February 18, 2026

U.S. Coast Guard Civil Engineering Unit
c/o Justin N Silvaroli
1240 E Ninth St, Rm 2179
Cleveland, OH 44199-2060

Via email: Justin.N.Silvaroli@uscg.mil

Re: Agency Interest Number: 90048
Tracking Number: 202560946
Tidal Authorization Number: 25-WQC-0040

Dear U.S. Coast Guard Civil Engineering Unit:

Your project did not qualify for approval under the Maryland State Programmatic General Permit (MDSPGP); therefore a separate review and issuance of the federal permit will be required by the U.S. Army Corps of Engineers. The federal permit is not attached.

Additionally, your project required a Wetlands License to be approved and issued by the Maryland Board of Public Works (BPW). The Wetlands License will be sent to you by BPW's Wetlands Administrator.

A project that does not qualify for approval under the MDSPGP requires an individual Water Quality Certification (WQC) to be issued by the Maryland Department of the Environment, which is attached. Please take a moment to read and review your WQC to ensure that you understand the limits of the authorized work and all of the general and special conditions.

You should not begin any work until you have obtained all necessary State, local, and federal authorizations. Please contact Mel Throckmorton at mel.throckmorton@maryland.gov or 410-375-2803 with any questions.

Sincerely,

Jonathan Stewart
Division Chief
Tidal Wetlands Division

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION
WATER QUALITY CERTIFICATION

25-WQC-0040

EFFECTIVE DATE: **February 19, 2026**
CERTIFICATION HOLDER: **U.S. Coast Guard Civil Engineering Unit**
ADDRESS: **1240 E Ninth St Room 2179**
Cleveland, OH 44199-2060
PROJECT LOCATION: **3425 Thomas Point Rd**
Annapolis, MD 21403

UNDER AUTHORITY OF SECTION 401 OF THE FEDERAL WATER POLLUTION CONTROL ACT AND ITS AMENDMENTS AND IN ACCORDANCE WITH § 9-313 THROUGH § 9-323, INCLUSIVE, OF THE ENVIRONMENT ARTICLE, ANNOTATED CODE OF MARYLAND, THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER AND SCIENCE ADMINISTRATION HAS DETERMINED THAT THE REGULATED ACTIVITIES DESCRIBED IN THE REQUEST FOR CERTIFICATION FOR THE PROPOSED U.S. COAST GUARD STATION BOAT RAMP AND AS DESCRIBED IN THE ATTACHED PLAN SHEETS DATED DECEMBER 11th, 2025, AND ANY SUBSEQUENT MODIFICATIONS APPROVED BY THE DEPARTMENT WILL NOT VIOLATE MARYLAND'S WATER QUALITY STANDARDS, IF CONDUCTED IN ACCORDANCE WITH THE CONDITIONS OF THIS CERTIFICATION.

THIS CERTIFICATION DOES NOT RELIEVE THE APPLICANT OF RESPONSIBILITY FOR OBTAINING ANY OTHER APPROVALS, LICENSES, OR PERMITS IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL REQUIREMENTS AND DOES NOT AUTHORIZE COMMENCEMENT OF THE PROPOSED PROJECT. A COPY OF THIS REQUIRED CERTIFICATION HAS BEEN SENT TO THE CORPS OF ENGINEERS. THE CERTIFICATION HOLDER SHALL COMPLY WITH THE CONDITIONS LISTED BELOW.

The Maryland Department of the Environment satisfied the statutory and regulatory public notice requirements by placing the WQC on Public Notice from January 1st, 2026, to February 1st, 2026, on Maryland Department of the Environment's Public Notice webpage and advertising in the Capital Gazette on January 8th, 2026.

PROJECT DESCRIPTION

1. Install approximately 235 linear feet of sheet pile to form a 18 foot wide by 120 foot box.
2. Temporarily install a dewatering pump within the sheet pile box that pumps to an upland filtering basin with filter bag;
3. Mechanically dredge a 120-foot long by 18-foot wide area to a depth of 10 feet at mean low water, and to deposit approximately 170 cubic yards of dredged material at an approved upland disposal site located at Rock Creek; and,
4. Fill sheet pile box with clean fill material and construct a 120-foot long by 8-foot wide concrete-cast boat ramp extending a maximum of 120 feet channelward of the mean high water line.
5. Remove a 20-foot long channelward section of sheet pile after filling for boat ramp.

GENERAL CONDITIONS

1. All water quality-related performance standards and conditions required by the Department in any state issued authorization for activities in tidal wetlands, nontidal wetlands, their 100-year floodplains, nontidal wetlands buffers, or nontidal wetland expanded buffers to ensure that any discharges will not result in a failure to comply with water quality standards in COMAR 26.08.02 or any other water quality requirements of state law or regulation shall be met.

2. This Certification does not obviate the need to obtain required authorizations or approvals from other State, federal or local agencies as required by law.

3. All additional authorizations or approvals, including self-certifying General Permits issued by the Department, shall be obtained and all conditions shall be completed in compliance with such authorizations.

4. The proposed project shall be constructed in accordance with the approved final plan by the Department, or, if Department approval is not required, the plan approved by the U.S. Army Corps of Engineers, and its approved revisions.

5. All fill and construction materials not used in the project shall be removed and disposed of in a manner which will prevent their entry into waters of this State.

6. This Certification does not authorize any injury to private property, any invasion of rights, or any infringement of federal, state, or local laws or regulations.

7. Authorized representatives of the Department shall be provided access to the site of authorized activities during normal business hours to conduct inspections and evaluations of the operations and records necessary to assure compliance with this Certification.

8. No stockpiles of any material shall be placed in Waters of the U.S. or state or private tidal wetlands.

9. Temporary construction trailers or structures, staging areas and stockpiles shall not be located within tidal wetlands, nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.

10. This Certification is valid for the project identified herein and the associated U.S. Army Corps of Engineers authorization NAB-2015-61057 (USCG Station Annapolis/Boat Ramp & Dredging) until such time that it expires or is not administratively extended.

SPECIAL CONDITIONS

1. All Critical Area requirements shall be followed and all necessary authorizations from the Critical Area Commission (“Commission”) shall be obtained. This Certificate does not constitute authorization for disturbance in the 100-foot Critical Area Buffer. “Disturbance” in the Buffer means clearing, grading, construction activities, or removal of any size of tree or vegetation. Any anticipated Buffer disturbance requires prior written approval, before commencement of land disturbing activity, from local jurisdiction in the form of a Buffer Management Plan.

2. All work performed under this Water Quality Certificate shall be conducted by a marine contractor licensed by the Marine Contractors Licensing Board (MCLB) in accordance with Title 17 of the Environment Article of Annotated Code of Maryland. Licensing by MCLB shall occur prior to the beginning of construction activities. A list of licensed marine contractors may be obtained by contacting the MCLB at 410-537- 3249, by e-mail at MDE.MCLB@maryland.gov or by accessing the Maryland Department of the Environment, Environmental Boards webpage.

3. The issuance of this Certificate is not a validation or authorization by the Department for any of the existing structures depicted on the plan sheets on the subject property that is not part of the authorized work description, nor does it relieve the Certificate Holder of the obligation to resolve any existing noncompliant structures and activities within tidal wetlands.

4. The Certificate Holder shall not perform any water-dependent work from November 15th through March 1st of any year to protect wintering waterfowl. The proposed project site is located in a Historic Waterfowl Concentration Area.

5. The Certificate Holder shall ensure that all dewatering of the sheet pile box occurs within the upland sedimentation basin with the filter bag. No direct discharge of the water shall occur into tidal wetlands.

6. The Certificate Holder shall not stockpile any material in State or private tidal wetlands.

7. The Certificate Holder, to reduce any potential adverse effects to aquatic resources, shall construct and maintain a cofferdam or similar containment structure around and channelward of the boat ramp area prior to any excavation and backfilling along the shoreline through completion of any excavation and backfilling along the shoreline and concrete work.

8. If the Certificate Holder transports dredged material by trucks, the trucks shall be watertight and no dredged material shall be discharged onto the roadways of the State.

9. The Certificate Holder shall dispose of dredged material only at the dredge disposal site(s) approved by this Certificate.

10. The Certificate Holder shall remove the channelward portion of the sheet pile wall upon conclusion of boat ramp construction.

STATEMENTS OF NECESSITY

1. Statement of Necessity for General Conditions 1, 2, 3, 4, and Special Conditions 1, 3, 5, 6, 7: These conditions are necessary to ensure that water quality standards are met, and designated uses are maintained.

   Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.10G(3); COMAR 26.23.02.06; COMAR 26.17.01; COMAR 26.23; COMAR 26.24

2. Statement of Necessity for General Conditions 5, 8, 9, and Special Conditions 5, 7: Fill or construction material within or adjacent to regulated resources may cause discharges resulting in turbidity in excess of water quality standards and interfere with designated uses of growth and propagation of fish, other aquatic life, wildlife; and other designated uses; and fail to meet general water quality criteria that waters not be polluted by substances in amounts sufficient to be unsightly or create a nuisance.

   Citation: 26.08.02.03B(1)-B(2); COMAR 26.23; COMAR 26.24; COMAR 26.17.04

3. Statement of Necessity for General Condition 6: This condition is necessary to clarify the scope of this certification to ensure compliance with water quality regulations, without limiting restrictions through other requirements.

   Citation: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08, COMAR 26.08.02.10E; COMAR 26.23.02.06; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

4. Statement of Necessity for General Condition 7: Conditions of certification involve precise actions to comply with water quality standards. Site inspection may be necessary to ensure that limits, methods, and other requirements are met to ensure that water quality standards are met and designated uses are maintained. These conditions are necessary to ensure that the activity was conducted, and project completed according to terms of the authorization/certification, while allowing for review of in-field modifications which may have resulted in discharges to ensure that water quality standards were met. Designated uses include support of estuarine and marine aquatic life and shellfish harvesting and for growth and propagation of fish, other aquatic life, and wildlife.

   Citation: Federal and state laws that authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.03B(1)(b); COMAR 26.08.02.03B(2); COMAR 26.23.02.06; COMAR 26.23; COMAR 26.24; COMAR 26.17.04

5. Statement of Necessity for General Condition 10: This condition is necessary to qualify the period of applicability of the terms and conditions of this Certification to be protective of Maryland water quality standards.

   Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; 40 C.F.R. 121, 15 C.F.R. 930, Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

6. Statement of Necessity for Special Condition 2: Expertise for conducting certain activities is required to ensure that there is no violation of water quality standards nor interference with designated uses. This condition is necessary to ensure that discharges will be conducted in a manner which does not violate water quality criteria nor interfere with designated uses.

   Citation: COMAR 26.08.02.02B(2)- B(4); COMAR 26.08 02.03B(2)(d) – (e); COMAR 26.08.02.03B(1)(b); 26.08.02.03B(2); COMAR 23.02.04.04

7. Statement of Necessity for General Condition 8 and Special Conditions 5, 7, 8, 9, 10: Unauthorized discharges may enter regulated waters as result of activity or structural failure. A plan to address inadvertent discharges will prevent or address further violations of water quality standards and failure of water to meet designated uses, including uses of growth and propagation of fish, other aquatic life, wildlife; and other designated uses; and fail to meet general water quality criteria that waters not be polluted by substances in amounts sufficient to be unsightly or create a nuisance.

   Citation COMAR 26.08.02.02B(1)d; COMAR 26.08.02.02B(3); COMAR 26.08.02.03B(1) and B(2); 26.08.02.01B(2); 26.08.02.02B(1)

8. Statement of Necessity for Special Condition 4: A time of year restriction is necessary to maintain the designated use for support of estuarine and marine aquatic life and shellfish harvesting.

   Citation: Federal and state laws which authorize this condition include but are not limited to: COMAR: 26.08.02.02B(1)(d); 26.08.02.02B(3); COMAR 26.08.02.02-16.

CERTIFICATION APPROVED

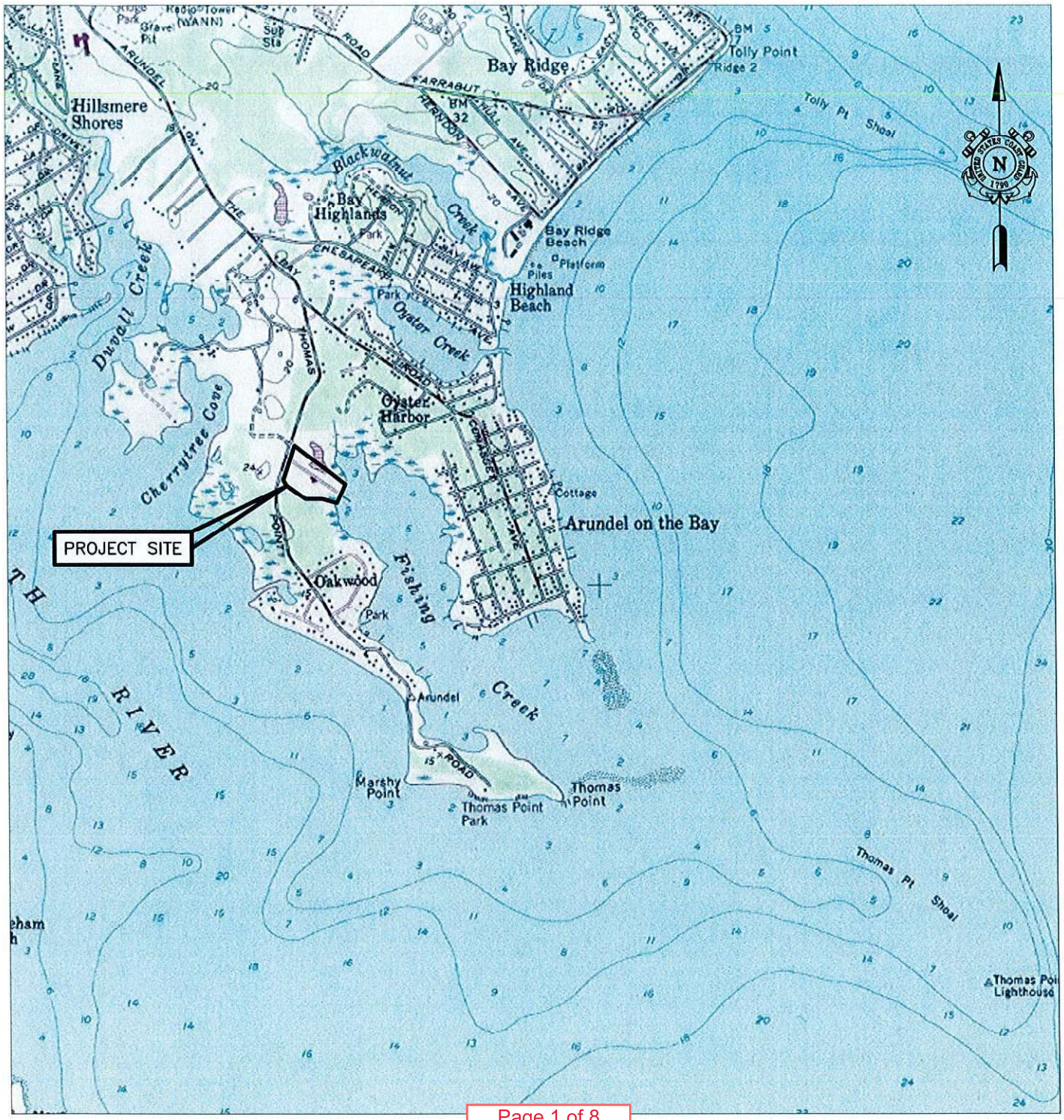
Heather L. Nelson
Program Manager, Wetlands and Waterways
Protection Program

Tracking Number: 202560946
Agency Interest Number: 90048

Effective Date: **February 19, 2026**

Enclosure: Plan Sheets dated December 11, 2025

cc: WSA Inspection & Compliance Program
Army Corps of Engineers

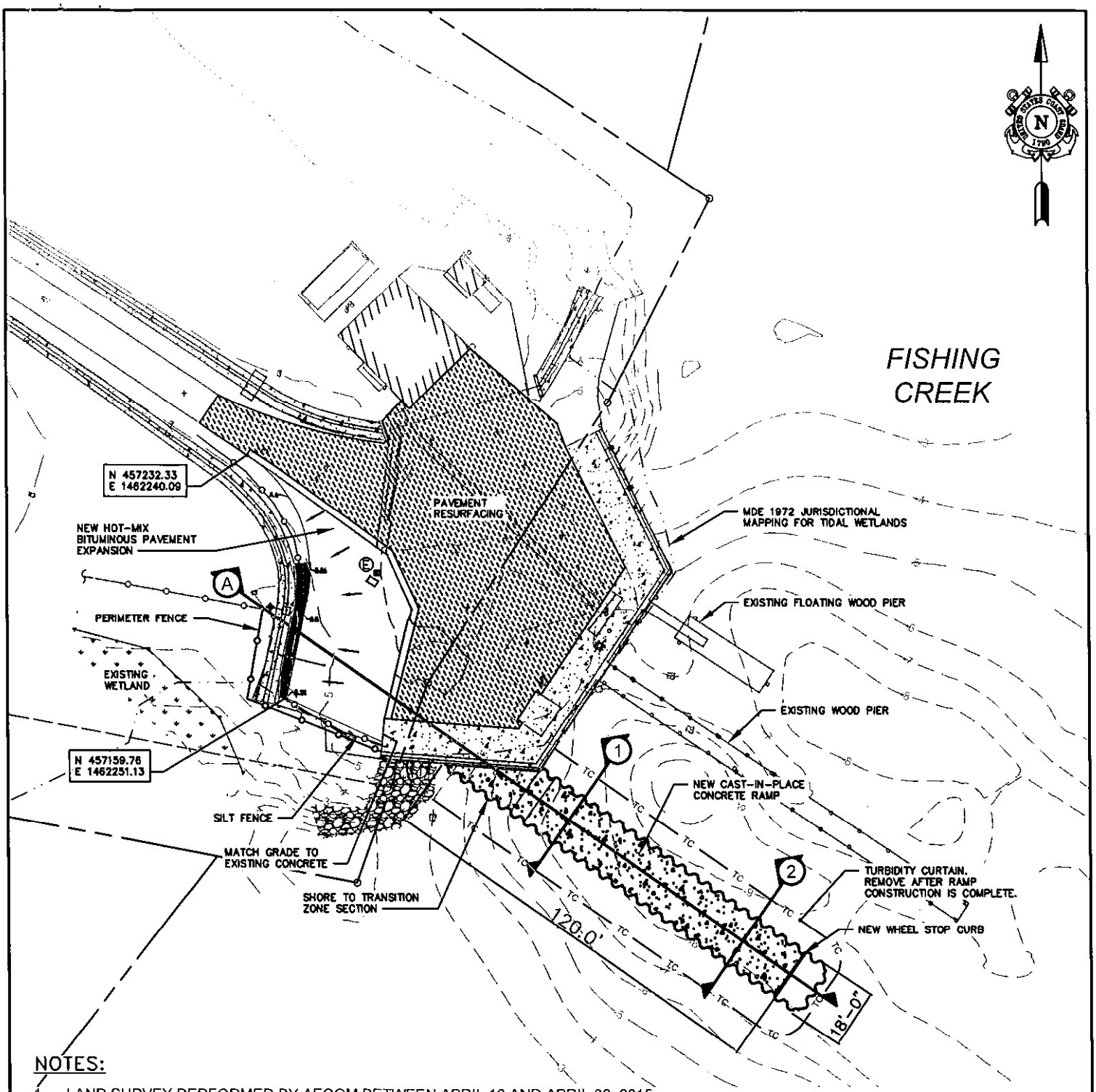


USCG STA ANNAPOLIS

25-WQC-0040
202560946
90048
12/11/25
MT

0 35,000 70,000
FEET

ANNAPOLIS BOAT RAMP PROJECT NO. 520896	FIGURE 4 AREA TOPOGRAPHY	USCG. CEU CLEVELAND 1240 EAST NINTH STREET CLEVELAND, OH 44199-2060
USCG STA ANNAPOLIS, MARYLAND	FEB 2025 SCALE: 1" = 35,000'	



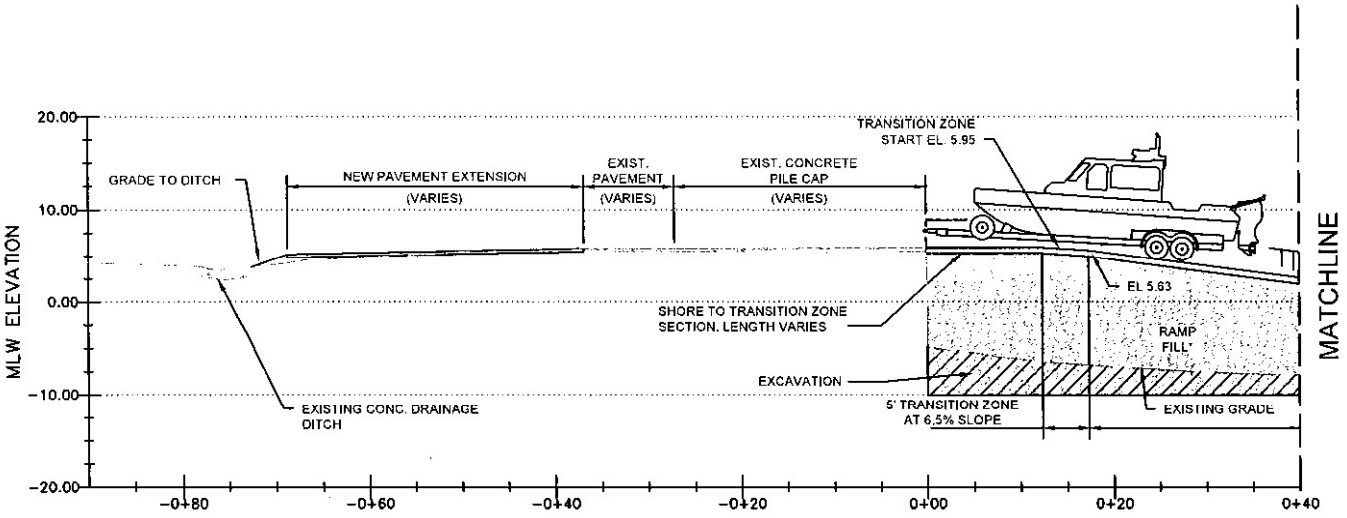
NOTES:

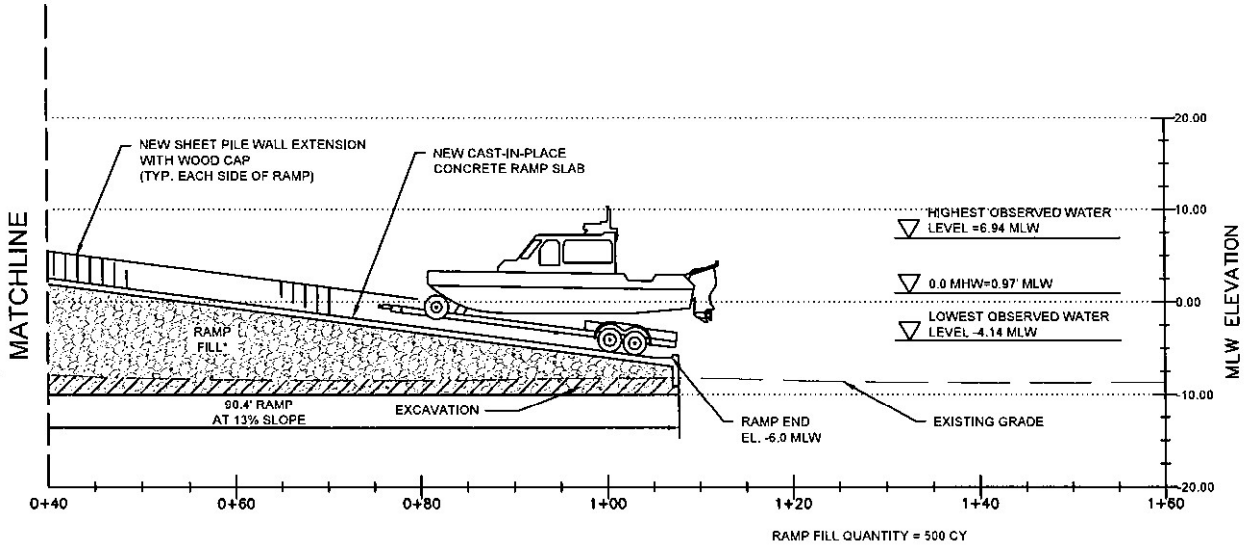
1. LAND SURVEY PERFORMED BY AECOM BETWEEN APRIL 16 AND APRIL 30, 2015.
2. BATHYMETRIC SURVEY PERFORMED BY AECOM ON APRIL 28, 2015 USING A SINGLE BEAM ECHO SOUNDER WITH DGPS CAPABILITY.
3. HORIZONTAL DATUM: NAVD83/2011 EPOCH:2010.0000
4. VERTICAL DATUM: NAVD88 CONVERTED TO MLW BY ADDING 0.55'
5. SOUNDINGS AND CONTOURS SHOWN ARE REFERENCED TO MLW BASED ON WATER MEASUREMENTS RECORDED AT THE U.S.C.G. PIER LOCATED IN FISHING CREEK AT BENCHMARK "ROSIE".
6. REMOVAL OF SEDIMENT WITHIN SHEETPILE BOX WILL BE DONE
   EXCAVATOR OR CLAM-SHELL BUCKET ON A CRANE. S
   CRANE INTO SEALED TRUCKS AND HAULED TO APPRO
7. SEDIMENT SAMPLING CONDUCTED IN 2005 AND 2012 F
   TO WHARF TO BE ACCEPTABLE FOR DISPOSAL AT THE

0 40' 80'
FEET

ANNAPOLIS BOAT RAMP PROJECT NO. 520896	JOI
USCG STA ANNAPOLIS, MARYLAND	FEB 2025 SCALE: 1" = 40'

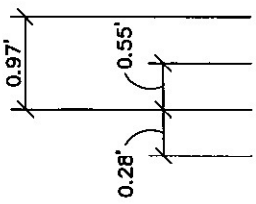
USCG. CEU CLEVELAND
1240 EAST NINTH STREET
CLEVELAND, OH
44199-2060





BOAT RAMP PROFILE A

VERTICAL DATUM CONVERSIONS



MHW (MEAN HIGH WATER 1983–2001)

NAVD88 (NORTH AMERICAN VERTICAL DATUM 1988)

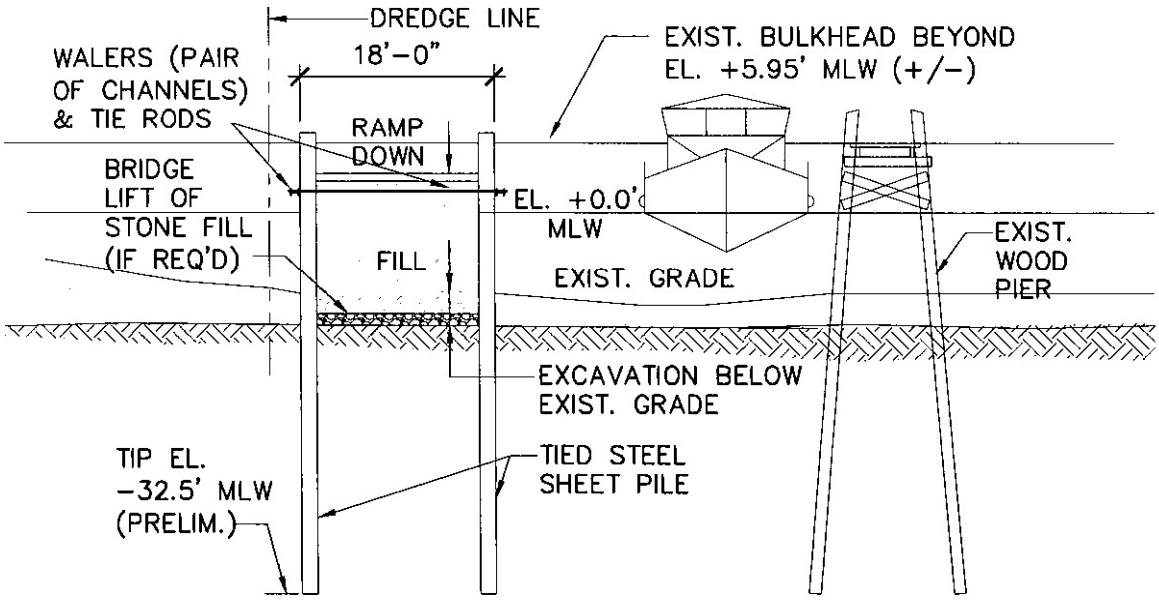
ELEV. 0.0 MLW (MEAN LOW WATER 1983–2001)

NGVD29 (NATIONAL GEODETIC VERTICAL DATUM 1929)

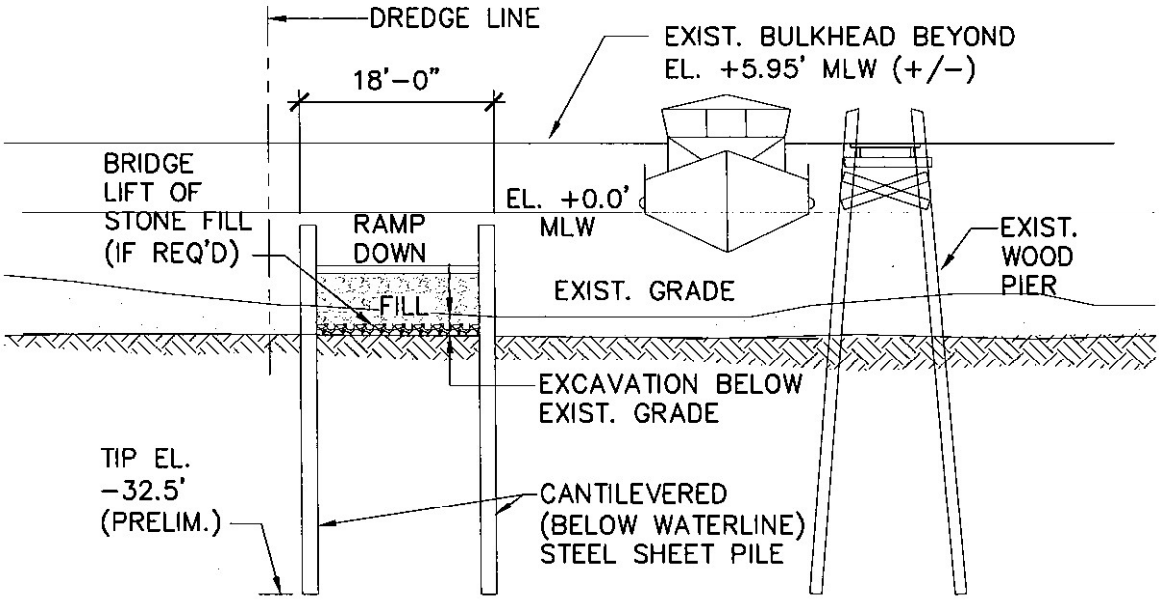
0 20 40

FEET

ANNAPOLIS BOAT RAMP PROJECT NO. 520896	JOI	USCG. CEU CLEVELAND 1240 EAST NINTH STREET CLEVELAND, OH 44199-2060
USCG STA ANNAPOLIS, MARYLAND	FEB 2025 SCALE: 1" = 20'	



SECTION 1



SECTION 2

0 16 32
FEET

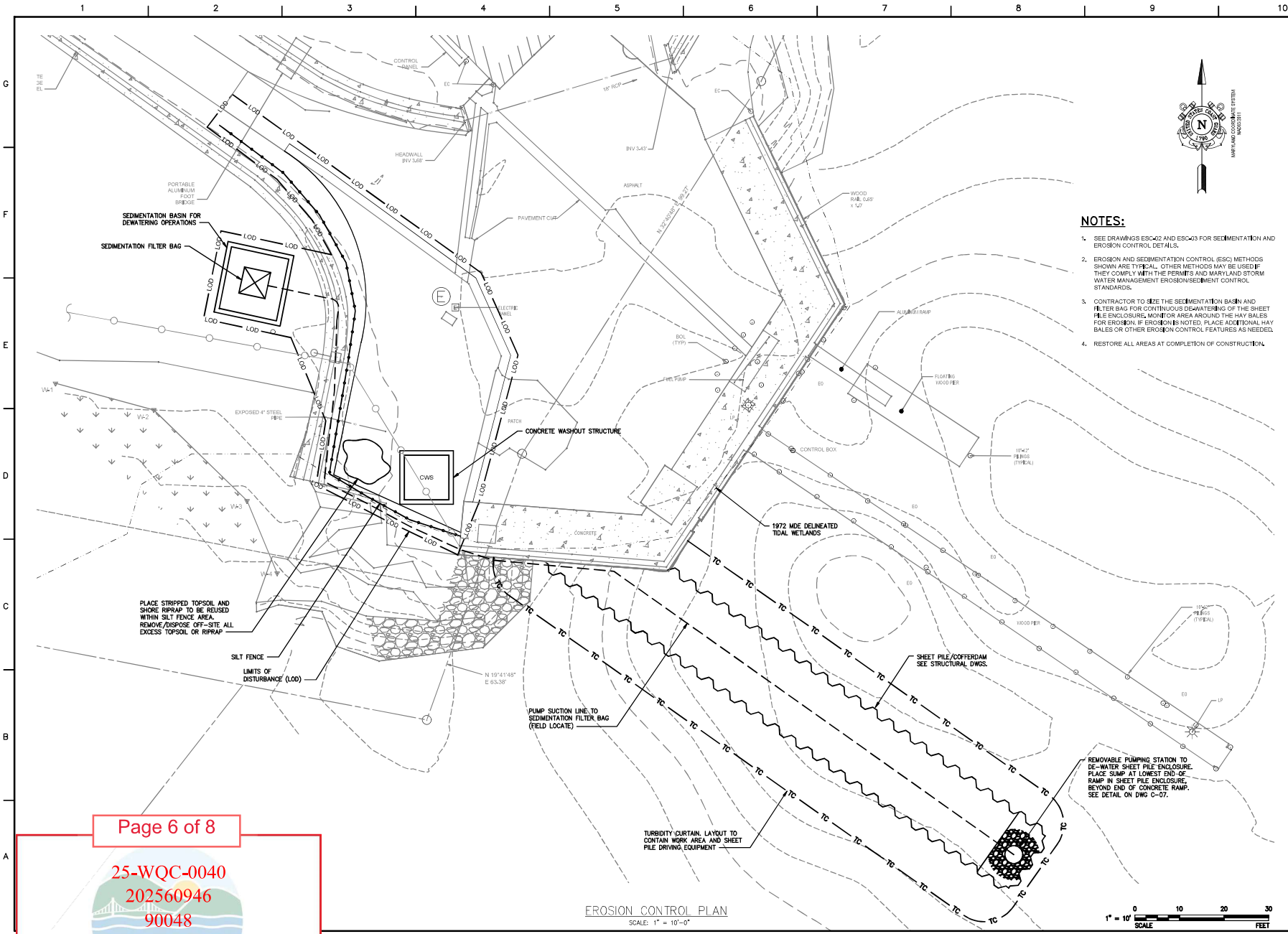
25-WQC-0040
202560946
90048
12/11/25
MT

ANNAPOLIS BOAT RAMP PROJECT NO. 520896	JOI	USCG. CEU CLEVELAND 1240 EAST NINTH STREET CLEVELAND, OH 44199-2060
USCG STA ANNAPOLIS, MARYLAND	FEB 2025 SCALE: 1/16" = 1'	

ROCK CREEK DMP SITE

25-WQC-0040
202560946
90048
12/11/25
MT

ANNAPOLIS BOAT RAMP PROJECT NO. 520896	ROCK CREEK DMP SITE VICINITY MAP	USCG. CEU CLEVELAND 1240 EAST NINTH STREET CLEVELAND, OH 44199–2060
USCG STA ANNAPOLIS, MARYLAND	DEC 2025 SCALE: NTS	



NOTES:

1. SEE DRAWINGS ESC-02 AND ESC-03 FOR SEDIMENTATION AND EROSION CONTROL DETAILS.
2. EROSION AND SEDIMENTATION CONTROL (ESC) METHODS SHOWN ARE TYPICAL. OTHER METHODS MAY BE USED IF THEY COMPLY WITH THE PERMITS AND MARYLAND STORM WATER MANAGEMENT EROSION/SEDIMENT CONTROL STANDARDS.
3. CONTRACTOR TO SIZE THE SEDIMENTATION BASIN AND FILTER BAG FOR CONTINUOUS DEWATERING OF THE SHEET PILE ENCLOSURE. MONITOR AREA AROUND THE HAY BALES FOR EROSION. IF EROSION IS NOTED, PLACE ADDITIONAL HAY BALES OR OTHER EROSION CONTROL FEATURES AS NEEDED.
4. RESTORE ALL AREAS AT COMPLETION OF CONSTRUCTION.

EROSION CONTROL PLAN
SCALE: 1" = 10'-0"

1" = 10' SCALE 0 10 20 30 FEET

U.S. COAST GUARD CIVIL ENGINEERING

MARK	DESCRIPTION	DATE
1	95% DESIGN	APR 2016
2	95% DESIGN	MAY 2016
3	FINAL DESIGN	SEP 2023

PLOTTING SCALE:1:1 SCALE:AS SHOWN

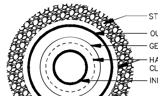
A/E COMPANY:
A/E PROJECT NO.:
CONSULTING A/E:

CIVIL ENGINEERING UNIT CLEVELAND
2140 EAST 9TH STREET
CLEVELAND, OH 44115-2060
PROJECT ENGINEER: SILVAROLI, JUSTIN
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY: JMS

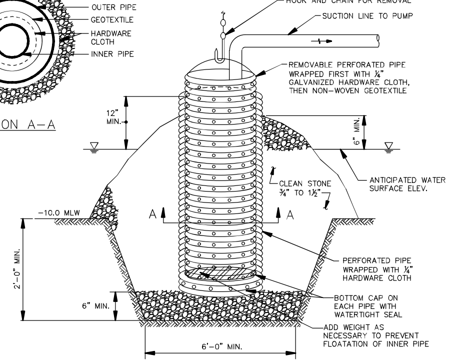
USCG PROJECT NO. 520866
USCG DRAWING NO. 0520866
USCG FILENAME
SHEET 1 OF 3

CONSTRUCT BOAT RAMP
CG STA ANNAPOLIS MD
ANNAPOLIS
CIVIL
EROSION CONTROL PLAN

SHEET ID
WATERFRONT
ESC-01



SECTION A–A



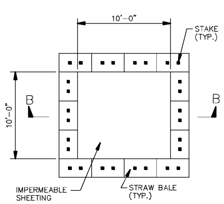
ELEVATION

CONSTRUCTION SPECIFICATIONS

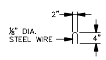
1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 6 FEET X 2 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

REMOVABLE PUMPING STATION

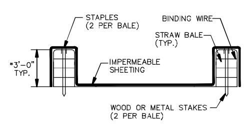
NOT TO SCALE



PLAN



STAPLE DETAIL



SECTION B–B

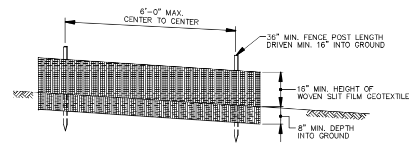
* CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3'-0" DEPTH

CONSTRUCTION SPECIFICATIONS

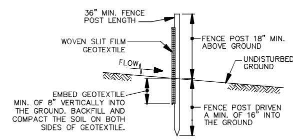
1. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
2. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
3. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
4. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET–VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

ONSITE CONCRETE WASHOUT STRUCTURE

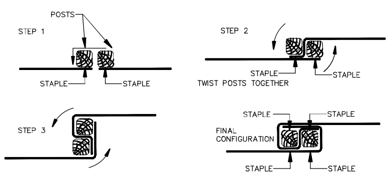
NOT TO SCALE



ELEVATION



CROSS SECTION



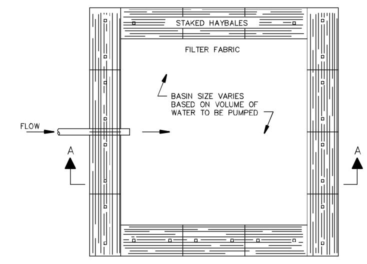
JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

CONSTRUCTION SPECIFICATIONS

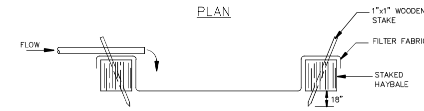
1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN MATERIALS SECTION H–1 OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE CONTRACTING OFFICER OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN MATERIAL SECTION H–1 OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

SILT FENCE DETAIL

NOT TO SCALE



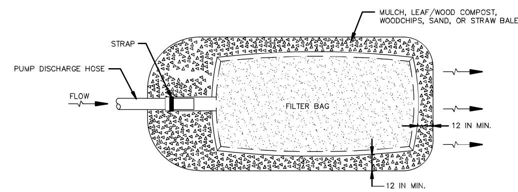
PLAN



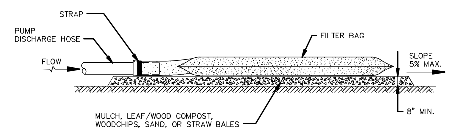
SECTION A–A

SEDIMENTATION BASIN FOR DEWATERING OPERATIONS

NOT TO SCALE



PLAN VIEW



ELEVATION

CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT^2	ASTM D–4491
PERMITIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

SEDIMENTATION FILTER BAG

NOT TO SCALE

U.S.C.G.
U.S. COAST GUARD CIVIL ENGINEERING

MARK	DESCRIPTION	DATE
3	FINAL DESIGN	SEP 2023
2	95% DESIGN	APR 2016
1	35% DESIGN	MAY 2015

PLOTTING SCALE:1:1 | SCALE: AS SHOWN

CIVIL ENGINEERING UNIT CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199–2060

A/E COMPANY:

PROJECT ENGINEER: SILVAROLI, JUSTIN

A/E PROJECT NO.:

DESIGNED BY: JNS | DRAWN BY: JNS | CONSULTING A/E:

EDITED BY: JNS | CHECKED BY: BV

USCG PROJECT NO. 520896
USCG DRAWING NO. C520896–D
USCG FILENAME
SHEET 2 OF 3

CONSTRUCT BOAT RAMP
CG STA ANNAPOLIS
ANNAPOLIS MD
CIVIL
EROSION CONTROL DETAILS

SHEET ID
WATERFRONT
ESC–02

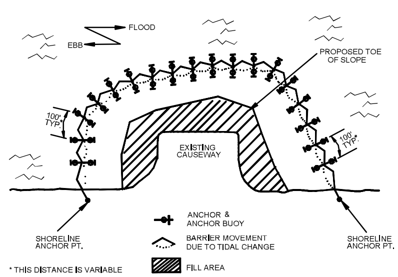
EROSION AND SEDIMENT CONTROL NOTES

THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION REQUIRES THAT THESE NOTES, IN THEIR ENTIRETY, BE INCLUDED ON THE EROSION AND SEDIMENT CONTROL PLAN. IT IS RECOGNIZED THAT EVERY NOTE MAY NOT APPLY TO ALL PROJECTS. THE REQUIREMENT OF ANY INDIVIDUAL NOTE NOT APPLICABLE TO THE SUBJECT PROJECT IS NOT BINDING UPON THE GOVERNMENT OR THE GOVERNMENT'S CONTRACTOR.

1. THE CONTRACTOR SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING WITH THE CONTRACTING OFFICER'S REPRESENTATIVE (COR).
2. THE CONTRACTOR MUST NOTIFY WMA IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:
   A. NOT REQUIRED.
3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE COR INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE COR/INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM WMA INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE (COR). THE CONTRACTOR MUST OBTAIN PRIOR COR AND WMA APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND / OR SEQUENCE OF CONSTRUCTION. ANY CHANGES TO THE PLAN REQUIRES CONTRACTING OFFICER APPROVAL.
4. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED WITHIN TWO(2) HOURS.
5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM WMA INSPECTOR AND THE COR.
6. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN SEVEN (7) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT FOR STABILIZATION MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)
7. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)
8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN FOURTEEN (14) CALENDAR DAYS AFTER ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.
9. THE SITE'S APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF WMA AND COR. FINAL DOCUMENTS TO BE SUBMITTED TO THE CONTRACTING OFFICER AS PART OF AS-BUILT PLANS.
10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF A CUT OR FILL SLOPE UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIP-RAP, OR BY OTHER APPROVED STABILIZATION MEASURES.
12. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF WMA INSPECTOR AND COR, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
14. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.
15. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION THAT EXIST OR IS UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.
16. THE WMA INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.
17. ALL TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS MUST HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.
18. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.
19. SEDIMENT SHALL BE REMOVED AND THE TRAP OR BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE QUARTER OF THE TOTAL DEPTH OF THE TRAP OR BASIN. TOTAL DEPTH SHALL BE MEASURED FROM THE TRAP OR BASIN BOTTOM TO THE CREST OF THE OUTLET.
20. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.
21. ALL WATER REMOVED FROM EXCAVATED AREAS (E.G. UTILITY TRENCHES) SHALL BE PASSED THROUGH AN APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE FROM THE SITE (I.E. VIA FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE).
22. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY COR OR WMA INSPECTOR:
   A. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
   B. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
   C. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS;
   D. TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.
23. WHERE DEEMED APPROPRIATE BY THE COR OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE CONTRACTOR SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AND AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.
24. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY WMA AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES; OTHERWISE APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.
25. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.
26. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.
27. SITE INFORMATION:*

A. TOTAL AREA OF FACILITY (BASE, CAMPUS, PARK, ETC.)	10.675 AC.
B. TOTAL AREA OF PROJECT SITE (BLDG & PARKING)	20,773 SF
C. AREA DISTURBED	2,000 SF
D. AREA TO BE ROOFED OR PAVED	2,000 SF
E. TOTAL CUT	85 CY
F. TOTAL FILL	695 CY
G. OFF-SITE WASTE / BORROW AREA LOCATION	85 CY / RAMP

*INFORMATION PROVIDED IS FOR MDE PERMITTING ONLY. CONTRACTOR SHALL VERIFY THE QUANTITY OF SPOIL MATERIALS.



TURBIDITY CURTAIN
TIDAL WATERS AND/OR HEAVY WIND & WAVE ACTION
NOT TO SCALE

TURBIDITY CURTAIN NOTES

MATERIALS

1. BARRIERS SHALL BE A BRIGHT COLOR (YELLOW OR "INTERNATIONAL" ORANGE ARE RECOMMENDED) THAT WILL ATTRACT THE ATTENTION OF NEARBY BOATERS.
2. THE CURTAIN FABRIC SHALL BE 45MILS THICK, WEIGH A MINIMUM OF 22OZ. PER SQ. YD, HAVE A GRAB TENSILE STRENGTH OF 300 LBS AND SHALL INCLUDE A UV INHIBITOR.
3. SEAMS IN THE FABRIC SHALL BE EITHER VULCANIZED WELDED OR SEWN, AND SHALL DEVELOP THE FULL STRENGTH OF THE FABRIC.
4. FLOATATION DEVICES SHALL BE FLEXIBLE, BUOYANT UNITS CONTAINED IN AN INDIVIDUAL FLOATATION SLEEVE OR COLLAR ATTACHED TO THE CURTAIN. BUOYANCY PROVIDED BY THE FLOATATION UNITS SHALL BE SUFFICIENT TO SUPPORT THE WEIGHT OF THE CURTAIN AND MAINTAIN A FREEBOARD OF AT LEAST 3 INCHES ABOVE THE WATER SURFACE LEVEL (SEE PLATE 3.27-2).
5. LOAD LINES SHALL BE FABRICATED INTO THE BOTTOM OF ALL FLOATING TURBIDITY CURTAINS. TYPE II AND TYPE III SHALL HAVE LOAD LINES ALSO FABRICATED INTO THE TOP OF THE FABRIC. THE TOP LOAD LINE SHALL CONSIST OF WOVEN WEBBING OR VINYL-SHEATHED STEEL CABLE AND SHALL HAVE A BREAK STRENGTH IN EXCESS OF 10,000 POUNDS. THE SUPPLEMENTAL (BOTTOM) LOAD-LINE SHALL CONSIST OF A CHAIN INCORPORATED INTO THE BOTTOM HEM OF THE CURTAIN OF SUFFICIENT WEIGHT TO SERVE AS BALLAST TO HOLD THE CURTAIN IN A VERTICAL POSITION. ADDITIONAL ANCHORAGE SHALL BE PROVIDED AS NECESSARY. THE LOAD LINES SHALL HAVE SUITABLE CONNECTING DEVICES WHICH DEVELOP THE FULL BREAKING STRENGTH FOR CONNECTING TO LOAD LINES IN ADJACENT SECTIONS.
6. EXTERNAL ANCHORS MAY CONSIST OF WOODEN OR METAL STAKES (2- X 4-INCH OR 2 -INCH MINIMUM DIAMETER WOOD OR 1.33 POUNDS/LINEAR FOOT STEEL) WHEN TYPE I INSTALLATION IS USED; WHEN TYPE II OR TYPE III INSTALLATIONS ARE USED, BOTTOM ANCHORS SHALL BE USED.
7. BOTTOM ANCHORS SHALL BE SUFFICIENT TO HOLD THE CURTAIN IN THE SAME POSITION RELATIVE TO THE BOTTOM OF THE WATERCOURSE WITHOUT INTERFERING WITH THE ACTION OF THE CURTAIN. THE ANCHOR MAY DIG INTO THE BOTTOM (GRAPPLING HOOK, PLOW OR FLUKE-TYPE) OR MAY BE WEIGHTED (MUSHROOM TYPE) AND SHALL BE ATTACHED TO A FLOATING ANCHOR BUOY VIA AN ANCHOR LINE. THE ANCHOR LINE WOULD THEN RUN FROM THE BUOY TO THE TOP LOAD LINE OF THE CURTAIN. WHEN USED WITH TYPE III INSTALLATIONS, THESE LINES SHALL CONTAIN ENOUGH SLACK TO. ALLOW THE BUOY AND CURTAIN TO FLOAT FREELY WITH TIDAL CHANGES WITHOUT PULLING THE BUOY OR CURTAIN DOWN AND SHALL BE CHECKED REGULARLY TO MAKE SURE THEY DO NOT BECOME ENTANGLED WITH DEBRIS. AS PREVIOUSLY NOTED, ANCHOR SPACING WILL VARY WITH CURRENT VELOCITY AND POTENTIAL WIND AND WAVE ACTION; MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED. SEE ORIENTATION OF EXTERNAL ANCHORS AND ANCHOR BUOYS FOR TIDAL INSTALLATION IN DETAIL THIS SHEET.

INSTALLATION

1. IN THE CALM WATER OF LAKES OR PONDS (TYPE I INSTALLATION) IT IS USUALLY SUFFICIENT TO MERELY SET THE CURTAIN END STAKES OR ANCHOR POINTS (USING ANCHOR BUOYS IF BOTTOM ANCHORS ARE EMPLOYED), THEN TOW THE CURTAIN IN THE FURLED CONDITION OUT AND ATTACH IT TO THESE STAKES OR ANCHOR POINTS. FOLLOWING THIS, ANY ADDITIONAL STAKES OR BUOYED ANCHORS REQUIRED TO MAINTAIN THE DESIRED LOCATION OF THE CURTAIN MAY BE SET AND THESE ANCHOR POINTS MADE FAST TO THE CURTAIN. ONLY THEN, THE FURLING LINES SHALL BE CUT TO LET THE CURTAIN SKIRT DROP.
2. IN RIVERS OR IN OTHER MOVING WATER (TYPE II AND TYPE III INSTALLATIONS) IT IS IMPORTANT TO SET ALL THE CURTAIN ANCHOR POINTS. CARE SHALL BE TAKEN TO ENSURE THAT ANCHOR POINTS ARE OF SUFFICIENT HOLDING POWER TO RETAIN THE CURTAIN UNDER THE EXISTING CURRENT CONDITIONS, PRIOR TO PUTTING THE FURLED CURTAIN INTO THE WATER. AGAIN, ANCHOR BUOYS SHALL BE EMPLOYED ON ALL ANCHORS TO PREVENT THE CURRENT FROM SUBMERGING THE FLOTATION AT THE ANCHOR POINTS. IF THE MOVING WATER INTO WHICH THE CURTAIN IS BEING INSTALLED IS TIDAL AND WILL SUBJECT THE CURTAIN TO CURRENTS IN BOTH DIRECTIONS AS THE TIDE CHANGES, IT IS IMPORTANT TO PROVIDE ANCHORS ON BOTH SIDES OF THE CURTAIN FOR TWO REASONS:

   2.1. CURTAIN MOVEMENT WILL BE MINIMIZED DURING TIDAL CURRENT REVERSALS.

   2.2. THE CURTAIN WILL NOT OVERRUN THE ANCHORS AND PULL THEM OUT WHEN THE TIDE REVERSES.

   WHEN THE ANCHORS ARE SECURE, THE FURLED CURTAIN SHALL BE SECURED TO THE UPSTREAM ANCHOR POINT AND THEN SEQUENTIALLY ATTACHED TO EACH NEXT DOWNSTREAM ANCHOR POINT UNTIL THE ENTIRE CURTAIN IS IN POSITION. AT THIS POINT, AND BEFORE UNFURLING, THE "LAY" OF THE CURTAIN SHALL BE ASSESSED AND ANY NECESSARY ADJUSTMENTS MADE TO THE ANCHORS. FINALLY, WHEN THE LOCATION IS ASCERTAINED TO BE AS DESIRED, THE FURLING LINES SHALL BE CUT TO ALLOW THE SKIRT TO DROP.
3. ALWAYS ATTACH ANCHOR LINES TO THE FLOTATION DEVICE. NOT TO THE BOTTOM OF THE CURTAIN.THE ANCHORING LINE ATTACHED TO THE FLOATATION DEVICE ON THE DOWNSTREAM SIDE WILL PROVIDE SUPPORT FOR THE CURTAIN. ATTACHING THE ANCHORS TO THE BOTTOM OF THE CURTAIN COULD CAUSE PREMATURE FAILURE OF THE CURTAIN DUE TO THE STRESSES IMPARTED ON THE MIDDLE SECTION OF THE CURTAIN.
4. THERE IS AN EXCEPTION TO THE RULE THAT TURBIDITY CURTAINS SHALL NOT BE INSTALLED ACROSS CHANNEL FLOWS; IT OCCURS WHEN THERE IS A DANGER OF CREATING A SILT BUILD-UP IN THE MIDDLE OF A WATERCOURSE, THEREBY BLOCKING ACCESS OR CREATING A SAND BAR. CURTAINS HAVE BEEN USED EFFECTIVELY IN LARGE AREAS OF MOVING WATER BY FORMING A VERY LONG-SIDED, SHARP "V" TO DEFLECT CLEAN WATER AROUND A WORK SITE, CONFINE A LARGE PART OF THE SILT-LADEN WATER TO THE WORK AREA INSIDE THE "V" AND DIRECT MUCH OF THE SILT TOWARD THE SHORELINE. CARE SHALL BE TAKEN, HOWEVER, NOT TO INSTALL THE CURTAIN PERPENDICULAR TO THE WATER CURRENT.

REMOVAL

1. CARE SHALL BE TAKEN TO PROTECT THE SKIRT FROM DAMAGE AS THE TURBIDITY CURTAIN IS DRAGGED FROM THE WATER.
2. THE SITE SELECTED TO BRING THE CURTAIN ASHORE SHALL BE FREE OF SHARP ROCKS, BROKEN CEMENT, DEBRIS, ETC. SO AS TO MINIMIZE DAMAGE WHEN HAULING THE CURTAIN OVER THE AREA.
3. IF THE CURTAIN HAS A DEEP SKIRT, IT CAN BE FURTHER PROTECTED BY RUNNING A SMALL BOAT ALONG ITS LENGTH WITH A CREW INSTALLING FURLING LINES BEFORE ATTEMPTING TO REMOVE THE CURTAIN FROM THE WATER.

MAINTENANCE

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE FILTER CURTAIN FOR THE DURATION OF THE PROJECT IN ORDER TO ENSURE THE CONTINUOUS PROTECTION OF THE WATERCOURSE.
2. SHALL REPAIRS TO THE GEOTEXTILE FABRIC BECOME NECESSARY, THERE ARE NORMALLY REPAIR KITS AVAILABLE FROM THE MANUFACTURERS; MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED TO ENSURE THE ADEQUACY OF THE REPAIR.
3. WHEN THE CURTAIN IS NO LONGER REQUIRED AS DETERMINED BY THE COR OR WMA INSPECTOR, THE CURTAIN AND RELATED COMPONENTS SHALL BE REMOVED IN SUCH A MANNER AS TO MINIMIZE TURBIDITY. REMAINING SEDIMENT SHALL BE SUFFICIENTLY SETTLED BEFORE REMOVING THE CURTAIN. SEDIMENT MAY BE REMOVED AND THE ORIGINAL DEPTH (OR PLAN ELEVATION) RESTORED. ANY SPOILS SHALL BE TAKEN TO UPLAND AREA AND BE STABILIZED.

U.S.C.G.
CE
U.S. COAST GUARD
CIVIL ENGINEERING

MARK	DESCRIPTION	DATE
3	FINAL DESIGN	SEP 2023
2	95% DESIGN	APR 2016
1	35% DESIGN	MAY 2015

PLOTTING SCALE:1:1 | SCALE: AS SHOWN

A/E COMPANY:
A/E PROJECT NO.:
CONSULTING A/E:

CIVIL ENGINEERING UNIT CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

PROJECT ENGINEER: SILVAROLI, JUSTIN
DESIGNED BY: JNS
DRAWN BY: JNS
EDITED BY: JNS
CHECKED BY: BV

USCG PROJECT NO. 520896
USCG DRAWING NO. C520896-D
USCG FILENAME
SHEET 3 OF 3

CONSTRUCT BOAT RAMP
CG STA ANNAPOLIS
ANNAPOLIS MD
CIVIL
EROSION CONTROL NOTES & DETAILS

SHEET ID
WATERFRONT
ESC-03