side of MHW due to the potential of negatively impacting the integrity of the rip-rap and cofferdam as a result of undercutting.

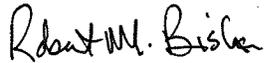
The intent of the shoreline protection is not a typical application where the river banks are protected from erosive velocities flowing parallel to the bank causing incision of the banks, but rather a protection of the shoreline due to temporary changes in flow direction caused by the configuration of the cofferdam structure. The shoreline protection measures will be removed at the end of project activities and the site will be restored to pre-construction contours and condition.

- 2. Provide VMRC aerial transmission line crossings of streams that have drainage areas greater than 5 square miles.**

An analysis has been conducted to determine if the transmission line crosses streams that have a contributing drainage area of 5 square miles or greater. The analysis was conducted using high resolution hydrology data (1:24,000/1:12,000 scale) from the National Hydrography Dataset. Streams that intersect the transmission line boundary were queried using ArcMap 9.3. The resulting 30 stream segments were incorporated with USGS topographic mosaics for Louisa and Caroline Counties and with an elevation triangulated irregular network (TIN) for Spotsylvania County to determine the contributing drainage area for each stream segment intersecting the transmission line corridor. The analysis concluded that there were no stream crossings within the transmission corridor with a drainage area of 5 square miles or greater.

We trust that the additional information supplied as Addendum 3 meets your needs at this time for purposes of finalizing the VWP Individual Permit for this project. Please do not hesitate to contact Mr. Robert Hare of my staff at 804-273-4127 if you have any questions or require clarification.

Sincerely,

Handwritten signature of Robert M. Bisha in cursive script.

Robert M. Bisha
Director Environmental Business Support

Attachments

cc: Ms. Carolyn Cannella, USACE
Mr. Randy Owen, VMRC

ATTACHMENT A

REVISED TABLE 6

Table 6. Permanent and Temporary Wetland and Stream Impact Details

Impact No.	Grid No.	Impact Description ¹	Wetland			Stream							Project Component
			Type	Impact Area (SF)	Impact Area (Acres) ³	Dimensions (Length and Width (ft))	Area (SF)	Area (Acres)	Fill (CY) below OHW	Geomorphological Classification	Average Flow (cfs)	Contributing Drainage Area (Square miles)	
1 ⁵	1, 2	F, EX, NT, PE, IN, V	PFO	17,199	0.39	362 X 2.5	905	0.02	3-7	Slightly incised channel and eroding banks	0.032	0.033	Route 700 Parcels - Spoil Pile
2 ⁵	1, 2	F, EX, NT, PE, IN, V	PFO	36,840	0.85	1,194 X 2	2,388	0.05	1-7	Slightly incised channel and eroding banks	0.042	0.043	Route 700 Parcels - Spoil Pile
3 ⁵	3	F, EX, NT, PE, IN, V	PFO	13,133	0.30	660 X 2	1,320	0.03	1-5	Slightly incised channel and eroding banks	0.038	0.039	Route 700 Parcels - Spoil Pile
4	3	F, NT, PE, V	PEM	697	0.02	---	---	---	---	---	---	---	Route 700 Parcels - Spoil Pile
5 ⁵	4, 5	F, NT, PE, IN, V	PFO	72,681	1.67	1,592 X 2	3,184	0.07	1-9	Slightly incised channel and eroding banks	0.059	0.060	Route 700 Parcels - Spoil Pile
6	5	F, NT, PE, V	PEM	956	0.02	---	---	---	---	---	---	---	Route 700 Parcels - Spoil Pile
7 ⁵	6	F, EX, NT, PE, IN, V	PFO	4,972	0.11	261 X 3	783	0.02	7	Incised channel, slightly eroding banks	0.090	0.092	Road Crossing
8 ⁵	6, 7	F, EX, NT, PE, IN, V	PFO	15,305	0.35	295 X 2	590	0.01	5-8	Slightly to deeply incised channel and eroding banks	0.090	0.092	Road Crossing
				6,120	0.14	937 X 2	1,874	0.04	5-8				Cooling Tower
9 ⁵	8, 9	F, EX, NT, PE, IN, V	PFO	3,915	0.09	213 X 3.5	746	0.02	1-19	No incised channel or active erosion to incised channel with eroding banks	0.040	0.042	Road Crossing
				7,385	0.17	866 X 3.5	3,031	0.07	1-19				Cooling Tower
10	10	F, NT, PE, V	PFO	2,014	0.05	---	---	---	---	---	---	---	Site Separation - Parking Lot
11	10	NT, PE, V	PFO	1,108	0.03	---	---	---	---	---	---	---	Site Separation - Parking Lot

Table 6. Permanent and Temporary Wetland and Stream Impact Details

Impact No.	Grid No.	Impact Description ¹	Wetland			Stream							Project Component
			Type	Impact Area (SF)	Impact Area (Acres) ³	Dimensions (Length and Width (ft))	Area (SF)	Area (Acres)	Fill (CY) below OHW	Geomorphological Classification	Average Flow (cfs)	Contributing Drainage Area (Square miles)	
12	11	NT, PE, V	PEM	15,625	0.36	---	---	---	---	---	---	---	Site Separation - Paint Shop
13 ⁷	12	F, EX, NT, PE, TE, SB, NV	Open Water	10,620	0.24	---	---	---	---	---	---	---	Unit 3 Intake Structure – Breaching of Berm
				736	0.02								Unit 3 Intake Structure – Rip-Rap
				22,356 ⁴	0.51								Unit 3 Intake Structure – Temporary Cofferdam
14 ^{6,8}	13	F, T, TE, PR, V	E2EM	8,020	0.18	195 X (174 – 215) ⁹	6,297	0.14	3,795	---	---	---	Large Component Transport Route - Roll-Off Location – Cofferdam and Shoreline Protection
						113 X 25 ⁹	2,825	0.06					
14, 15 ^{6,8}	13	F, T, TE, PR, SB V	Open Water	25,783	0.59	---	---	---	---	---	---	---	Large Component Transport Route - Roll-Off Location – Cofferdam and Shoreline Protection

Table 6. Permanent and Temporary Wetland and Stream Impact Details

Impact No.	Grid No.	Impact Description ¹	Wetland			Stream							Project Component	
			Type	Impact Area (SF)	Impact Area (Acres) ³	Dimensions (Length and Width (ft))	Area (SF)	Area (Acres)	Fill (CY) below OHW	Geomorphological Classification	Average Flow (cfs)	Contributing Drainage Area (Square miles)		
15 ⁸	13	F, T, TE, V	PEM	2,234	0.05	---	---	---	---	---	---	---	---	Large Component Transport Route - Roll-Off Location – Shoreline Protection
16 ⁸	13	F, T, TE, V	PEM	323	0.01	---	---	---	---	---	---	---	---	Large Component Transport Route - Roll-Off Location – Cofferdam
---	---	NT, PE, V/NV	PFO, PEM/ PSS	118,483	2.72	---	---	---	---	---	---	---	---	Lake Anna 3-Inch Water Elevation Rise
---	---	NT, PE, V/NV	PFO, PEM/ PSS	236,095	5.42	---	---	---	---	---	---	---	---	Waste Heat Treatment Facility 3-Inch Water Elevation Rise
Total Permanent Impacts				563,884	12.95	6,380	14,821	0.34	---	---	---	---	---	---
Total Temporary Impacts				58,716	1.35	308	9,122	0.21	---	---	---	---	---	---

¹Note: F=fill, EX=excavation, NT=non-tidal, T=tidal, PE=permanent, TE=temporary, PR=perennial, IN=intermittent, V=vegetated, SB=subaqueous bottom, NV=non-vegetated.

²A formal wetland delineation was not conducted along the Lake Anna and Waste Heat Treatment Facility shorelines. Wetland areas are considered to be dominated by woody vegetation (i.e., forested/scrub-shrub). VDEQ and USACE performed site visits and the USACE issued a Jurisdictional Determination (JD) for the Lake Anna and Waste Heat Treatment Facility shorelines. Shoreline wetland areas are depicted in Attachment D-2. Shoreline wetlands will be mitigated as a functional loss

³Acre values rounded to three significant digits.

⁴Temporary impact associated with cofferdam at intake structure.

⁵Intermittent Stream

⁶Perennial Stream

⁷Impact #13 (Grid Sheet 12) depicts dredging associated with the Intake Structure. A temporary cofferdam will temporarily impact 22,356 square feet of open water.

⁸Impact #14, 15, and 16 depict temporary impacts to wetland areas and streams associated with the Large Component Transport Route. See Attachment D-1 in JPA submitted July 2010.

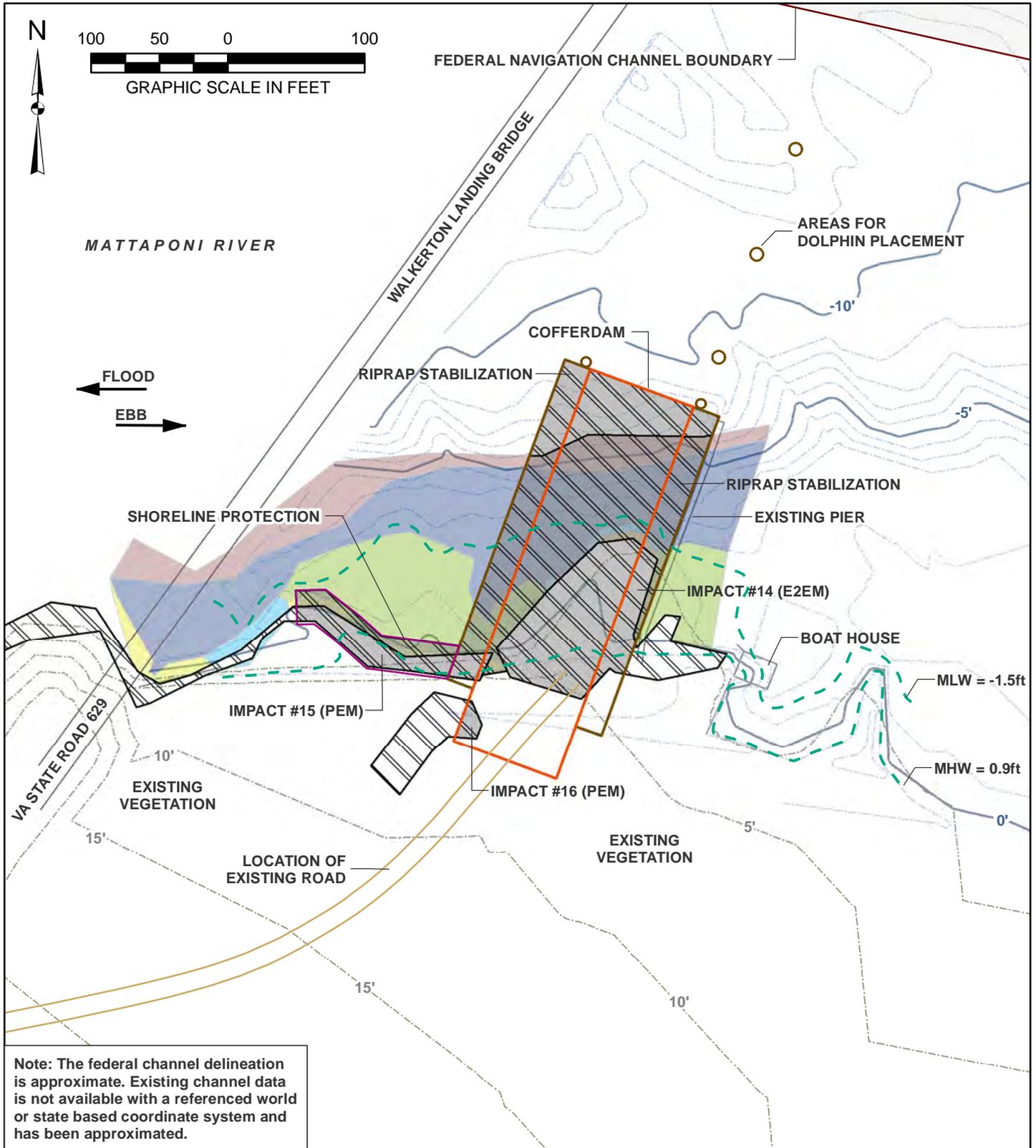
⁹195 lf of stream impact is associated with the cofferdam and 113 lf of stream impact is associated with shoreline protection.

ATTACHMENT B

REVISED GRID 13 PLAN VIEW AND CROSS-SECTIONS

LARGE COMPONENT TRANSPORT ROUTE

GRID 13



SAV Areas

- Dense SAV
- Intertidal Beach Community
- Sparse SAV
- Sparse SAV and Yellow Pondlily Community
- Dense SAV and Mixed Flat Community
- Mixed Freshwater Community

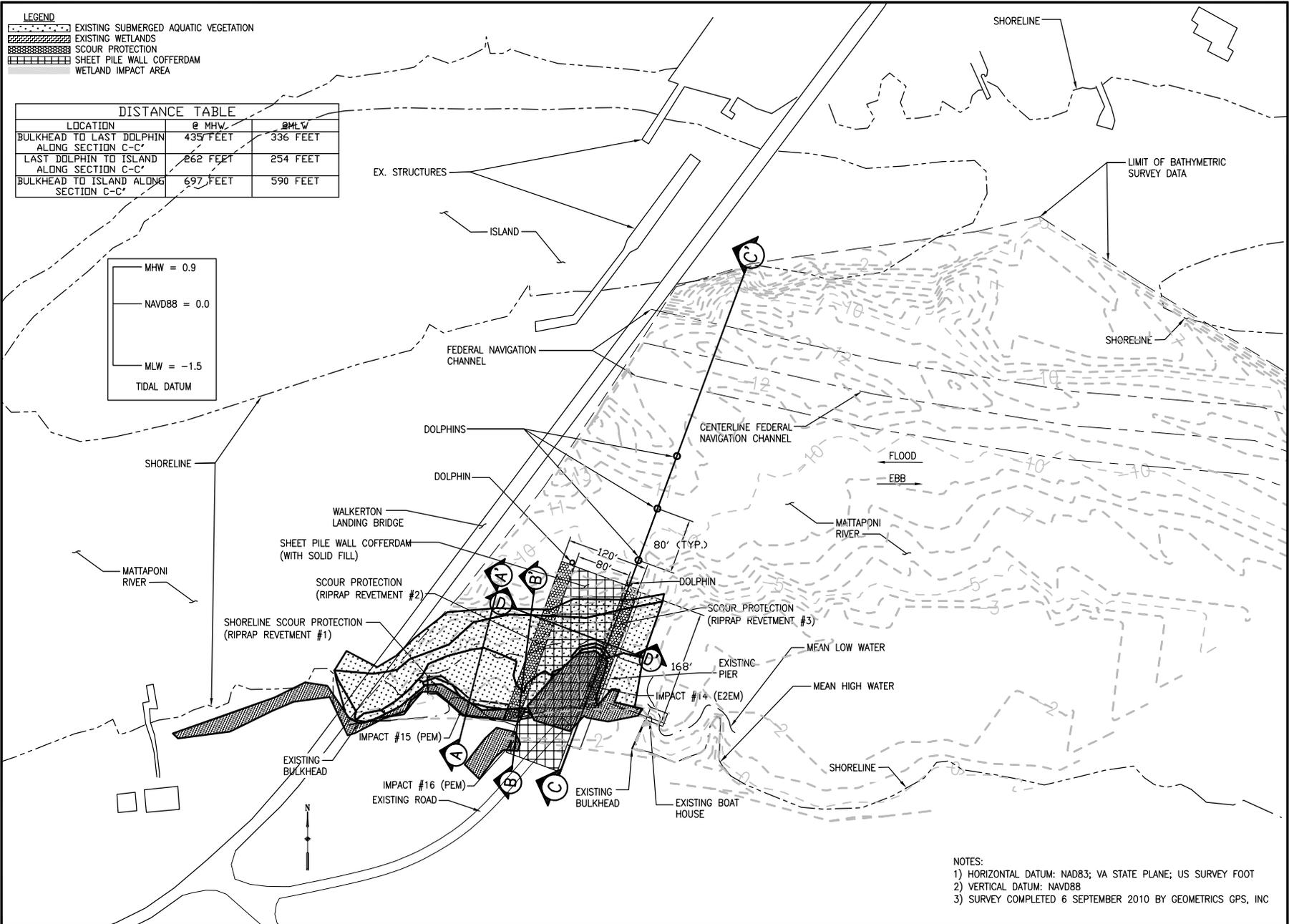


Figure 1. GRID 13 – PLAN VIEW



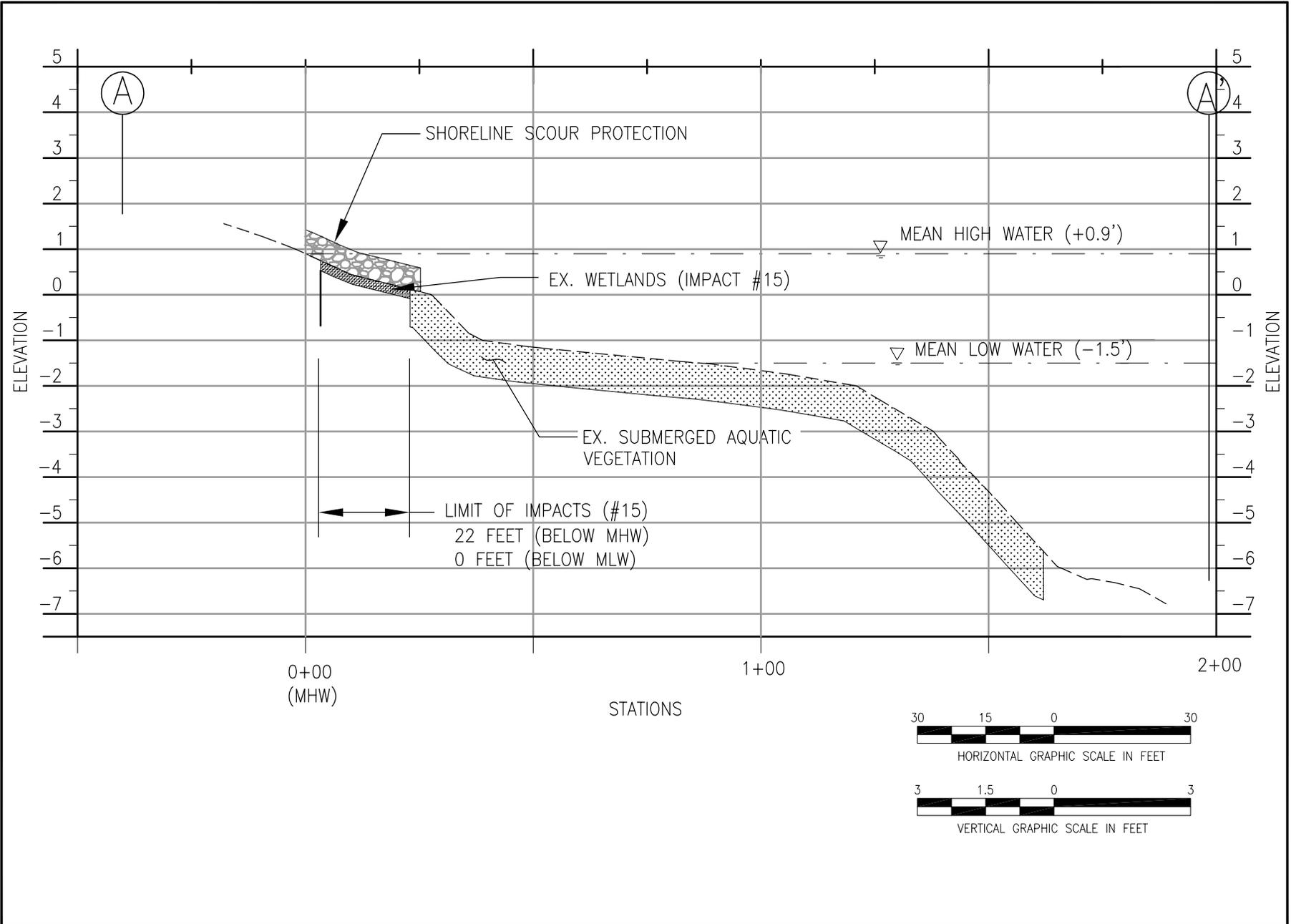


Figure 2. GRID 13 – CROSS SECTION A – A'



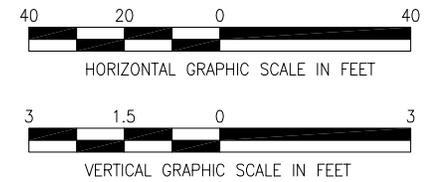
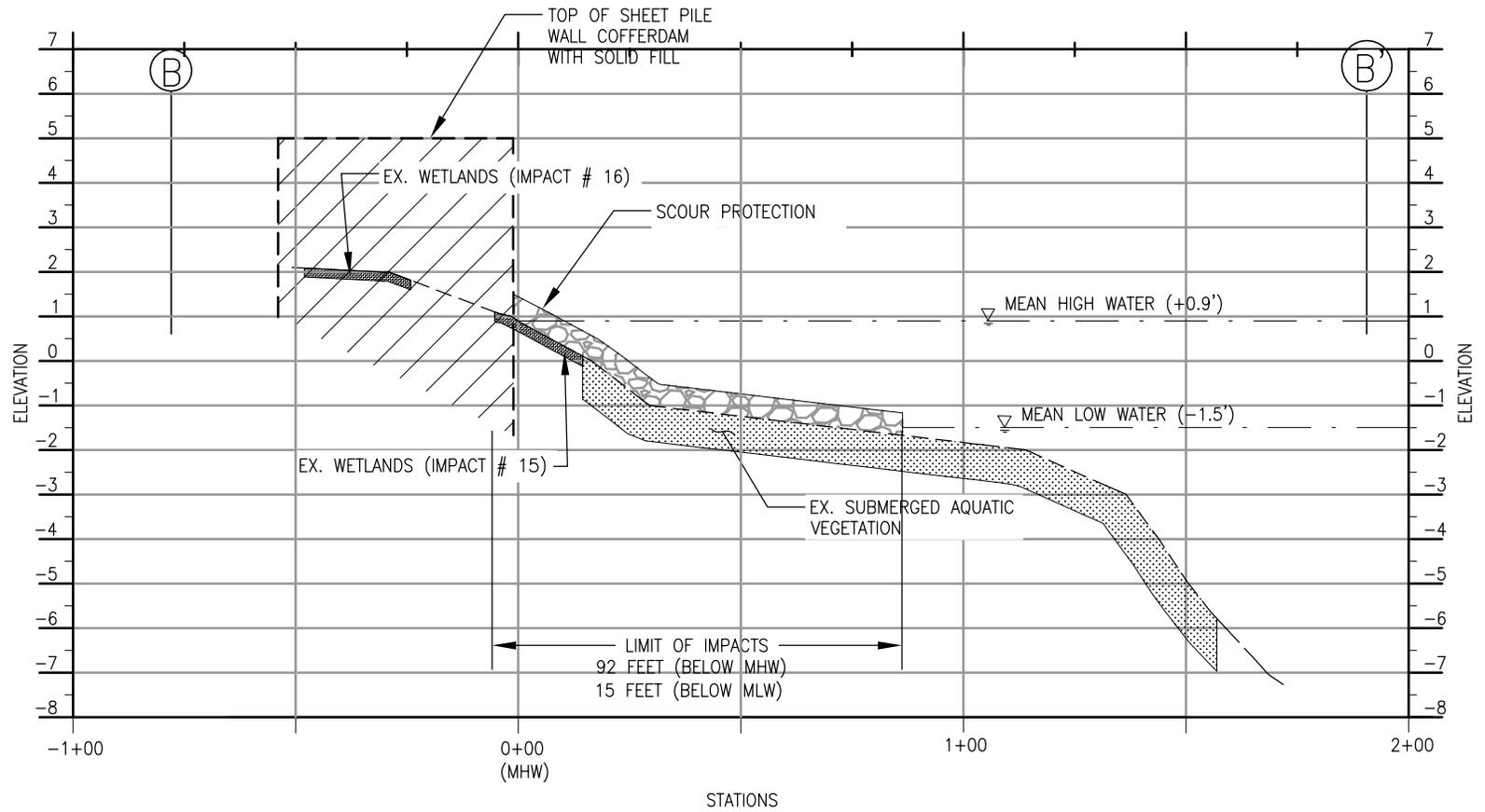
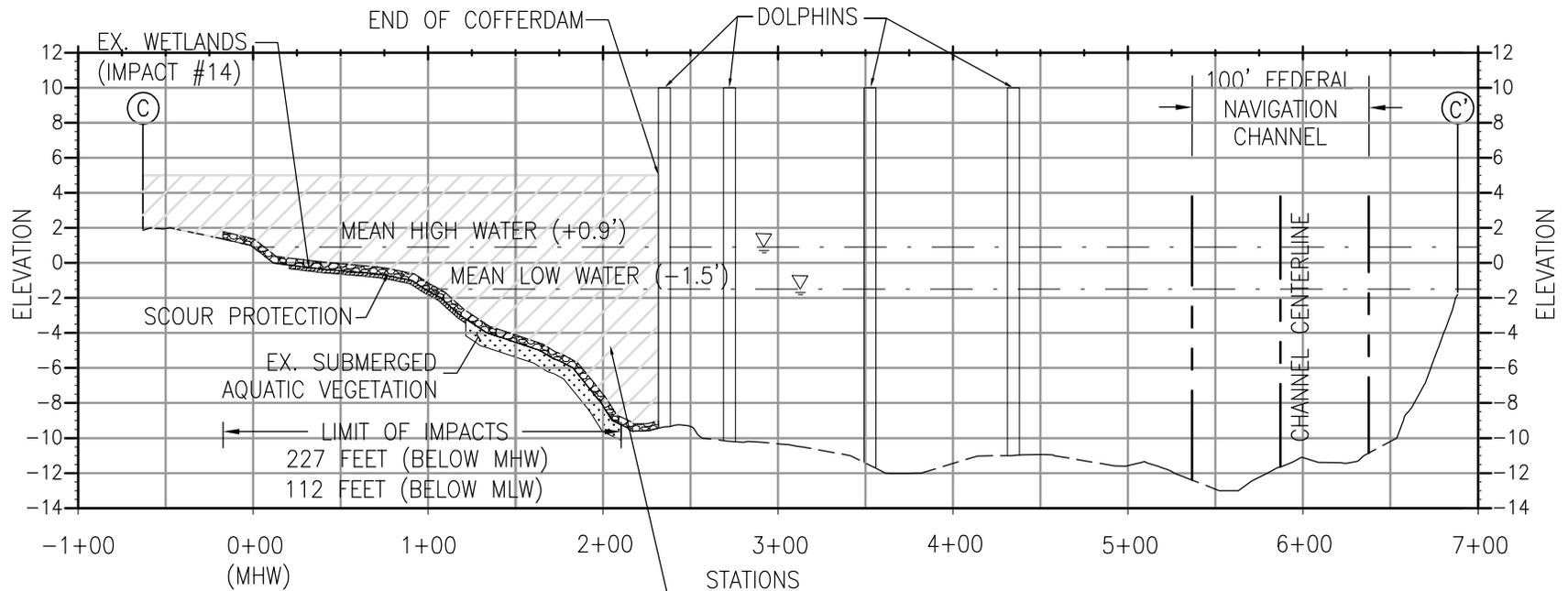


Figure 3. GRID 13 – CROSS SECTION B – B'





COFFERDAM WITH SOLID FILL BELOW MHW
 LENGTH @ MHW = 230 FEET
 LENGTH @ MLW = 130 FEET

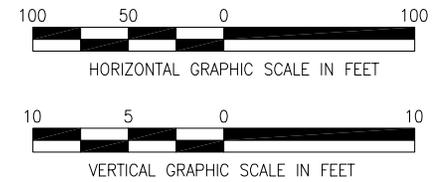


Figure 4. GRID 13 - CROSS SECTION C - C'



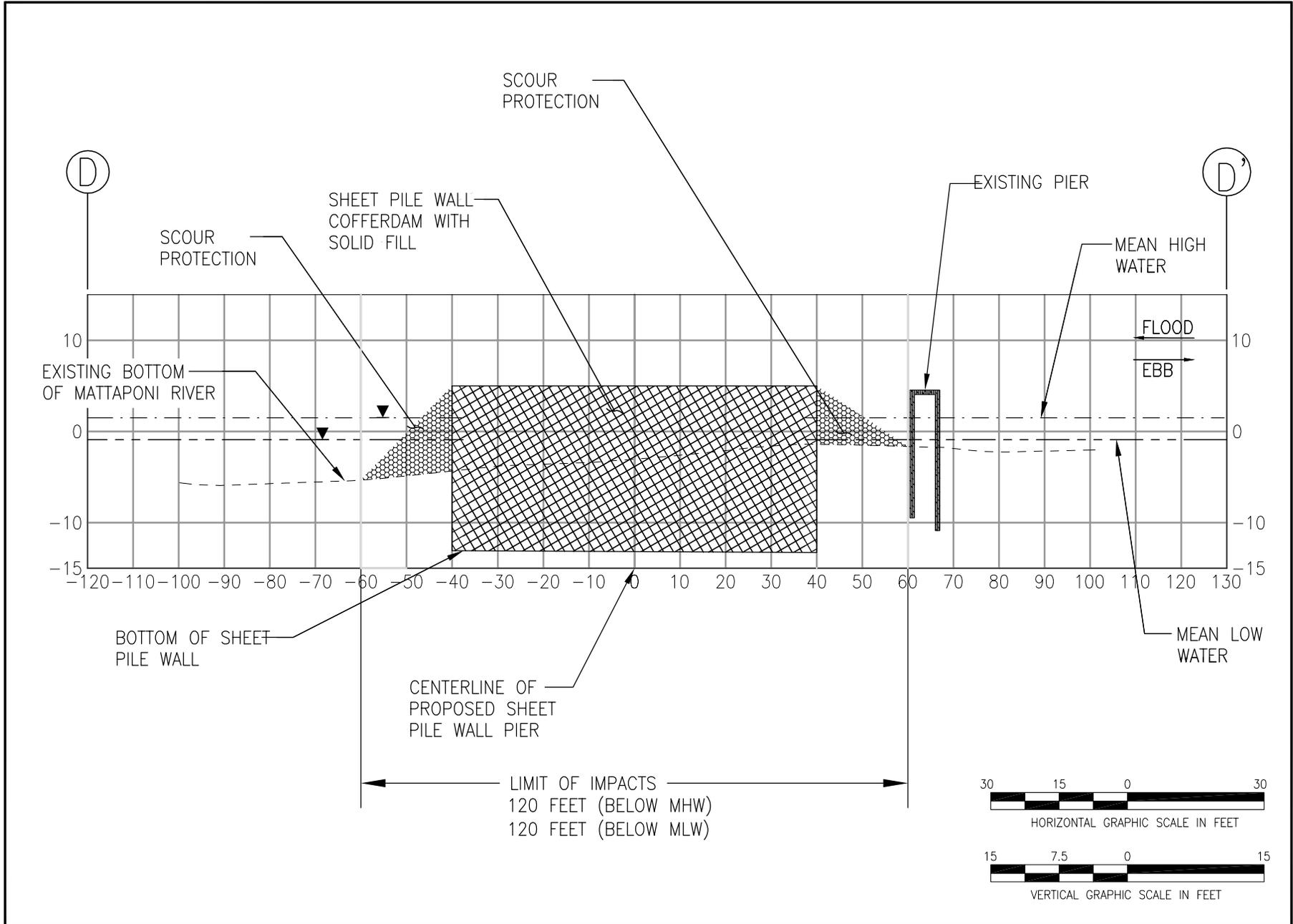


Figure 5. GRID 13 – CROSS SECTION D – D'