Public Notice

U.S. Army Corps of Engineers
Baltimore District

In Reply to Application Number
CENAB-OPR-M (NSF-INDIAN HEAD/ BUILDING 459)
2016-60552

PN 16-31 Comment Period: May 18, 2016 to June 1, 2016

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC ABOUT THE WORK DESCRIBED BELOW. AT THIS TIME, NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED.

The Baltimore District Corps of Engineers have received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, as described below:

APPLICANT: NSF-Indian Head
c/o Mr. Jeffrey Bossart
3972 Ward Road, Suite 101
Indian Head, Maryland 20640

LOCATION: In an unnamed tributary to Mattawoman Creek between buildings 458 and 459 at NSF-Indian Head, Indian Head, Charles County, Maryland

WORK: To stabilize a stream system by relocating the stream channel and constructing a 10-foot wide by 50-foot long riffle grade control structure; utilize two clay plugs to create a vernal pool within the old bend; to remove fall tree log jams impacting approximately 554 square feet of nontidal forested wetlands for access and approximately 2,310 square feet along 3,330 linear feet of stream within an unnamed tributary to Mattawoman Creek. All work is to be completed in accordance with the proposed plan(s). If you have any questions concerning this matter, please contact Mrs. Erica Schmidt at (410) 962-6029 or Erica.Schmidt@usace.army.mil.

Site layout for this project was based upon existing stream conditions. Efforts were made to avoid, to the extent possible, the long and short-term adverse impacts associated with the proposed project. The applicant proposes to access the site from the land from building 458.

Compensatory mitigation is not being proposed by the applicant for permanent impacts to the stream. The proposed project will reduce sedimentation downstream and the area of the existing bend will be converted into habitat for aquatic wildlife with specific attention to creating herp habitat.

The purpose of the project is primarily to provide stream bank stabilization.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important

resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act from the Maryland Department of the Environment. Any written comments concerning the work described above which relate to water quality certification must be received by the Wetlands and Waterways Program, Maryland Department of the Environment, 1800 Washington Blvd. Suite 430, Baltimore, Maryland 21230 within the comment period as specified above to receive consideration. Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the District Engineer, US Army Corps of Engineers, Baltimore District, 10 S. Howard Street, Baltimore, Maryland 21201, within the comment period as specified above to receive consideration. The 401 certifying agency has a statutory limit of one year to make its decision.

The applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the Maryland Coastal Zone Program. This certification statement is available for inspection in the District Office; however, public comments relating to consistency must be received by the Coastal Zone Division, Maryland Department of the Environment, 1800 Washington Blvd. Suite 430, Baltimore, Maryland 21230, within the comment period as specified above. It should be noted that CZ Division has a statutory limit of 6 months in which to make its consistency determination.

The applicant must obtain any State or local government permits, which may be required.

A preliminary review of this application indicates that the proposed work will not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

Review of the latest published version of the National Register of Historic Places indicates that no registered properties listed as eligible for inclusion therein are located at the site of the proposed work. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the requested permit.

The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 of the Clean Water Act. Any person who has an interest, which may be adversely affected by the issuance of this permit, may request a public hearing. The District Engineer must receive the request, which must be in writing, US Army Corps of Engineers, Baltimore District, 10 S. Howard Street, Baltimore, Maryland 21201, within the comment period as specified as above to receive consideration. Also, it must clearly state forth the interest that may be adversely affected by this activity in the manner in which the interest may be adversely affected.

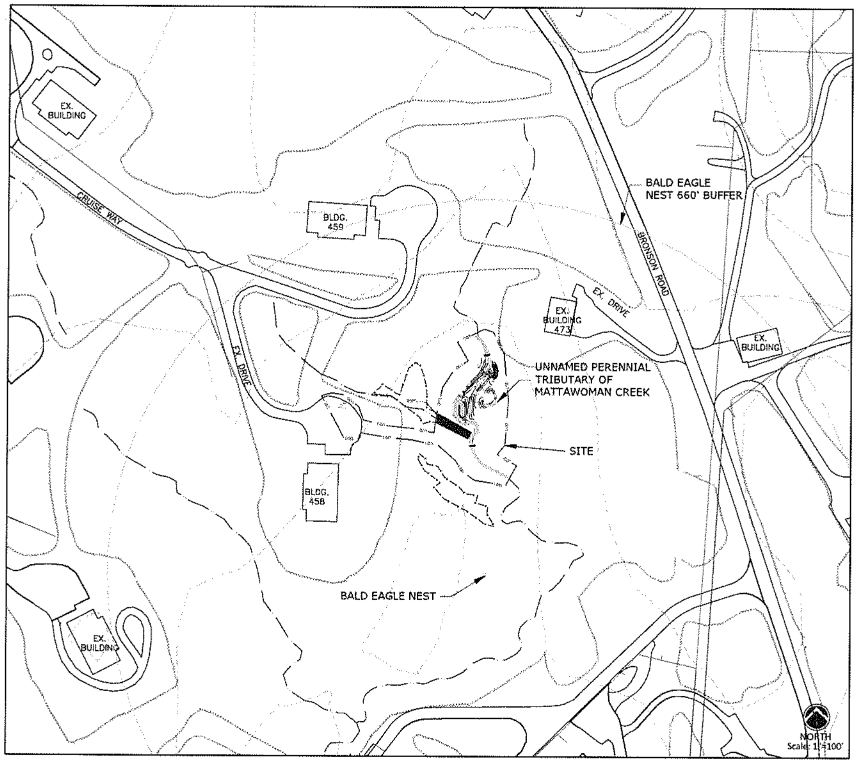
It is requested that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and not being known to this office, who did not receive a copy of this notice.

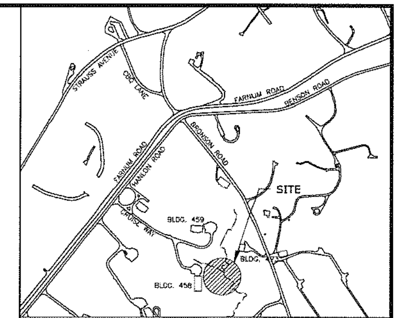
FOR THE DISTRICT ENGINEER:

Kathy B. Anderson
Chief, Maryland Section Southern

GENERAL CONSTRUCTION NOTES

1. DUE TO THE DYNAMIC NATURE OF STREAMS, SITE CONDITIONS MAY CHANGE. THEREFORE, THE TOPOGRAPHIC DATA PROVIDED MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EXISTING CONDITIONS AND ADJUST HIS/HER BID AS NECESSARY TO PROVIDE FOR FULL COMPLETION OF THE PROJECT. THERE SHALL BE NO ADDITIONAL COMPENSATION FOR DEVIATIONS BETWEEN THE PLANS AND EXISTING CONDITIONS.
2. ON-SITE STORAGE IS AT CONTRACTOR'S RISK.
3. CONTRACTOR SHALL FURNISH OWN SANITARY FACILITIES AND WATER.
4. WORK SHALL NOT BE CONDUCTED DURING A RAIN EVENT, WITHIN 24 HOURS AFTER A SIGNIFICANT RAIN EVENT HAS ENDED (EQUAL TO OR GREATER THAN 0.5" OVER A 24-HOUR PERIOD), OR WHEN THE SOIL IS FROZEN OR EXCESSIVELY WET.
5. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THESE PLANS. THE CONTRACTOR MUST MEASURE THE CHANNELS AND ALL STRUCTURES ON A CONTINUOUS BASIS DURING CONSTRUCTION TO ENSURE THAT THE PROPOSED GRADES, STRUCTURES, ELEVATIONS, AND SLOPES ARE CONSISTENT WITH THE PLANS. UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, ALL ELEVATIONS, GRADES, DIMENSIONS AND STRUCTURES SHALL BE CONSTRUCTED WITHIN 0.25 FT. OF WHAT IS SHOWN ON THE PLANS.
6. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR OBTAINING FEDERAL, STATE AND LOCAL ENVIRONMENTAL PERMITS, BUT SHALL BE RESPONSIBLE FOR ADHERING TO PERMIT CONDITIONS.
7. THE CONTRACTOR SHALL MAKE ALL REASONABLE ATTEMPTS TO MINIMIZE DISTURBANCE TO VEGETATION AND SOIL WITHIN THE DESIGNATED WORK AREA. VEGETATION THAT IS NOT SLATED FOR REMOVAL THAT IS SCARRED, NICKED OR OTHERWISE DAMAGED SHALL BE PRUNED TO THE SATISFACTION OF THE RESTORATION SPECIALIST.
8. CONTRACTOR SHALL PLACE WOOD CHIPS OR TIMBER MATS WITHIN THE LOD TO MAINTAIN THE INTEGRITY OF THE HAUL ROADS AND STAGING/STOCKPILE AREAS DURING CONSTRUCTION. TIMBER MATS OR MULCH SHALL ALSO BE USED IN PROXIMITY TO TREES WHICH ARE TO REMAIN. WOOD CHIPS SHALL BE REPLENISHED AS NEEDED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ALL PUBLIC AND PRIVATE FEATURES WHICH ARE DAMAGED AS A RESULT OF THIS RESTORATION PROJECT. FEATURES INCLUDE, BUT ARE NOT LIMITED TO: ROADWAYS, CULVERTS, PARKING LOTS, UTILITY POLES, ASPHALT PATHWAYS, SIDEWALKS, AND ASSOCIATED INFRASTRUCTURE FEATURES. DETERMINATION OF WHETHER A REPAIR OR REPLACEMENT IS ACCEPTABLE SHALL BE MADE BY THE RESTORATION SPECIALIST, OR THE OWNER OF THE PARTICULAR FEATURE.
10. PROVIDE TEMPORARY STABILIZATION OF ACTIVE WORK AREAS AT THE END OF EACH WORK DAY.
11. AS WORK IS COMPLETED, PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS WITH THE SPECIFIED SEED MIX, AS NOTED ON THE PLANTING PLAN.
12. SEDIMENT CONTROLS MAY ONLY BE REMOVED WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.
13. FOLLOWING THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL DEBRIS, TRASH, AND OTHER MATERIALS BROUGHT TO THE SITE.
14. PLANTINGS WILL CONSIST OF THE PLANTS LISTED ON THE PLANTING PLAN; THE TREES AND SHRUBS WILL BE INSTALLED BETWEEN MARCH 15 TO MAY 15 OR SEPTEMBER 1 TO OCTOBER 31.
15. PLANTING SHALL NOT OCCUR IN SUB-FREEZING TEMPERATURES, WHEN THE GROUND IS FROZEN, WHILE THE SITE IS FLOODED, WHEN THE SOIL IS TOO DRY OR WET, OR OTHERWISE IN A CONDITION NOT GENERALLY ACCEPTED AS SATISFACTORY FOR PLANTING.
16. THIS PROJECT DOES NOT HAVE ANY ADVERSE EFFECT ON GROUNDWATER.
17. HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM NAD 83/2011. ALL ELEVATIONS ARE IN FEET AND ARE BASED ON NAVD 88 DATUM. INDIAN HEAD BASE CONTROL POINTS 1036, 1037, 140, 1041.
18. EXISTING FEATURES SHOWN HEREON WERE TAKEN FROM ACTUAL FIELD MEASUREMENTS BY SOLTESZ APRIL 22, 2015.
19. THE EXISTING UTILITIES SHOWN ON THESE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND INVESTIGATION AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
20. THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS CONCERNED PRIOR TO GRADING OPERATIONS.
21. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF CONTRACTORS' NEGLIGENCE OR METHOD OF OPERATION SHALL BE MADE AT NO ADDITIONAL COST TO THE CLIENT OR THE OWNER.
22. ANY DISTURBED AREAS FLATTER THAN 2:1 AND NOT PAVED SHALL RECEIVE 4 INCHES OF TOPSOIL, SEED, AND MULCH, UNLESS OTHERWISE NOTED. DISTURBED AREAS 2:1 OR STEEPER SHALL RECEIVE 2 INCHES OF TOPSOIL, SEED, AND MULCH.
23. MATERIAL REMOVED DURING CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.





VICINITY MAP

NORTH
Scale: 1"=500'

NOTES:

1. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.
2. THE STUDY AREA IS WITHIN THE PRIMARY MANAGEMENT ZONE FOR BALD EAGLE NESTS. THEREFORE, CONSTRUCTION SHALL NOT OCCUR DURING THE BALD EAGLE BREEDING/NESTING SEASON (DECEMBER 15-JULY 15).
3. ON SITE PERENNIAL STREAM IS USE CLASS I WITH A CLOSURE PERIOD OF MARCH 1- JUNE 15.
4. SITE IS OUTSIDE OF 100 YEAR FLOODPLAIN ACCORDING TO FEMA FLOODMAP 24017C0133D. ZONE X AREA OF MINIMAL FLOOD HAZARD.

Standard Stabilization Note

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

a.) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and

b.) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

RESPONSIBLE PERSONNEL CERTIFICATION FOR

Project Title:

NAVFAC Project #:

Contractor:

MDE Permit #:

RESPONSIBLE PERSONNEL CERTIFICATION

"I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THE SEDIMENT CONTROL PLANS AND THAT THE RESPONSIBLE PERSONNEL WILL OBTAIN CERTIFICATION BY REGISTERING FOR AND/OR COMPLETING THE MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR SEDIMENT AND EROSION CONTROL BEFORE ANY CLEARING OR EARTHWORK FOR THE PROJECT MAY BEGIN."

DATE ______ RESPONSIBLE PERSONNEL SIGNATURE

GREEN CARD NO. ______ PRINTED NAME AND TITLE

THE CONTRACTOR SHALL HAVE AN ASSIGNED "RESPONSIBLE PERSONNEL" SIGN THE BLOCK ABOVE PRIOR TO BEGINNING ANY EARTHWORK.

NOTE: THIS SHEET SHALL BE INCLUDED WITH THE FINAL "FOR CONSTRUCTION" PLAN SET AND SHALL BE RETAINED AS A PART OF THE RECORD DRAWINGS FOR THE PROJECT.

BUILDING 459
PRE-FINAL EROSION AND SEDIMENT CONTROL STREAM STABILIZATION PLAN

DECEMBER 2015

INDEX OF SHEETS

MISS UTILITY

OWNER'S / DEVELOPER'S CERTIFICATION

I / We hereby certify that all clearing, grading, construction, and/or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a certificate of attendance at a Maryland Department of the Environment approved training program for the control of erosion and sediment before beginning the project. I/We hereby authorize the right of entry for periodic on-site evaluation by appropriate inspection and enforcement authority or the State of Maryland, Department of the Environment.

Date ______ Owner / Developer Signature

Card No. ______ Printed Name and Title

DESIGN CERTIFICATION

I hereby certify that this plan has been designed in accordance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control, the 2000 Maryland Stormwater Design Manual, Volumes I & II including supplements, the Environment Article Sections 4-101 through 116 and Sections 4-201 and 215, and the Code of Maryland Regulations (COMAR) 26.17.01 and COMAR 26.17.02 for erosion and sediment control and stormwater management, respectfully.

Date ______ Designer's Signature

Md. Registration No. 3705 ______ Stephanie Pruett
P.E., R.L.S., (RLA) or R.A. (circle one) ______ Printed Name

AI#: 150610

Prepared for/Applicant:

NAVFAC

Contract #: N40080-14-D-0002

NO.	BY	DATE	REVISIONS DESCRIPTION

Survey:

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WALDORF OFFICE
401 Post Office Road, Suite 103
Waldorf, MD 20602

Prepared by:

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Marstel-Day LLC
513 Prince Edward Street Suite 101
Fredericksburg, VA 22401

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2713 Magruder Blvd, St. D
Hampton, VA 23666

Environmental Systems Analysis, Inc.
Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401

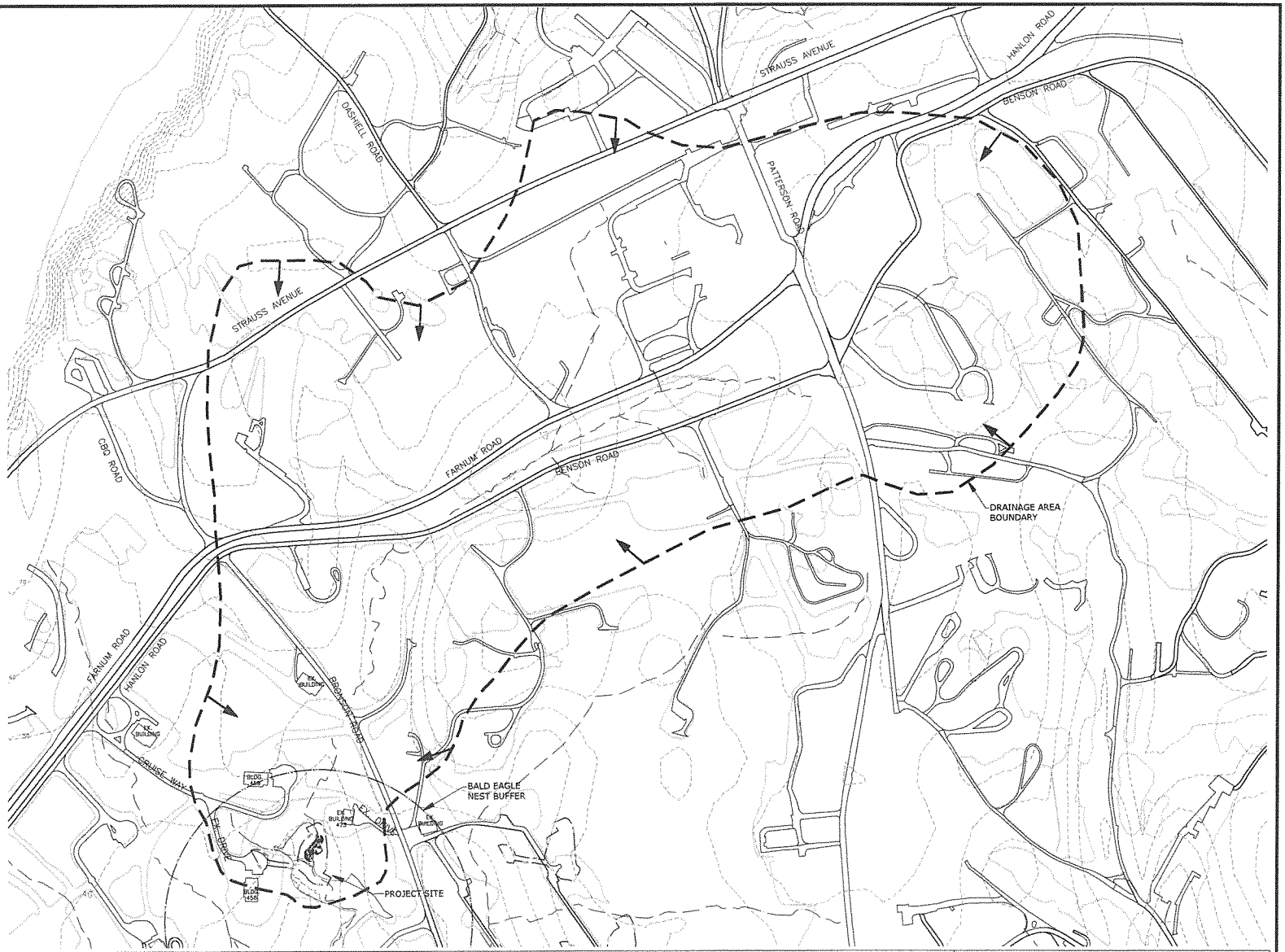
COVER SHEET
BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 459\CAD\Plans\Individual Drawings
SHEET: 1 of 11

LEGEND

- EXISTING CONTOURS
- EXISTING STREAM CENTERLINE
- EXISTING ROADWAY
- DRAINAGE AREA BOUNDARY
- DRAINAGE DIRECTIONAL FLOW
- EXISTING TREELINE
- EXISTING WETLANDS
- BALD EAGLE NEST BUFFER

NOTES

1. TOTAL DRAINAGE AREA: 163 AC
2. THERE IS NO FLOODPLAIN WITHIN THE STUDY AREA ACCORDING TO FEMA FLOOD MAP 24017C0133D



Prepared for/Applicant:

NAVFAC Naval Facilities Engineering Command

Contract #: N40080-14-D-0002

REVISIONS			
NO.	BY	DATE	DESCRIPTION

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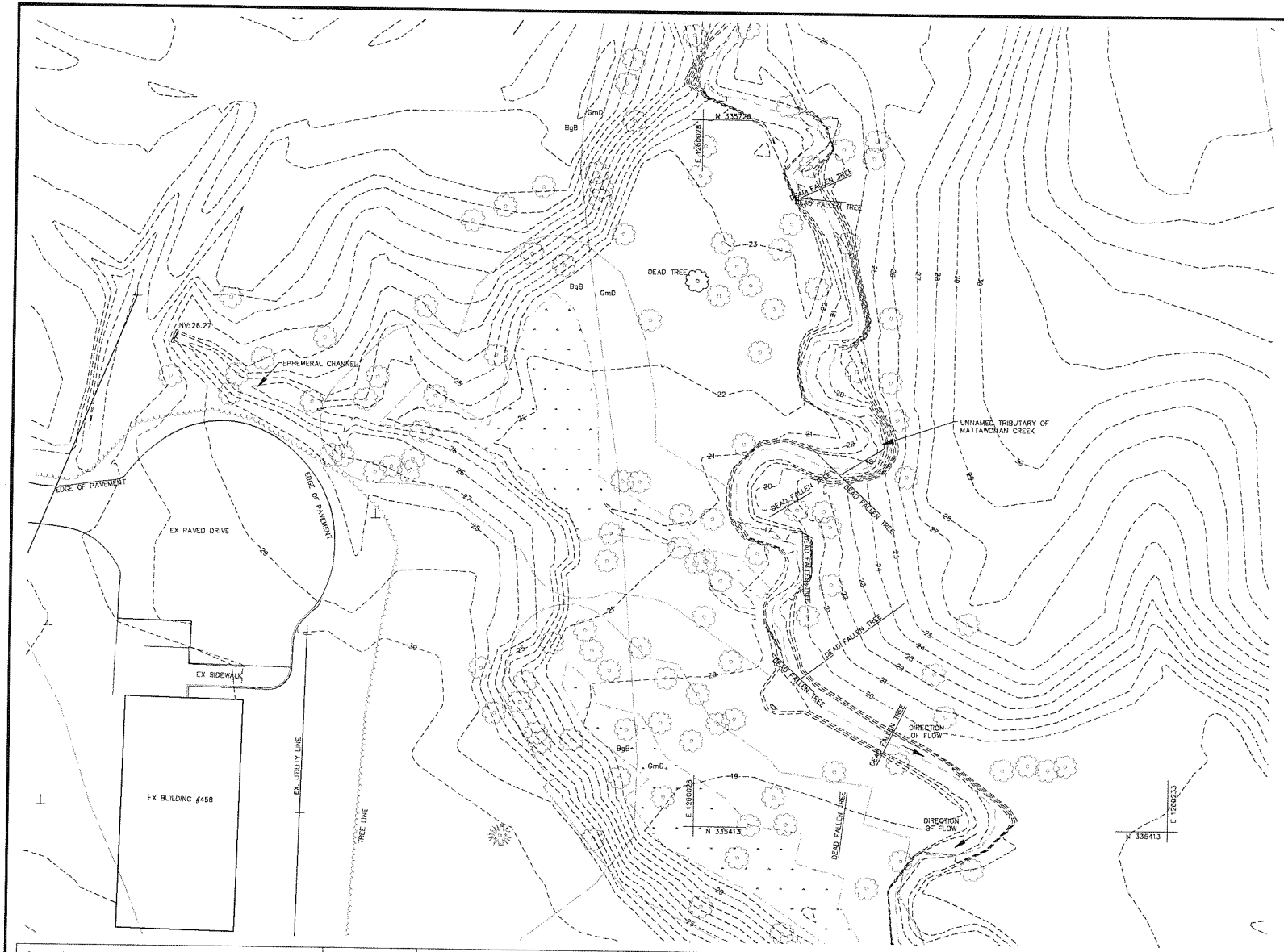
DRAINAGE AREA MAP

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

0' 100' 200' 400'
SCALE: 1"=200'

NORTH

SCALE: 1"=200'
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 459\CAD\Plans\Individual Drawings



LEGEND

- EXISTING OVERHEAD UTILITIES
- EXISTING CONTOURS
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM CENTERLINE
- EXISTING TREELINE
- EXISTING TREE
- GmD — EXISTING SOIL BOUNDARY

SOILS LEGEND

BgB BELTSVILLE-GOSSTOWN-WOODSTOWN COMPLEX, 5 TO 15 PERCENT SLOPES
GmD GROSSTOWN-MARR-HOGHOLE COMPLEX, 5 TO 15 PERCENT SLOPES.

THE PREDOMINANT SOIL ON SITE IS GmD GROSSTOWN-MARR-HOGHOLE COMPLEX, 5 TO 15 PERCENT SLOPES WHICH CONTAINS 30 PERCENT OF GROSSTOWN AND SIMILAR SOILS, 30 PERCENT MARR AND SIMILAR SOILS, 15 PERCENT HOGHOLE AND SIMILAR SOILS AND 25 PERCENT MINOR COMPONENTS.

Marr
Parent material: Loamy fluviomarine deposits
Natural drainage class: Well drained
Available water storage in profile: High (about 9.2 inches)
Hydrologic Soil Group: B

Grosstown
Parent material: Loamy and gravelly fluviomarine deposits
Natural drainage class: Well drained
Available water storage in profile: Moderate (about 6.7 inches)
Hydrologic Soil Group: B

Hoghole
Parent material: Sandy and gravelly fluviomarine deposits
Natural drainage class: Excessively drained
Available water storage in profile: Very low (about 2.7 inches)
Hydrologic Soil Group: A

Prepared for/Applicant:

NAVFAC
Naval Facilities Engineering Command

Contract #: N40080-14-D-0002

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EXISTING CONDITIONS
BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

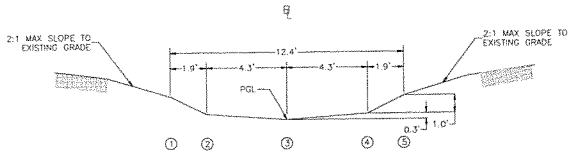
SCALE: 1"=20'
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 458\CAD\Plans\Individual Drawings

SCALE: 1"=20'
NORTH

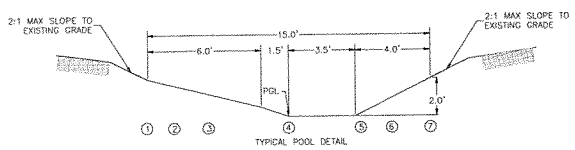
SHEET: 3 of 11

LEGEND

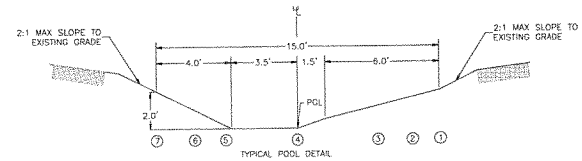
- EXISTING OVERHEAD UTILITY
- EXISTING CONTOURS
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM CENTERLINE
- EXISTING TREELINE
- EXISTING TREE
- GmD — EXISTING SOIL BOUNDARY
- PROPOSED LIMIT OF DISTURBANCE
- 0+00.00 0+23.24 — PROPOSED STREAM CENTERLINE
- PROPOSED WRAPPED SOIL LIFT (WSL)
- PROPOSED RIFFLE GRADE CONTROL (RGC)
- PROPOSED CONTOURS
- PROPOSED CROSS SECTION



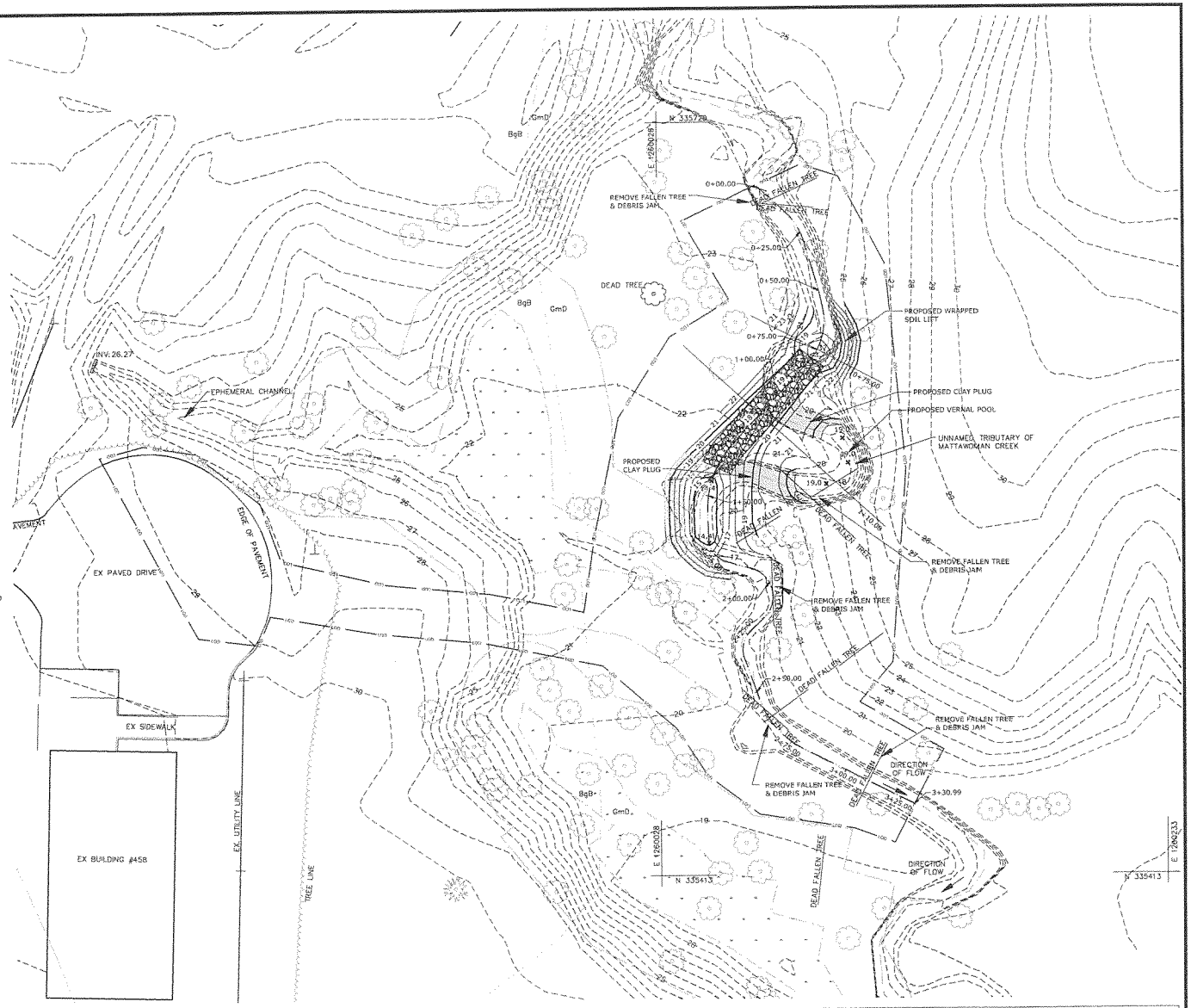
TYPICAL RIFFLE DETAIL



TYPICAL POOL DETAIL



TYPICAL POOL DETAIL



Prepared for/Applicant:

NAVFAC Naval Facilities Engineering Command

Contract #: N40080-14-D-0002

REVISIONS			
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GRADING PLAN

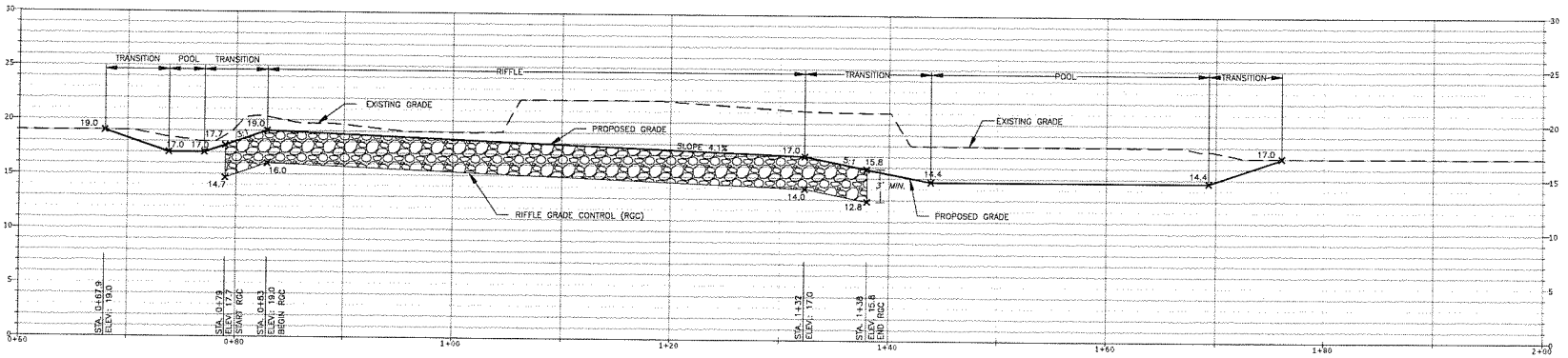
BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

0' 10' 20' 40'
SCALE: 1"=20'

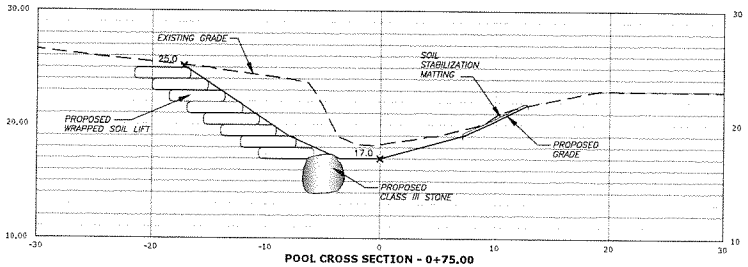
NORTH

SCALE: 1"=20'
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-07
Building 458\CAD\Plans\Individual Drawings

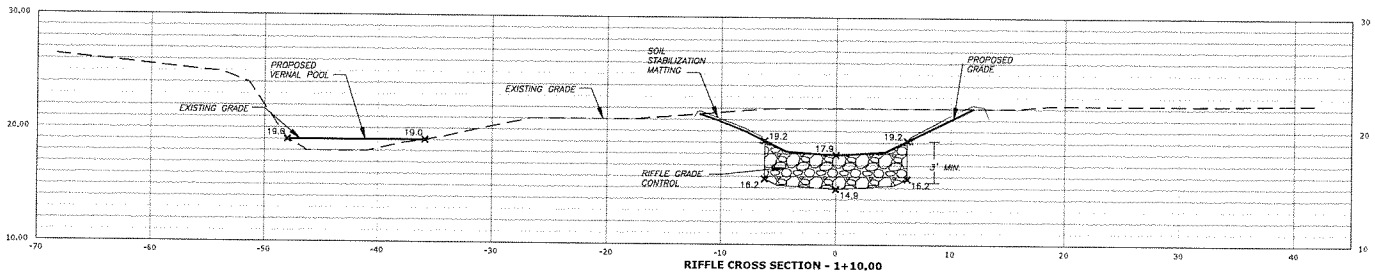
SHEET: 4 of 11



LONGITUDINAL PROFILE



POOL CROSS SECTION - 0+75.00



RIFFLE CROSS SECTION - 1+10.00

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED RIFFLE GRADE CONTROL (RGC)
- PROPOSED WRAPPED SOIL LIFT
- PROPOSED CLASS III STONE

Prepared for/Applicant:

NAVFAC Naval Facilities Engineering Command Mid-Atlantic

Contract #: N40080-14-D-0002

REVISIONS			
NO.	BY	DATE	DESCRIPTION

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Waldorf
Leonardtown

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LONGITUDINAL PROFILE AND CROSS SECTIONS

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

0' 2.5' 5' 10'

HORIZONTAL & VERTICAL SCALE: 1"=5'

SCALE: 1"=5'

DATE: DECEMBER 2015

ESA PROJECT NAME 2015-03
Building 459\CAD\Plans\Individual Drawings

SHEET: 5 of 11

LEGEND

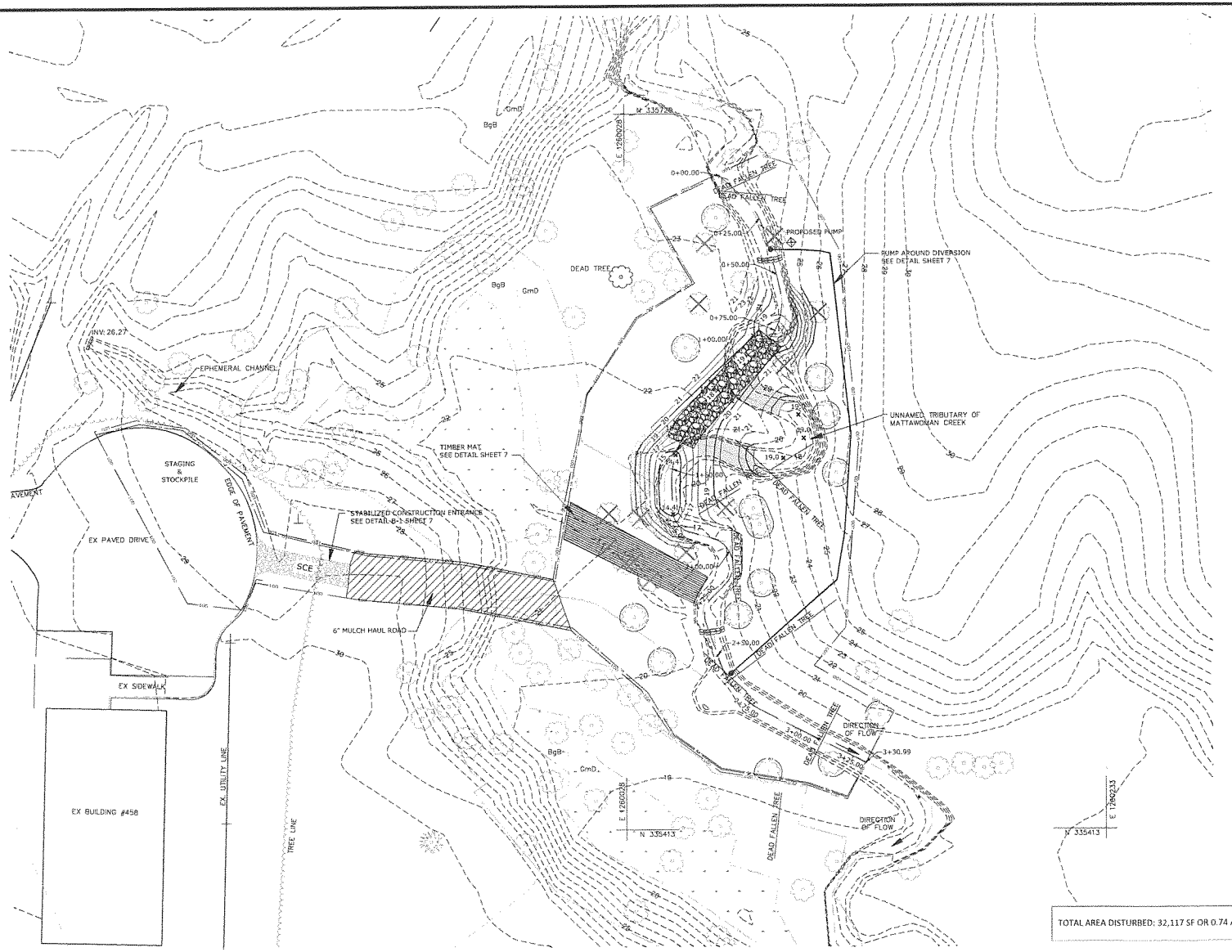
- EXISTING CONTOURS
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM CENTERLINE
- EXISTING TREELINE
- EXISTING TREE
- GmD — EXISTING SOIL BOUNDARY
- PROPOSED LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED PUMP AROUND
- PROPOSED SILT FENCE
- PROPOSED TREE PROTECTION FENCE
- 0+00.00 0+23.24 — PROPOSED BASELINE
- PROPOSED WRAPPED SOIL LIFT (WSL)
- PROPOSED RIFFLE GRADE CONTROL (RGC)
- PROPOSED TIMBER MAT
- PROPOSED CLAY PLUG
- PROPOSED SANDBAGS FOR PUMP AROUND
- PROPOSED 6" MULCH HAUL ROAD
- PROPOSED CONTOURS
- PROPOSED TREE TO BE REMOVED

SEQUENCE OF CONSTRUCTION

1. OBTAIN NSF INDIAN HEAD DIG PERMIT AND LOCATE UTILITIES.
2. NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT COMPLIANCE DIVISION (410) 537-3510 AND MISS UTILITY, A MINIMUM OF 7 CALENDAR DAYS BEFORE THE START OF WORK.
3. NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
4. PRIOR TO INITIATING WORK, A PRE-CONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE SO THAT PROJECT OBJECTIVES, ON-SITE CONDITIONS, TREE PROTECTION, EROSION AND SEDIMENT CONTROL, ACCESS, SPOIL AREA, STAGING AND STOCKPILE AND GRADING PRACTICES MAY BE DISCUSSED AND FINALIZED WITH A NAVY REPRESENTATIVE, MDE INSPECTOR, CONTRACTOR, AND THE RESTORATION SPECIALIST.
5. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED USING STAKES AND FLAGGING PRIOR TO INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.
6. PROVIDE CONSTRUCTION STAKE OUT WITH HORIZONTAL AND VERTICAL STATION AND ELEVATION REFERENCES.
7. INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE), TIMBER MATS AND OTHER SEDIMENT CONTROL DEVICES PER THE PLANS.
8. OBTAIN APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.
9. INSTALL TREE PROTECTION FENCE. CLEAR VEGETATION WITHIN THE LOD ONLY AS NECESSARY. VEGETATION TO BE REMOVED SHALL BE FLUSH CUT WITH A CHAIN SAW. WHOLESALE CLEARING WITHIN THE LOD SHALL NOT OCCUR. VEGETATION THAT IS SCARRED, NICKED OR OTHERWISE DAMAGED SHALL BE PRUNED TO THE SATISFACTION OF THE NAVY REPRESENTATIVE.
10. REMOVE FALLEN TREES AS MARKED ON THE PLANS.
11. INSTALL PUMP DIVERSION AT THE LOCATIONS SHOWN. INSTALL DISCHARGE HOUSE AND PROVIDE OUTLET PROTECTION AS NECESSARY TO PREVENT SCOUR DURING PUMP OPERATION.
12. STARTING AT THE UPSTREAM LIMIT AND WORKING DOWNSTREAM, GRADE AND SHAPE CHANNEL AND INSTALL WRAPPED SOIL LIFT REVETMENT ACCORDING TO THE PLANS. AT THE END OF EACH DAY, SEED AND INSTALL TEMPORARY SOIL STABILIZATION MATTING IMMEDIATELY FOLLOWING COMPLETION OF GRADING. TO THE TOP OF GRADED SLOPES. ANY AREA OUTSIDE OF THE STREAM CHANNEL WHICH CANNOT BE STABILIZED BY THE END OF THE DAY SHALL HAVE SILT FENCE PLACED BELOW THE DISTURBED AREA.
13. PROVIDE TEMPORARY STABILIZATION OF ACTIVE WORK AREAS AT THE END OF EACH WORK DAY. AT THE COMPLETION OF EACH WORK DAY, REMOVE FLOW DIVERSION TO ALLOW FREE FLOW OF THE WATER.
14. GRADING FROM STATION 1+00 TO 1+50 AND INSTALLATION OF THE CLAY PLUGS SHALL BE CONDUCTED DURING A SINGLE DAY OF WORK WHEN NO RAIN IS PREDICTED FOR A 48 HOUR PERIOD.
15. GRADE AND PERMANENTLY STABILIZE VERNAL POOL.
16. INSTALL PROPOSED RIFFLE GRADE CONTROL STRUCTURE AND WRAPPED SOIL LIFT REVETMENT AT THE DOWNSTREAM LIMIT OF WORK.
17. AFTER CHANNEL WORK IS COMPLETED, REMOVE DIVERSION AND IMMEDIATELY INSPECT CHANNEL. IF EROSION OCCURS, RE-INSTALL DIVERSION AND REPAIR ERODED AREA(S), AND MAKE NECESSARY ADJUSTMENTS TO PREVENT ADDITIONAL EROSION.
18. PRIOR TO DE-MOBILIZATION, CONTRACTOR SHALL ARRANGE FOR A FINAL INSPECTION OF THE PROJECT BY THE NAVY AND THE RESTORATION SPECIALIST TO ENSURE THAT THE STREAM WORK IS ACCEPTABLE.
19. THE CONTRACTOR SHALL PERFORM ALL NECESSARY REPAIRS IDENTIFIED DURING THE FINAL INSPECTION. ALL REPAIRS ARE TO BE COMPLETED WITHIN 7 DAYS FOLLOWING THE INSPECTION.
20. WHEN REPAIRS ARE COMPLETED, INSTALL PLANTING MATERIAL AS SPECIFIED ON THE PLANTING PLAN, AND PERMANENTLY STABILIZE ALL DISTURBED AREAS AS A RESULT OF THIS ACTIVITY.
21. REMOVE ALL CONSTRUCTION DEBRIS, EQUIPMENT, AND TRASH.
22. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND NAVY, REMOVE ESC DEVICES, TREE PROTECTION FENCING, AND PERMANENTLY STABILIZE THE REMAINING AREAS.
23. CONTACT MDE COMPLIANCE INSPECTOR FOR CONFIRMATION THAT THE SITE HAS BEEN STABILIZED.

NOTES:

1. DEWATERING DEVICES AND CLEAR WATER DIVERSION LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED BY CONTRACTOR.
2. IF PUMP IS REQUIRED TO DEWATER WORK AREAS, CONTRACTOR SHALL SIZE THE PUMP AND HOSE.



TOTAL AREA DISTURBED: 32,117 SF OR 0.74 AC

Prepared for/Applicant:

NAVFAC

Contract #: N40080-14-D-0002

REVISIONS		
NO.	BY	DATE

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EROSION AND SEDIMENT CONTROL PLAN

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: 1"=20'
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 458\CAD\Plans\Individual Drawings

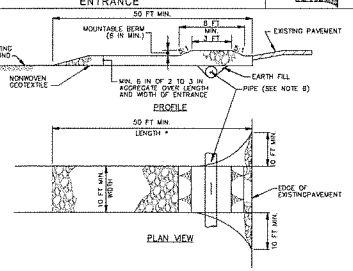
SCALE: 1"=20'

NORTH

SHEET: 6 of 11

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

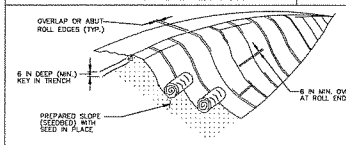
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS ~ ≥ 2:1 ≥ 6 ft (≥ INCLUDE SHEAR STRESS)



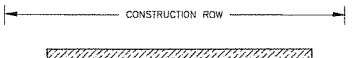
CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 1.2 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

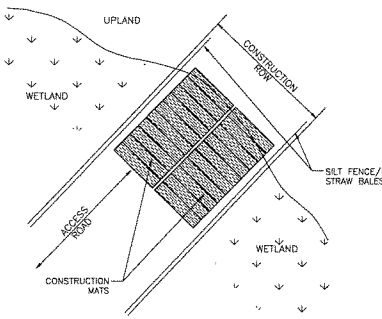
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SECTION VIEW

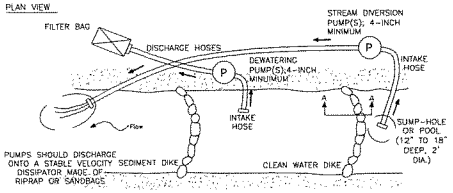


PLAN VIEW

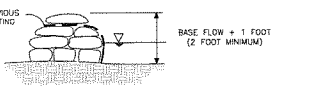


TIMBER MAT

PLAN VIEW



CROSS-SECTION



IMPLEMENTATION SEQUENCE

1. THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
2. SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHOULD BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS.
3. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A FILTER BAG. THE MEASURE SHALL BE LOCATE SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
4. TRAVERSING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED SHALL BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHOULD BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHOULD BE USED ONLY WHEN NECESSARY AND ONLY WHERE NOTED ON THE PLANS OR SPECIFIED.
5. ALL STREAM RESTORATION MEASURES SHOULD BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS-SECTIONS. ALL GRADING MUST BE STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATTING AS SPECIFIED ON THE PLANS.
6. AFTER AN AREA IS COMPLETED AND STABILIZED, THE CLEAN WATER DIKE SHOULD BE REMOVED. AFTER THE FIRST SEDIMENT FLUSH, A NEW CLEAN WATER DIKE SHOULD BE ESTABLISHED UPSTREAM FROM THE OLD SEDIMENT DIKE. FINALLY, UPON ESTABLISHMENT OF A NEW SEDIMENT DIKE BELOW THE OLD ONE, THE OLD SEDIMENT DIKE SHOULD BE REMOVED.
7. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHALL DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STEM PUMP AROUND.
8. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND PRACTICES, SHOULD FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WATER FROM THE TRIBUTARY SHOULD CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.
10. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHOULD BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.

PUMP-AROUND

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS,WATERWAYS, AND 100-YEAR FLOODPLAINS

1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2) PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3) DO NOT USE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6) RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM*), MILLET (*SETARIA ITALICA*), BARLEY (*HORDEUM SP.*), OATS (*UNICLA SP.*), AND/OR RYE (*SECALE CEREALE*). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. **KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS.** THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

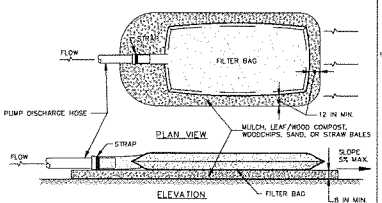
   USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

   USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.

10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11) CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB



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/FT²	ASTM D-4491
PERMITTIVITY (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

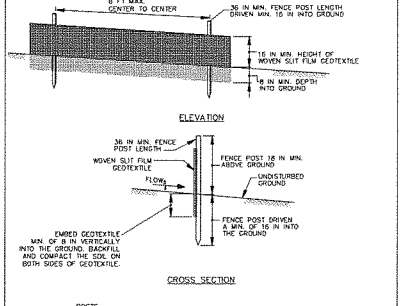
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS (1½ x 1½ x ¼ 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 8 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND 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 AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
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.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Prepared for/Applicant:

NAVFAC Naval Facilities Engineering Command

Contract #: N40080-14-D-0062

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NO.	BY	DATE	DESCRIPTION

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EROSION & SEDIMENT CONTROL NOTES AND DETAILS

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: NTS
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 459\CAD\Plans\Individual Drawings

SHEET: 7 of 11

STANDARD EROSION AND SEDIMENT CONTROL NOTES

THE 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 APPLICANT OR THE APPLICANT'S CONTRACTOR.

1. THE CONTRACTOR SHALL NOTIFY THE ADMINISTRATION (WMA) AT (410) 537-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE ADMINISTRATION, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF WMA.
2. THE CONTRACTOR MUST NOTIFY WMA IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:
A. THE REQUIRED PRE-CONSTRUCTION MEETING.
B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES
C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.
D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.
F. PRIOR TO FINAL ACCEPTANCE.
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 AGENCY INSPECTOR OR WMA 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 WMA 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 AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND WMA APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND / OR SEQUENCE OF CONSTRUCTION.
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 IMMEDIATELY.
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 AGENCY INSPECTOR.
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 THREE (3) 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.
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.
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 SEVEN (7) 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 APPROVAL LETTER, 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 THE AGENCY RESPONSIBLE FOR PROJECT.
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 AGENCY INSPECTORS, 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 NONMAINTENANCE 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 EXISTS 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 SHALL BE PASSED THROUGH A WMA APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE TO A 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 ENGINEER 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 ENGINEER 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 DEVELOPER OR OWNER 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 3,314 ACRES
(BASE, CAMPUS, PARK, ETC.)
B. AREA DISTURBED 0.74 ACRES
C. AREA TO BE ROOFED OR PAVED 0 ACRES
D. TOTAL CUT - CUBIC YARDS
E. TOTAL FILL - CUBIC YARDS
F. OFF-SITE WASTE / BORROW AREA LOCATION: WASTE LOCATION TBD BY CONTRACTOR AT TIME OF CONSTRUCTION. WASTE SITE MUST HAVE AN ACTIVE EROSION & SEDIMENT CONTROL PERMIT.

MDE REQUIREMENTS FOR GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY

1. *UTILIZATION OF ENVIRONMENTAL SITE DESIGN*: THE SUBJECT PROJECT PROPOSES TO STABILIZE THE EXISTING STREAM CHANNEL USING NATURAL CHANNEL DESIGN, AND BANK STABILIZATION TECHNIQUES. NO IMPERVIOUS SURFACES ARE PROPOSED. STREAM EROSION WILL BE DECREASED AND FLOW WILL INFILTRATE THROUGH THE PROPOSED COASTAL PLAIN OUTFALL.
2. *MAINTENANCE OF LIMITS OF DISTURBANCE TO PROTECT NATURAL AREAS*: THE LIMITS OF DISTURBANCE SHOWN ON THE PLAN SET ARE INCLUSIVE, CONSISTENT AND PREVENT DISTURBANCE TO STREAMS, NATURAL DRAINAGE FEATURES, STREAM BUFFERS, SOIL CONSERVATION AREAS, WETLANDS, AND FOREST CONSERVATION AREAS DURING CONSTRUCTION EXCEPT AS SPECIFIED IN AN APPROVED EROSION AND SEDIMENT CONTROL PLAN. ON-GOING MAINTENANCE INSPECTIONS OF THE EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONDUCTED.
3. *CONTROL OF CONSTRUCTION EQUIPMENT AND VEHICLES*: CONSTRUCTION VEHICLES WILL ACCESS THE PROJECT FROM THE PROPOSED STABILIZED CONSTRUCTION ENTRANCE.
4. *EVALUATION AND APPROPRIATE LIMITATION OF SITE CLEARING*: CLEARING OF THIS SITE HAS BEEN LIMITED TO WITHIN THE PROPERTY BOUNDARY AND IS MINIMAL AS NECESSARY TO PERFORM THE STREAM STABILIZATION.
5. *EVALUATION AND DESIGNATION OF SITE AREA FOR PHASING OR SEQUENCING*: STABILIZATION WORK WILL PROCEED FROM THE UPSTREAM LIMIT TO THE DOWNSTREAM LIMIT. IN-STREAM DIVERSION PIPES WILL BE INSTALLED TO DIVERT STREAM FLOW IN ORDER TO WORK IN DIFFERENT LOCATIONS AND STAGES OF THE EXISTING STREAM.
6. *IDENTIFICATION OF SOILS AT HIGH RISK FOR EROSION AND ADVANCED STABILIZATION TECHNIQUES TO BE USED*: NO HIGHLY ERODIBLE SOILS WILL BE IMPACTED DURING CONSTRUCTION AT THIS SITE.
7. *IDENTIFICATION OF STEEP SLOPES AND DESIGNATION OF LIMITATIONS ON CLEARING THEM*: STEEP SLOPES ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS IF APPLICABLE AND WILL BE STABILIZED AS INDICATED ON THE PLANS.
8. *EVALUATION AND DESIGNATION OF STABILIZATION REQUIREMENTS AND TIME LIMITS AND PROTECTION MEASURES FOR DISCHARGES TO THE CHESAPEAKE BAY, IMPAIRED WATERS, OR WATERS WITH ESTABLISHED TMDLS*: THE SUBJECT PROJECT SITE IS NOT WITHIN THE LOCALIZED DRAINAGE BASINS OF WATERS WITH ESTABLISHED TMDLS. PROPOSED TEMPORARY SEDIMENT CONTROLS HAVE BEEN DESIGNATED ON THE PLAN SET.

MATERIAL SPECIFICATIONS

CLASS 0/I STONE STONE SHALL BE OF NATURAL GRANITE AND THE COLOR SHALL BE GREY OR BROWN IN COLOR. OTHER STONE TYPES OR COLORS WILL BE REJECTED. CONTRACTOR SHALL SUPPLY A STONE SAMPLE FOR REVIEW AND APPROVAL PRIOR TO ANY DELIVERY OF STONE TO PROJECT SITE.

CLASS I STONE STONE SHALL BE OF NATURAL GRANITE AND THE COLOR SHALL BE GREY OR BROWN IN COLOR. OTHER STONE TYPES OR COLORS WILL BE REJECTED. CONTRACTOR SHALL SUPPLY A STONE SAMPLE FOR REVIEW AND APPROVAL PRIOR TO ANY DELIVERY OF STONE TO PROJECT SITE.

CLASS II STONE STONE SHALL BE OF NATURAL GRANITE AND THE COLOR SHALL BE GREY OR BROWN IN COLOR. OTHER STONE TYPES OR COLORS WILL BE REJECTED. CONTRACTOR SHALL SUPPLY A STONE SAMPLE FOR REVIEW AND APPROVAL PRIOR TO ANY DELIVERY OF STONE TO PROJECT SITE. BACH BOULDER SHALL WEIGH AT LEAST 450 LBS.

CLASS III GRANITE GRANITE BOULDERS SHALL BE PREDOMINATELY SQUARE OR RECTANGULAR IN SHAPE AND SHALL HAVE A MAXIMUM LENGTH OF 5' AND A MINIMUM LENGTH OF 3' MEASURED ALONG ANY AXIS. EACH BOULDER SHALL WEIGH AT LEAST 1,500 LBS., AND HAVE A COLOR THAT IS PREDOMINANTLY GREY OR BROWN IN COLOR. WHITE STONE IS NOT ACCEPTABLE AND WILL BE REJECTED. THE RESTORATION SPECIALIST SHALL DETERMINE STONE COLOR AND MAY REJECT ANY MATERIAL NOT MEETING THIS SPECIFICATION.

COARSE AGGREGATE SHALL BE USED FOR CHINKING INTO THE RIFFLE GRADE CONTROL. IT SHALL BE A NATURAL AGGREGATE MATERIAL WITH A D50 OF 1.5 INCHES AND A RANGE FROM 0.25 TO 3 INCHES. STONE SHALL BE FREE OF SOIL AND ORGANIC MATERIAL WITH A COLOR THAT IS PREDOMINANTLY GREY OR BROWN; PREDOMINANTLY WHITE STONE WILL NOT BE ACCEPTED. NO. 57 STONE IS ACCEPTABLE.

6-INCH SILICA COBBLE SHALL BE USED FOR THE RIFFLE GRADE CONTROL. STONE SHALL BE A NATURAL AGGREGATE AND HAVE A SIZE DISTRIBUTION BETWEEN 5 AND 8 INCHES WITH A D50 OF 6 INCHES. ONLY MATERIAL WITH ROUNDED EDGES WILL BE ACCEPTED. STONE SHALL BE FREE OF SOIL AND ORGANIC MATERIAL WITH A DENSITY GREATER THAN 150 LBS/CU FT. THE COLOR SHALL BE PREDOMINANTLY BROWN, GREY OR BLUE-GREY; PREDOMINANTLY WHITE STONE WILL NOT BE ACCEPTED. MANUFACTURED STONE WILL NOT BE ACCEPTED.

COARSE AGGREGATE SAND SHALL BE A NATURAL, SILICA BASED PRODUCT. SAND SHALL BE WASHED AND FREE OF DEBRIS, SOIL, AND ORGANIC MATERIAL. MANUFACTURED (CRUSHED) SAND MADE FROM LIMESTONE OR OTHER STONE PRODUCTS OF ANY TYPE IS NOT ACCEPTABLE.

TOPSOIL: APPLY TOPSOIL THAT HAS 2.5%-10% ORGANIC MATTER, AND MEETS THE STANDARD; TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE NAVY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5 % BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 " IN DIAMETER.

SELECT FILL MATERIAL 900:
MATERIAL MUST CONFORM TO AASHTO A-4, A-5, A-6, OR A-7 SPECIFICATIONS (SILTY OR CLAYEY SOILS). SOIL MUST BE FREE OF GRAVEL, COBBLE, BOULDERS, ROOTS, ORGANIC MATTER, AND ALL WASTE PRODUCTS. IF SUITABLE MATERIAL CANNOT BE OBTAINED FROM THE MATERIAL EXCAVATED FROM THE PROJECT SITE, THE CONTRACTOR IS REQUIRED TO PURCHASE OR FURNISH THIS MATERIAL FROM OFF-SITE SOURCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING SOIL TESTS ON THE SELECT FILL TO VERIFY THAT IT MEETS THIS STANDARD. IF SOIL TESTING HAS BEEN PREVIOUSLY PERFORMED ON FURNISHED MATERIALS, THE CONTRACTOR MUST PROVIDE TEST RESULTS WHICH DEMONSTRATE CONFORMANCE OF THE MATERIAL WITH THIS STANDARD.

SANDBAGS: SHALL CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRA-VIOLET RADIATION, PUNCTURES AND TEARING. SANDBAGS MUST BE WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL (I.E. SAND, FINE GRAVEL, ETC.).

TEMPORARY SOIL STABILIZATION MATTING: THE FABRIC SHALL CONSIST OF 100% HIGH STRENGTH COCONUT FIBER WHICH IS TWISTED AND WOVEN IN A GRID WITH 0.4 TO 0.5 INCH OPENINGS; NO SYNTHETIC FIBERS ARE PERMISSIBLE. THE THICKNESS OF THE FABRIC SHALL BE 0.3 - 0.4 INCH WITH A DRY WEIGHT OF 23 OZ/SY. THE PRODUCT SHALL WITHSTAND SHEAR STRESSES UP TO 4.5 LB/SQ.FT, AN EXAMPLE OF AN ACCEPTABLE PRODUCT IS ROLANKA BIOD-MAT 70 (1-800-760-3215; HTTP://WWW.ROLANKA.COM). STABILIZE ANY DISTURBED SLOPES WITH AN ASPECT STEEPER THAN 3:1 WITH TEMPORARY SOIL STABILIZATION MATTING, OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR.

LANDSCAPE STAPLES: LANDSCAPE STAPLES SHALL BE A 10 TO 12-INCH, "U" SHAPED RIGID WIRE PRODUCT.

SHREDDED HARDWOOD MULCH SHALL BE SHREDDED AND BE FREE OF LEAVES, VINES INCLUDING POISON IVY, TRASH AND FOREIGN MATTER.

Prepared for/Applicant:

NAVFAC Engineering and Expeditionary Warfare Center

Contract #: N40080-14-D-0002

REVISIONS			
NO.	BY	DATE	DESCRIPTION

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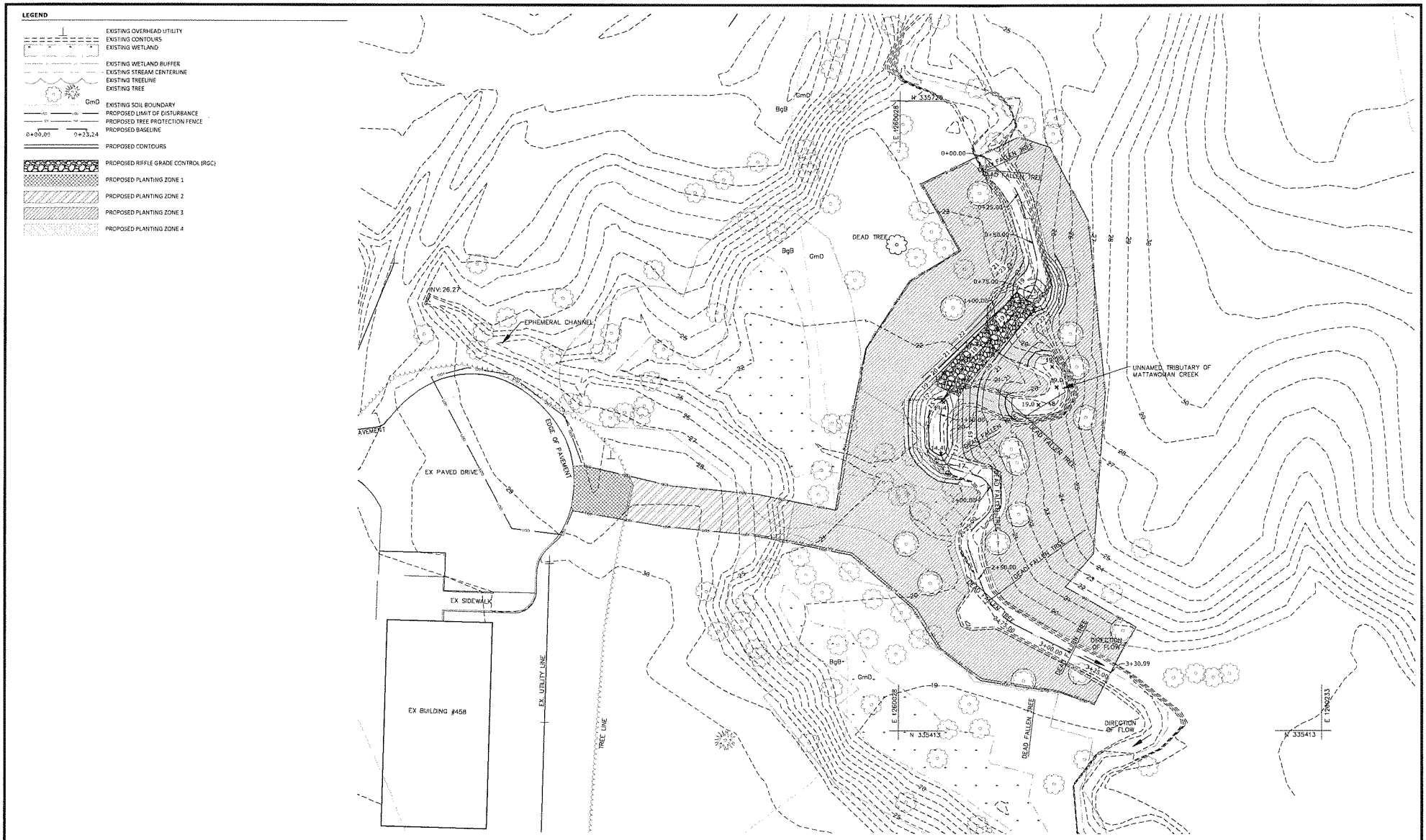
STANDARD EROSION & SEDIMENT CONTROL NOTES

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: N/A
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 458\CAD\Plans\Individual Drawings

SHEET: 8 of 11



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PLANTING PLAN

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN

NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: 1"=20'
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 458\CAD\Plans\Individual Drawings

0' 10' 20' 40'
SCALE: 1"=20'
NORTH

SHEET: 9 of 11

PROPOSED PLANT LIST

Proposed Planting Zone 1 (617 SF or 0.01 AC)

Qty.	Scientific Name	Common Name	Condition	Indicator Status	Spacing
		Seed			
1	*Lolium perenne L.*	Perennial ryegrass	Seed	FACU	100 LB/AC
1	*Lolium multiflorum*	Annual ryegrass	Seed	FAC	100 LB/AC

Proposed Planting Zone 2 (1,595 SF or 0.04 AC)

Qty.	Scientific Name	Common Name	Condition	Indicator Status	Spacing
		Trees and Shrubs			
3	*Asimina triloba*	Pawpaw	#2	FAC	8' O.C.
7	*Ilex opaca*	American holly	#2	FAC	15 O.C.
3	*Kalmia latifolia*	Mountain laurel	#2	FACU	8' O.C.
2	*Pinus taeda*	Loblolly pine	#3	FAC	15 O.C.
2	*Quercus falcata*	Southern red oak	#3	FACU	15 O.C.
2	*Quercus phellos*	Willow oak	#3	FACW	15 O.C.

Proposed Planting Zone 3 (19,360 SF or 0.45 AC)

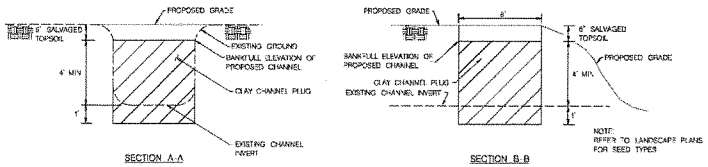
Qty.	Scientific Name	Common Name	Condition	Indicator Status	Spacing
		Trees and Shrubs			
10	*Acer saccharum*	Silver maple	#3	FAC	15 O.C.
10	*Betula nigra*	River birch	#3	FACW	15 O.C.
10	*Ilex opaca*	American holly	#2	FAC	15 O.C.
10	*Ilex verticillata*	Winterberry	#2	FACW	8' O.C.
10	*Lindera benzoin*	Spicebush	#2	FAC	8' O.C.
10	*Liquidambar styraciflua*	Sweetgum	#3	FAC	15 O.C.
10	*Platanus occidentalis*	Sycamore	#3	FACW	15 O.C.
10	*Quercus bicolor*	Swamp white oak	#3	FACW	15 O.C.

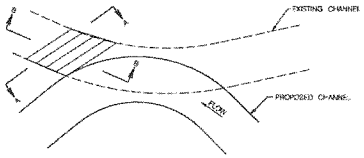
Proposed Planting Zone 4 (685 SF or 0.02 AC)

Qty.	Scientific Name	Common Name	Condition	Indicator Status	Spacing
		Trees and Shrubs			
10	*Cornus amomum*	Silky dogwood	Tubeling	FACW	4' O.C.
10	*Salix nigra*	Black willow	Tubeling	OBL	4' O.C.
10	*Viburnum dentatum*	Southern arrowwood	Tubeling	FAC	4' O.C.
11	*Viburnum prunifolium*	Blackhaw viburnum	Tubeling	FACU	4' O.C.

Planting Zones 2, 3, & 4 (21,572 SF or 0.50 AC) - Maryland Coastal Plain Riparian Seed Mix (ERNMX#-732)

30% Indiangrass, PA Ecotype (*Sorghastrum nutans*, PA Ecotype)
17% Virginia Wildrye, PA Ecotype (*Elymus virginicus*, PA Ecotype)
15% Big Bluestem, 'Niagara' (*Andropogon gerardii, 'Niagara'*)
10% Rostop Panicgrass, Coastal Plain NC Ecotype (*Panicum rigidulum (P. stipitatum)*, Coastal Plain NC Ecotype)
5% Beaked Panicgrass, SC Ecotype (*Panicum anceps*, SC Ecotype)
5% Switchgrass, 'Shelter' (*Panicum virgatum, Shelter'*)
5% Partridge Pea, PA Ecotype (*Chamaecrista fasciculata (Cassia f.)*, PA Ecotype)
4% Autumn Bentgrass, Albany Pine Bush-NY Ecotype (*Agrostis perennans*, Albany Pine Bush-NY Ecotype)
2% Boneset, PA Ecotype (*Eupatorium perfoliatum*, PA Ecotype)
2% Mistflower, FL Ecotype (*Eupatorium coelestinum (Conoclinium c.)*, FL Ecotype)
2% Common Sneezeweed, PA Ecotype (*Helenium autumnale*, PA Ecotype)
1% Maryland Senna (*Senna marilandica (Cassia m.)*)
1% Wild Senna, VA & WV Ecotype (*Senna hebecarpa (Cassia h.)*, VA & WV Ecotype)
1% Swamp Milkweed, PA Ecotype (*Asclepias incarnata*, PA Ecotype)



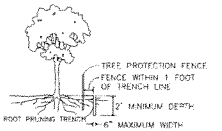


CLAY PLUGS CONSTRUCTION:

THE RESTORATION SPECIALIST WILL INSPECT THE SELECT FILL FOR CONFORMANCE PRIOR TO INSTALLATION. UNACCEPTABLE MATERIAL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. CLAY CHANNEL PLUGS SHALL BE INSTALLED AT THE LOCATIONS AND ELEVATIONS AS SHOWN IN THE PLANS. HOWEVER, THE RESTORATION SPECIALIST MAY INSTRUCT THE CONTRACTOR TO ADJUST THE LOCATION, ORIENTATION, AND ELEVATION OF PROPOSED FEATURE BASED ON THE STREAM CONDITIONS AT THE TIME OF CONSTRUCTION.

1. PRIOR TO CONSTRUCTING THE CLAY CHANNEL PLUG, SHAPE AND/OR GRADE THE CHANNEL BANKS TO THE PROPOSED CONFIGURATION.
2. AT THE LOCATION SPECIFIED FOR THE STRUCTURE, EXCAVATE EXISTING GROUND TO A DEPTH OF 1 FOOT BELOW THE PROPOSED CHANNEL INVERT. EACH PLUG SHALL EXTEND 8 FEET HORIZONTALLY FROM THE PROPOSED TOP OF BANK.
3. PLACE SELECT FILL MATERIAL INTO THE EXCAVATED FOOTPRINT OF THE STRUCTURE IN 6-INCH LIFTS TO THE HEIGHT SHOWN ON THE GRADING PLAN. COMPACT EACH LIFT WITH A WALK-BEHIND VIBRATING PLATE COMPACTOR, MAKING TWO COMPLETE PASSES ATOP EACH LIFT, CONTINUE FILLING AND COMPACTING LIFTS TO ACHIEVE THE SPECIFIED ELEVATION.
4. PLACE 4 INCHES OF SALVAGED TOPSOIL ON TOP OF THE CLAY CHANNEL PLUG.
5. SEED AND STABILIZE ATOP THE CLAY CHANNEL PLUG ACCORDING TO THE PLANTING PLAN.

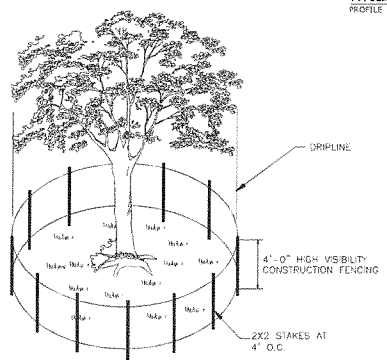
CLAY CHANNEL PLUG



1. RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED & FLAGGED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH THE AREA 1' BEYOND THE TPF AND EXCAVATE APPROXIMATELY 24 INCHES DEEP WITH A 4-6 INCH TRENCHER.
5. IMMEDIATELY AFTER TRENCHING AND CUTTING THROUGH ALL ROOTS IN THE TRENCH AREA, PRUNE THE ROOTS SO AS TO PROVIDE GOOD CLEAN CUTS. BACKFILL THE TRENCH WITH THE EXCAVATED MATERIAL OR TOPSOIL WITH A HIGH ORGANIC CONTENT.
6. WATER THE BACKFILLED TRENCH IMMEDIATELY. UNTIL TRENCH OVERFLOWS. SETTLED AREAS SHOULD BE FILLED WITH BACKFILL UNTIL LEVEL WITH THE EXISTING GROUND.
7. APPLY A 3" DEEP, 3' WIDE BAND OF MULCH TO THE TREE'S CRITICAL ROOT ZONE AT THE LIMIT OF GRADING (ADJACENT TO THE TPF).

TYPICAL ROOT PRUNING

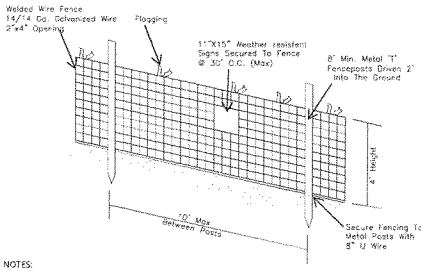
CROSS SECTION



NOTES:

1. DRIVE STAKES FIRMLY INTO GROUND AT LEAST 12".
2. PROTECTIVE MEASURES SHALL EXTEND BEYOND THE TREE DRIPLINE.

TREE PROTECTION



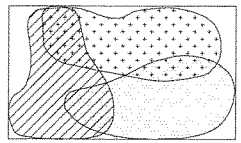
NOTES:

1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ARBORIST.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIED.

TYPICAL TREE PROTECTION FENCE

PROFILE

AGGREGATION PLANTING

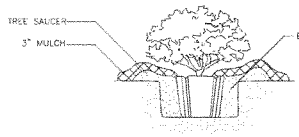


PLANT PLACEMENT DETAIL
NOT TO SCALE

- THE VEGETATION PLANTING PLAN WILL BE LAID-OUT AND PLANTED IN AGGREGATION.
- MIX TREE, AND SHRUB SPECIES IN THE STAGING AREA.

NOTE: ONE OF THE MOST COMMON TREE, SHRUB, FORB AND GRASS COMMUNITY STRUCTURES OBSERVED IN EARLY SERAL FORESTS IS THAT OF FAIRLY HOMOGENEOUS BLOCKS OF SPECIES IN LOOSE AGGREGATION UNITS/POLYGONS. OFTEN WHEN A TREE OR GRASS SPECIES TAKES HOLD AND PERFORMS WELL ON A GIVEN SITE, SEED RAIN WILL FALL IN A MANNER TO PRODUCE AN ELONGATED TEAR-DROP PATTERN, OVERLAPPING WITH OTHER SOMEWHAT DISCRETE PLANT TYPES. THIS IS NOT A RANDOM PATTERN, NOR IS IT HOMOGENEITY OR ON-CENTER PLANTING. ECO-TONES DEVELOP BASED ON SEVERAL FACTORS INCLUDING SOIL MOISTURE/GRADIENT, CHEMISTRY AND SWEEPS OF AGGREGATION MAY BEST MOCK NATURAL PATTERNS.

PLANT COMMUNITY LAYOUT



- SCARIFY SIDES OF ROOT BALL AND PLANTING SITE
- PLANTING HOLE IS TWICE THE DIAMETER OF THE ROOT BALL.
- ROOT BALL TO BE PLANTED AT THE SAME DEPTH AS GROWN IN THE NURSERY.
- IN WET AREAS, PLANT WITH 1/4 OF ROOT BALL ABOVE THE GROUND.

CONTAINER PLANTING

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS.

TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5 % BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.

THE SUBSOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 6 INCHES BEFORE PLACEMENT OF TOPSOIL.

WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 LBS PER 1000 SQ FT) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL.

TOPSOIL SHALL BE TESTED AND AMENDED AS PER SOIL TEST RECOMMENDATIONS.

TOPSOIL APPLICATION.

1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES.
2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4-8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
3. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

PRE-PLANTING SPECIFICATIONS

1. ALLOW AT LEAST THREE (3) MONTHS IN ADVANCE TO ORDER MATERIALS AND PLANTS.
2. THE PREFERRED PLANTING TIME FOR CONTAINER GROWN MATERIALS (TREES, SHRUBS, AND SEEDLINGS) IS FROM SEPTEMBER 15 TO NOVEMBER 15. PLANTING SHALL NOT TAKE PLACE IN SUB-FREEZING TEMPERATURES, WHEN THE GROUND IS FROZEN, OR WHEN THE SOIL IS TOO DRY OR WET, OR OTHERWISE IN A CONDITION NOT GENERALLY ACCEPTED AS SATISFACTORY FOR PLANTING AND MAY ADVERSELY AFFECT PLANT MATERIALS.
3. IF CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY THE RESTORATION SPECIALISTS BEFORE PLANTING.
4. ALL BARE SOIL MUST BE STABILIZED AND SEEDED USING THE SEED MIX SPECIFIED ON THE PLANS PRIOR TO PLANTING.
5. PLANTING SHOULD OCCUR WITHIN 24 HOURS OF PLANT MATERIAL DELIVERY TO THE SITE. AFTER BEING DELIVERED TO THE JOB SITE, PLANTS SHALL BE STORED IN A COOL, SHADY LOCATION. PLANT ROOT MASSES SHALL BE KEPT MOIST WITH PERIODIC WATERING UNTIL THE TIME OF PLANTING. PLANT MATERIALS LEFT UNPLANTED FOR MORE THAN 24 HOURS SHALL BE PROTECTED FROM DIRECT SUN AND WEATHER AND KEPT MOIST. NURSERY STOCK SHALL NOT BE LEFT UNPLANTED FOR MORE THAN 2 WEEKS.
6. PLANTS SHALL BE INSPECTED BY THE RESTORATION CONTRACTOR AND ANY MATERIAL THAT IS EITHER DAMAGED OR WHICH HAS ROOT BALL COMPACTION, OR KINKED ROOT SYSTEMS WILL BE REJECTED/REPLACED.
7. SOIL ROOT MASSES SHALL BE THOROUGHLY MOIST UPON DELIVERY TO THE SITE. DRY OR LIGHT WEIGHT PLANTS SHALL BE REJECTED/REPLACED. IF THE SOIL/ROOT MASSES ARE SUBSTANTIALLY SMALLER THAN THE SPECIFIED CONTAINER SIZE AND LOOSE SOIL EXISTS ON THE BOTTOM OF THE CONTAINERS, THE PLANTS SHALL BE REJECTED/REPLACED.
8. ALL REJECTED PLANTS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND APPROVED REPLACEMENT PLANTS INSTALLED AT NO COST TO THE NAVY.

Prepared for/Applicant:

NAVFAC Mid-Atlantic Engineering Command

Contract #: N40080-14-D-6902

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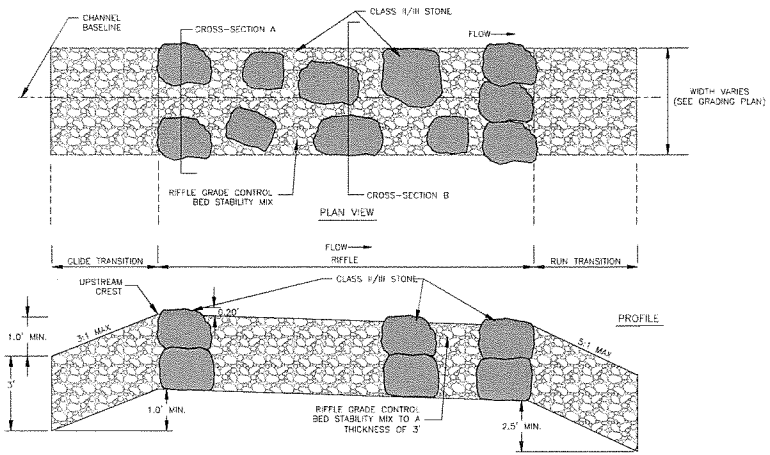
PLANTING NOTES & DETAILS

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: NOT TO SCALE
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 459\CAD\Plans\Individual Drawings

SHEET: 10 of 11

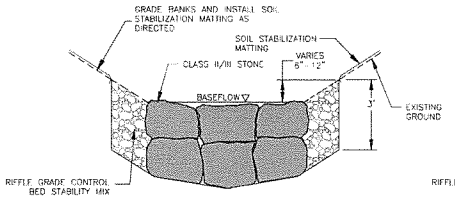


RIFFLE GRADE CONTROL (RGC) BED STABILITY MIX

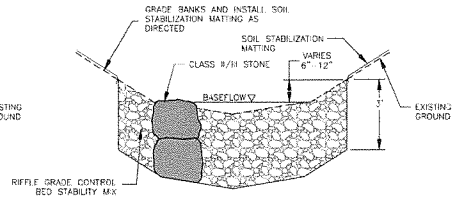
% MIX	SHA CLASS 0 STONE	10%
	SHA CLASS 1 STONE	20%
	SHA CLASS II/III STONE	40%
	STREAM BED MATERIAL	30%

STREAMBED MATERIAL (SBM) MIX--CONTINGENT

% MIX	DOUBLE WASHED CONSTRUCTION SAND	40%
	ROUND RIVER ROCK/GRAVEL	50%
	SILICA COBBLE	10%



CROSS-SECTION A



CROSS-SECTION B

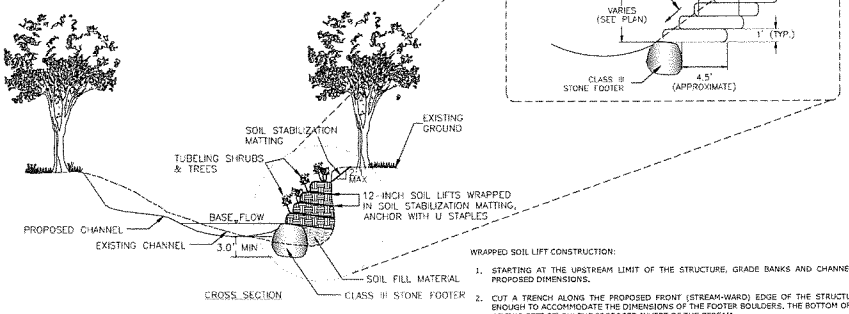
RIFFLE GRADE CONTROL CONSTRUCTION

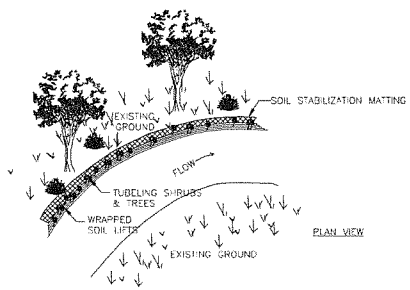
1. STARTING AT THE DOWNSTREAM LIMIT OF THE STRUCTURE, CONSTRUCT THE CHANNEL SUBGRADE BY FILLING OR EXCAVATING AS NEEDED, GRADE BANKS TO ACCOMMODATE THE PROPOSED CHANNEL DIMENSIONS AND SHAPE.
2. WHEN EXCAVATING FOR THE STRUCTURE, SALVAGE STREAMBED MATERIAL (EXCLUDING SILT/FINES) AND SET ASIDE. IF THERE IS AN INSUFFICIENT SUPPLY OF SALVAGED STREAMBED MATERIAL, CONTRACTOR SHALL IMPORT STREAMBED MATERIAL MIX.
3. PLACE CLASS II/III STONE THROUGHOUT THE STREAMBED IN THE FOOTPRINT OF THE STRUCTURE IN A CHECKERBOARD PATTERN. AT THE DOWNSTREAM LIMIT OF THE RIFFLE, PLACE CLASS II/III STONE TO FORM A WEIR AS SHOWN ON THE DETAIL.
4. WORKING IN 6-INCH DEPTH INCREMENTS, PLACE BED STABILITY MIX (CLASS 0, CLASS 1 STONE, STREAM BED MATERIAL) SO THAT IT SHINGLES IN A DOWNSTREAM DIRECTION IN THE VOIDS BETWEEN THE CLASS I/II STONE. SMALL AND LARGE STONE SHALL BE MIXED TO MINIMIZE VOID SPACES.
5. AFTER EACH 6-INCH DEPTH INCREMENT, WASH MATERIAL INTO VOIDS USING PUMPED WATER TO PROMOTE COMPACTION AND ELIMINATION OF VOIDS. CONTINUE TO ADD AND COMPACT MATERIAL TO ATTAIN THE DESIRED SHAPE OF THE CHANNEL.
6. WHEN FINAL SHAPE OF STRUCTURE IS ATTAINED, PLACE A LAYER OF SAND ATOP STRUCTURE AND WASH MATERIAL INTO VOIDS USING A GENTLE STREAM OF WATER. CONTINUE PLACING AND WASHING SAND INTO STRUCTURE UNTIL MATERIAL CEASES TO BE ACCEPTED.
7. FINE GRADE THE BANKS TO ACHIEVE FINAL DIMENSIONS.
8. PLACE SPECIFIED SEED MIX ONTO THE BANKS, THEN INSTALL SOIL STABILIZATION MATTING AS SHOWN ON THE DETAIL TO THE UP-SLOPE LIMIT OF GRADING. ANY PROTRUSIONS SUCH AS ROOTS OR LUMPS IN THE SOIL SHALL BE REMOVED PRIOR TO SECURING THE MATTING. KEY IN MATTING PER THE DETAILS ON THE PLANS.

RIFFLE GRADE CONTROL

NOTES:

1. CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF FEATURES VARY. SEE CROSS SECTIONS AND PROFILES FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE.
2. THALWEG MAY BE MODIFIED IN FIELD PER THE RESTORATION SPECIALIST.
3. IF BEDROCK IS ENCOUNTERED DURING CONSTRUCTION, CONFER WITH THE RESTORATION SPECIALIST. THE VERTICAL EXTENT OF THE STRUCTURE MAY BE REDUCED, OR THE BEDROCK MAY BE NOTCHED TO PROVIDE A STABLE FOOTER ON WHICH TO PLACE THE CLASS II/III STONE.





WRAPPED SOIL LIFT

WRAPPED SOIL LIFT CONSTRUCTION:

1. STARTING AT THE UPSTREAM LIMIT OF THE STRUCTURE, GRADE BANKS AND CHANNEL AS NECESSARY TO OBTAIN THE PROPOSED DIMENSIONS.
2. CUT A TRENCH ALONG THE PROPOSED FRONT (STREAM-WARD) EDGE OF THE STRUCTURE. THE TRENCH SHALL BE WIDE ENOUGH TO ACCOMMODATE THE DIMENSIONS OF THE FOOTER BOULDERS. THE BOTTOM OF THE TRENCH SHALL BE A MINIMUM OF TWO FEET BELOW THE PROPOSED INVERT OF THE STREAM.
3. PLACE A ROW OF FOOTER BOULDERS WITHIN TRENCH SUCH THAT THERE IS NO GAP BETWEEN THE BOULDERS. THE TOP SURFACE OF THE FOOTER BOULDERS SHOULD BE AS FLAT (HORIZONTAL) AS POSSIBLE, APPLY DOWNWARD PRESSURE TO SET THE BOULDERS IN PLACE. THE TOPS OF THE FOOTERS SHALL BE SET AT THE EXPECTED BASE FLOW ELEVATION.
4. PLACE SOIL MATERIAL BEHIND THE FOOTERS AS NEEDED TO CREATE A FLAT SURFACE FLUSH WITH THE TOP OF THE FOOTERS.
5. BEGIN BUILDING THE SOIL LIFTS BY UNROLLING THE MATTING PARALLEL TO THE BANK SLOPE, OVER THE FOOTER BOULDERS AND SOIL FILL. MAKE SURE THERE IS FULL CONTACT BETWEEN THE FOOTER OR SOIL AND THE MATTING. THE LENGTH OF MATTING SHOULD EXTEND FOR THE LENGTH OF THE STRUCTURE.
6. PLACE TOPSOIL ATOP THE MATTING TO A THICKNESS OF 1 FOOT. APPLY SEED AS SPECIFIED WITHIN THE PLANTING SCHEDULE AT THE RATE SHOWN ON THE PLANS. WRAP THE MATTING OVERTOP AND AROUND THE SOIL LAYER, AND SECURE WITH LANDSCAPE STAPLES PLACED AT 2-FOOT INTERVALS.
7. BUILD THE NEXT LIFT ATOP THE FIRST, IN THE SAME MANNER. THE NEXT LIFT SHOULD BE OFF-SET FROM THE BOTTOM LIFT IN THE DIRECTION OF THE BANK, BY SUCH A DISTANCE AS TO OBTAIN THE PROPOSED CHANNEL DIMENSIONS. CONTINUE BUILDING LIFTS IN THE SAME MANNER TO MATCH THE LIMITS OF THE SOIL LIFTS AS SHOWN ON THE PLANS. EACH SOIL LIFT SHALL HORIZONTALLY OVERLAP THE BOTTOM LIFT BY 2 FEET.
8. UPSLOPE OF THE LIFTS, GRADE BANKS TO A MAXIMUM SLOPE OF 2:1 TO TRANSITION TO EXISTING GRADE. PLACE THE SPECIFIED SEED MIX ONTO THE UPPER BANKS.
9. AS SPECIFIED IN THE PLANTING SCHEDULE, PLANT TUBELING TREES AND SHRUBS INTO EACH OF THE LIFTS AS SPECIFIED BELOW.
10. PLANTS MAY BE INSTALLED FROM SEPTEMBER 1 TO DECEMBER 1 AND FROM MARCH 1 TO JUNE. PLANTING SHALL NOT BE PERFORMED OUTSIDE OF THESE DATES. IN ADDITION, PLANTING SHALL NOT OCCUR IN SUB-FREEZING TEMPERATURES, WHEN THE GROUND IS FROZEN, OR WHEN THE SOIL IS TOO DRY OR WET, OR OTHERWISE IN A CONDITION NOT GENERALLY ACCEPTED AS SATISFACTORY FOR PLANTING.
11. AT 5-FOOT INTERVALS IN THE SOIL LIFTS, CUT INTO THE SOIL STABILIZATION MATTING AND EXCAVATE A PLANTING HOLE AT LEAST 2 INCHES WIDER THAN THE WIDTH OF THE TUBELING ROOTS.
12. INSTALL TUBELING IN THE CENTER OF THE HOLE SO THAT THE TOP OF THE ROOT MASS IS AT THE SOIL SURFACE.
13. BACKFILL PLANTING HOLE WITH THE EXCAVATED TOPSOIL.
14. THOROUGHLY WATER THE TUBELINGS AFTER THEY ARE PLANTED, EVEN IF IT IS RAINING.
15. THE CONTRACTOR MUST ENSURE A 60 PERCENT SURVIVAL RATE AMONG ALL TUBELINGS FOR A PERIOD OF ONE FULL CALENDAR YEAR FOLLOWING THE DATE OF ACCEPTANCE. SURVIVAL OF EACH PLANT ITEM WILL BE DEFINED AS A MINIMUM OF 80 PERCENT OF THE BRANCHES OF THE TREE OR SHRUB REMAINING ALIVE FOR THE DURATION OF THE CALENDAR YEAR. IF LESS THAN 80 PERCENT OF THE TREE OR SHRUB IS ALIVE, IT WILL NOT BE COUNTED IN THE SURVIVAL RATE. THE CONTRACTOR SHALL REPLACE AT HIS/HER OWN EXPENSE AND TO THE COUNTY'S SATISFACTION.
16. THIS GUARANTEE SHALL COVER LOSSES DUE TO ALL DAMAGES EXCEPT VANDALISM, FIRE, AND FLOOD.
17. PLANT MATERIAL REPLACEMENTS SHALL BE OF THE SAME SIZE, TYPE, AND VARIETY AS THE PLANTS SPECIFIED IN THE PLANTING SCHEDULE OR AS THE APPROVED SUBSTITUTES FOR THE ORIGINAL PLANTING.

Prepared for/Applicant:

NAVFAC Naval Facilities Engineering Command

Contract #: N40080-14-D-0002

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NOTES & DETAILS

BUILDING 459
PRE-FINAL EROSION & SEDIMENT CONTROL STREAM STABILIZATION PLAN
NAVAL SUPPORT FACILITY INDIAN HEAD
CHARLES COUNTY, MARYLAND

SCALE: NTS
DATE: DECEMBER 2015
ESA PROJECT NAME 2015-03
Building 458\CAD\Plans\Individual Drawings

SHEET:11 of 11