

ENVIRONMENTAL ASSESSMENT

*Environmental Assessment
Appendices*

*Fort Norfolk Pier Rehabilitation and Expansion Project
USACE, Norfolk District, Fort Norfolk, Virginia*

APPENDIX I

Greater Atlantic Regional Fisheries Office Endangered
Species Act Section 7: NLAA Program Verification



Reply to
Attention of

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

January 6, 2022

Mark Murray-Brown
Protected Resources Division
National Marine Fisheries Service – Northeast Regional Office
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

Dear Mr. Murray-Brown:

I am requesting verification under the USACE NLAA Program for the NAO Pier Rehabilitation and Improvements Project, located at Fort Norfolk, Norfolk, Virginia. This project includes improvements to the existing NAO pier to allow for the safe mooring of three 65 foot vessels and to protect the mooring location from wave action and severe storm events. A full description of the work and drawings are included in this package.

In accordance with the NLAA Program, the USACE, Norfolk District has determined that the action is not likely to adversely affect listed species per the justifications provided.

Should you have any questions or require further information on this submittal, please contact Shannon Reinheimer of my staff at shannon.j.reinheimer@usace.army.mil or 757-201-7074. Thank you for your assistance.

Sincerely,

Lesley Dobbins-Noble
Chief, Operations Branch

Enclosures:
GARFO ESA Section 7: NLAA Program Verification Form
Appendix A: Project Description and Purpose
Drawings

GARFO ESA Section 7: NLAA Program Verification Form

(Please submit a signed version of this form, together with any project plans, maps, supporting analyses, etc., to nmfs.gar.esa.section7@noaa.gov with "USACE NLAA Program: [Application Number]" in the subject line)

Section 1: General Project Details

Application Number:			
Reinitiation:		No	
Applicant(s):		Lesley Dobbins-Noble, Operations Branch Chief, USACE	
Permit Type:		To be determined	
Anticipated project start date (e.g., 10/1/2020)		01/01/2023	
Anticipated project end date (e.g., 12/31/2022 – if there is no permit expiration date, write "N/A")		01/01/2024	
Project Type/Category (check all that apply to entire action):			
<input type="checkbox"/>	Aquaculture (shellfish) and artificial reef creation	<input type="checkbox"/>	Mitigation (fish/wildlife enhancement or restoration)
<input type="checkbox"/>	Dredging and disposal/beach nourishment	<input type="checkbox"/>	Bank stabilization
<input checked="" type="checkbox"/>	Piers, ramps, floats, and other structures	<input type="checkbox"/>	If other, describe project type category: <div></div>
Town/City:	Norfolk	Zip:	23510
State:	Virginia	Water body:	Elizabeth River

Project/Action Description and Purpose*(include relevant permit conditions that are not captured elsewhere on form):*

This project proposes to rehabilitate the existing NAO Pier 1 at Fort Norfolk. The primary goal of the project is to modify the existing pier to allow for the safe mooring of three (3) 65 ft vessels at Ft. Norfolk and protect the mooring location from wave action and severe storm events. No existing pilings have been treated with creosote. Currently, the existing NAO Pier 1 is not an adequate mooring location in moderate to severe weather situations in conjunction with simultaneous high tides. During these storm events with the current state of the pier, the vessels are relocated to other facilities for the duration of the storm event. As a result, the vessels may not be able to access the port for multiple days before or after a storm event, preventing the USACE from performing crucial port and channel surveys required for maintaining navigable waterways.

Type of Bottom Habitat Modified:		Permanent/Temporary:	Area (acres):
Sand (saline)		Permanent	0.67
Select Type of Bottom Habitat		Select Permanent or Temporary	
Select Type of Bottom Habitat		Select Permanent or Temporary	
Project Latitude (e.g., 42.625884)		36.857000	
Project Longitude (e.g., -70.646114)		-76.308000	
Mean Low Water (MLW)(m)		-1.66	
Mean High Water (MHW)(m)		0.99	
Width (m) of water body in action area:	Stressor Category (stressor that extends furthest distance into water body – e.g., turbidity plume; sound pressure wave):	Max extent (m) of stressor into the water body:	
718.00	turbidity plume	90.00	

Section 2: ESA-listed species and/or critical habitat in the action area:

<input checked="" type="checkbox"/>	Atlantic sturgeon (all DPSs)	<input checked="" type="checkbox"/>	Kemp's ridley sea turtle
<input type="checkbox"/>	Atlantic sturgeon critical habitat Indicate which DPS : <div>Select DPS</div>	<input checked="" type="checkbox"/>	Loggerhead sea turtle (NW Atlantic DPS)
<input checked="" type="checkbox"/>	Shortnose sturgeon	<input checked="" type="checkbox"/>	Leatherback sea turtle
<input type="checkbox"/>	Atlantic salmon (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale
<input type="checkbox"/>	Atlantic salmon critical habitat (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale critical habitat
<input checked="" type="checkbox"/>	Green sea turtle (N. Atlantic DPS)	<input type="checkbox"/>	Fin whale

* Please consult GARFO PRD's ESA Section 7 Mapper for ESA-listed species and critical habitat information for your action area at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater>.

Section 3: NLAA Determination (check all applicable fields):

If the Project Design Criteria (PDC) is met, select Yes. If the PDC is not applicable (N/A) for your project (e.g., the stressor category is not included for your project activity, or for PDC 2, your project does not occur within the range of the GOM DPS of Atlantic salmon), select N/A. If the PDC is applicable, but is not met, leave both boxes blank and provide a justification for that PDC in Section 4.

a) GENERAL PDC			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.	No portion of the proposed action will individually or cumulatively have an adverse effect on ESA-listed species or designated critical habitat.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2.	No portion of the proposed action will occur in the tidally influenced portion of rivers/streams where Atlantic salmon presence is possible from April 10–November 7. Note: If the project will occur within the geographic range of the GOM DPS Atlantic salmon but their presence is not expected following the best available commercial scientific data, the work window does not need to be applied (include reference in project description).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as spawning grounds as follows: i. Gulf of Maine: April 1–Aug. 31 ii. Southern New England/New York Bight: Mar. 15–Aug. 31 iii. Chesapeake Bay: March 15–July 1 and Sept. 15–Nov. 1 Note: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval (include reference in project description).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as overwintering grounds, where dense aggregations are known to occur, as follows: i. Gulf of Maine: Oct. 15–April 30 ii. Southern New England/ New York Bight: Nov. 1–Mar. 15 iii. Chesapeake Bay: Nov. 1–Mar. 15 Note: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval (include reference in project description).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5.	Within designated Atlantic salmon critical habitat, no portion of the proposed action will affect spawning and rearing areas (PBFs 1-7).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6.	Within designated Atlantic sturgeon critical habitat, no work will affect hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand) (PBF 1).

Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	Work will result in no or only temporary/short-term changes in water temperature, water flow, salinity, or dissolved oxygen levels.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	If ESA-listed species are (a) likely to pass through the action area at the time of year when project activities occur; and/or (b) the project will create an obstruction to passage when in-water work is completed, then a zone of passage (~50% of water body) with appropriate habitat for ESA-listed species (e.g., depth, water velocity, etc.) must be maintained (i.e., physical or biological stressors such as turbidity and sound pressure must not create barrier to passage).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9.	Any work in designated North Atlantic right whale critical habitat must have no effect on the physical and biological features (PBFs).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10.	The project will not adversely impact any submerged aquatic vegetation (SAV).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11.	No blasting or use of explosives will occur.

b) The following stressors are applicable to the action
(check all that apply – use Stressor Category Table for guidance):

<input checked="" type="checkbox"/>	Sound Pressure
<input type="checkbox"/>	Impingement/Entrapment/Capture
<input checked="" type="checkbox"/>	Turbidity/Water Quality
<input type="checkbox"/>	Entanglement (Aquaculture)
<input checked="" type="checkbox"/>	Habitat Modification
<input checked="" type="checkbox"/>	Vessel Traffic

Activity Category	Stressor Category					
	Sound Pressure	Impingement/Entrapment/Capture	Turbidity/Water Quality	Entanglement	Habitat Mod.	Vessel Traffic
Aquaculture (shellfish) and artificial reef creation	N	N	Y	Y	Y	Y
Dredging and disposal/beach nourishment	N	Y	Y	N	Y	Y

Activity Category	Stressor Category					
	Sound Pressure	Impingement/ Entrapment/ Capture	Turbidity/ Water Quality	Entanglement	Habitat Mod.	Vessel Traffic
Piers, ramps, floats, and other structures	Y	N	Y	N	Y	Y
Transportation and development (e.g., culvert construction, bridge repair)	Y	N	Y	N	Y	Y
Mitigation (fish/wildlife enhancement or restoration)	N	N	Y	N	Y	Y
Bank stabilization and dam maintenance	Y	N	Y	N	Y	Y

c) SOUND PRESSURE PDC

Information for Pile Driving:

If your project includes non-timber piles*, please attach your calculation to this verification form showing that the noise is below the injury thresholds of ESA-listed species in the action area. The GARFO Acoustic Tool is available as one source, should you not have other information:

<https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-consultation-technical-guidance-greater-atlantic>

*Sound pressure effects from timber and steel sheet piles were analyzed in the NLAA programmatic consultation, so no additional acoustic information is necessary.

	Pile material	Pile diameter/width (inches)	Number of piles	Installation method
a)	Steel Pipe	30	52	Vibratory hammer
b)	Steel Pipe	18	8	Vibratory start and then impact hammer to depth
c)	Timber	12	4	Vibratory hammer
d)	Select pile material			Select installation method

Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.	<p>If pile driving is occurring during a time of year when ESA-listed species may be present, and the anticipated noise is above the behavioral noise threshold, a “soft start” is required to allow animals an opportunity to leave the project vicinity before sound pressure levels increase. <i>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.</i></p> <p><u>For impact pile driving:</u> 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.</p> <p><u>For vibratory pile installation:</u> 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.</p>
<input type="checkbox"/>	<input type="checkbox"/>	13.	Any new pile supported structure must involve the installation of ≤ 50 piles (below MHW).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.	All underwater noise (pressure) is below ($<$) the physiological/injury noise threshold for ESA-species in the action area.

d) IMPINGEMENT/ENTRAINMENT/CAPTURE PDC

Information for Dredging/Disposal:

Type of dredge:	Select type of dredge		
Maintenance dredging?:	Select Yes or No	If “Yes”, how many acres?	
If maintenance, when was the last dredge cycle?			
New dredging:	Select Yes or No	If “Yes”, how many acres?	
Estimated number of dredging events covered by permit:			
ESA-species exclusion measures required (e.g., cofferdam, turbidity curtain):	Select Yes or No		
If no exclusion measures required, explain why:	Select reason why no exclusion measures are required		
Information for Intake Structures:			
Mesh screen size (mm) for temporary intake:			

Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	Only mechanical, cutterhead, and low volume hopper (e.g., CURRITUCK, ~300 cubic yard maximum bin capacity) dredges may be used.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	16.	No new dredging in Atlantic sturgeon or Atlantic salmon critical habitat (maintenance dredging still must meet all other PDCs). New dredging outside Atlantic sturgeon or salmon critical habitat is limited to one time dredge events (e.g., burying a utility line) and minor (≤ 2 acres) expansions of areas already subject to maintenance dredging (e.g., marina/harbor expansion).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	Work behind cofferdams, turbidity curtains, or other methods to block access of animals to dredge footprint is required when operationally feasible or beneficial and ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, exclusion methods are not necessary).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	Temporary intakes related to construction must be equipped with appropriate sized mesh screening (as determined by GARFO section 7 biologist and/or according to Chapter 11 of the NOAA Fisheries Anadromous Salmonid Passage Facility Design) and must not have greater than 0.5 fps intake velocities, to prevent impingement or entrainment of any ESA-listed species life stage.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	19.	No new permanent intake structures related to cooling water, or any other inflow at facilities (e.g. water treatment plants, power plants, etc.).

e) TURBIDITY/WATER QUALITY PDC

Information for Turbidity Producing Activity (excluding disposal):

ESA-species turbidity control measures required (e.g., turbidity curtain):	Yes
If no turbidity control measures required, explain why:	Select reason why no turbidity control measures are required

Information for Dredged Material Disposal:

Disposal site:	Select disposal site
Estimated number of trips to disposal site:	
Relevant disposal site permit/special conditions required (NAE: for offshore disposal, include Group A, B, C, or relevant Long Island Sound consultation):	

Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	20.	Work behind cofferdams, turbidity curtains, or other methods to control turbidity is required when operationally feasible or beneficial and ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, turbidity control methods are not necessary).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	21.	In-water offshore disposal may only occur at designated disposal sites that have been the subject of ESA section 7 consultation with NMFS, where a valid consultation is in place and appropriate permit/special conditions are included.

Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	22.	Any temporary discharges must meet state water quality standards (e.g., no discharges of substances in concentrations that may cause acute or chronic adverse reactions, as defined by EPA water quality standards criteria).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	23.	Only repair, upgrades, relocations and improvements of existing discharge pipes or replacement in-kind are allowed; no new construction of untreated discharges.
f) ENTANGLEMENT PDC			
Information for Aquaculture Projects:			
Approximate distance from shore (MHW)(m):			
Grow season begins (approximate):			
Grow season ends (approximate):			
Total number of vertical lines:			
Total number of horizontal lines:			
Is any gear seasonally removed from the water? If yes, which parts and when?			
	Aquaculture Gear	Acreage (total permit footprint)	Type of Shellfish Cultivated
a)	Select aquaculture gear		Select type of shellfish cultivated
b)	Select aquaculture gear		Select type of shellfish cultivated
c)	Select aquaculture gear		Select type of shellfish cultivated
Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	24.	Shell on bottom <50 acres with maximum of 4 corner marker buoys;
<input type="checkbox"/>	<input checked="" type="checkbox"/>	25.	Cage on bottom with no loose floating lines <5 acres and minimal vertical lines (1 per string of cages, 4 corner marker buoys);
<input type="checkbox"/>	<input checked="" type="checkbox"/>	26.	Floating cages in <3 acres in waters and shallower than -10 feet MLLW with no loose lines and minimal vertical lines (1 per string of cages, 4 corner marker buoys);
<input type="checkbox"/>	<input checked="" type="checkbox"/>	27.	Floating upweller docks in >10 feet MLLW.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	28.	Any in-water lines, ropes, or chains must be made of materials and installed in a manner to minimize or avoid the risk of entanglement by using thick, heavy, and taut lines that do not loop or entangle. Lines can be enclosed in a rigid sleeve.
g) HABITAT MODIFICATION PDC			
Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	29.	No conversion of habitat type (soft bottom to hard, or vice versa) for aquaculture or reef creation.

h) VESSEL TRAFFIC PDC			
Information for Vessel Traffic:			
	Temporary Project Vessel Type		Number of Vessels
a)	Work barge		2
b)	Select temporary vessel type		
c)	Select temporary vessel type		
	Type of Non-Commercial or Aquaculture Vessels Added – only include if there is a net increase directly/indirectly resulting from project)		Number of Vessels (if sum > 2, PDC 33 is not met and justification required in Section 4)
a)	Select type of non-commercial or aquaculture vessels		
b)	Select type of non-commercial or aquaculture vessels		
	Type of Commercial Vessels Added (only include if there is a net increase directly/indirectly resulting from project)		Number of Vessels (if > 0, PDC 33 is not met and justification required in Section 4)
a)			
b)			
If no temporary/permanent vessel traffic, briefly explain (e.g., all land-based work, no net increase in vessel traffic)			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	30.	Maintain project vessels operating within the action area to speed limits below 10 knots and dredge vessel speeds of 4 knots maximum, while dredging.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	31.	Maintain a 1,500-foot buffer between project vessels and ESA-listed whales and a 150-foot buffer between project vessels and sea turtles unless the vessel is navigating to an in-water disposal site/activity. If the vessel is navigating to an in-water disposal site/activity, refer to and include the conditions contained in the appropriate GARFO-USACE/EPA consultation for the disposal site.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	32.	The number of project vessels must be limited to the greatest extent possible, as appropriate to size and scale of project.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	33.	The permanent net increase in vessels resulting from a project (e.g., dock/float/pier/boating facility) must not exceed two non-commercial vessels. A project must not result in the permanent net increase of any commercial vessels (e.g., a ferry terminal).

Section 4: Justification for Review under the NLAA Program

If the action is not in compliance with all of the General PDC and appropriate stressor PDC, but you can provide justification and/or special conditions to demonstrate why the project still meets the NLAA determination and is consistent with the aggregate effects considered in the programmatic consultation, you may still certify your project through the NLAA program using


this verification form. Please identify which PDC your project does not meet (e.g., PDC 9, PDC 15, PDC 22, etc.) and provide your rationale and justification for why the project is still eligible for the verification form.

To demonstrate that the project is still NLAA, you must explain why the effects on ESA-listed species or critical habitat are **insignificant** (i.e., too small to be meaningfully measured or detected) or **discountable** (i.e., extremely unlikely to occur). **Please use this language in your justification.**


PDC#	Justification
13	The piles included are necessary for construction. To mitigate against the acoustic impacts of pile driving on the surrounding environment, a soft start to pile driving of 15 minutes will be employed, allowing for the species to escape the area after the vibratory start. Vibratory hammer installation will be used on all 64 piles. 8 of those piles will be driven with an impact hammer for the final ~10 feet of depth to confirm the axial capacities have been reached. The Elizabeth River is approximately 1,500 feet wide at the project location, aquatic life will be able to pass. Because the action area is an unlikely foraging area for sturgeon/turtles and for the reasons above, any effects are too small to be meaningfully measured and are therefore insignificant.
PDC #	
PDC #	

PDC #	
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Section 5: USACE Verification of Determination

<input type="checkbox"/>	In accordance with the NLAA Program, USACE has determined that the action complies with all applicable PDC and is not likely to adversely affect listed species.
<input checked="" type="checkbox"/>	In accordance with the NLAA Program, the USACE has determined that the action is not likely to adversely affect listed species per the justification and/or special conditions provided in Section 4.
USACE Signature:	
Date:	
	Digitally signed by DOBBINS-NOBLE.LESLEY.CAROLE.1047416848 Date: 2022.01.06 12:16:01 -05'00'
6 January 2022	

Section 6: GARFO Concurrence

<input type="checkbox"/>	In accordance with the NLAA Program, GARFO PRD concurs with USACE's determination that the action complies with all applicable PDC and is not likely to adversely affect listed species or critical habitat.
<input checked="" type="checkbox"/>	In accordance with the NLAA Program, GARFO PRD concurs with USACE's determination that the action is not likely to adversely affect listed species or critical habitat per the justification and/or special conditions provided in Section 4.
<input type="checkbox"/>	GARFO PRD does not concur with USACE's determination that the action complies with the applicable PDC (with or without justification), and recommends an individual Section 7 consultation to be completed independent from the NLAA Program.
GARFO Signature:	
Date:	
	Digitally signed by Brian D Hopper Date: 2022.02.09 11:34:54 -05'00'
2/9/22	

In order to use the autogenerated tables, below, copy the row of the "Proxy project" you'd like to use from the "Pile Types & Acoustic Formulas" tab, and Paste Special "Values" in one of the green rows, below. Reformat the tables as you see fit for your project/letter.

Action Agencies: For your effects analysis, always include Tables 1 & 2, below. Use of Tables 3-5 will depend on whether or not those species are affected by the pile driving. You can delete odd rows from the tables, as necessary, just be sure that the formulas carry over.

Proxy Projects for Estimating Underwater Noise			
			Attenuatio

Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB _{peak})	Estimated Pressure Level (dB _{avg})	Estimated Single Strike Sound Exposure Level (dB _{SEL})
Steel	Vibratory	180 N/A	N/A	N/A
Steel	Vibratory	195 N/A	N/A	N/A
Steel	Vibratory s/s	185 N/A	N/A	N/A
Timber	Vibratory	176 N/A	N/A	N/A

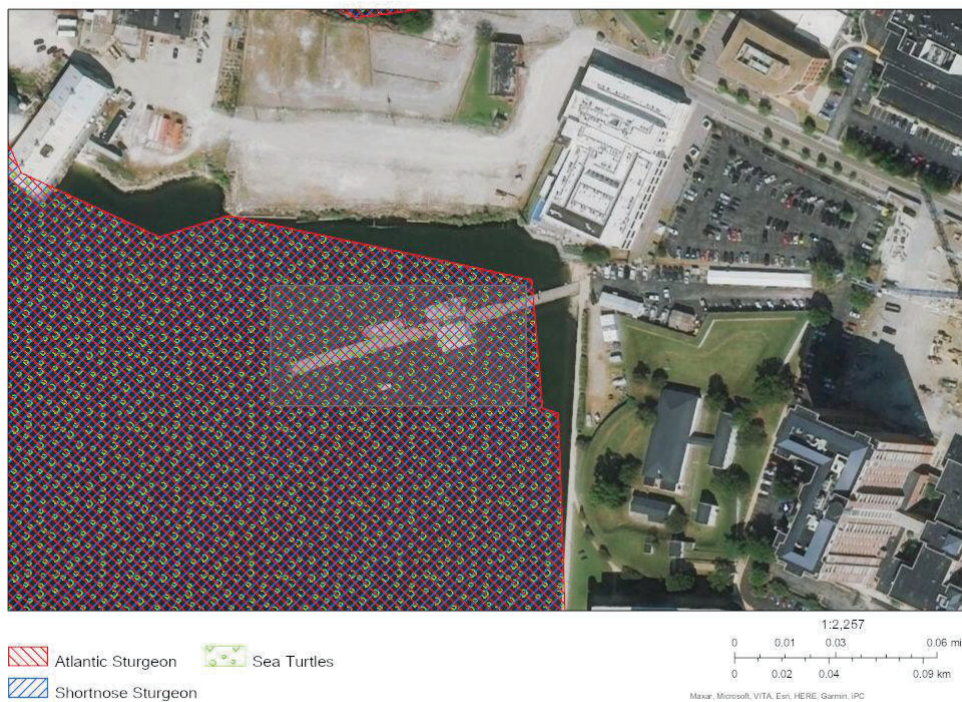


Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 2,153.26 acres

Oct 5 2021 13:58:14 Eastern Daylight Time



Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	3	2,351.54	N/A
Shortnose Sturgeon	1	783.85	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	4	3,135.39	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

Atlantic Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	ANS_JAM_SUB_MAF	Atlantic sturgeon	Subadult	Migrating & Foraging	James River	03/15	11/30	N/A	N/A	783.85
2	ANS_JAM_JUV_MAF	Atlantic sturgeon	Juvenile	Migrating & Foraging	James River	01/01	12/31	N/A	N/A	783.85
3	ANS_JAM_ADU_MAF	Atlantic sturgeon	Adult	Migrating & Foraging	James River	03/15	11/30	N/A	N/A	783.85

Shortnose Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	SNS_JAM_ADU_MAF	Shortnose sturgeon	Adult	Migrating & Foraging	James River	03/01	11/30	N/A	N/A	783.85

Sea Turtles

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	GRN_STS_AJV_MAF	Green sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	783.85
2	KMP_STS_AJV_MAF	Kemp's ridley sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	783.85
3	LTR_STS_AJV_MAF	Leatherback sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	783.85
4	LOG_STS_AJV_MAF	Loggerhead sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	783.85

DISCLAIMER: Use of this App does NOT replace the Endangered Species Act (ESA) Section 7 consultation process; it is a first step in determining if a proposed Federal action overlaps with listed species or critical habitat presence. Because the data provided through this App are updated regularly, reporting results must include the date they were generated. The report outputs (map/tables) depend on the options picked by the user, including the shape and size of the action area drawn, the layers marked as visible or selectable, and the buffer distance specified when using the "Draw your Action Area" function. Area calculations represent the size of overlap between the user-drawn Area of Interest (with buffer) and the specified S7 Consultation Area. Summary table areas represent the sum of these overlapping areas for each species group.

NAO Pier Rehabilitation and Improvements Project

Appendix A: Project Purpose and Description

This project proposes to rehabilitate the existing pier at Fort Norfolk. The primary goal of the project is to modify the existing pier to allow for the safe mooring of three 65 feet (ft) vessels at Fort Norfolk and protect the mooring location from wave action and severe storm events.

Currently, the existing pier is not an adequate mooring location in moderate to severe weather situations in conjunction with simultaneous high tides. During these storm events with the current state of the pier, the vessels are relocated to other facilities for the duration of the storm event. As a result, the vessels may not be able to access the port for multiple days before or after a storm event, preventing the USACE from performing crucial port and channel surveys required for maintaining navigable waterways.

The north side of the pier will be developed with a floating mooring system to allow for minimal adjustments of mooring lines during tidal fluctuations. A "main" floating dock with two finger floating docks (three slips) will be installed. The freeboard of the docks will be 30 inches (in) (maximum for stability). The pier will be modified for new utilities as well as raised to accommodate for rising tide levels and a new gangway. None of the existing pilings have been treated with creosote.

The main floating dock and two floating dock fingers (three slips) will be accessed by a small 8 ft x 16 ft platform and a 6 ft x 60 ft aluminum gangway. The main floating dock is 30 ft wide and 60 ft long. The two finger floating docks are 20 ft and 80 ft wide and 240 ft long, respectively. The main floating dock and finger floating docks will be made of concrete. Twenty-two new 30-in diameter hollow, steel pipe piles will be installed to anchor the floating docks. Four new 30-in diameter hollow, steel pipe monopiles with donut fenders attached will be installed on the waterward side of two of the slips to protect the vessels and aid in mooring. The platform will be supported by four 18-in diameter partially concrete filled, steel pipe piles.

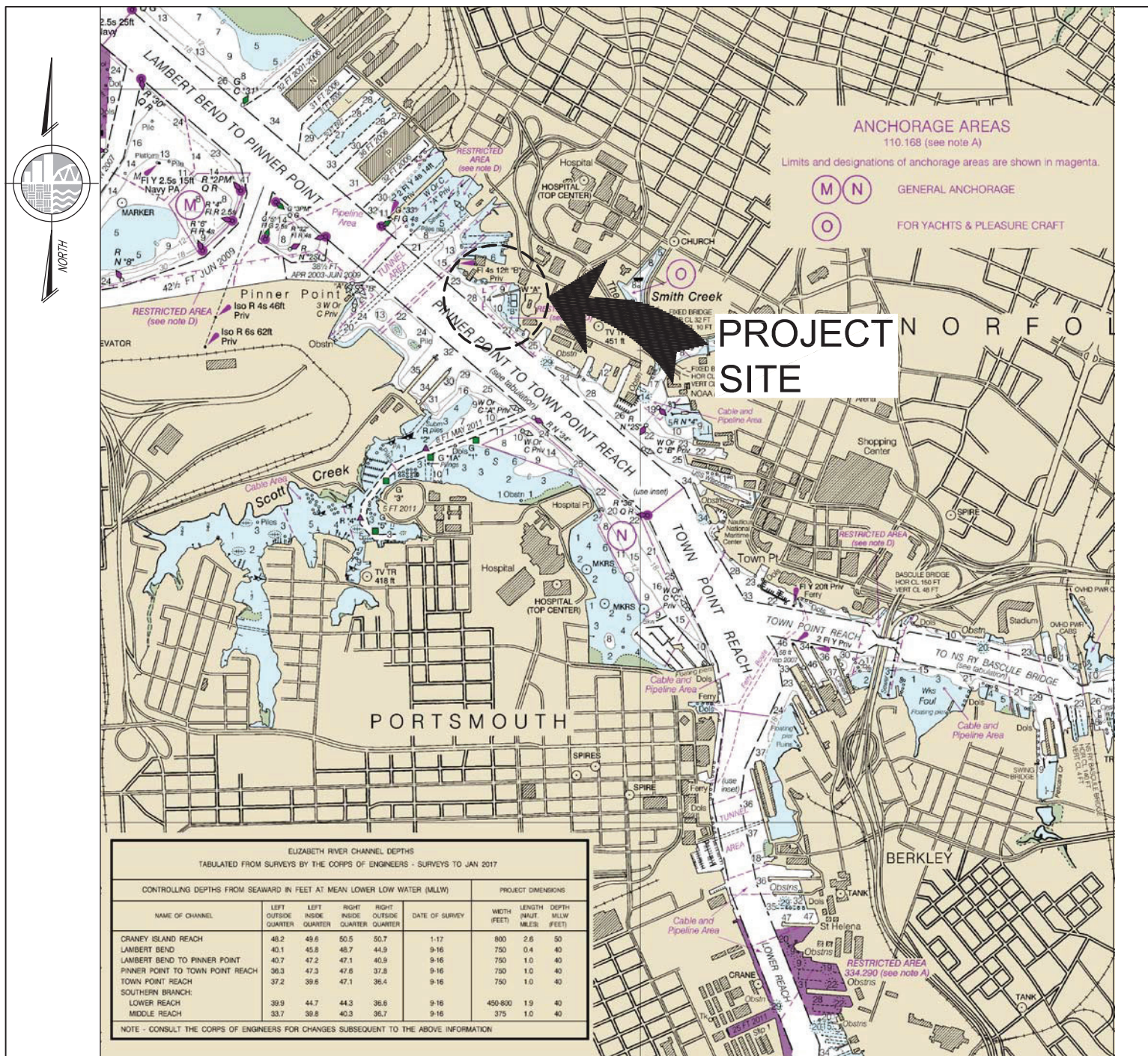
A steel breakwater wave screen will be installed to the west and perpendicular of the pier to protect the dock system from wave action. The wave screen will consist of two legs, joined at approximately a 120-degree angle. The shorter of the two legs will be 90 ft long and the longer of the two will be 220 ft long. Twenty-one 30-in diameter steel pipe piles will support the screen. The wave screen will have a 3 ft-high opening at the bottom. All 64 piles, including steel and timber, will be advanced using a vibratory hammer and a soft start. Eight of the steel piles will be driven with an impact hammer for the final approximately 10 ft of depth to confirm the axial capacities have been reached.

A new timber wave fence will be installed on the existing timber fender. 335 linear feet (LF) of timber wave fence will be installed along the south side of the existing pier. The wave fence will have a 3 ft-high opening at the bottom. Off the southwest corner of the pier, the wave screen will be extended another 45 LF using three 30-inch-diameter steel pipe piles to support the screen.

There will be two steel monopiles with floating donut fenders, one at the west end of the 45 LF of new wave screen and the other at the south end of the short 90 LF segment of the larger wave screen. These monopiles will be separate by approximately 53 ft-4 in to create the opening of the basin.

The existing pier deck will be raised by the addition of new steel beams to protect the deck from flooding. The new deck elevation will be approximately 2 ft higher than the current elevation. A new ramp will be installed to access the raised deck. Pier raising will be done by building a secondary deck atop the existing pier. Wide flange steel beams will be used to increase the height and a fiberglass grating will be used for the new deck surface. New concrete edge beams will be poured atop the perimeter of the pier and will include scuppers to handle drainage. All concrete pouring will take place above the water on the existing structure.

Additionally, on the south side of the pier, a new boat lift for a Boston whaler vessel is proposed. The lift will be supported by four 12-inch-diameter timber piles.



SITE LOCATION MAP

N.T.S.

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

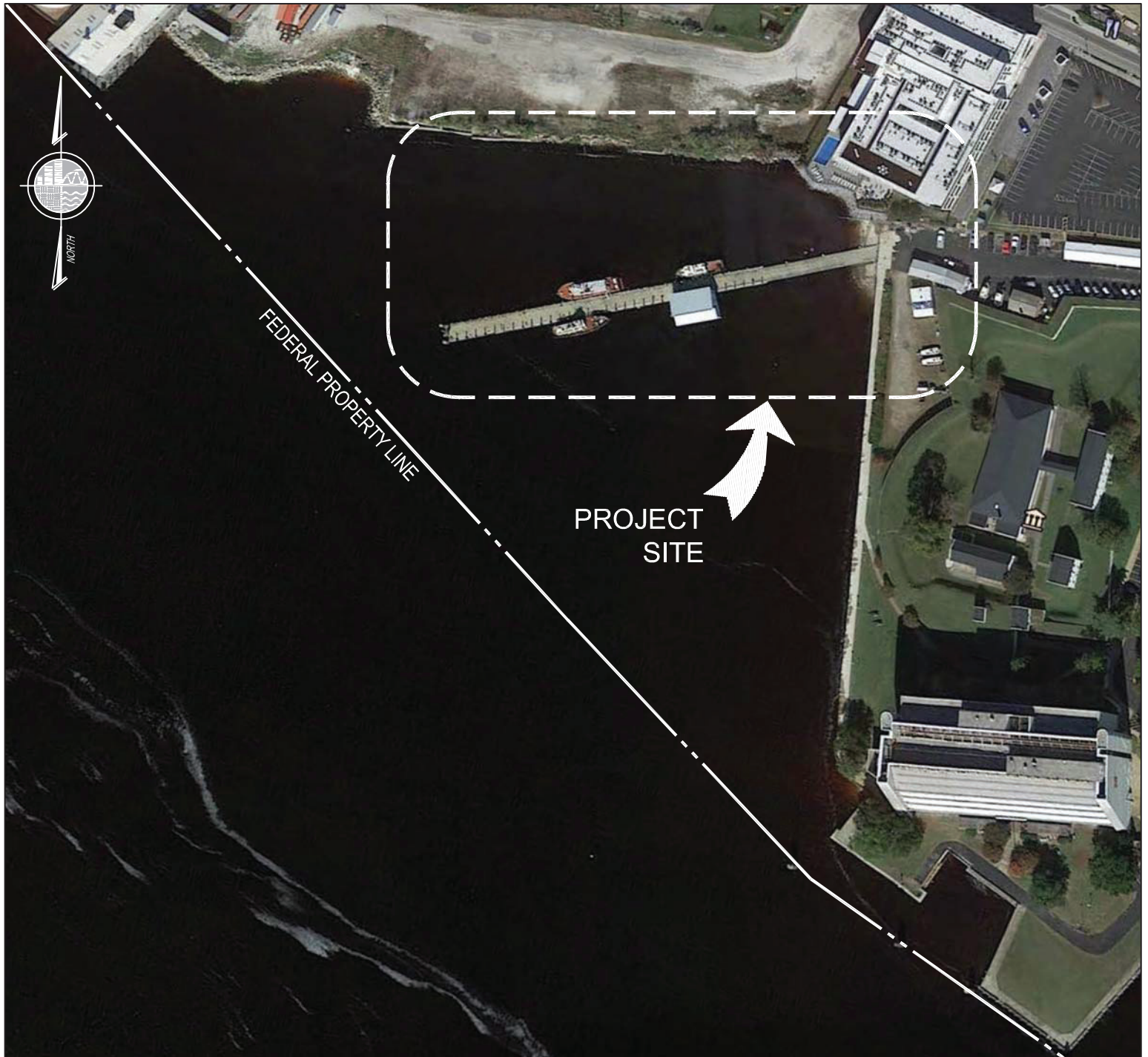
AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

SITE LOCATION MAP

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA

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11/20/21



SITE VICINITY MAP

N.T.S.

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

SITE VICINITY MAP

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA

SHT 2 OF 16

11/20/21

TIDAL DATA

BASED ON DATA PUBLISHED BY NOAA. PUBLICATION DATE
10/20/17.
FOR TIDAL EPOCH 1983 - 2001.

	NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29)	MEAN-LOW-WATER DATUM
100 YR. FLOOD LEVEL 3 HURRICANE	10.00	11.66
HIGHEST OBSERVED (HOWL)	4.62	6.28
PLATFORM DECK (TYP.)	4.24	5.90
SPRING HIGH TIDE (SHT)	1.37	3.03
MEAN HIGH HIGH WATER (MHHW)	1.24	2.90
MEAN HIGH WATER (MHW)	0.99	2.65
NGVD OF 1929 (NGVD 29)	0.00	1.66
MEAN LOW WATER (MLW)	-1.66	0.00
MEAN LOW LOW WATER (MLLW)	-1.79	-0.13
LOWEST OBSERVED (LOWL)	-3.28	-1.62

NOTES:

1. DATUMS FOR ELIZABETH RIVER (NORFOLK HARBOR) VA.
2. ALL ELEVATIONS ARE IN FEET.

TIDAL DATUM

N.T.S.

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF
THE JOINT PERMIT
APPLICATION FOR THE LIST
OF ADJACENT PROPERTY
OWNERS.

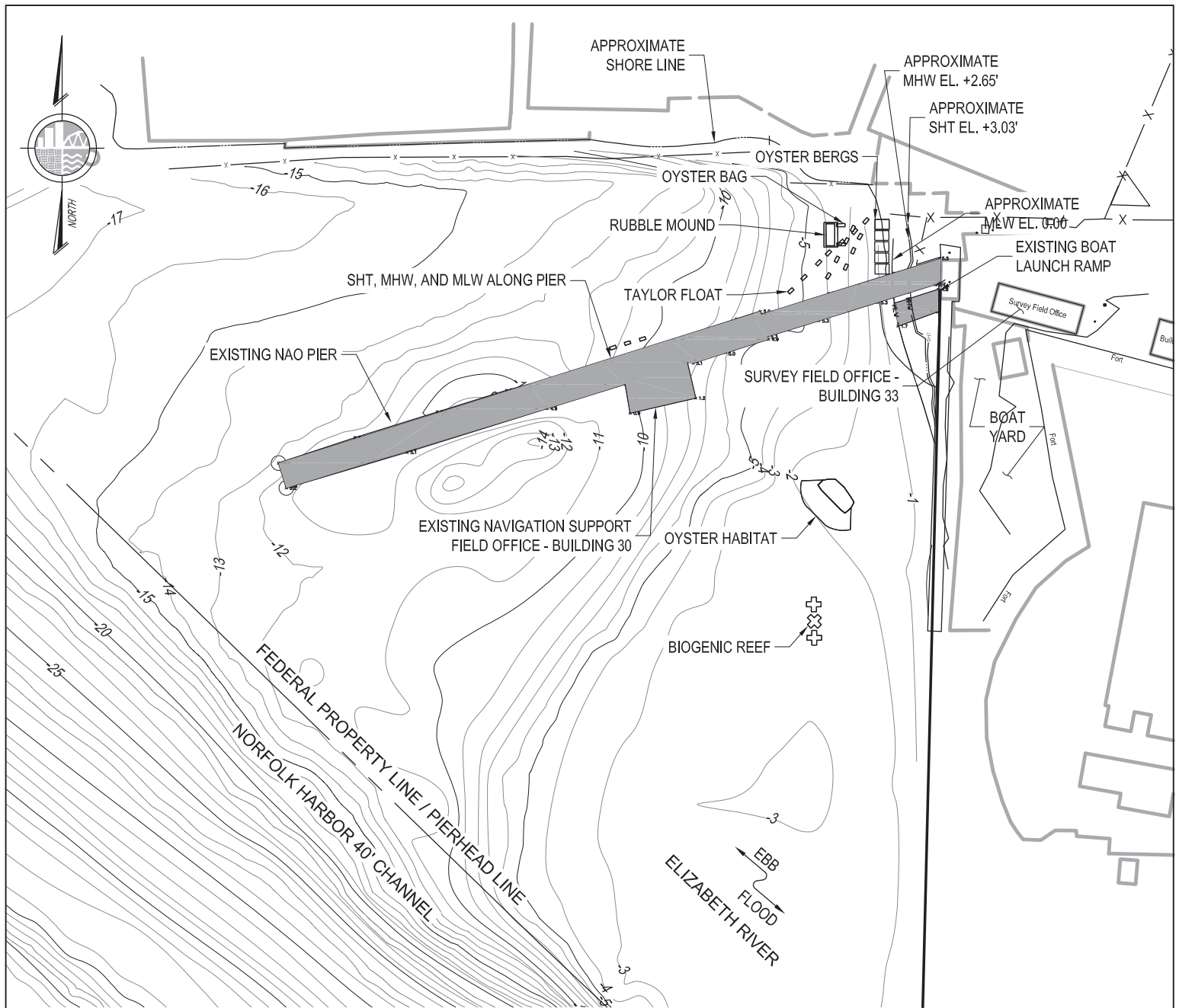
NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510
AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

TIDAL DATUM

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA

SHT 3 OF 16 11/20/21



4 EXISTING SITE PLAN

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

1"=100'

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

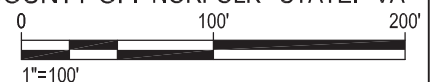
NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

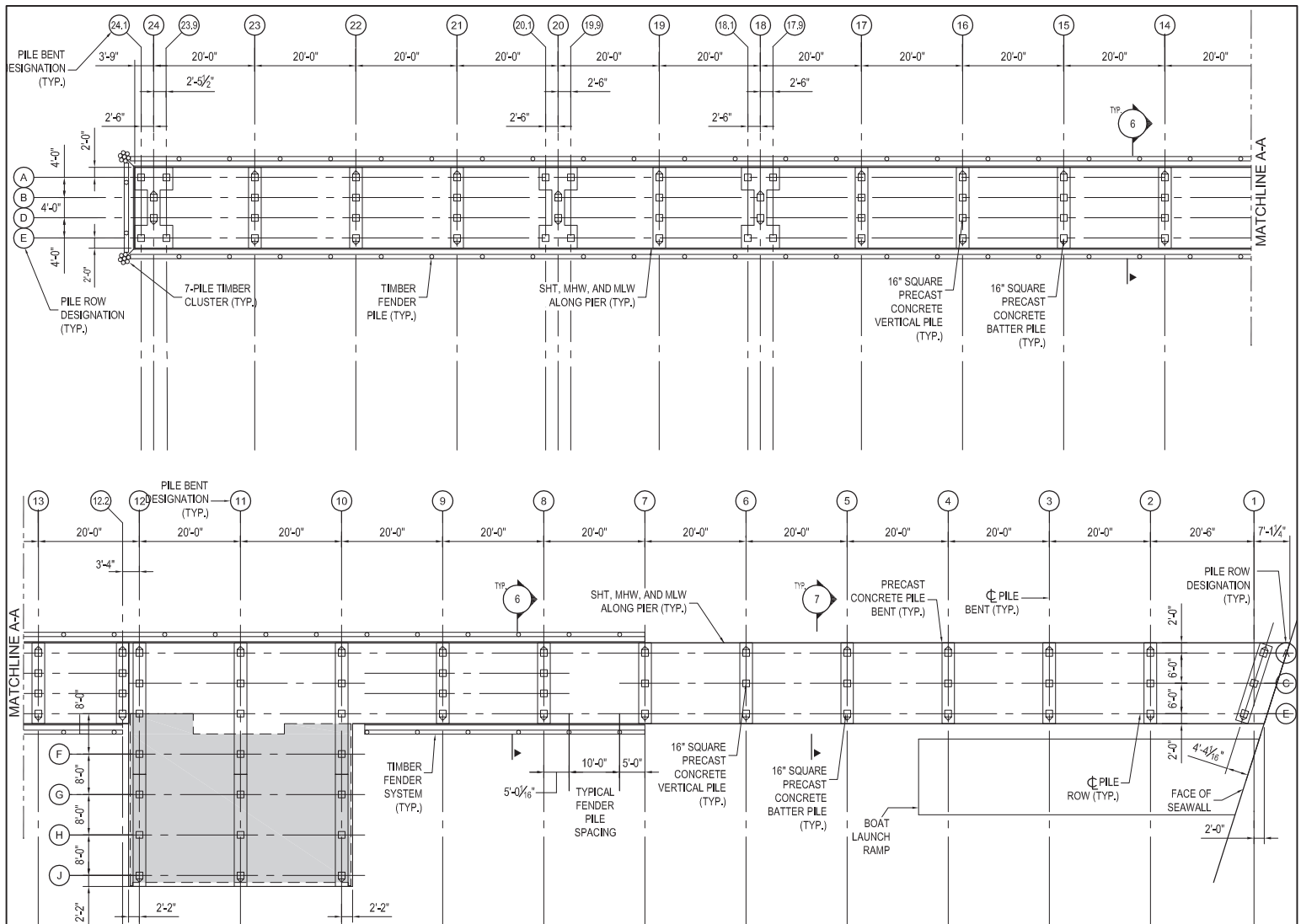
EXISTING SITE PLAN

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 4 OF 16

11/20/21



5

EXISTING PIER PILE PLAN

1/32"=1'-0"

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

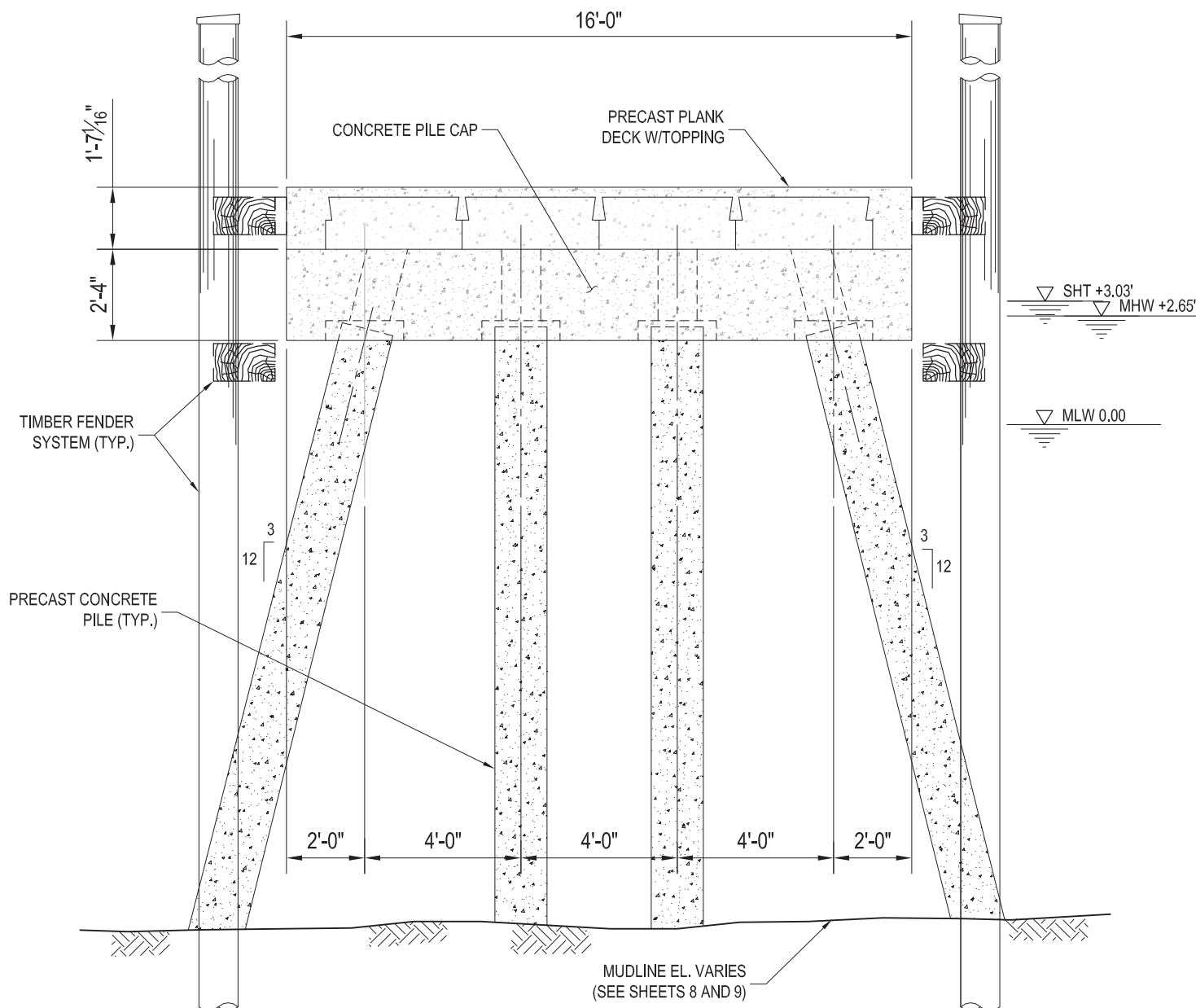
EXISTING PIER PILE PLAN

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 5 OF 16

11/20/21



6

EXISTING TYPICAL BENT CONFIGURATION

1/4"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

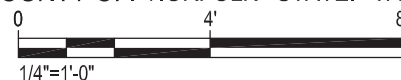
NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

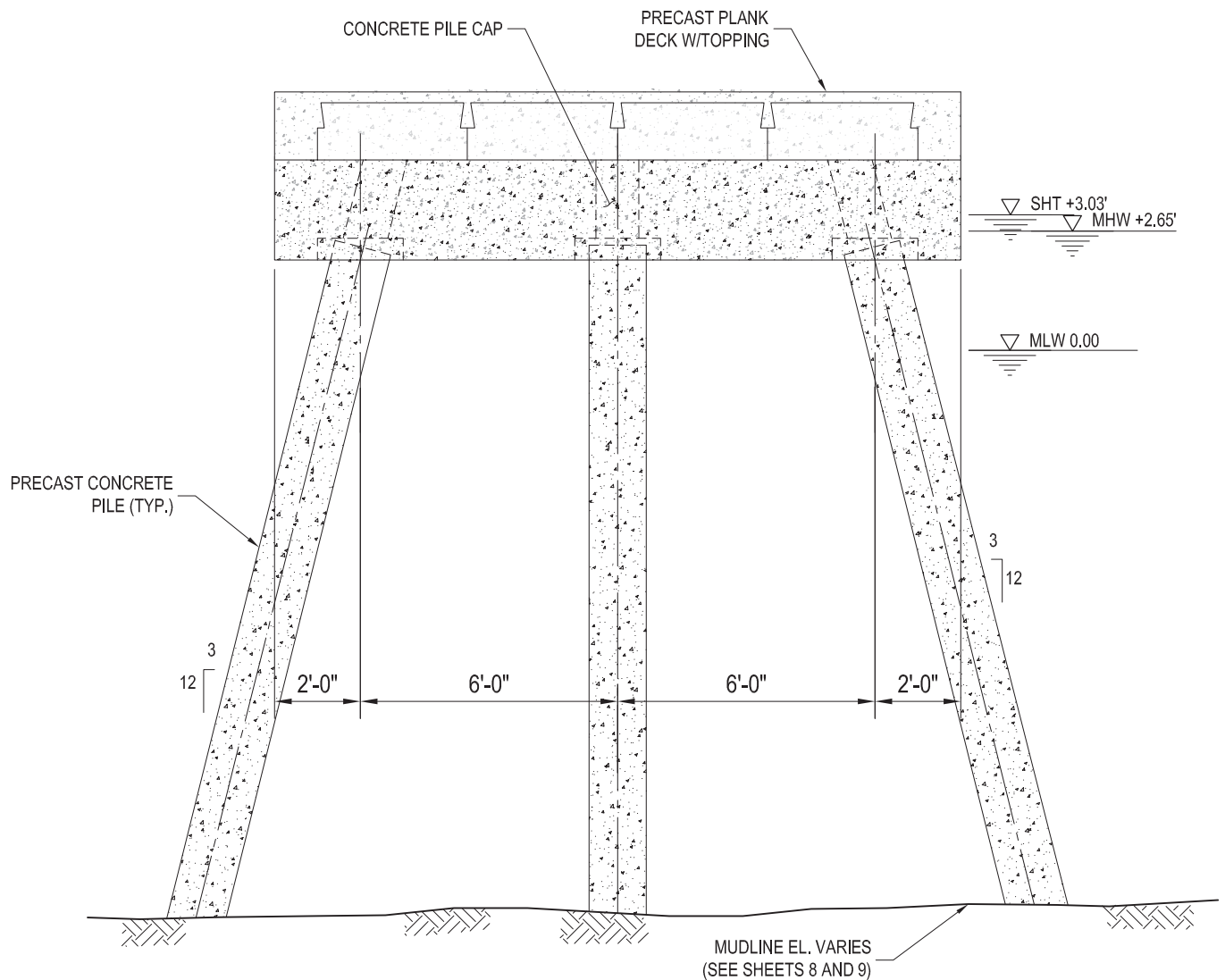
EXISTING SECTIONS

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



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7

EXISTING PIER RAMP BENT CONFIGURATION

1/4"=1'-0"

NOTES:

1. TYPICAL BENT CONFIGURATION FOR BENTS 1-7.
2. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble

United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT:

M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

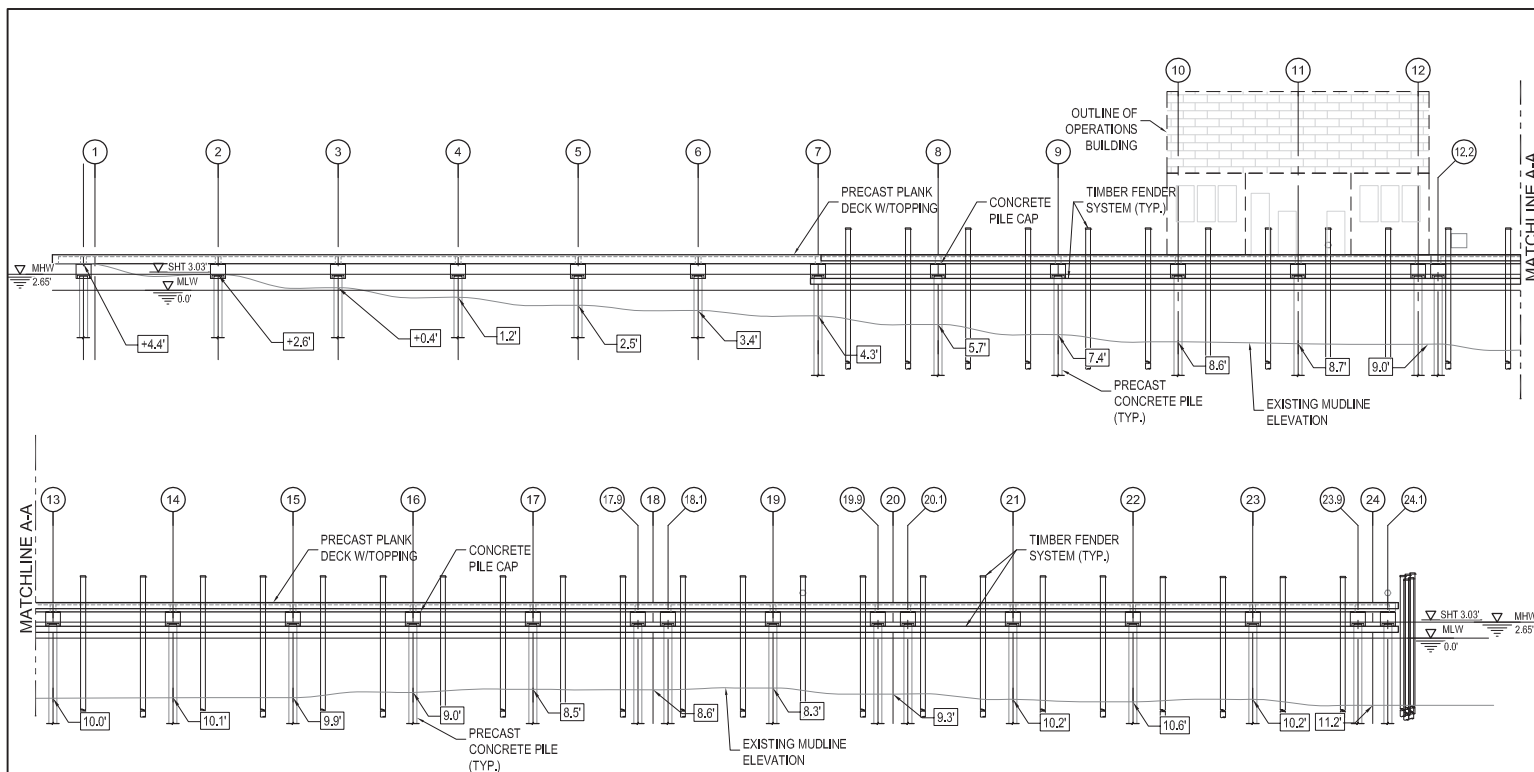
EXISTING SECTIONS

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



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11/20/21



PIER ELEVATION (LOOKING SOUTH)

8

EXISTING ELEVATIONS

1/32"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

LEGEND:

X.X'

MUDLINE ELEVATION BELOW
MEAN-LOW-WATER

①

PILE BENT IDENTIFICATION

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF
THE JOINT PERMIT
APPLICATION FOR THE LIST
OF ADJACENT PROPERTY
OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

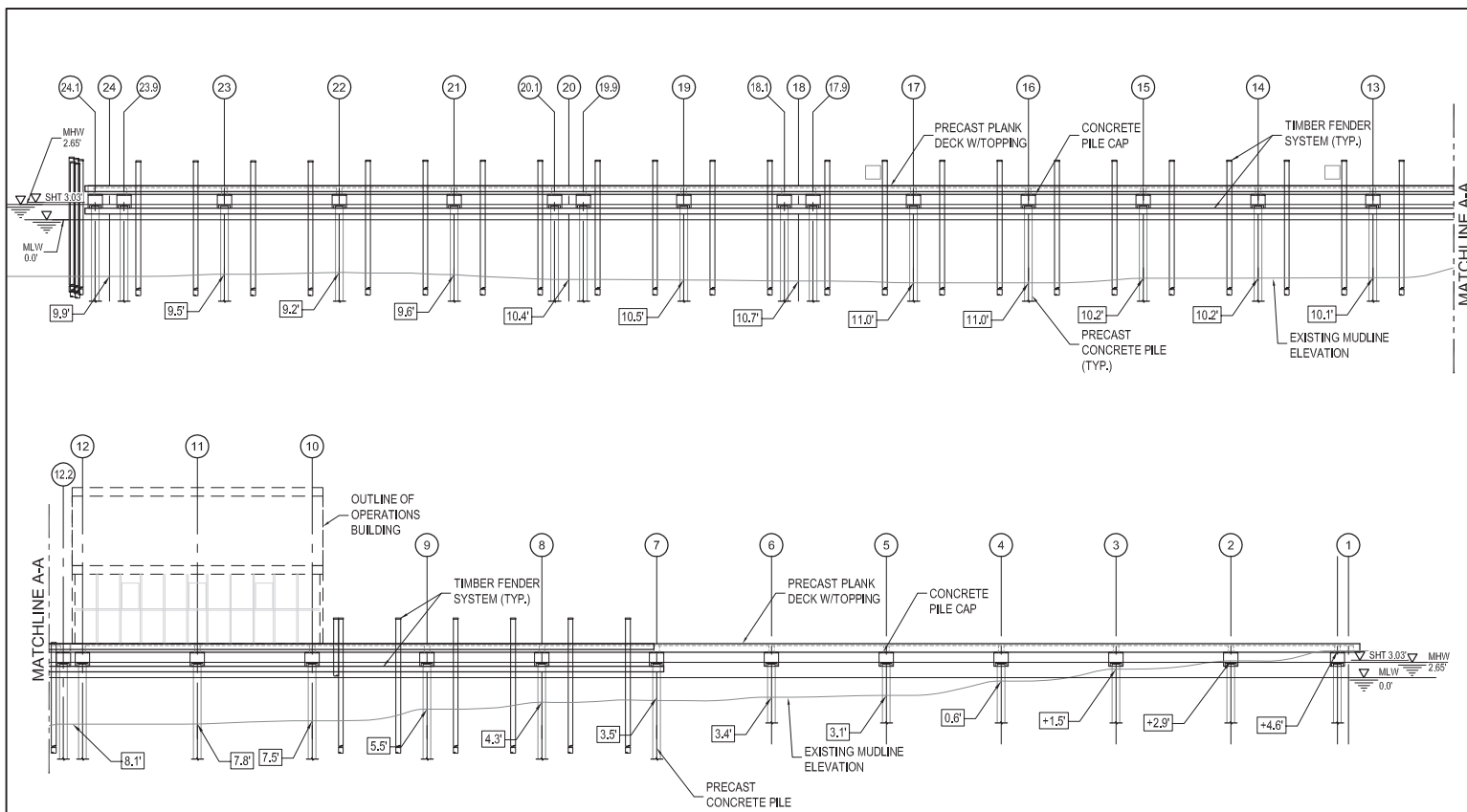
EXISTING ELEVATIONS

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA

0 32' 64'
1/32"=1'-0"

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11/20/21



PIER ELEVATION (LOOKING NORTH)

9

EXISTING ELEVATIONS

1/32"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

LEGEND:

(X.X)

MUDLINE ELEVATION BELOW
MEAN-LOW-WATER

(1)

PILE BENT IDENTIFICATION

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

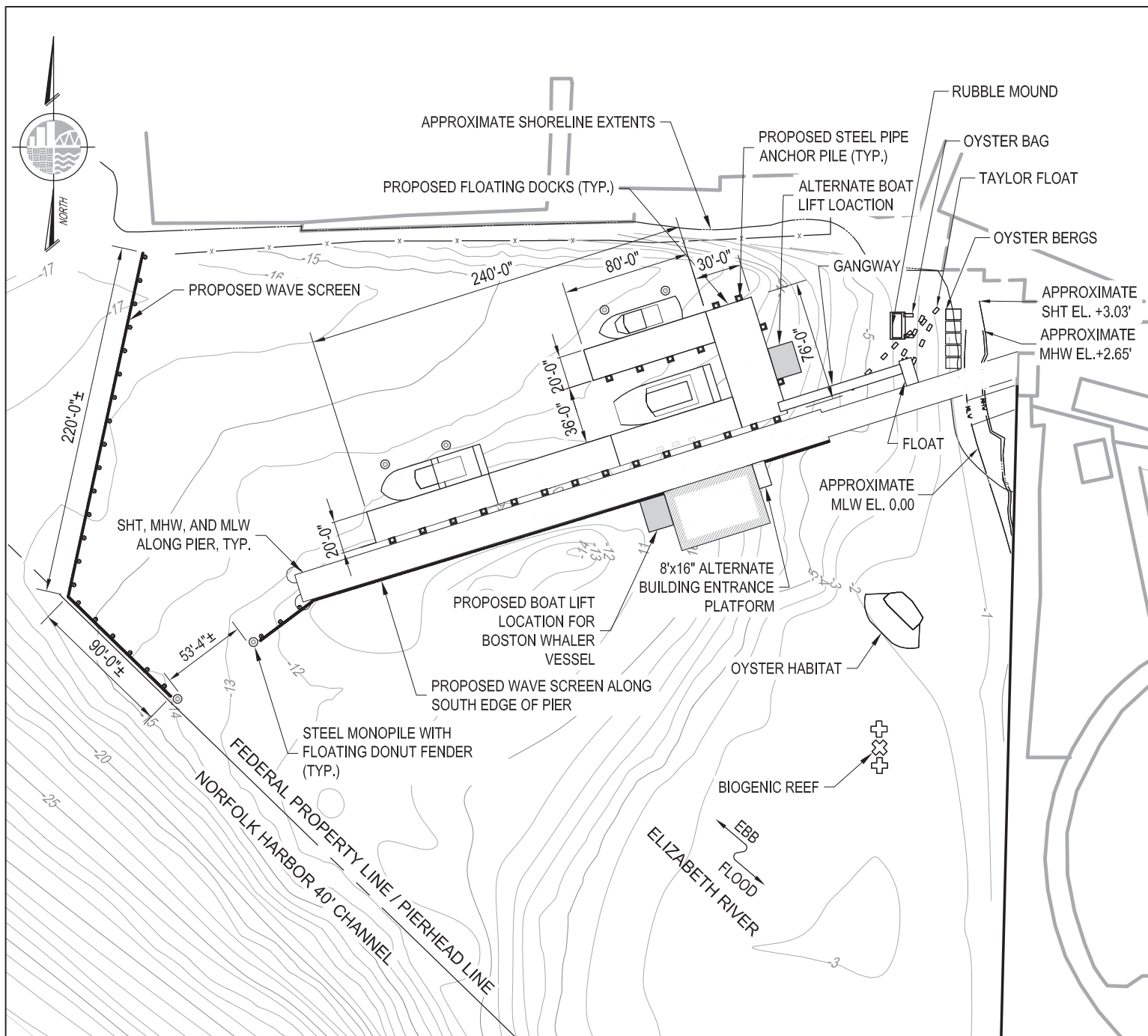
EXISTING ELEVATIONS

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



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11/20/21



10 PROPOSED SITE PLAN

1"=90'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

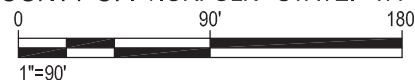
NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

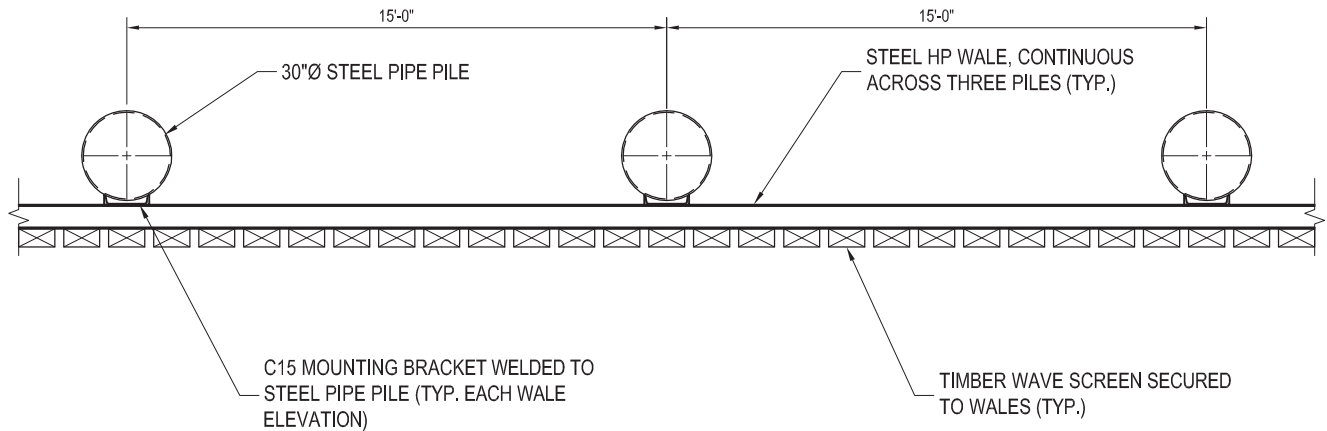
PROPOSED SITE PLAN

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 10 OF 16

11/20/21



11 STEEL BREAKWATER PART PLAN

3/16"=1'-0"

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

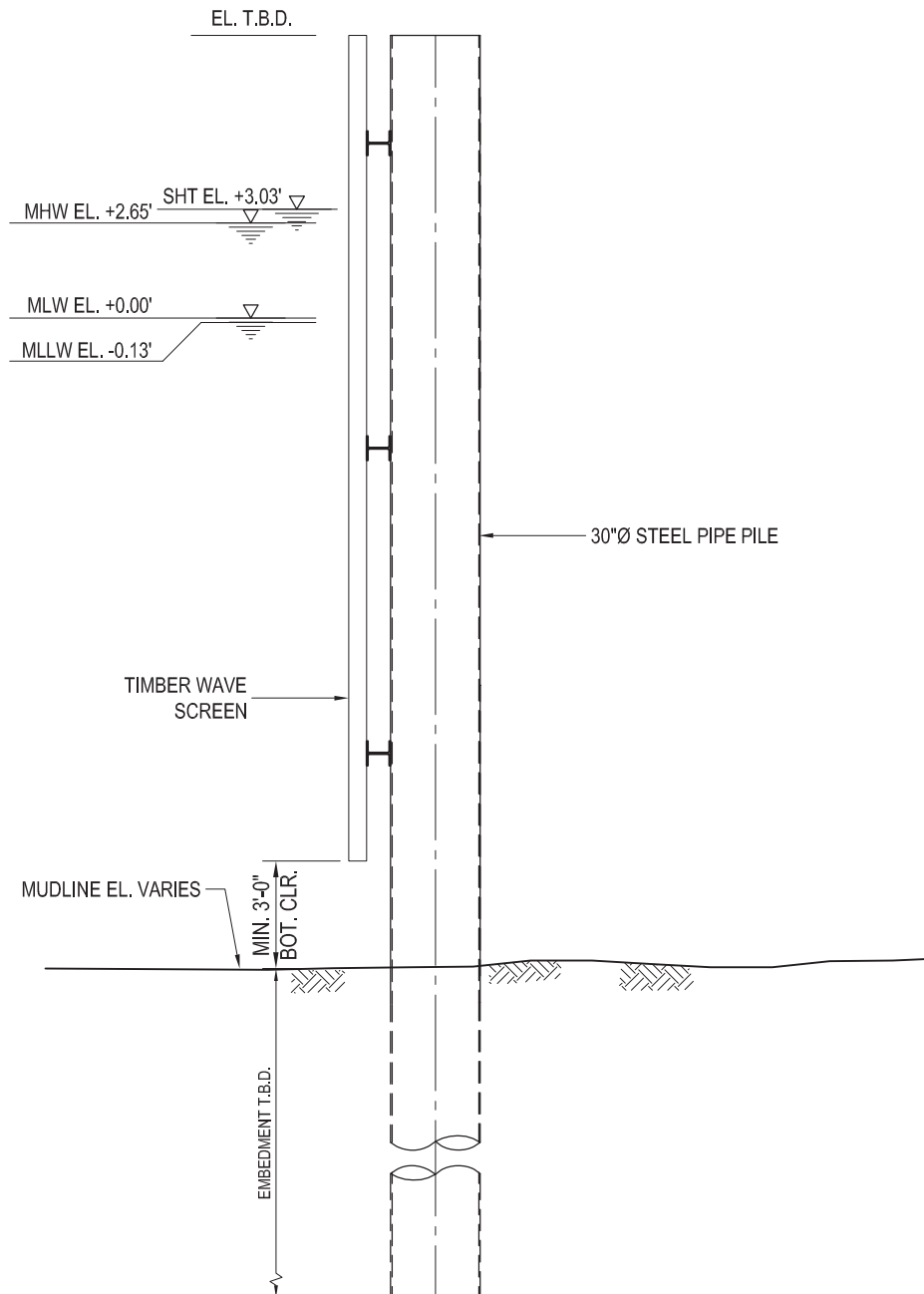
WAVE SCREEN PART PLAN

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 11 OF 16

11/20/21



12

STEEL BREAKWATER SECTION

3/16"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble

United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

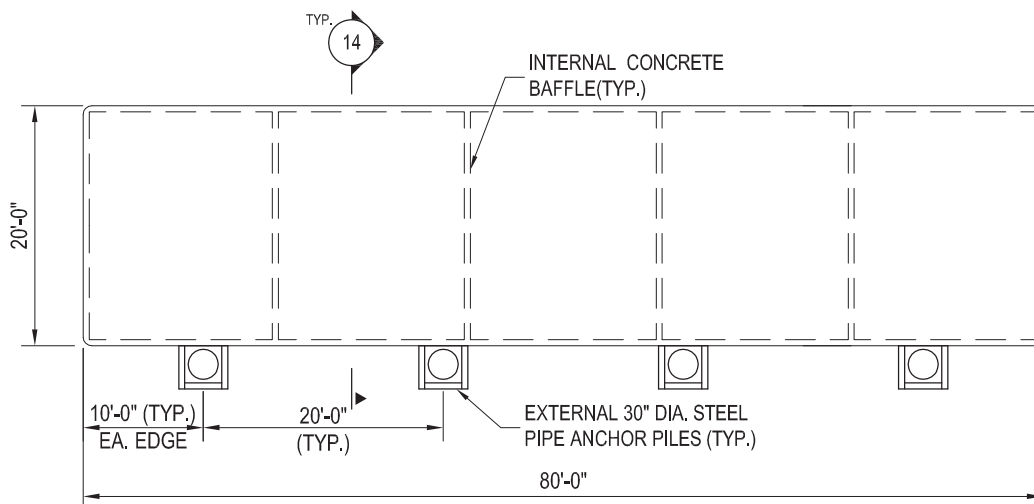
WAVE SCREEN SECTION

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA

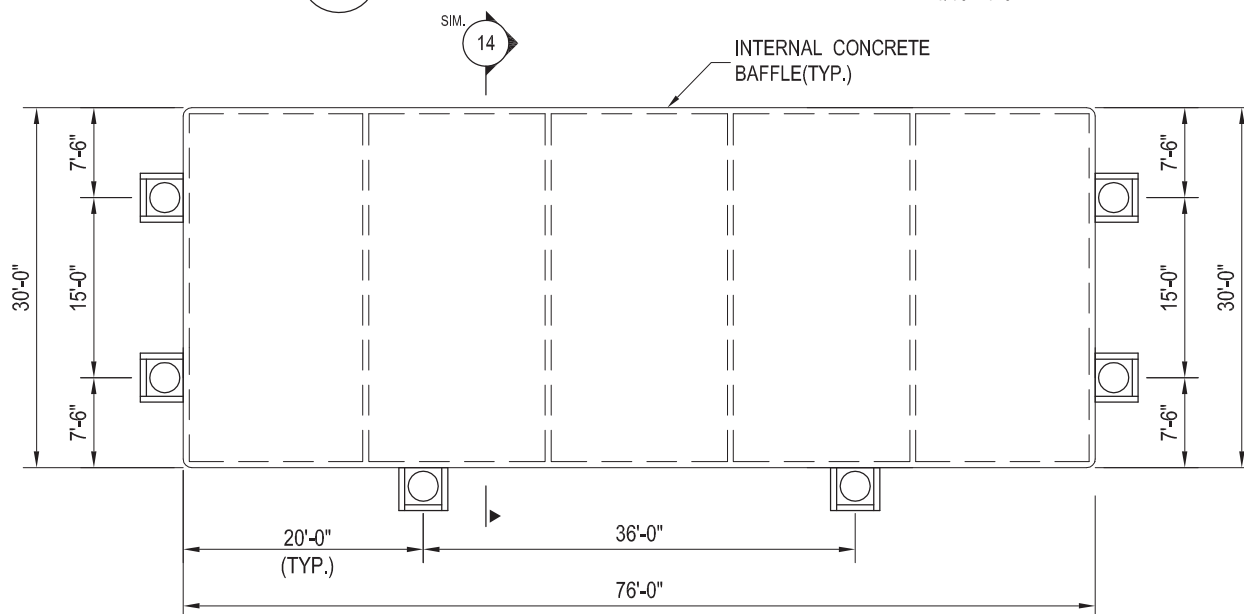


SHT 12 OF 16

11/20/21



13A TYPE 1 FLOATING DOCK PLAN
1/16"=1'-0"



13B TYPE 2 FLOATING DOCK PLAN
1/16"=1'-0"

NOTE:

1. FLOAT BAFFLE LAYOUT AND GEOMETRY ARE APPROXIMATE. FINAL DESIGN TO BE PERFORMED BY MANUFACTURER AND SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT.

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510
AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

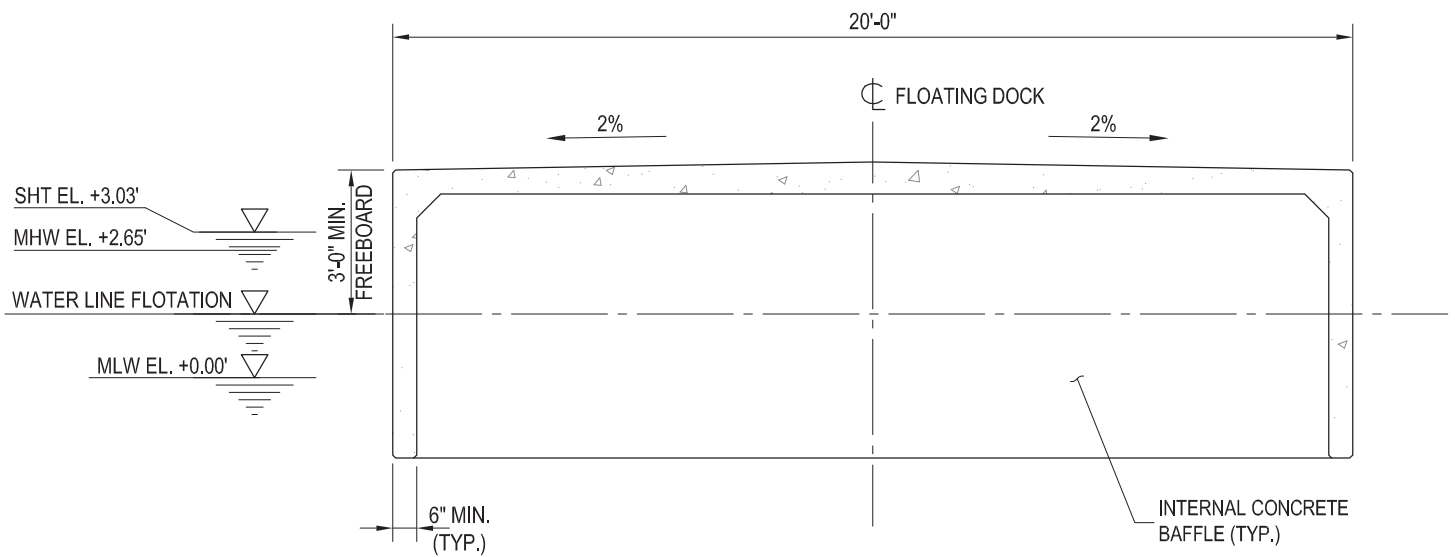
**FLOATING DOCK
PLAN**

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 13 OF 16

11/20/21



14

FLOATING DOCK TYPICAL SECTION

1/4"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

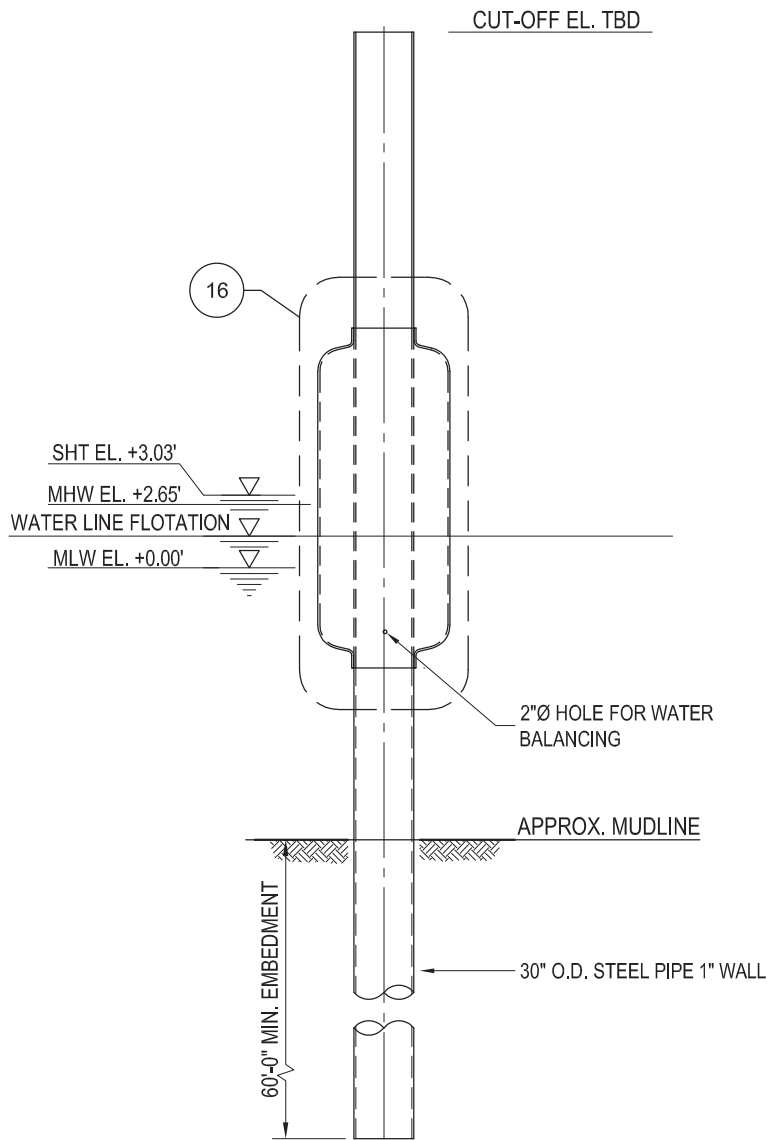
FLOATING DOCK SECTION

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 14 OF 16

11/20/21



15

MONOPILE ELEVATION

1/8"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

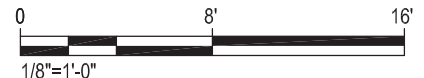
NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

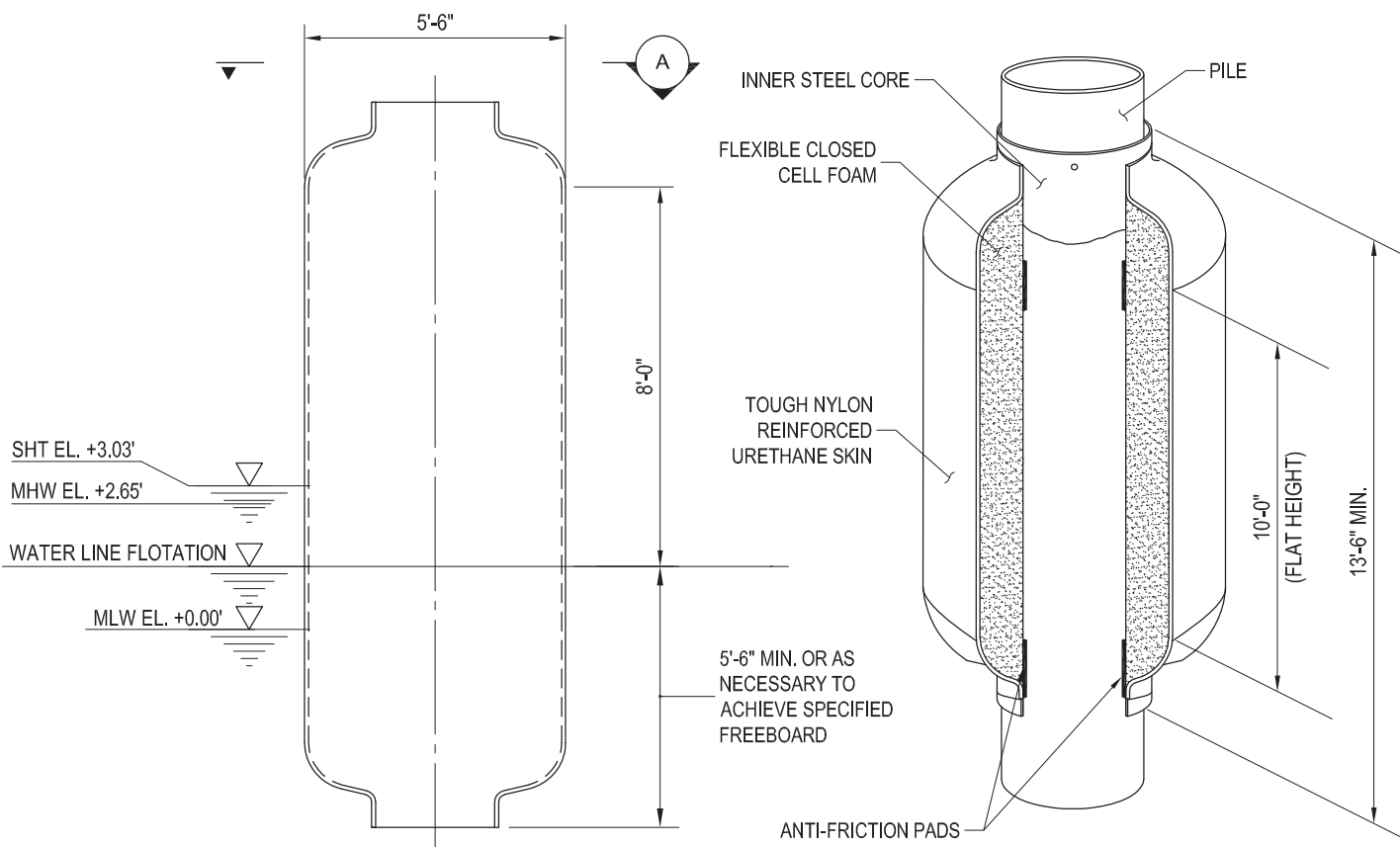
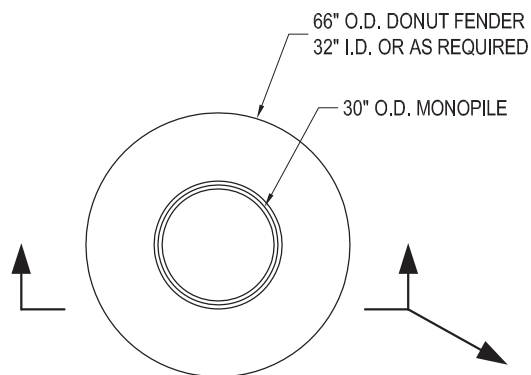
MONOPILE & FLOATING DONUT FENDER

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 15 OF 16

11/20/21



16

DONUT FENDER

1/4"=1'-0"

NOTE:

1. REFERENCE DATUM IS TO MEAN LOW WATER (MLW).

A

SECTION

N.T.S.

DATUM: NAVD88

ADJACENT OWNERS:

1. REFER TO SECTION 14 OF THE JOINT PERMIT APPLICATION FOR THE LIST OF ADJACENT PROPERTY OWNERS.

NAO PIER - SMALL CRAFT HARBOR

APPLICANT: Lesley Dobbins-Noble
United States Army Corps Of Engineers
Norfolk District 803 Front St.
Norfolk, VA 23510

AGENT: M.G. McLaren Engineering
and Land Surveying, P.C.
530 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677

FLOATING DONUT FENDER SECTIONS

IN: ELIZABETH RIVER
AT: NORFOLK (NORFOLK HARBOR)
COUNTY OF: NORFOLK STATE: VA



SHT 16 OF 16

11/20/21