

**SCOPE OF WORK
NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON**

COOPERATIVE AGREEMENT

For

Molls Cove Stream Restoration

At

Naval Air Station Patuxent River, Webster Field Annex

January 2015

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A. BACKGROUND

Background. The Patuxent River Naval Air Station (NAS), Webster Field Annex, in St. Mary's County, Maryland was purchased and developed in 1943 to serve as an outlying field for NAS Patuxent (PAX) River and as a dispersal field in the event of possible air invasion. This outlying field was originally used as an emergency landing field, because of heavy air traffic at NAS Pax River during WWII; however, the Beachville Air Station (as it was called then) was also used for dive-bombing, aerial gunnery, target practice, and glider control experiments. The outlying field was renamed Webster Field in 1944 in honor of Captain Walter W. Webster, an early pioneer of naval aviation. At the end of WWII, air activity at the outlying field decreased considerably until 1947 when the field was reactivated for use by the Naval Air Reserve Training Unit of NAS Anacostia.

From 1967-1978, Webster Field underwent several different expansions and construction projects related to ongoing mission requirements. These projects began to increase the runoff from the impervious surface areas that resulted in degradation of waterways around the installation. Several improvement and mission related construction projects continue today, further straining the waterways around the installation with increased runoff during storm events resulting in sedimentation of neighboring waterways. In accordance with the Clean Water Act and E.O. 13508, Webster Field must take action to reduce the sedimentation of surrounding waterways. This Cooperative Agreement will meet those requirements by restoring 764 feet of streams, using the step pool storm conveyance (SPSC) restoration technique along two channels of Molls Cove.

The Cooperator will implement the government approved design (Appendix B) on the two channels, identified as the Western Tributary and the Eastern Tributary, which are located approximately 2,000 feet northwest of the intersection of Villa and Saint Inigoes Roads on Webster Field. The two channels have nontidal and tidal sections, and they drain into Molls Cove, a tidal tributary of the St. Mary's River. The Cooperator shall comply with all permits and authorizations associated with the approved design during the implementation of the design.

B. POINTS OF CONTACT

Prior to agreement award, inquiries regarding the negotiation and other aspects of the project should be directed to the Contract Specialist. After agreement award, technical and contract inquiries shall be directed to the Technical Point of Contact.

Contract Specialist
Blake Wittmann
NAVFAC Washington
1314 Harwood Street, SE Bldg. 212
Washington Navy Yard, DC 20374
Telephone: (202) 685-1257
Email: blake.wittmann@navy.mil

Technical Point of Contact (TPOC)
Ms. Anna Lubetski

NAVFAC Washington
1314 Harwood Street, SE Bldg. 212
Washington Navy Yard, DC 20374
Telephone: (202) 685-8479
Email: anna.lubetski@navy.mil

Station Point of Contact (SPOC)

The Station Point of Contact for this Cooperative Agreement will be named by the TPOC after Cooperative Agreement Award (CAA).

C. PERIOD OF PERFORMANCE

The period covered by this scope of work is twelve (12) months from date of award of the Agreement. For purposes of the scope of work for this Agreement, the term “days” is defined as calendar days.

D. GENERAL REQUIREMENTS

1. The Cooperator shall manage the total work effort and assure fully adequate and timely completion of services required under this Scope of Work. Included in this function shall be a full range of management duties including, but not limited to, planning, scheduling, inventory, analysis, and quality control.
2. The Cooperator shall provide all equipment (unless otherwise stated) and analyses necessary to complete the work described within this Scope of Work. All data (raw and associated electronic files including data summaries and analyses), photographs, maps, figures, tables, slides, etc. produced under the Agreement, and equipment greater than or equal to \$100 purchased with Agreement funds (including computer software) are the property of the U.S. Navy.
3. The Cooperator shall comply with all applicable federal and state laws, such as, but not limited to, the Sikes Act, the Clean Water Act, Coastal Zone Management Act, Endangered Species Act, Migratory Bird Treaty Act, Archeological Resources Protection Act, and the National Historic Protection Act. The Cooperator shall comply with all necessary permits/authorizations during the execution of fieldwork under the Agreement.
4. The Cooperator shall comply with all applicable laws and regulations pertaining to the provision of safe and respectful workplace and to provide a work environment free of harassment and intimidation for such party's own employees and third parties.
5. The Cooperator shall conduct literature reviews, field investigations and interviews with experts and authorities as necessary to accomplish the work described within this Scope of Work. The Cooperator shall, in particular, attempt to contact and utilize information from the local U.S. Navy offices and other professionals who are experienced with the technical requirements under Section E of the Agreement.
6. The Cooperator shall ensure that the data obtained under the Agreement be scientifically defensible and suitable for publication. Methods of data collection and/or analyses shall be provided in the Cooperator's required work plan under Section G of the Agreement. The

U.S. Navy, at its discretion, may subject work plans, draft reports or draft manuscripts to external peer review.

7. The Cooperator shall assign a project manager for this project, and shall advise the Government within fourteen (14) days before changing a project manager during the execution of this Agreement.
8. The Cooperator shall inform, in writing (via email), the Contracting Officer (via the TPOC) of its intent to publish or present any data or findings resulting from activities/research completed under the Agreement.
9. The Cooperator shall inform in writing (via email) the SPOC (copy to TPOC) of any unusual activity observed while conducting surveys in the field (e.g. trespassers or persons in unauthorized areas). Information should include location, date, time, and any detailed facts regarding the activity. In addition, information regarding trespassers should be reported to the Installation Security Office as soon as possible.
10. Throughout the term of the Agreement, the Cooperator shall allow the TPOC and the SPOC the opportunity to periodically observe the Cooperator's field activities, to review files of raw data, prepared data (such as data analyses, summaries, maps, figures, tables, etc.), or any record deemed appropriate by the Contracting Officer in establishing the Cooperator's performance in fulfilling the requirements of the Agreement.
11. The Contracting Officer, via the TPOC, may request updated data (presented on maps, figures and/or tables) at their discretion. The Cooperator shall forward the requested data electronically within ten (10) days from the date of request. If the requested data cannot be provided within this time frame, the Cooperator shall forward electronically the most updated raw data to the Contracting officer, via the TPOC. The Cooperator shall document the amount of the amount of effort and its translated cost incurred by the Cooperator to complete the request for updated data and forward this information electronically to the Contracting Officer (via TPOC).
12. The Government will not be responsible for the loss of or damage to property of the Cooperator, or for personal injuries to the Cooperator arising from or incident to the use of Government facilities or equipment.

The Cooperator shall indemnify and hold harmless the Government, its officers, agents, and employees from all liability under the Federal Tort Claims Act (28 U.S.C. Sec 2671 et seq.) or otherwise, for death or injury to all persons, or loss or damage to the property of all persons resulting from the use of the premises by the Cooperator. This covenant shall survive the termination of the Agreement.

In the event of damage, including contamination, to any Government property by the Cooperator, its officers, agents, servants, employees, subgrantees, subawardees, or invitees, the Cooperator, at the election of the Government, shall promptly repair, replace, or make monetary compensation for the repair or replacement of such property to the satisfaction of the Government.

13. The Cooperator must obtain insurance. All insurance required by the Agreement shall be in such form, for such periods of time, and with such insurers as the Contracting Officer

does not disapprove. A copy of each policy of insurance taken out hereunder shall be provided to the Contracting Officer's local representative prior to use of the premises and facilities at each installation. The Cooperator agrees that not less than thirty (30) days prior to the expiration of any insurance required by the Agreement, it will deliver to the Contracting Officer's local representative a certificate of insurance or a certified copy of each renewal policy to cover the same risks. The Cooperator shall furnish the insurance specified as follows and each policy of insurance covering bodily injuries and third party property damage shall contain an endorsement reading substantially as follows:

- a. The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy.
 - b. NAVFAC Washington shall be given thirty (30) days written notice prior to making any material change in or the cancellation of the policy.
 - c. The United States of America (Dept. of the Navy) is added as an additional insured in operations of the policy holder at or from premises designated under the Agreement and owned by the United States.
 - d. This insurance policy is for use of facilities under the Agreement.
 - e. Loss, if any, under this policy shall be adjusted with the Cooperator and the proceeds, at the direction of the Government, shall be payable to the Cooperator, and proceeds not paid to the Cooperator shall be payable to the Treasurer of the United States of America.
14. The Cooperator shall notify the TPOC and SPOC in writing as to coordinate the work to be accomplished and the area(s) where work will be accomplished.
 15. Unexploded ordnance may be encountered while conducting fieldwork. The Cooperator shall not touch or attempt to pick-up any suspected ordnance. The Cooperator shall notify the TPOC and SPOC of the exact location of the ordnance as soon as possible. This notification may be made by telephone.
 16. The Cooperator shall comply with all security rules, regulations, requirements, and day-to-day operational changes thereto. Unannounced changes to day-to-day operational procedures may, at times, prohibit the Cooperator access to the project area. The primary use of the Installation is for its military mission. Without prior notice, designated areas may become closed to the activities of the Cooperator. In such cases the Cooperator will be provided notification of such as soon as possible. It is the responsibility of the Cooperator to reschedule this work to the maximum extent possible. Should the U.S. Navy require the Cooperator to leave the Installation for a period greater than thirty (30) days (such as in the case of a national emergency), the Agreement may be terminated by either party unless an alternative agreement is reached between the Cooperator and the U.S. Navy through a signed, written amendment of the Agreement.
 17. Photography is restricted on the Installation. The Cooperator is required to obtain permission from the U.S. Navy prior to taking any photographs on the Installation. Only photographs of Agreement-related activities will be permitted.

18. Access. The Cooperator (with the assistance of the Government) will be required to obtain Rapid Gate Passes or long-term (but no more than 28 day) badges that will remain active for the duration of the project. If Rapid Gate is not used to gain access and access is required for no more than 30 days annually, the Cooperator shall coordinate with the SPOC for base access at least ten (10) days prior to the intended visit (including kick-off meeting) for base Security review and approval. Base access for foreign nationals shall be coordinated at least thirty (30) days prior to the intended visit for base Security review and approval. Failure to do so will result in denial of base access.
19. In order for personnel to access U.S. Government property in an automobile, a valid driver's license, vehicle registration, and proof of insurance are required. Copies of these documents shall be provided to the Installation Security Office. The Cooperator shall comply with all requirements for accessing the installation under the Agreement.
20. Installation Permits. In addition to any regulatory required permits, the Cooperator shall coordinate with the SPOC to obtain any installation specific permits (i.e., dig permits for intrusive work), if any, required prior to the initiation of any field work. Please be aware that dig permits may take up to ten (10) days for approval. The Cooperator shall supply proof that all necessary installation specific permits have been received to the TPOC and SPOC prior to the start of field activities.
21. Utilities. In addition to using any government or utility company locating services available (i.e., Miss Utility), the Cooperator shall utilize a qualified private utility locating service company to locate all underground utilities in the work area. Any markings made during the utility investigation must be maintained throughout the duration of the field work. The Cooperator must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent exploration, excavation or construction work is expected to come within three (3) feet of the utility.

E. SPECIFIC TASKS

The Cooperator shall provide personnel in sufficient numbers and with relevant expertise to fulfill the requirements of the Agreement.

1. The Cooperator shall implement the Government approved design (Appendix B) at Molls Cove for step pool storm conveyance (SPSC) restoration on 764 linear feet (15,550 square feet) of streams at Webster Field Annex in St. Mary's County, MD.
2. The Cooperator shall comply with all permits/authorizations associated with the Government approved design for Molls Cove.
3. The Cooperator shall implement the design on two channels, which have been identified as the Western Tributary and the Eastern Tributary.
4. The Cooperator shall plant approved native plant species within the limits of disturbance defined in the Government approved design.

5. The Cooperator shall guarantee an 85% survival rate of the plantings one year after the initial planting. This survival rate will be reviewed and approved of by the TPOC and SPOC prior to completion of this task order.

F. MEETINGS

1. The Cooperator shall attend a kick-off meeting within fourteen (14) days of the Agreement award date. The kick-off meeting shall primarily discuss a proposed schedule of critical project milestones, a site visit schedule, and proposed working dates for tasks under the Agreement.
2. The Cooperator and any personnel conducting the tasks identified in the Agreement must attend the meeting so that they may be introduced to the personnel in charge of any restricted areas.
3. The Cooperator shall provide meeting minutes, as required under Section G of the Agreement, via email within seven (7) days of meetings held under this the Agreement to the TPOC and SPOC.
4. Site visits shall be arranged by the Cooperator as needed to complete the tasks under the Agreement, or as requested by the TPOC and SPOC.
5. The Cooperator shall be available throughout the Agreement period to the TPOC and SPOC in such matters regarding the tasks to be completed under the Agreement. At a minimum, the Cooperator will submit monthly status reports (via email) to the TPOC and SPOC.

G. DELIVERABLES

Draft Report. The Cooperator shall prepare and submit two (2) electronic copies (via CDs) summarizing the restoration implementation for Molls Cove. The report will include information obtained through investigations and analyses conducted by the Cooperator. All text, maps and illustrations must be of high quality and easily reproducible on standard or color copiers. Measurements and/or quantities identified within the reports prepared under this Agreement shall be displayed in English and metric units. The Cooperator shall distribute this document to the TPOC and SPOC. The TPOC and SPOC shall provide (if there are any) their respective comments, suggestions, or edits on the draft management plan within thirty (30) days from the date of receipt. Once the TPOC and SPOC have reviewed and commented on this submission, the Cooperator shall make the changes and provide the TPOC and SPOC a proof copy (via email) for approval before printing and releasing the final report.

Final Report. The Cooperator shall prepare four (4) hardcopies and four (4) electronic copies (via CDs) of the as-built drawings and final report to be submitted to the TPOC and SPOC. All electronic source files for tables and figures shall be labeled and submitted. All digital photographs shall be labeled with at least the following information: (1) subject/activity, (2) location (specific place), (3) date, and (4) name of photographer.

Safety Plan. The Cooperator shall prepare and submit one (1) hardcopy and one (1) electronic

copy (via email) to the SPOC (copy to the TPOC) within thirty (30) days of Agreement award and at least three weeks prior to the projected start of any field activities. The Safety Plan must be approved by the Installation Safety Office prior to the start of any fieldwork. The SPOC will provide the Cooperator with specific information about the required format and content of the Safety Plan; this may include an EM-385 compliant Safety Plan. The Safety Plan shall include personal protective equipment (PPE) requirements, installation emergency POC and any conditions that would require an immediate work stoppage and a site evaluation by installation safety personnel.

Work Plan. The Cooperator shall provide a preliminary work plan and schedule at the kick-off meeting for discussion. Comments from the Navy will be submitted to the Cooperator within twenty-one (21) days of the kickoff meeting. The Cooperator shall submit a final work plan (via email) to the TPOC and SPOC within thirty (30) days or less of Navy comment receipt. Work schedules shall be updated and submitted by the Cooperator electronically (via email) to the TPOC and SPOC monthly or on request from the TPOC for all field activities.

Monthly Reports. Two (2) electronic copies of a monthly progress report are due by the seventh (7th) of the following month or the next workday if the 7th falls on a weekend, for work performed during the previous month, for the duration of the Agreement. Electronic copies of these reports shall be concurrently submitted to the TPOC and the SPOC via e-mail. The progress report shall include, at a minimum, Agreement number, report date, report period, project name, names of investigators, meeting minutes (minutes shall include the date/time/location the meeting was held, attendees, relevant discussion notes, etc.), work performed during reporting period, including problems encountered and recommendations to resolve issues, work anticipated for the next reporting periods and project status. Small maps (8.5" x 11") may be used to show locations.

Meeting Minutes. The Cooperator shall submit meeting minutes electronically only to the TPOC and SPOC within seven (7) days of the meeting occurrence. The TPOC and SPOC will provide comment within seven (7) days of receipt of draft minutes. Final meeting minutes may be included in the monthly progress report submittal.

H. GOVERNMENT FURNISHED INFORMATION AND MATERIALS

1. The Government will provide the following supporting materials in order to assist the Cooperator with the tasks associated with the Agreement:
 - a. Applicable information, strategies, or protocols;
 - b. GIS data and maps, if available;
 - c. Aerial photographs, if available; and
 - d. Topographical maps, if available.
2. The Government will provide information, GIS data and maps or indicating areas of special concern, i.e., areas of unique habitat that may harbor sensitive species or land use history that may contain protected cultural resources, if available and applicable.
3. The Government will provide real estate maps and facility information needed to complete the tasks.

4. If necessary the Government will provide prearranged access to the installation lands in keeping with the terms of this Agreement. Weather, illness, and other factors may cause some variation in the proposed schedule.

I. COOPERATOR FURNISHED ITEMS

The Cooperator shall provide all equipment (unless otherwise stated) and analyses necessary to complete the work described within this Scope of Work. All equipment that costs more than \$100 purchased using Agreement funds remains the property of the Navy at the completion of the Agreement. The final report shall include an inventory of all equipment purchased that costs more than \$100, with the name of make, model, serial number, and maintenance records.

J. DELIVERABLE FORMAT

The Cooperator's submittals and compliance with notification requirements must be in writing unless specified otherwise. Writing includes email.

All documents, maps, and illustrations must be of high quality and easily reproducible on standard or color copiers. All documents will be two sided, single spaced, on 8 ½" by 11" paper in manuscript format, with standard outline spacing. Fold out pages should be avoided. If these are necessary, they will be no larger than 11" x 17" and have the same design as the 8 ½" by 11" graph pages, and they will be approved by the Government before document preparation. Pages intentionally left blank shall be labeled as such. All pages of the documents will be appropriately numbered with filename and date listed in the footer of hard copies, and inserted into a 3 ring binder with a labeled edge.

All deliverable documents and maps, charts, etc. shall also be delivered in electronic format, Microsoft Office Word or jpeg formats. If ADOBE ACROBAT is used, files will be scanned per chapter, per figure and per appendix so that files are manageable and easily compliable. Files must be delivered in electronic formats that can be altered or updated by the Government. All chapters shall be saved as separate files on a CD for ease of reproduction.

All databases containing raw data and all associated electronic data summary and analytical files shall be formatted in Excel, Word, Dbase IV, or any compatible Microsoft database software and submitted to the TPOC and SPOC (via CDs). Microsoft ACCESS files shall include all queries, reports, tables etc.

If required, all original still photographs will be captured at a minimum of 1 million pixels and 24-bit color.

K. DATA

All databases containing raw data and all associated electronic data summary and analytical files shall be formatted in 2003 Excel, 2003 Word, Dbase IV, or any compatible Microsoft database software and submitted to the TPOC and SPOC (via CD-ROM). Microsoft ACCESS files shall include all queries, reports, tables etc.

1. GPS Data Collection

All data collected with GPS shall have an error of no more than 2-3 meters of the actual data collected in the field. All GPS data shall be defined with the following coordinate system and parameters: (1) Horizontal Datum: NAD 83; (2) Vertical Datum: GRS 80; (3) Projection: Maryland StatePlane_FIPS_1900_feet and Virginia_FIPS_450I; (4) Units: Feet; (5) all data layers must be created in accordance with SDSFIE V2.6. Associated attribute data shall be recorded in a dBase IV compatible format (DBF).

2. GIS Data

Electronic copies of all GIS data developed under this Cooperative Agreement, shall be submitted in accordance with the Naval District Washington Standards for Geographic Information System (GIS) Deliverables (Appendix A). The GIS data shall be submitted to the TPOC and SPOC (via CD-ROM or DVD). The Cooperator shall provide a document (Microsoft Word) that lists all layers developed or updated for the task.

3. Maps

All maps created under the Agreement shall be incorporated in the draft and final versions of the Final Report. All maps shall be printed on 8.5" by 11" paper or 11" by 17" paper folded to match the size of the report(s). Unless otherwise indicated, all maps shall be printed at an acceptable scale using Maryland StatePlane_FIPS_1900_feet and Virginia_FIPS_450I, North American Datum 1983. Electronic copies of all maps created shall also be provided. All maps created for this Agreement shall contain the following information: title, scale bar, legend, date, north arrow, and author of the map.

L. DATA AND PUBLICATIONS

1. The Cooperator acknowledges that information and data gathered or received pursuant to the Agreement may have regulatory and national security significance and that the unauthorized dissemination or use of this information might prejudice the interests of the U.S. Navy and Department of Defense. Therefore, the Cooperator agrees not to disclose or use any information or data directly or indirectly acquired through activities associated with the Agreement to any person, organization or entity who is not a party to the Agreement, and to prohibit disclosure or use of the same by the Cooperator's personnel, representatives, agents, contractors, or associates unless disclosure is compelled by process of law, or the Navy authorizes disclosure or use in accordance with the Agreement. The terms "data", "information," "use" and "disclose" (and its forms and derivatives) will be interpreted very broadly. Limitations on disclosure encompass all forms of dissemination including the spoken word, written word, and electronic media. "Use" includes, but is not limited to, inclusion in academic papers, professional presentations and incorporation in other research not associated with the Agreement. All products, reports, field notes, field data forms, photographs or other information or other records or documents, including slide presentations produced using any information obtained under the Agreement are the property of the U.S. Navy. The Cooperator may disclose or use data and information with the prior written approval of the U.S. Navy (via the Contracting Officer) and per the terms of that approval. The Cooperator will submit a written request to disclose or use information or data to the Contracting Officer (cc provided to the SPOC and TPOC)

explaining what information is to be disclosed or used, the reason for the disclosure or purpose for which the information or data will be used and to whom the information will be disclosed. Within thirty (30) days from receipt of the request, the SPOC will issue a written recommendation (with TPOC concurrence) for Contracting Officer approval. If no action is taken within thirty (30) days from receipt of the request, the request will be forwarded to the higher management levels of the NAVFACENGCOM Washington for resolution.

2. The U.S. Navy recognizes that the Cooperator may want to use information and data acquired through the Agreement in professional and academic manuscripts, publications and presentations and that such use may benefit not only those with an academic or professional interest in the information or data, but the general public as well. If authorization is given for such use, the Navy retains the right to review any manuscripts, publication or presentation in advance of publication or presentation for the purpose of ensuring the accuracy and releasability of the information or data presented. The Cooperator agrees that any manuscript, publication or presentation will include a statement as to the origin of the information or data obtained through the Agreement. Authorization for the use of information or data in one context is not to be construed as authorization for subsequent uses or purposes. The Cooperator shall submit at least two (2) hard copies of published manuscripts, and at least one electronic copy of slides, and/or slide or poster presentations to the Navy, at no extra cost to the Navy.
3. Recognizing the significant technical contributions of the Cooperator and U.S. Navy TPOC and SPOC in the development of the Agreement's scope of work, its goals, objectives, experimental sampling design, data interpretation, review of technical reports, etc., U.S. Navy TPOC and SPOC shall be accorded, if appropriate, joint-authorship credit for any publication of manuscript and technical presentation that is based upon the full use or partial use of the technical information, data, or interpretation of data produced under the Agreement. Appropriate joint-authorship credit means credit commensurate with the amount of work and technical contributions provided by the U.S. Navy TPOC and SPOC, and fair with reference to credit given by the primary author (Cooperator) to other joint authors of the manuscript and technical presentation. Appropriateness of joint authorship is to be determined by reference to applicable authority, for example, the code of ethics, rules, regulations, or guidance set forth by institutions or other recognized venues on the publication of manuscripts and technical presentations.
4. No classified information shall be presented in any document prepared under this Task Agreement. The Cooperator shall not release any information regarding the project, particularly the results developed under this Task Agreement, to any Federal, State or local (public or private) agencies or organizations without permission of the Government
5. The Cooperator shall be responsible for ensuring all personnel, representatives, agents, contractors, and associates participating in activities under the Agreement have read and acknowledged the provisions the Agreement.

M. RELEASE OF PUBLIC INFORMATION

The Cooperator shall not respond to any third party inquiries concerning the Agreement or concerning data and information obtained under the Agreement. All third party inquiries

received by the Cooperator shall be directed to the Contracting Officer (via the TPOC) for response in accordance with applicable law and regulations.

N. COORDINATION

The TPOC and the SPOC will furnish the necessary personnel, material, and services to fulfill this Task Order as follows:

The TPOC will:

1. Reimburse the Cooperator for all direct and indirect costs of tasks associated with this Cooperative Agreement. These costs should be identified in the Cooperator's estimate as part of the proposal. Costs not identified in the estimate must be approved by the Contracting Officer and TPOC before they will be paid.

The SPOC will:

1. Provide prearranged access to the installation lands in keeping with safety requirements within the military training environment. The SPOC will provide liaison between all appropriate offices and Air Mission Components and the Cooperator to schedule research activities to the extent practicable. Weather, illness, mission requirements and other factors may cause some variation in the proposed schedule.
2. Provide installation topographic maps and/or black and white copies of aerial photography, as needed, to plot research locations.
3. Make installation Geographic Information System (GIS) data available to the Cooperator for use in creating custom maps.

The Cooperator will:

1. The Cooperator shall schedule all activities associated with the Agreement at least three weeks in advance to allow for appropriate notification and approval on each installation.
2. The Cooperator shall be responsible for coordinating access to each installation with the SPOC.

O. SCHEDULE

Milestone	Completion Date
Cooperative Agreement Award	CAA
Kick-off Meeting	CAA + 14 days
Stream Restoration Complete	CAA + 180 days
Final Report	CAA + 365 days

P. PAYMENTS

1. The Cooperator shall request reimbursement on a monthly basis.
2. Advance payments may be requested by the Cooperator. Requests for advance payment shall be submitted on SF-270, "Request for Advance or Reimbursement." The form can be downloaded from the internet at <http://www.whitehouse.gov/omb/grants/sf270.pdf>.

3. The Cooperator shall maintain advances of Federal funds in an interest bearing account. The Cooperator shall remit, at least quarterly, to the Navy interest earned on advances. The Cooperator may keep interest amounts up to \$100 per year for administrative expenses. The Cooperator shall submit a SF-272 "Federal Cash Transactions Report" along with interest earned. The form can be downloaded from the internet at <http://www.whitehouse.gov/omb/grants/sf272.pdf>.
4. Partial payments equal to the amount of work accomplished may be made monthly from date of award. An amount not to exceed ten (10) percent of the total Agreement funds will be withheld until the final report, electronic data, and photographic information have been received (via the TPOC) and approved by the Contracting Officer.
5. Any requirement for the payment or obligation of funds, under the terms of the Agreement, shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. §1341 *et seq.* Nothing in the Agreement shall be construed, as implying that Congress will, at a later time, appropriate funds sufficient to meet deficiencies.
6. The provisions of this Cooperative Agreement, including the requirement to remit interest earned on advances, shall be applied to subrecipients and subgrantees performing substantive work under the Cooperative Agreement. Subrecipients and subgrantees are defined below:
 - a. A Subrecipient is the legal entity to which a subaward is made and which is accountable to the recipient for the use of the funds provided.
 - b. A Subgrantee is the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided.
 - c. A subaward is an award of financial assistance in the form of money, or property in lieu of money, made under an award by a recipient to an eligible subrecipient or by a subrecipient to a lower tier subrecipient. The term includes financial assistance when provided by any legal agreement, even if the agreement is called a contract. Subawards are for the performance of substantive work under awards, and are distinct from contracts for procuring goods and services.
 - d. A subgrant is an award of financial assistance in the form of money, or property in lieu of money, made under a grant by a grantee to an eligible subgrantee. The term includes financial assistance when provided by any legal agreement, even if the agreement is called a contract. Subgrants are for the performance of substantive work under awards, and are distinct from contracts for procuring goods and services.

Q. TERMINATION

1. If the Agreement is terminated, the Cooperator shall not bill for work that has not been completed subsequent to the termination date of the Agreement.

2. In the event that personnel or funding used to fulfill obligations under this Agreement are not available from either party, termination or modification this Cooperative Agreement must be made within 30 days of written notification.

APPENDIX A: NAVFAC Washington - Procedures and Specifications for Geographic Information System (GIS) Deliverables

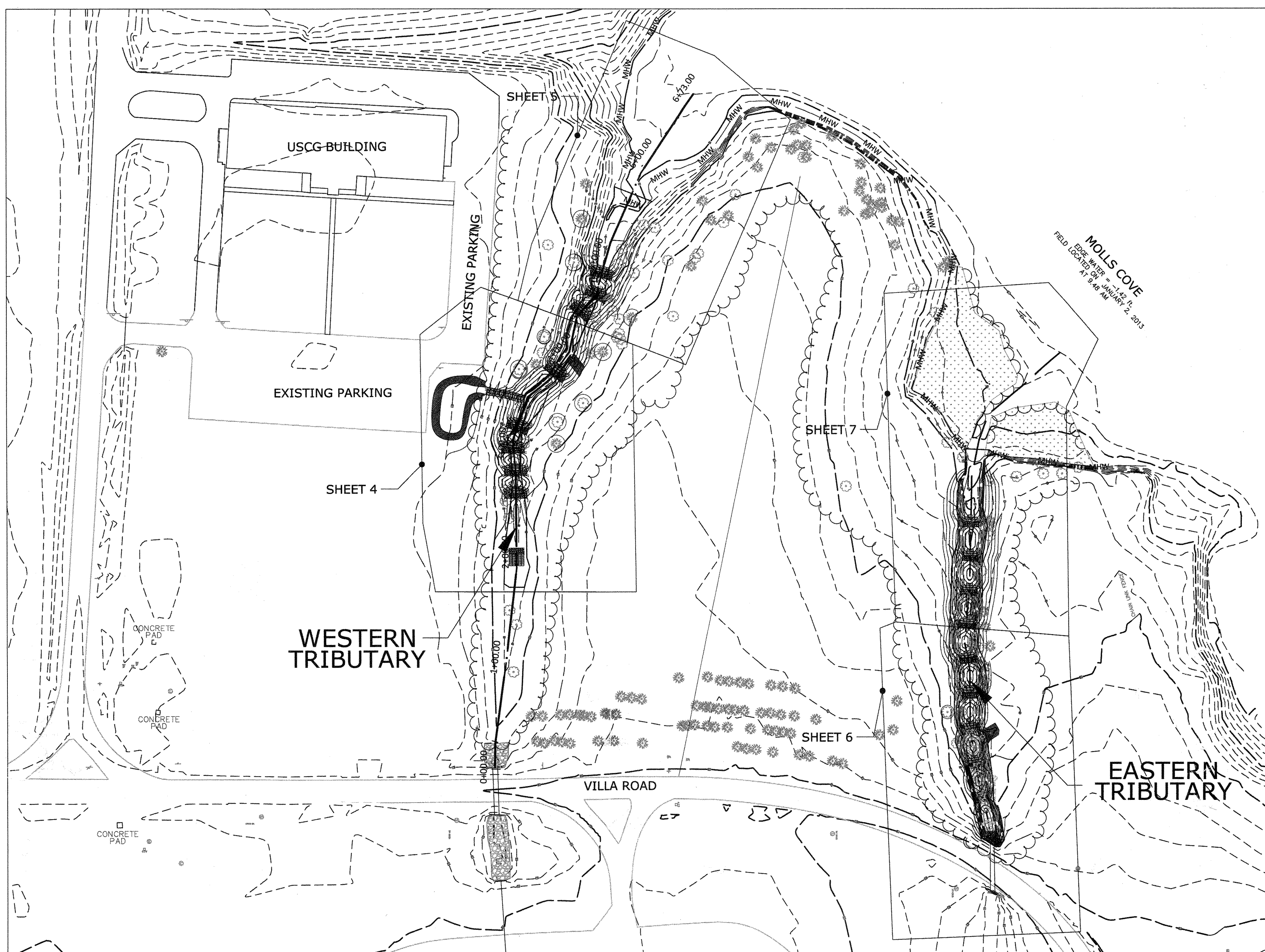
APPENDIX B: Molls Cove Design

GENERAL CONSTRUCTION NOTES

1. NO WORK SHALL BE CONDUCTED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, UNLESS A WAIVER IS OBTAINED FROM THE WATER MANAGEMENT ADMINISTRATION OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
2. ON-SITE STORAGE IS AT CONTRACTOR'S RISK.
3. CONTRACTOR SHALL FURNISH OWN SANITARY FACILITIES AND WATER.
4. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR OBTAINING ANY OF THE REQUIRED PERMITS FOR THIS PROJECT, HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE TERMS AND CONDITIONS OF ALL PERMITS REQUIRED FOR THIS PROJECT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATIONS OF ALL UTILITIES, STRUCTURES, PLANT MATERIALS, AND EROSION AND SEDIMENT CONTROL FEATURES, INCLUDING THE LIMITS OF DISTURBANCE.
6. 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.
7. EXCEPT WHERE NOTED, CONTRACTOR SHALL NOT DISTURB OR REMOVE ANY CONCRETE OR RIP RAP FROM THE CULVERTS THAT CONVEY FLOW BENEATH VILLA ROAD.
8. THE CONTRACTOR MUST MEASURE THE CHANNEL 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 ALL ELEVATIONS, GRADES, DIMENSIONS AND STRUCTURES SHALL BE CONSTRUCTED WITHIN 0.2 FT. OF WHAT IS SHOWN ON THE PLANS.
9. THE CONTRACTOR SHALL MAKE ALL REASONABLE ATTEMPTS TO MINIMIZE DISTURBANCE TO VEGETATION AND SOIL WITHIN THE WORK AREAS. VEGETATION THAT IS NOT SLATED FOR REMOVAL THAT IS SCARRED, NICKED, OR OTHERWISE DAMAGED SHALL BE PRUNED TO THE SATISFACTION OF THE RESTORATION SPECIALIST. ALL VEGETATION THAT IS TO BE REMOVED SHALL BE FLUSH CUT USING A CHAIN SAW OR OTHER CUTTING DEVICE; IT SHALL NOT BE SCRAPPED OR PUSHED OVER.
10. ALL DISTURBED AREAS OUTSIDE OF THE CHANNEL, WHERE GRADING IS NOT SPECIFIED, SHALL BE RETURNED TO PRE-CONSTRUCTION GRADES, AND SEEDED AND MULCHED ACCORDING TO THE PLANS AND TO THE SATISFACTION OF THE RESTORATION SPECIALIST.
11. ALL DISTURBED STREAM BANKS WITHIN THE LOD SHALL BE PERMANENTLY STABILIZED WITH SEED AND SOIL STABILIZATION MATTING.
12. ALL FLOW MUST BE DIVERTED AND REMOVED FROM THE WORK AREAS DURING CONSTRUCTION. DEWATERING OF THE WORK AREA IS REQUIRED.
13. DISTURBED AREAS NOT INCLUDED IN ONE OF THE FOUR PLANTING ZONES SHALL BE PERMANENTLY STABILIZED WITH THE 'PERMANENT STABILIZATION AREAS' SEED MIX, LISTED ON SHEET 20, AND MULCHED ACCORDING TO THE PLANS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ALL FEATURES AND PROPERTY WHICH ARE DAMAGED AS A RESULT OF THIS RESTORATION PROJECT. DETERMINATION OF WHETHER A REPAIR OR REPLACEMENT IS ACCEPTABLE SHALL BE MADE BY THE OWNER OF THAT PARTICULAR FEATURE.
15. SEDIMENT CONTROLS MAY ONLY BE REMOVED WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.
16. FOLLOWING THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL DEBRIS, TRASH, AND OTHER MATERIALS BROUGHT TO THE SITE.
17. THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
18. TOPOGRAPHIC DATA PROVIDED IS BASED ON FIELD-RUN SURVEY PERFORMED BY SOLTESZ IN JANUARY 2013.
19. DESIGN AND DRAWING BASED ON MARYLAND COORDINATE SYSTEM FROM AS PROVIDED BY SOLTESZ
HORIZONTAL - NAD83/91
VERTICAL - NAVD88
DATES SURVEY PERFORMED- DECEMBER 19, 2012 TO JANUARY 2, 2013.
20. ALL STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS.
21. LOCATION OF EXISTING UTILITIES, PIPELINES AND STRUCTURES SHOWN ON THE DRAWINGS ARE PROVIDED BY SOLTESZ.
22. 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.
23. A POST-CONSTRUCTION INSPECTION WILL BE PERFORMED WITHIN 7 DAYS FOLLOWING COMPLETION OF WORK TO INSPECT THE WORK PRODUCT. STRUCTURES, GRADES, MATERIALS, SEEDING, AND PLANTS WILL BE INSPECTED FOR COMPLIANCE WITH THE PLANS. ANY WORK OR MATERIAL FOUND TO BE DEFICIENT OR OTHERWISE NONCOMPLIANT WITH THE PLANS, FOR ANY REASON, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS/HER EXPENSE WITHIN 7 DAYS OF THE POST CONSTRUCTION INSPECTION. ALL REPAIR WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE NAVY AND/OR AGENCY REPRESENTATIVE(S).

INDEX OF SHEETS

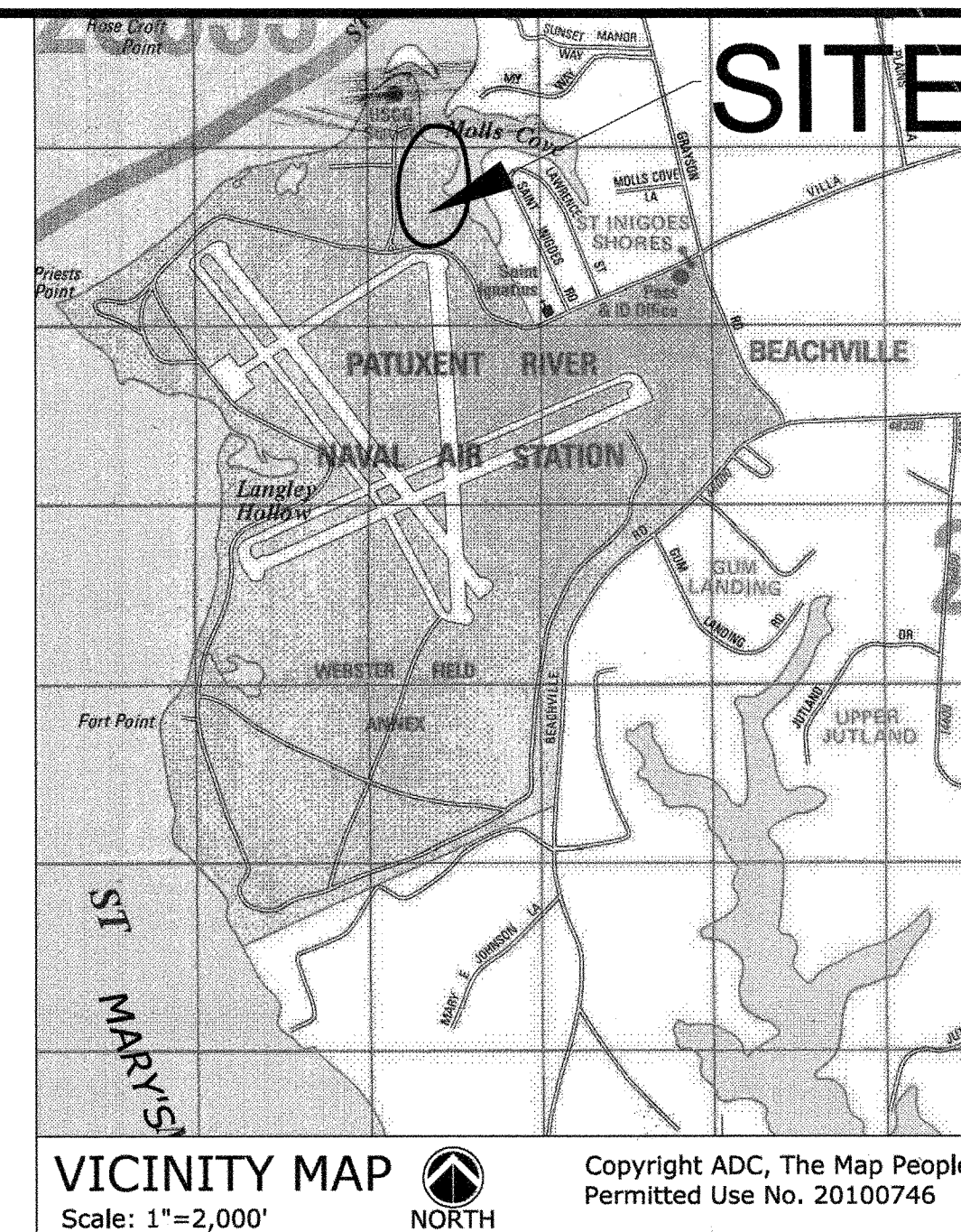
SHEET 1	COVER SHEET
SHEET 2	DRAINAGE AREA MAP
SHEET 3	EXISTING CONDITIONS
SHEET 4	GRADING PLAN-WESTERN TRIBUTARY
SHEET 5	GRADING PLAN-WESTERN TRIBUTARY
SHEET 6	GRADING PLAN-EASTERN TRIBUTARY
SHEET 7	GRADING PLAN-EASTERN TRIBUTARY
SHEET 8	CROSS SECTIONS-WESTERN TRIBUTARY
SHEET 9	CROSS SECTIONS-WESTERN & EASTERN TRIBUTARY
SHEET 10	CROSS SECTIONS-EASTERN TRIBUTARY
SHEET 11	LONGITUDINAL PROFILE-WESTERN TRIBUTARY
SHEET 12	LONGITUDINAL PROFILE-EASTERN TRIBUTARY
SHEET 13	EROSION AND SEDIMENT CONTROL PLAN--WESTERN TRIBUTARY
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SHEET 21	NOTES, SEQUENCE OF CONSTRUCTION, MATERIAL SPECIFICATIONS
SHEET 22	TYPICAL NOTES & DETAILS



SCALE: 1"=60'

STREAM RESTORATION PLAN FOR MOLLS COVE WESTERN AND EASTERN TRIBUTARIES FEBRUARY 2014

THE CONTRACTOR MUST COORDINATE WITH THE NAVY TO HAVE ALL UTILITIES MARKED PRIOR TO ANY CONSTRUCTION.



VICINITY MAP
Scale: 1"=2,000'



Copyright ADC, The Map People
Permitted Use No. 20100746

OWNER'S/DEVELOPERS 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 hereby authorize the right to entry for periodic on-site evaluation by State of Maryland, Department of the Environment, Compliance Inspectors.

Owner/Developer Signature

Print Name and Title

49735

Carl Jarvis
Supervisory Civil Engr
Head, Construction Mgmt

DESIGN CERTIFICATION

"I hereby certify that this plan has been designed in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control or current revisions thereof and the Department of the Environment Stormwater Management Regulations."

02/12/2015
Date

Designer's Signature

3705

Maryland Registration Number

Stephanie Pratt

Print Name

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

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION

NUMBER: 14-NT-0223-201461026

AI Number: 144300; MDE NO. 15-SF-0071

COVER SHEET

MOLLS COVE

AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: AS SHOWN

DATE: February 2014

ESA PROJECT FILE

Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat Improvement/Surveys for Wildlife and Habitat Improvements/Molls Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings

SHEET: 1 of 22



REVISIONS		
NO.	BY	DATE
1	SP	09/14
2	MR	11/14
3	MR	1/15

Survey:

SOLTESZ

WALDORF OFFICE
401 Post Office Road, Suite 103
Waldorf, MD 20602
t. 301.870.2166 f. 301.870.2884

Prepared for/Applicant:



Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:



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

**Western Drainage
Area = 32.07 acres**

**Sub area A
21.33 AC**

**Sub area B
3.50 AC**

**Sub area C
3.28 AC**

**Sub area D
0.55 AC**
**Sub area E
3.41 AC**

**Outlet, Western
Drainage Area**

**Outlet, Eastern
Drainage Area**

**Eastern Drainage Area
(to outlet)= 19.74 acres**

**Sub area
2.63 AC**

**NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071**



REVISIONS		
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2	MR	11/14
3	MR	1/15
DESCRIPTION		
RESPONSE TO MDE COMMENTS DATED 08/14		
REVISE ESC PLAN, MHW		
REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14		

Survey:
SOLTESZ

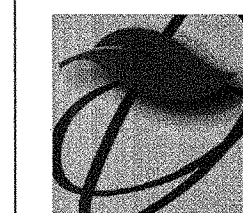
WALDORF OFFICE
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Waldorf, MD 20602
T. 301.870.2166 F. 301.870.2884

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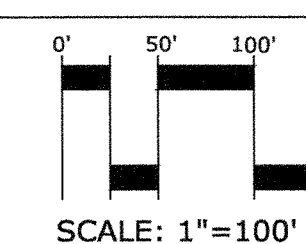


**Environmental
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Analysis, Inc.**
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Ecological Restoration
162 West Street
Annapolis, MD 21401

DRAINAGE BASINS

MOLLS COVE

**AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND**



SCALE: 1"=100'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 2 of 22



- LEGEND
- EXISTING UTILITIES
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
 - EXISTING MARSH GRASS
 - EXISTING RIPRAP
 - EXISTING TREES
 - STREAM BASELINE
 - MEAN HIGH WATER

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

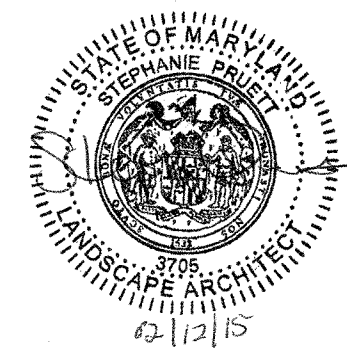
EXISTING CONDITIONS SITE PLAN

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

0' 20' 40' 80'
SCALE: 1"=40'



SCALE: 1"=40'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 3 of 22



REVISIONS			
NO.	BY	DATE	DESCRIPTION
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3	MR	1/15	REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14

Survey:
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Prepared for/Applicant:

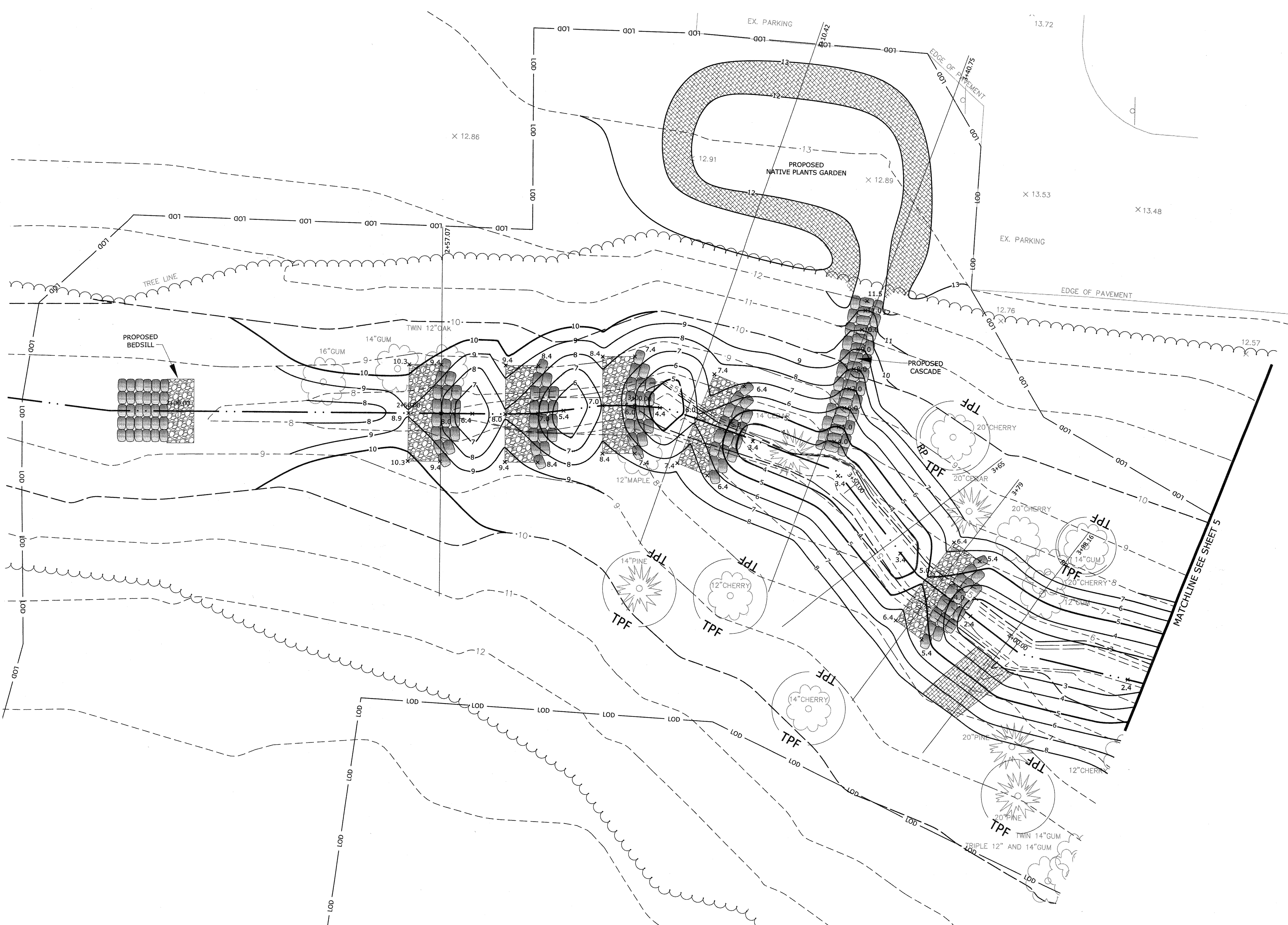


Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:



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



- LEGEND**
- EXISTING ELECTRIC
 - EXISTING WATER VALVE
 - EXISTING CABLE TV BOX
 - EXISTING FIRE HYDRANT
 - EXISTING SEWER MANHOLE
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
 - EXISTING MARSH GRASS
 - EXISTING RIPRAP
 - EXISTING TREES
 - STREAM BASELINE
 - PROPOSED RIFFLE WEIR
 - PROPOSED POOL
 - PERMANENT SOIL STABILIZATION MATTING
 - LIMITS OF DISTURBANCE
 - CROSS-SECTION LOCATION
 - ROOT PRUNING
 - PROPOSED TREE PROTECTION FENCE
 - PROPOSED CONTOURS
 - PROPOSED SPOT ELEVATIONS
 - MEAN HIGH WATER

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

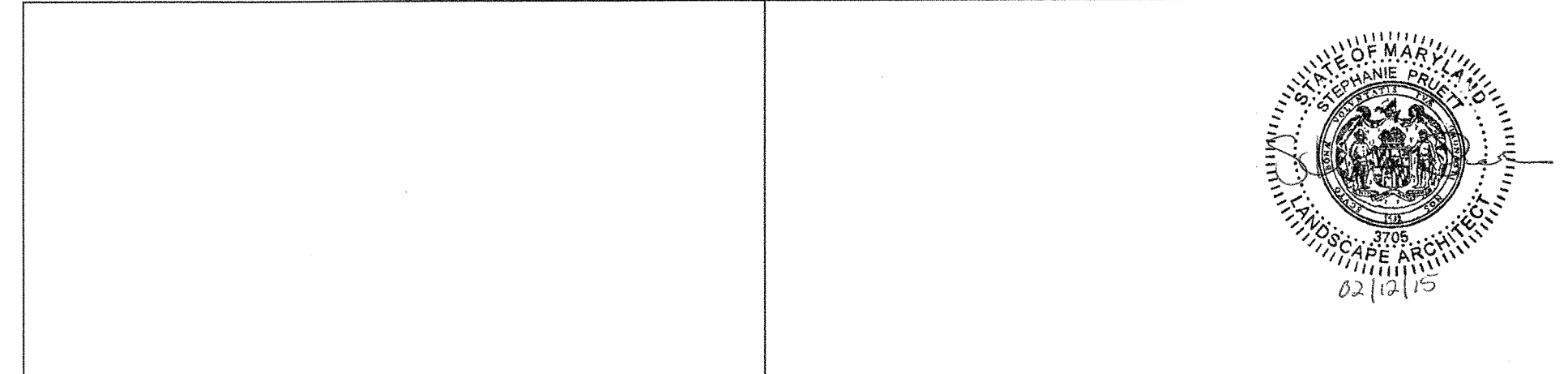
GRADING PLAN-WESTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'

DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings

SHEET: 4 of 22



REVISIONS			
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1	SP	09/14	RESPONSE TO MDE COMMENTS DATED 08/14
2	MR	11/14	REVISE ESC PLAN, MHW
3	MR	1/15	REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14

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Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

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



LEGEND

- EXISTING ELECTRIC
- EXISTING WATER VALVE
- EXISTING CABLE TV BOX
- EXISTING FIRE HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING MARSH GRASS
- EXISTING RIPRAP
- EXISTING TREES
- STREAM BASELINE
- PROPOSED RIFFLE WEIR
- PROPOSED POOL
- PERMANENT SOIL STABILIZATION MATTING
- LIMITS OF DISTURBANCE
- CROSS-SECTION LOCATION
- ROOT PRUNING
- PROPOSED TREE PROTECTION FENCE
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATIONS
- MEAN HIGH WATER

MOLLES COVE
EDGE WATER = -1.42 ft.
FIELD LOCATED ON JANUARY 2, 2013
AT 9:48 AM

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

GRADING PLAN-WESTERN TRIBUTARY

MOLLES COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

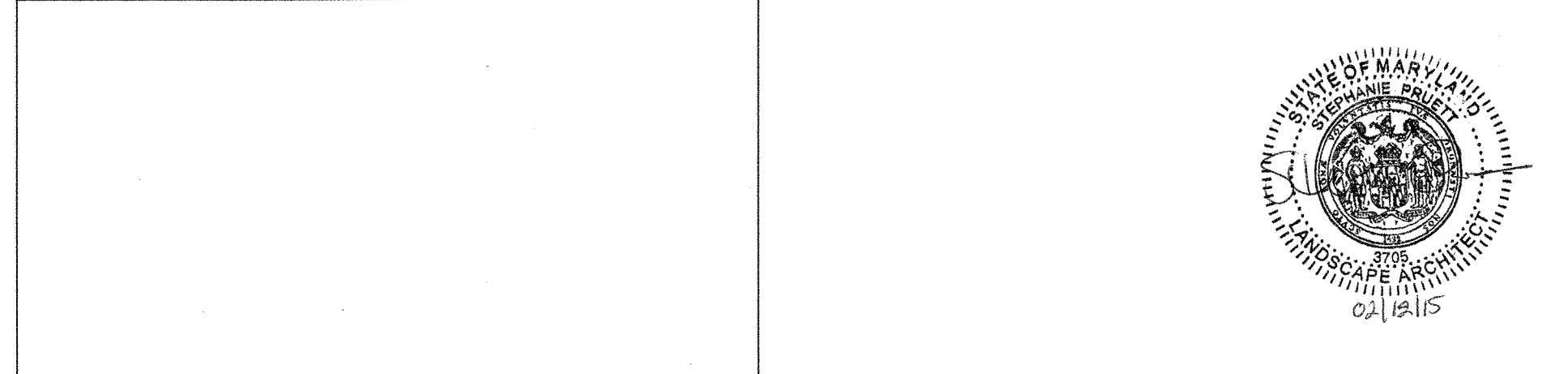
SCALE: 1"=10'

DATE: February 2014

ESA PROJECT FILE

12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molles
Cove Stream Restoration/CAD_GIS/Molles Cove/Individual Drawings

SHEET: 5 of 22



REVISIONS		
NO.	BY	DATE
1	SP	09/14
2	MR	11/14
3	MR	1/15

Survey:
SOLTESZ

WALDORF OFFICE
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Waldorf, MD 20602
t. 301.870.2166 f. 301.870.2884

Prepared for/Applicant:

NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON

Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:

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Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401



LEGEND

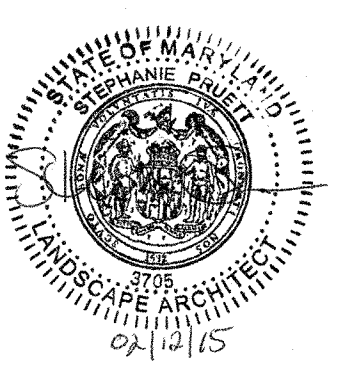
- EXISTING ELECTRIC
- EXISTING WATER VALVE
- EXISTING CABLE TV BOX
- EXISTING FIRE HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING CONTOURS
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- PROPOSED TREE PROTECTION FENCE
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATIONS
- MEAN HIGH WATER

NOTE:
REMOVE EXISTING RIP RAP FROM CHANNEL AND BANKS WITHIN WORK AREAS. SUITABLE MATERIAL SHALL BE SALVAGED AND USED FOR OUTFALL STABILIZATION AND FOOTERS.

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

GRADING PLAN-EASTERN TRIBUTARY
MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvements/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 6 of 22

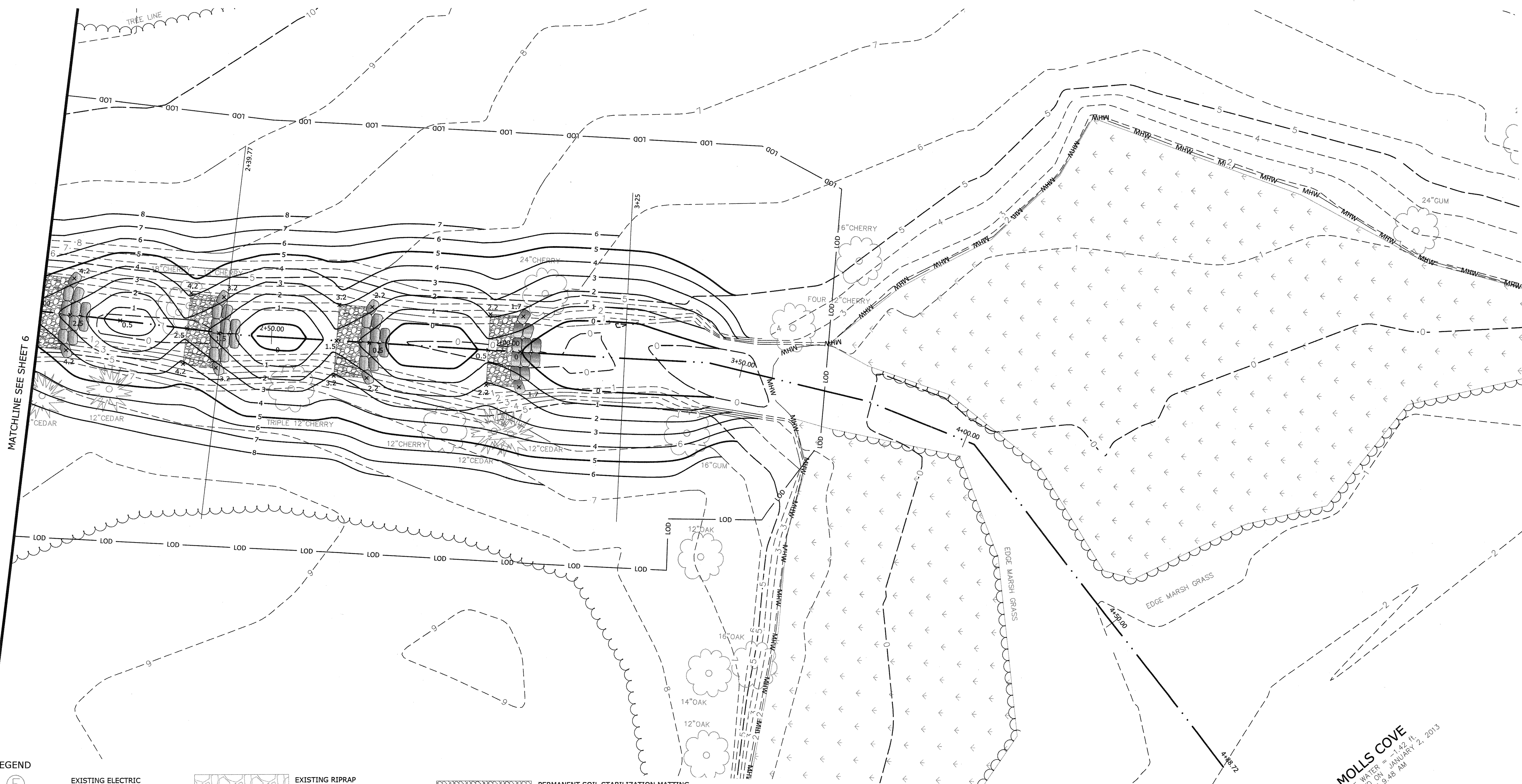


REVISIONS		
NO.	BY	DATE
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Survey:
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Prepared for/Applicant:
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Naval Facilities Engineering Command
NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:
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Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401



LEGEND

- | | | | | | |
|--|------------------------|--|----------------------|--|--------------------------------------|
| | EXISTING ELECTRIC | | EXISTING RIPRAP | | PERMANENT SOIL STABILIZATION MATTING |
| | EXISTING WATER VALVE | | EXISTING TREES | | LIMITS OF DISTURBANCE |
| | EXISTING CABLE TV BOX | | STREAM BASELINE | | CROSS-SECTION LOCATION |
| | EXISTING FIRE HYDRANT | | PROPOSED RIFFLE WEIR | | ROOT PRUNING |
| | EXISTING SEWER MANHOLE | | PROPOSED POOL | | PROPOSED TREE PROTECTION FENCE |
| | EXISTING CONTOURS | | | | PROPOSED CONTOURS |
| | EXISTING TREELINE | | | | PROPOSED SPOT ELEVATIONS |
| | EXISTING FENCE | | | | MEAN HIGH WATER |
| | EXISTING MARSH GRASS | | | | |

NOTE:
REMOVE EXISTING RIP RAP FROM CHANNEL AND BANKS WITHIN WORK AREAS. SUITABLE MATERIAL SHALL BE SALVAGED AND USED FOR OUTFALL STABILIZATION AND FOOTERS.

MOLLS COVE
EDGE WATER = -1.42 ft
FIELD LOCATED ON JANUARY 2, 2013
AT 9:46 AM

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071



REVISIONS		
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Survey:
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Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

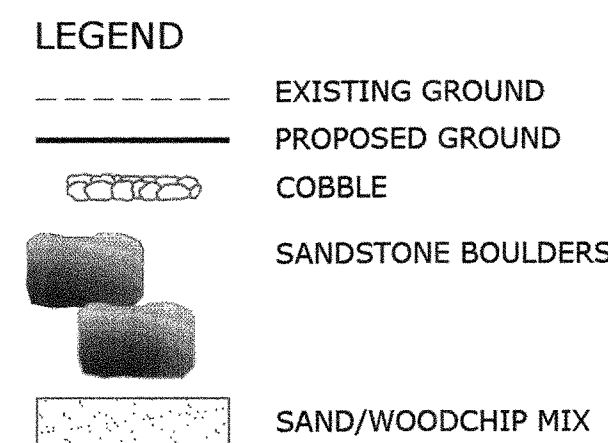
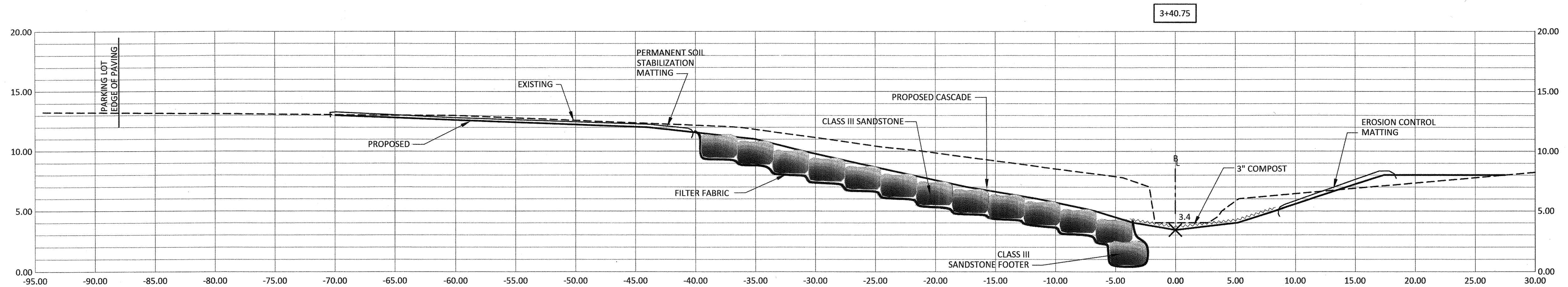
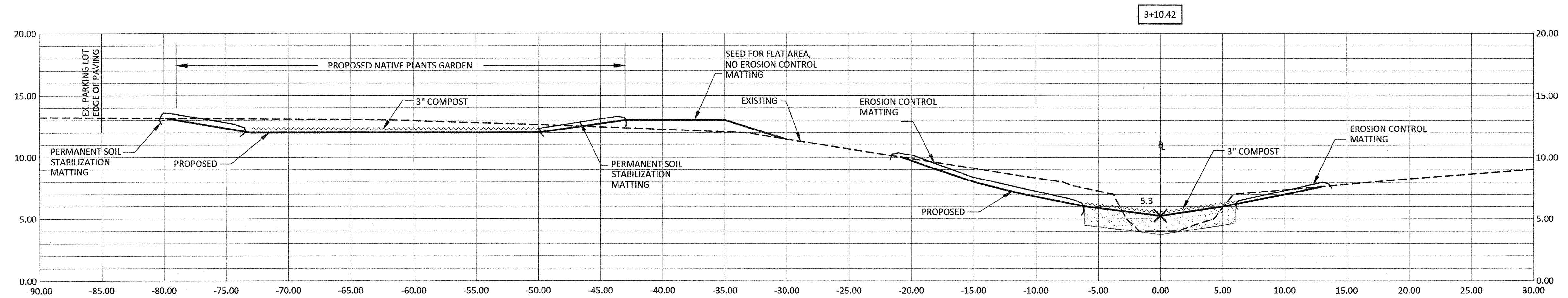
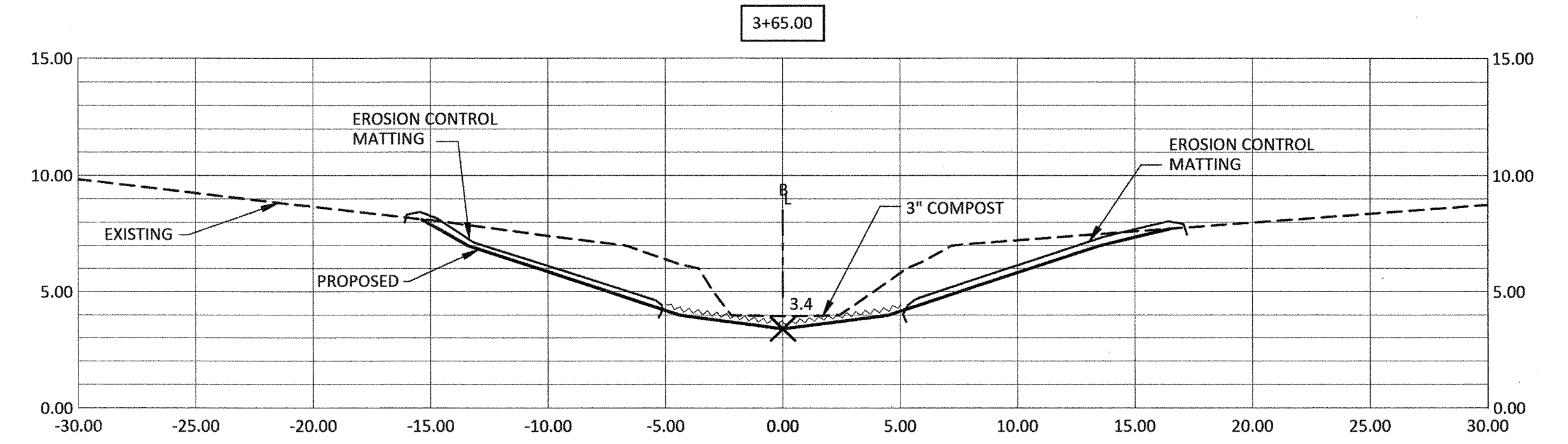
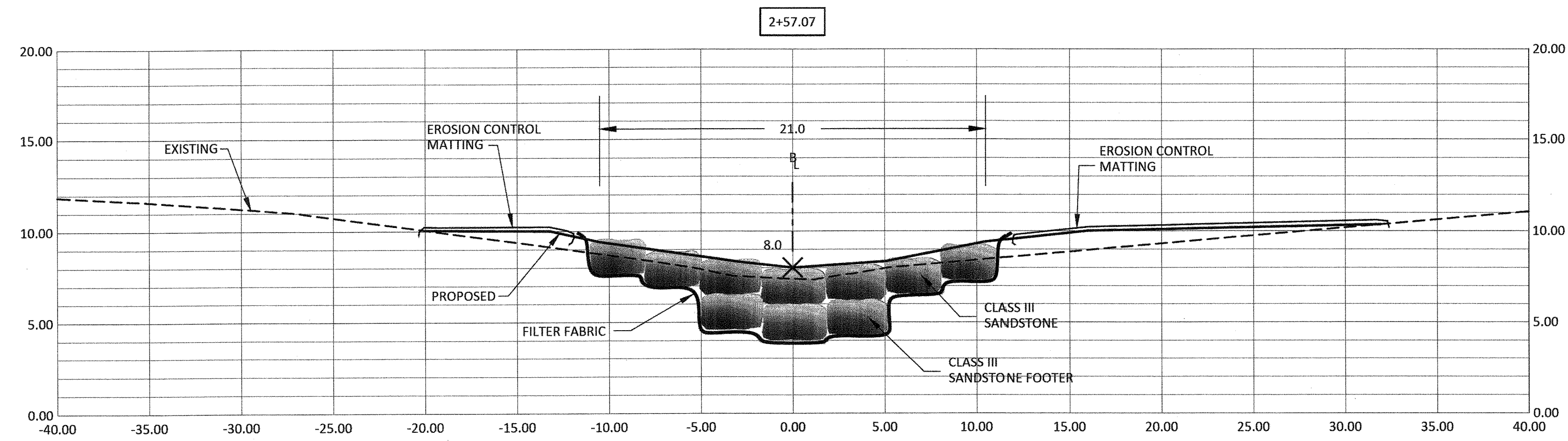
Prepared by:
Environmental Systems Analysis, Inc.
Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401

GRADING PLAN-EASTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'

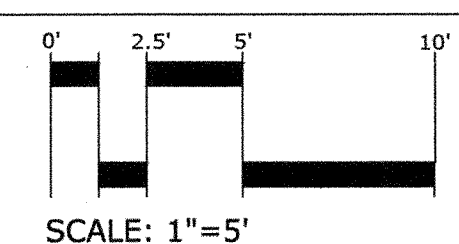
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SHEET: 7 of 22



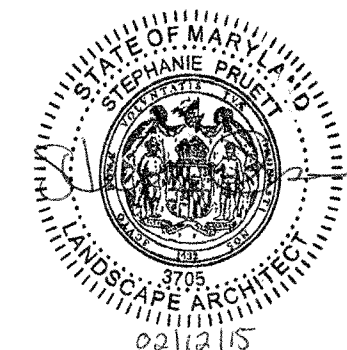
NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

CROSS SECTIONS-WESTERN TRIBUTARY

MOLLS COVE
 AT WEBSTER FIELD
STREAM RESTORATION PLAN
 ST. MARY'S COUNTY, MARYLAND



SCALE: 1"=5'
 DATE: February 2014
 ESA PROJECT FILE 12-01 NAVFAC
 Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
 Improvement/Surveys for Wildlife and Habitat Improvement/Molls
 Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
 SHEET: 8 of 22

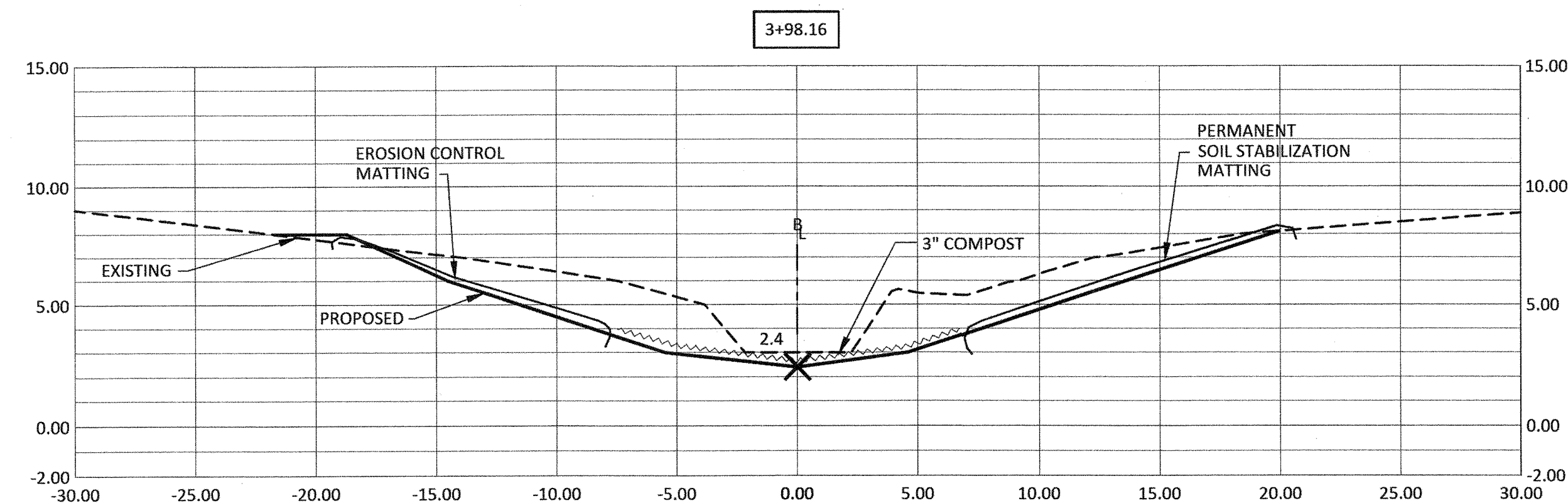
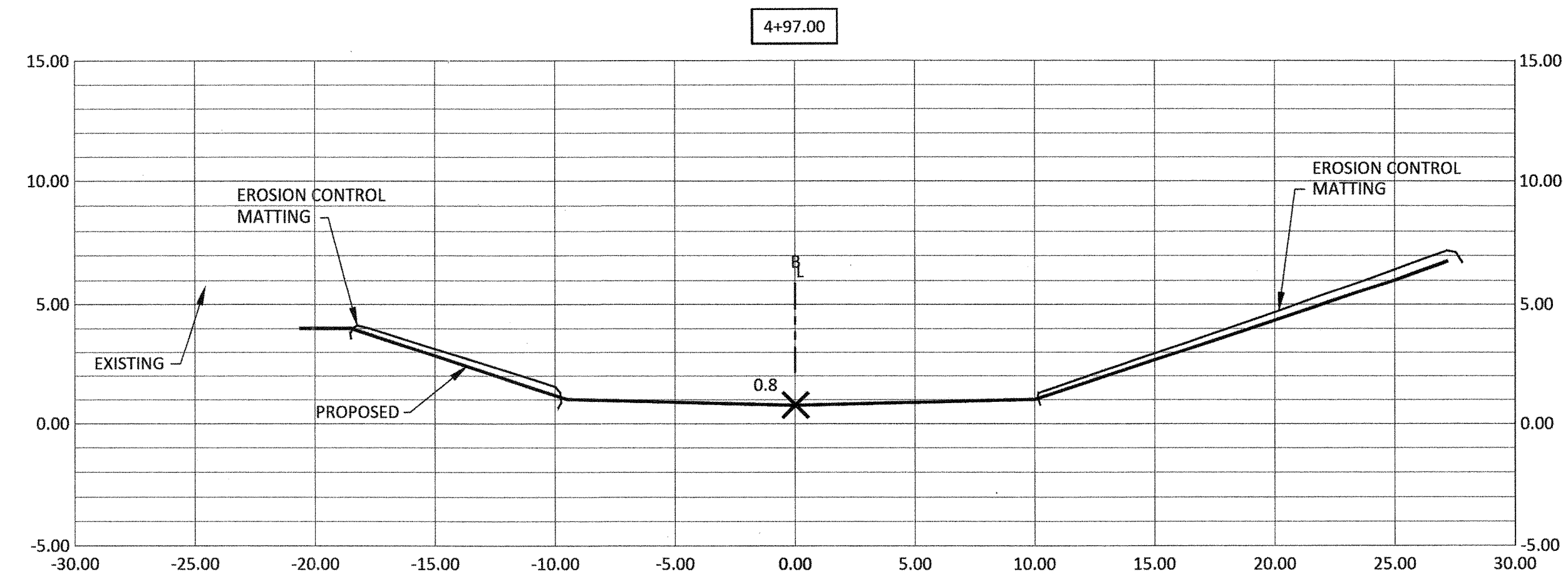
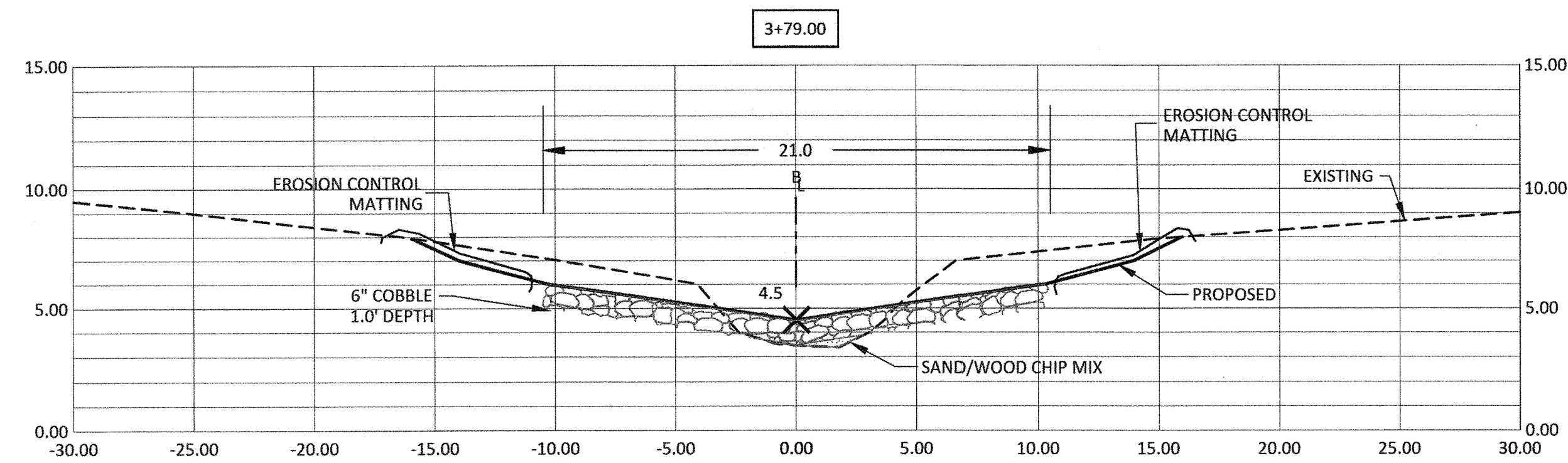


REVISIONS			DESCRIPTION
NO.	BY	DATE	
1	SP	09/14	RESPONSE TO MDE COMMENTS DATED 08/14
2	MR	11/14	REVISE ESC PLAN, MHW
3	MR	1/15	REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14

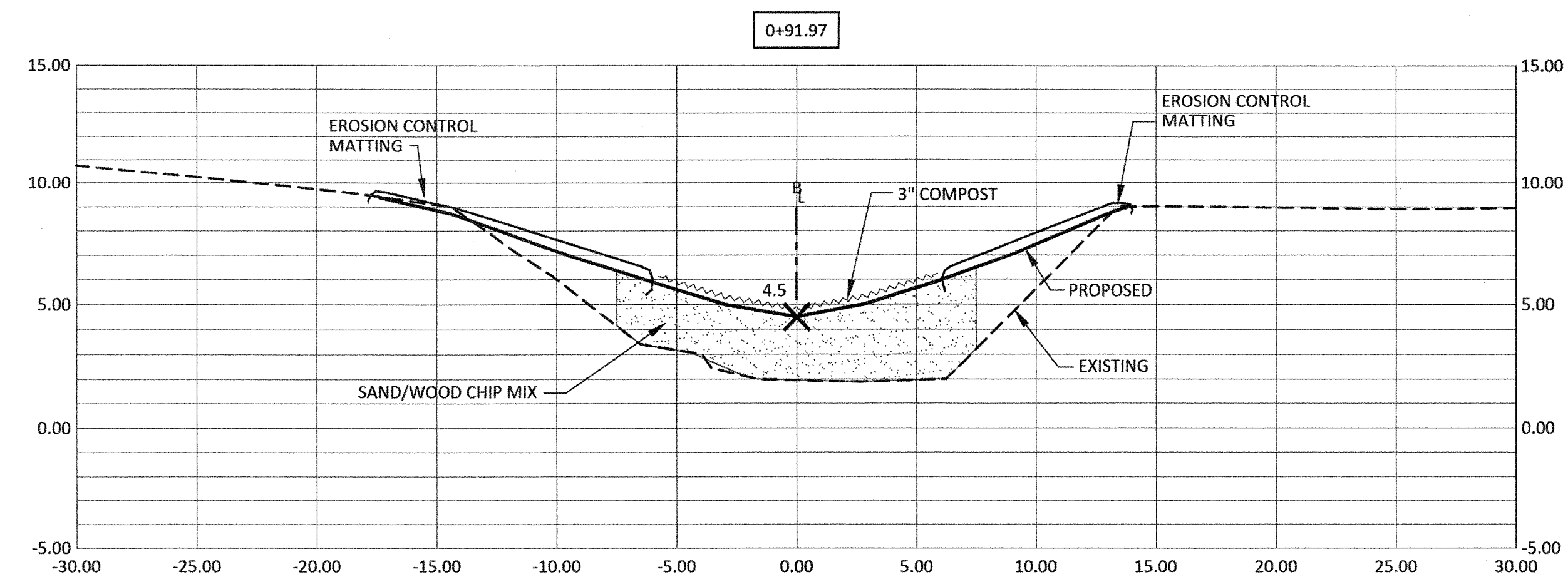
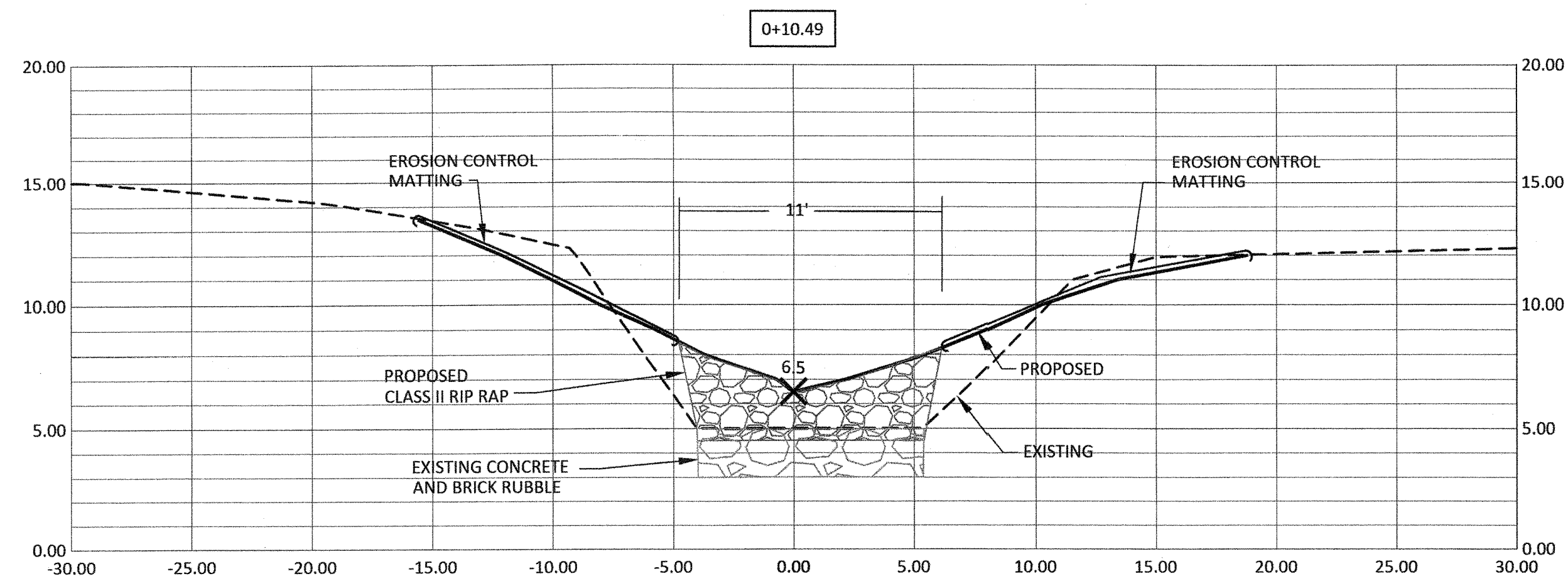
Survey:
SOLTESZ
 WALDORF OFFICE
 401 Post Office Road, Suite 103
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Prepared for/Applicant:
NAVFAC
 Naval Facilities Engineering Command
 NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

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

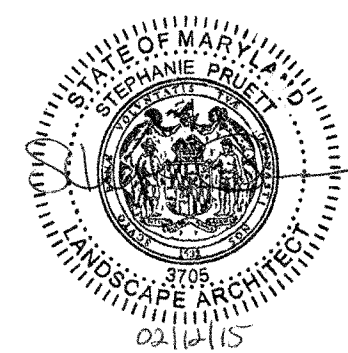


WESTERN TRIBUTARY
EASTERN TRIBUTARY



LEGEND

- EXISTING GROUND
- PROPOSED GROUND
- COBBLE
- SANDSTONE BOULDERS
- SAND/WOODCHIP MIX



REVISIONS			
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Survey:

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Prepared for/Applicant:

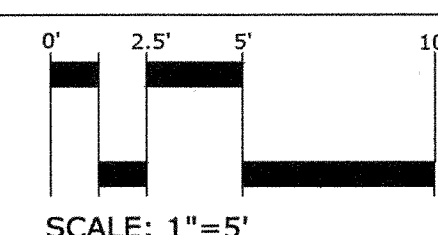
NAVFAC
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NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
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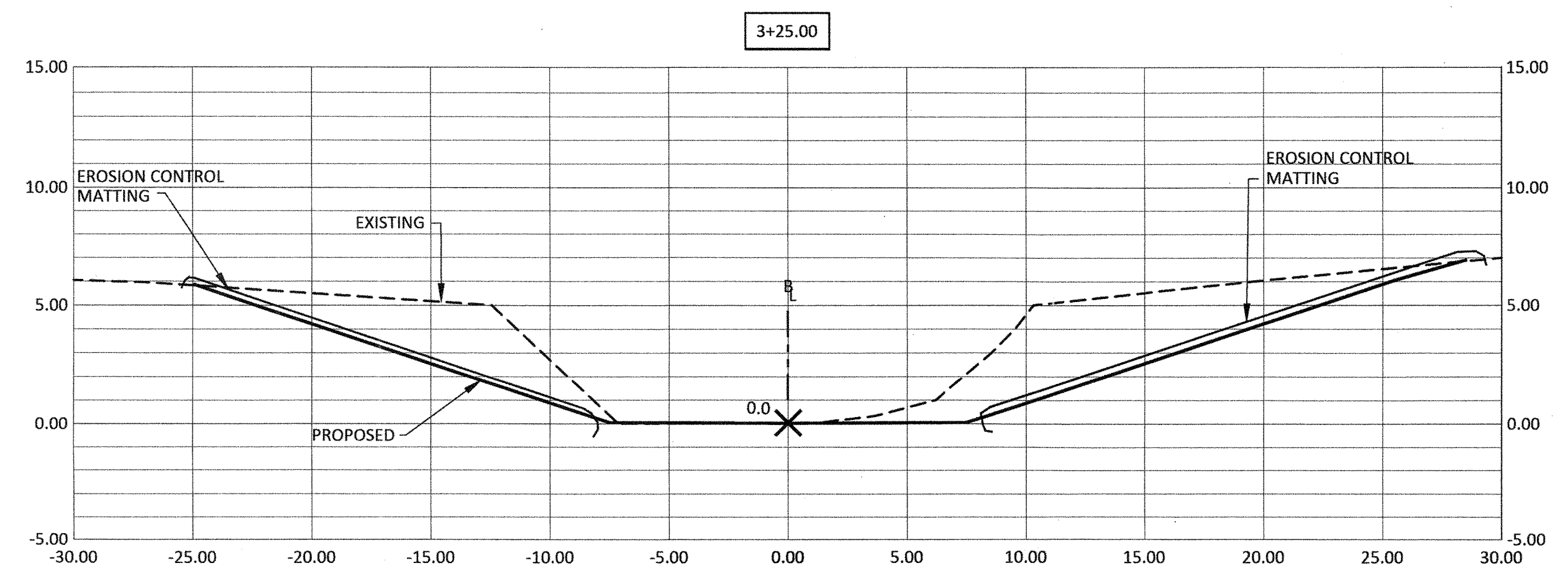
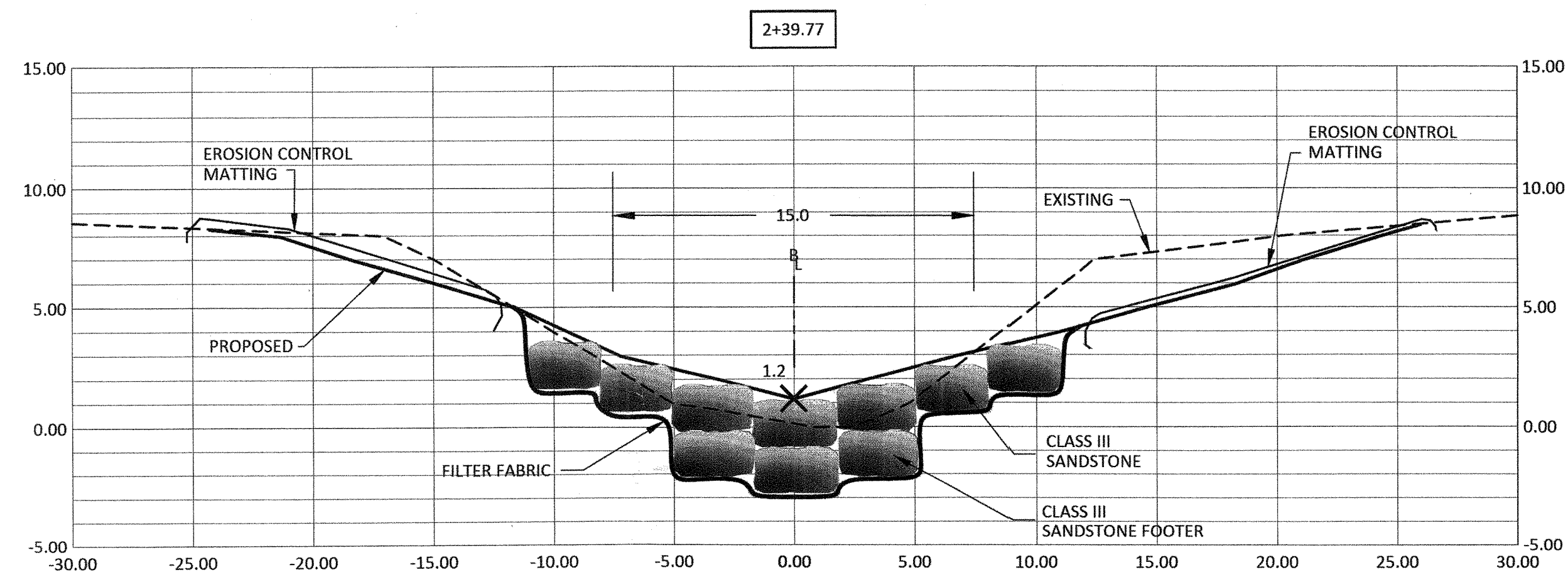
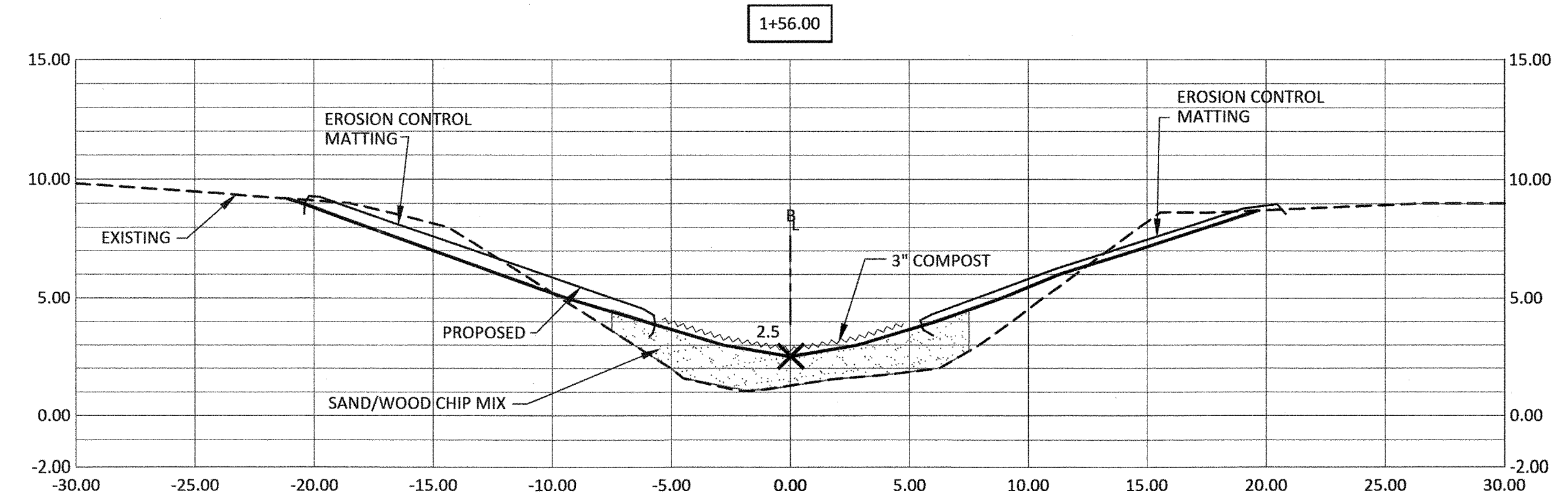
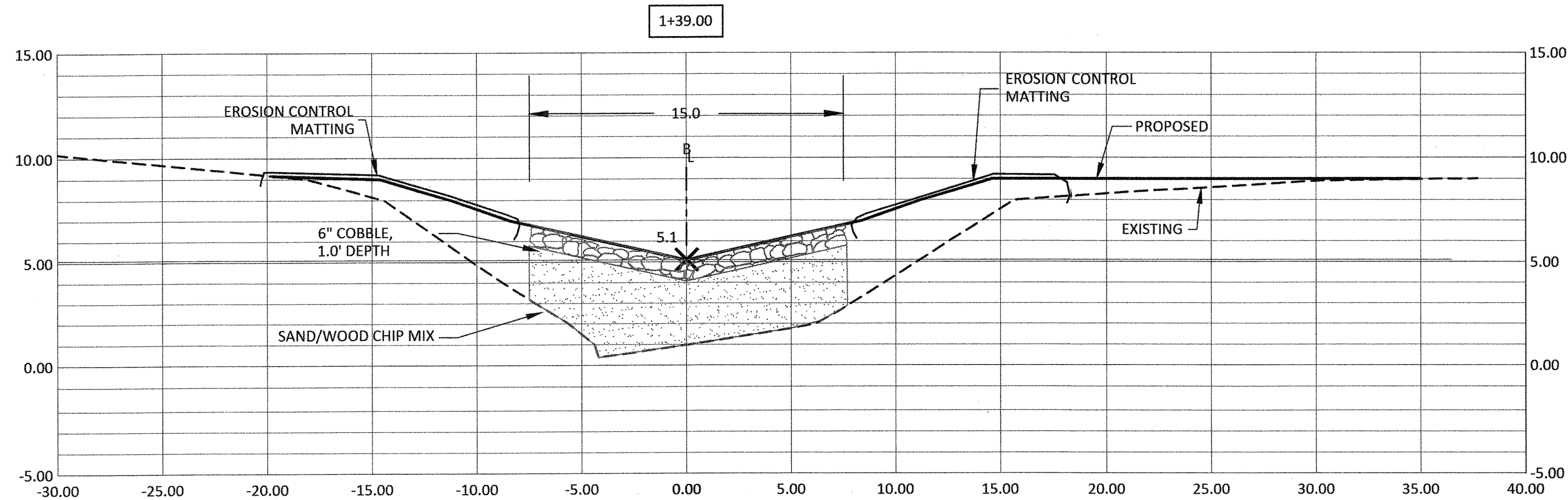
CROSS SECTIONS-WESTERN & EASTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND



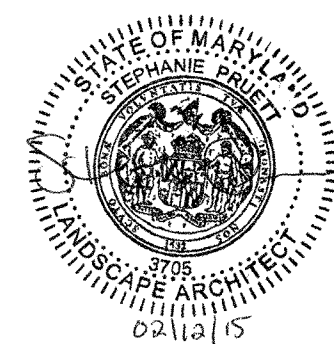
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DATE: February 2014
ESA PROJECT FILE
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat Improvement/Surveys for Wildlife and Habitat Improvement/Molls Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 9 of 22

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071



LEGEND

- EXISTING GROUND
- PROPOSED GROUND
- COBBLE
- SANDSTONE BOULDERS
- SAND/WOODCHIP MIX



REVISIONS			
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Survey:
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Prepared for/Applicant:



Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:

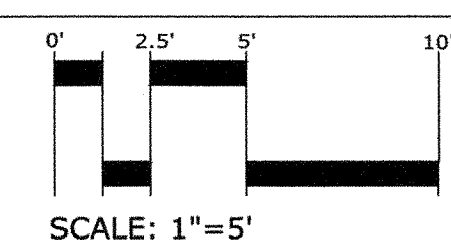


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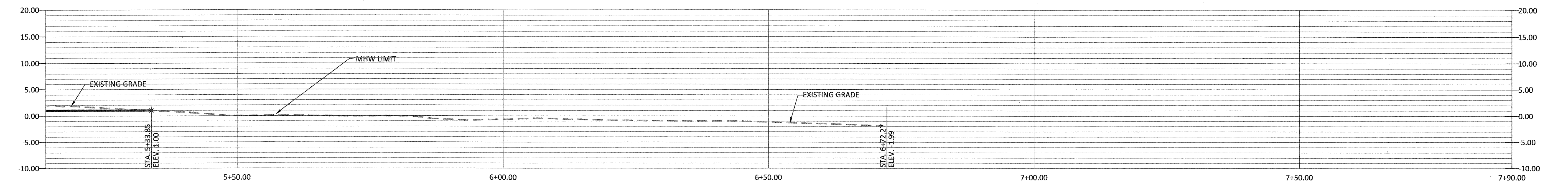
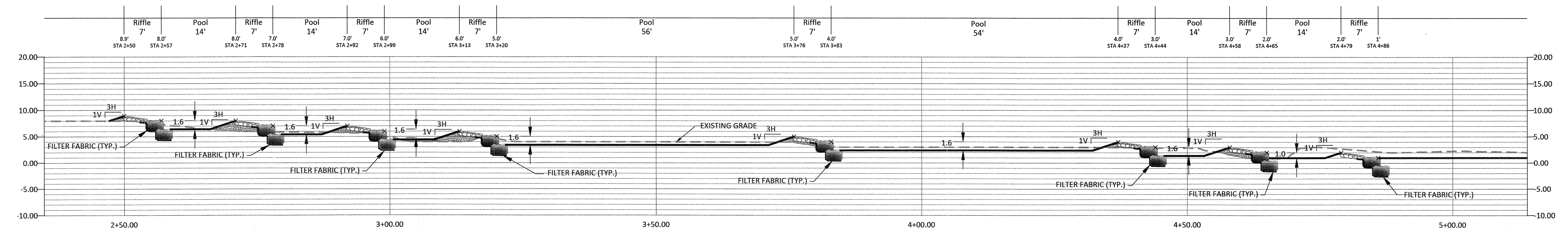
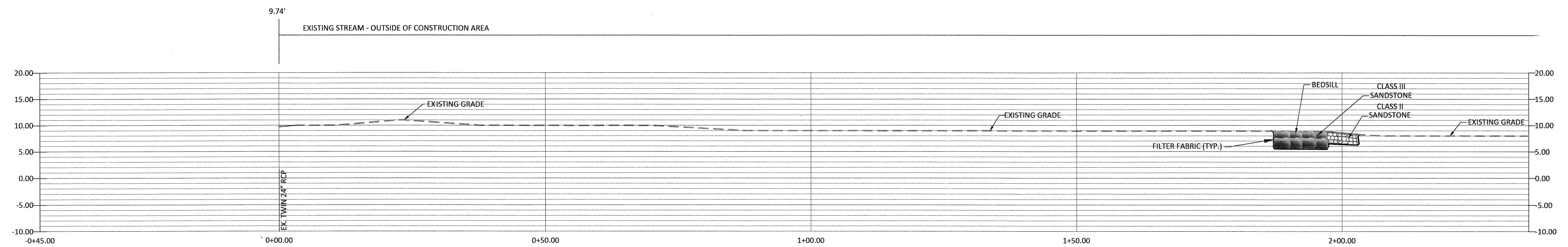
NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

CROSS SECTIONS-EASTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND



SCALE: 1"=5'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 10 of 22



LEGEND

- EXISTING GRADE
- PROPOSED STREAM INVERT
- COBBLE
- SANDSTONE BOULDERS
- SAND/WOODCHIP MIX
- BEDSILL



REVISIONS			
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Survey:

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Prepared for/Applicant:

NAV FAC
Naval Facilities Engineering Command
Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401
Contract #: N40080-12-D-0350
Task Order: 0009

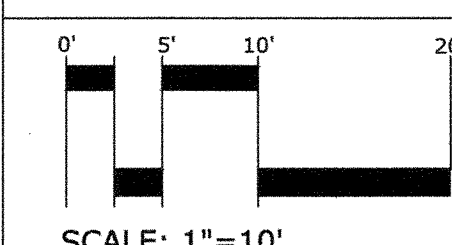
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Ecological Restoration
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Annapolis, MD 21401

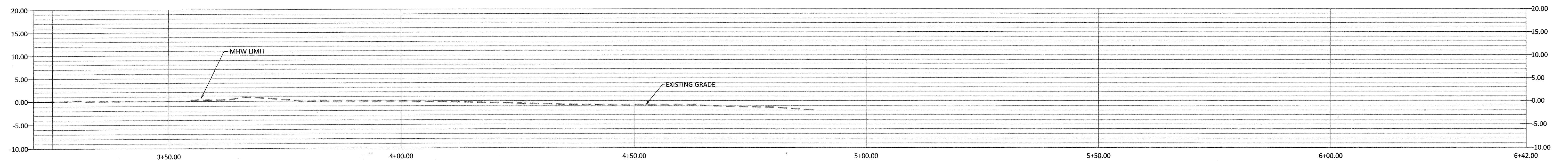
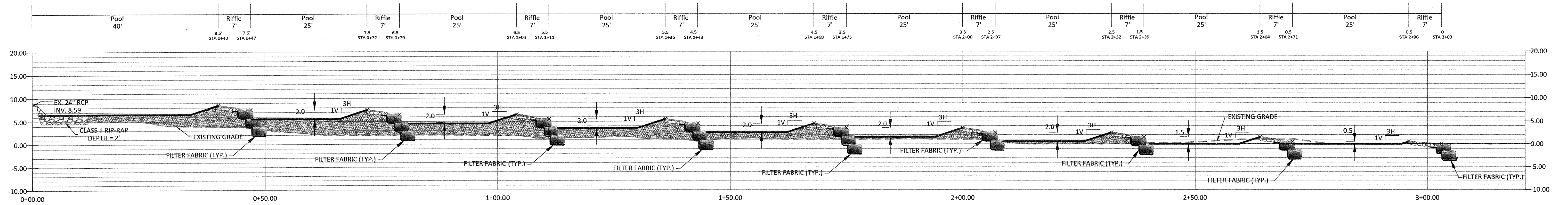
NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

LONGITUDINAL PROFILE-WESTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND



SCALE: 1"=10'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 11 of 22



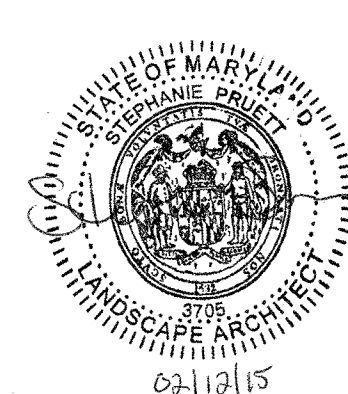
- LEGEND**
- EXISTING GRADE
 - PROPOSED STREAM INVERT
 - COBBLE
 - SANDSTONE BOULDERS
 - SAND/WOODCHIP MIX

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

LONGITUDINAL PROFILE-EASTERN TRIBUTARY

MOLLS COVE
 AT WEBSTER FIELD
 STREAM RESTORATION PLAN
 ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'
 DATE: February 2014
 ESA PROJECT FILE 13-01 NAVFAC
 Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
 Improvement/Surveys for Wildlife and Habitat Improvements/Molls
 Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
 SHEET: 12 of 22

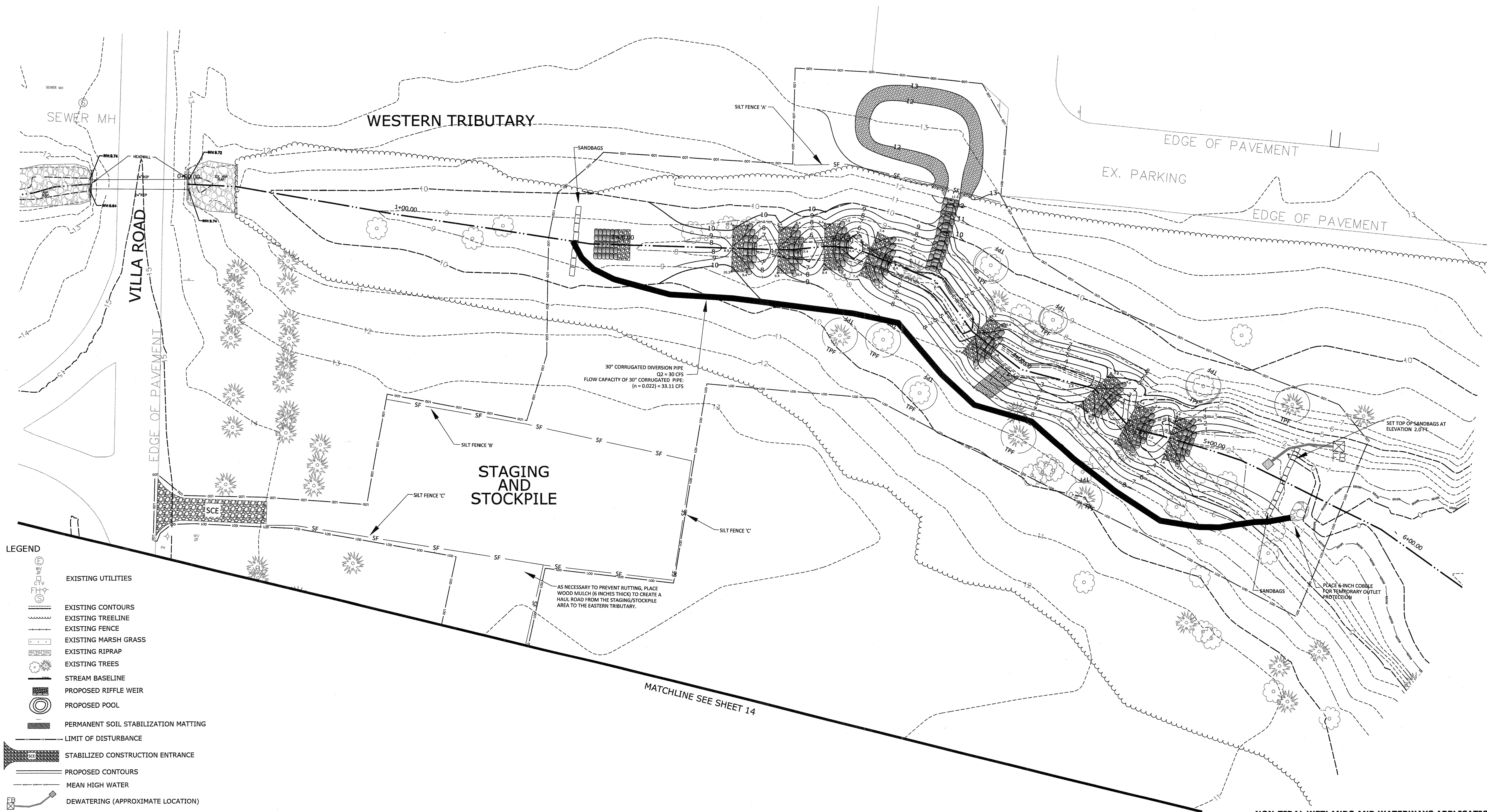


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Prepared for/Applicant:
NAVFAC
 Naval Facilities Engineering Command
 NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:
Environmental Systems Analysis, Inc.
 Natural Resources Management
 Ecological Restoration
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 Annapolis, MD 21401



- LEGEND**
- EXISTING UTILITIES
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
 - EXISTING MARSH GRASS
 - EXISTING RIPRAP
 - EXISTING TREES
 - STREAM BASELINE
 - PROPOSED RIFFLE WEIR
 - PROPOSED POOL
 - PERMANENT SOIL STABILIZATION MATTING
 - LIMIT OF DISTURBANCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - PROPOSED CONTOURS
 - MEAN HIGH WATER
 - DEWATERING (APPROXIMATE LOCATION)

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

EROSION AND SEDIMENT CONTROL PLAN--WESTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=20'

DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvements/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings

SHEET: 13 of 22



REVISIONS		
NO.	BY	DATE
1	SP	09/14
2	MR	11/14
3	MR	1/15

Survey:
SOLTESZ

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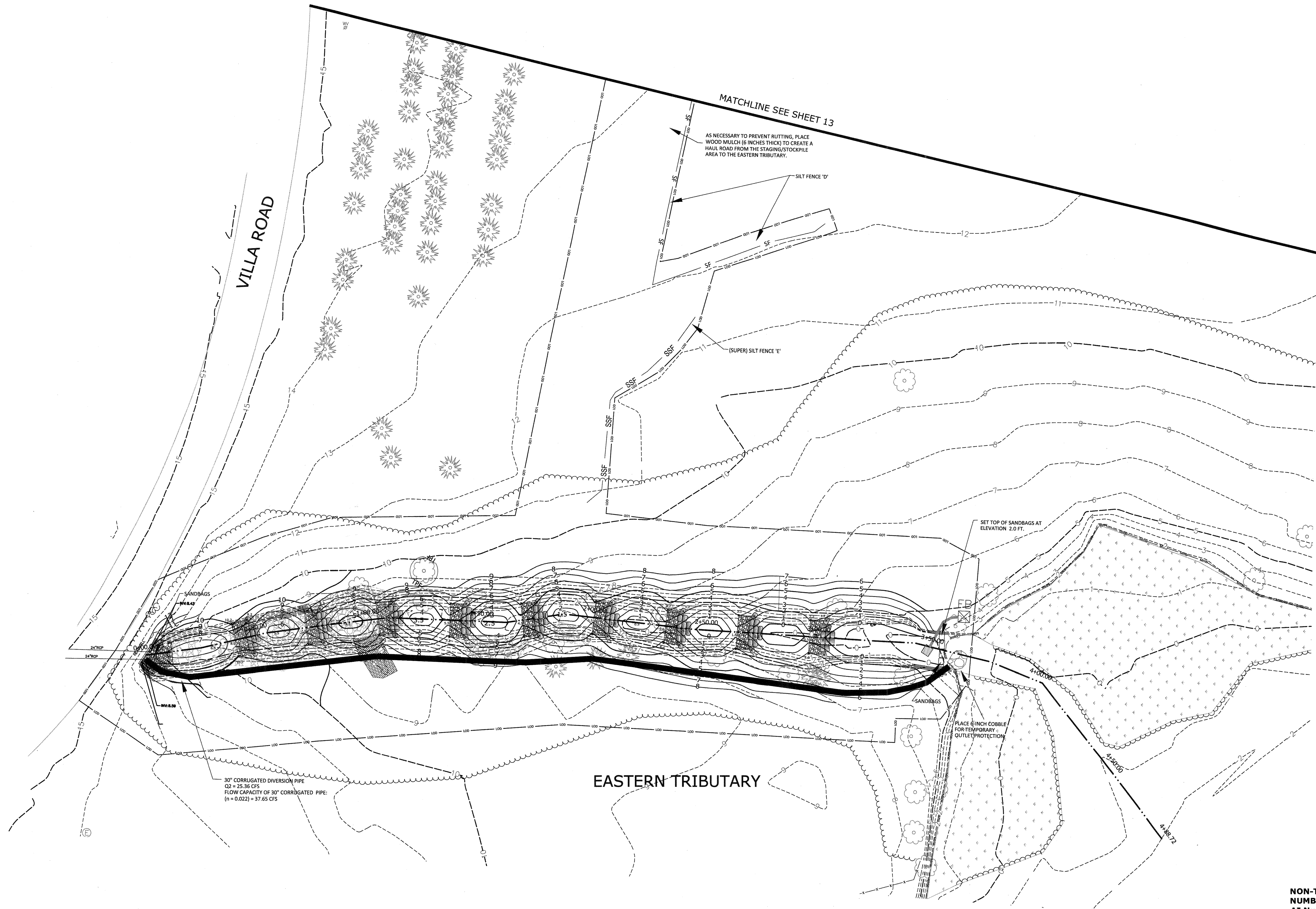
Prepared for/Applicant:

NAVFAC
Naval Facilities Engineering Command

Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:

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



- LEGEND**
- EXISTING UTILITIES
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
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NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

EROSION AND SEDIMENT CONTROL PLAN--EASTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=20'

DATE: February 2014
ESA PROJECT FILE
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat Improvement/Surveys for Wildlife and Habitat Improvement/Molls Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 14 of 22

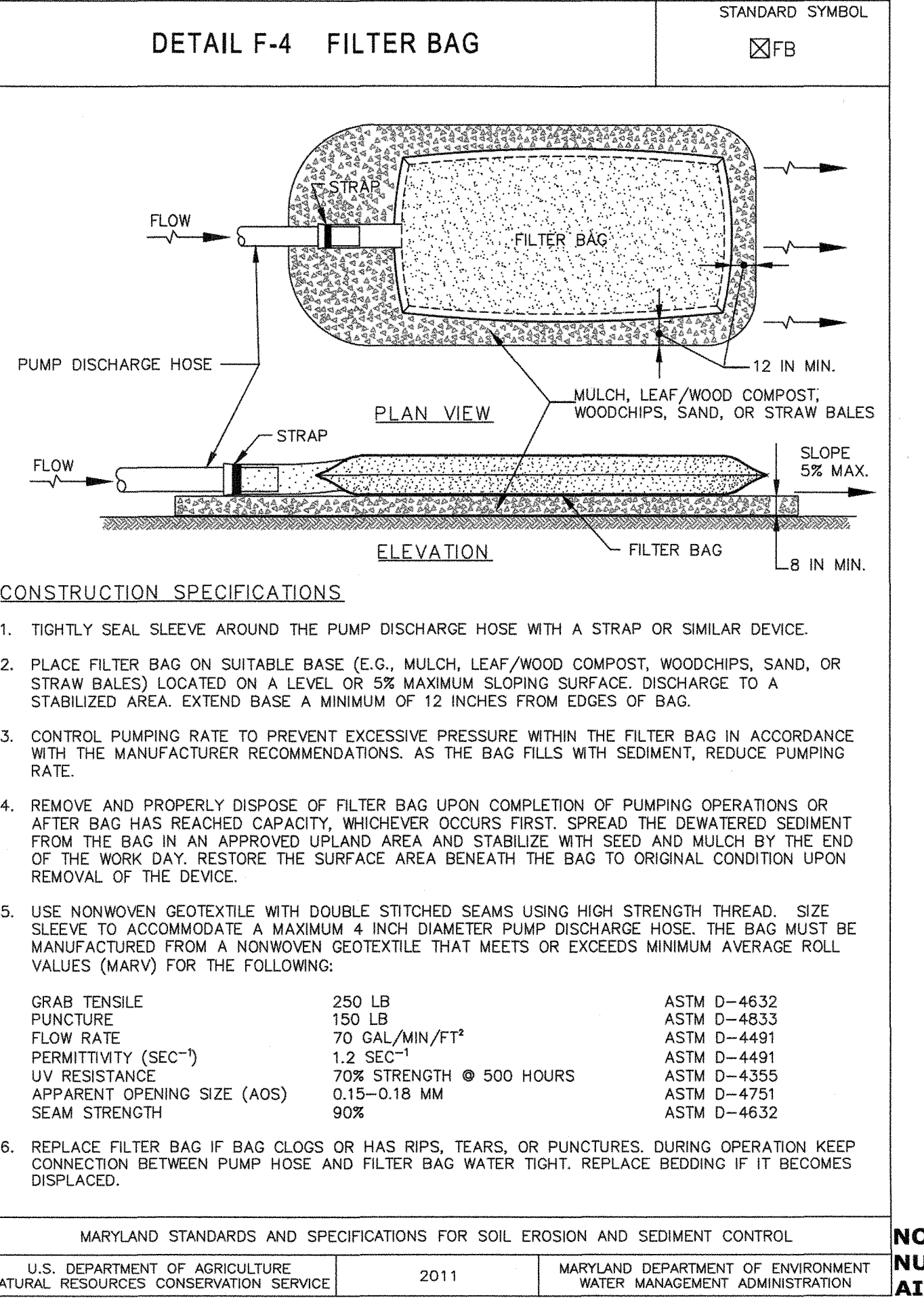
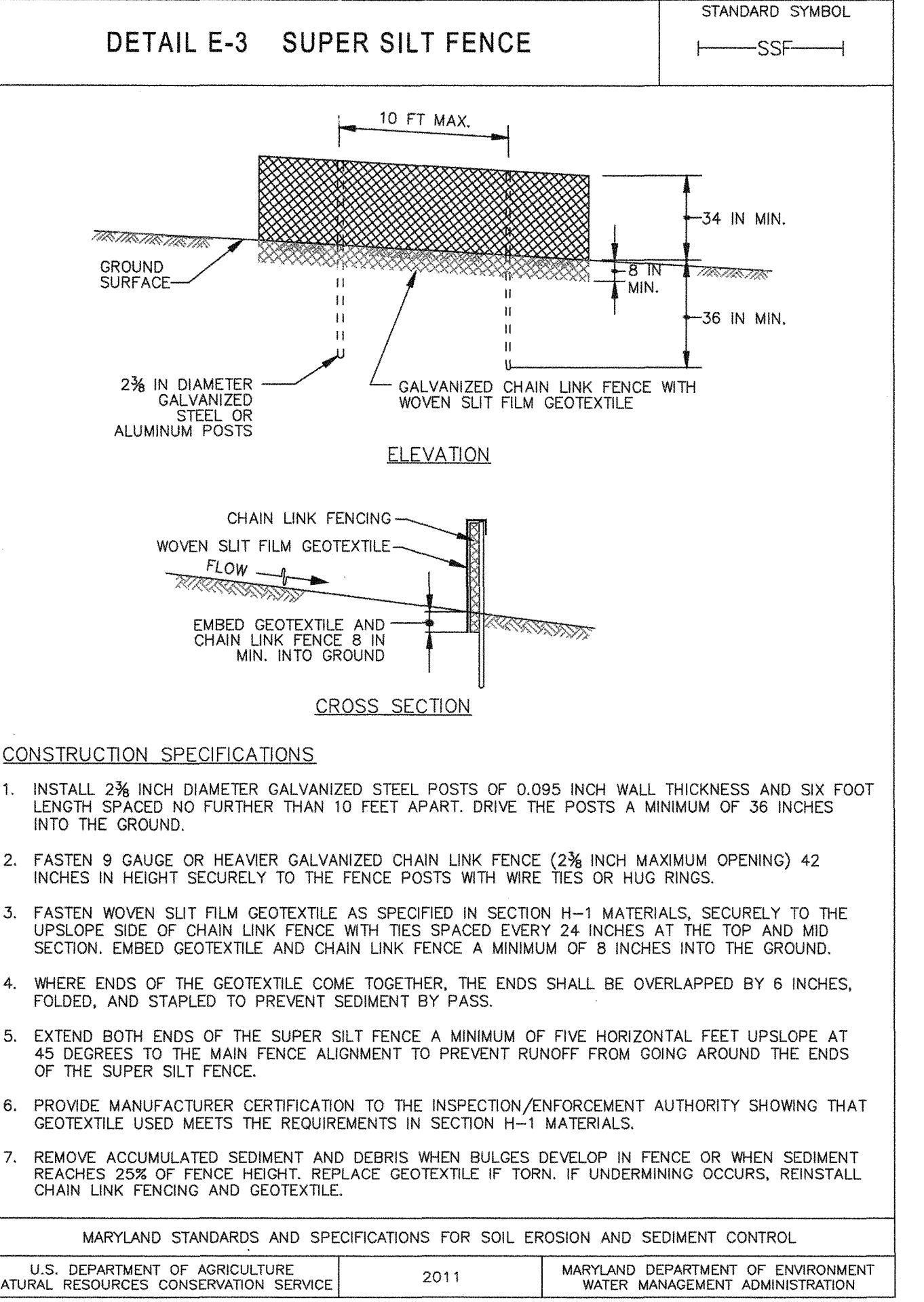
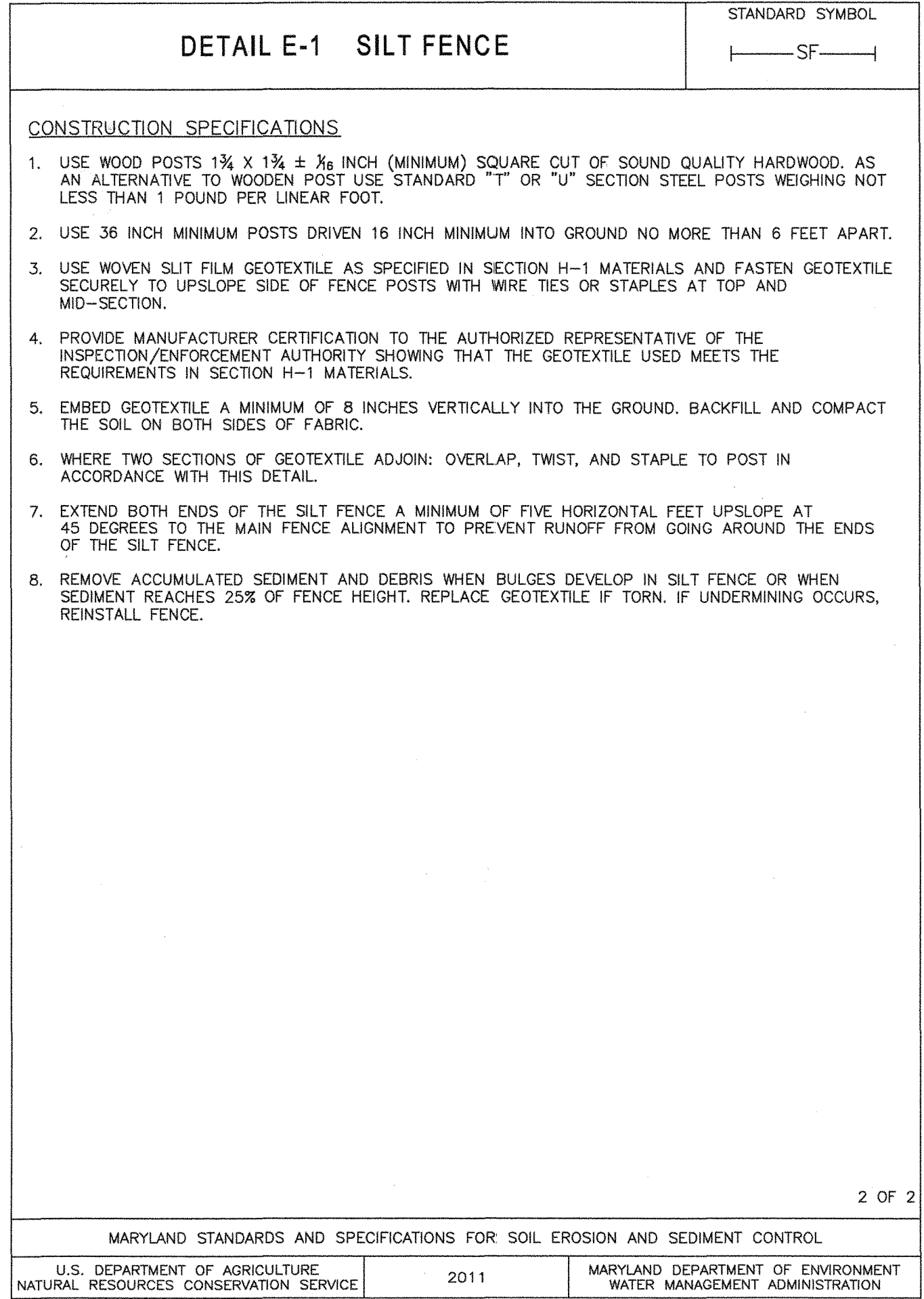
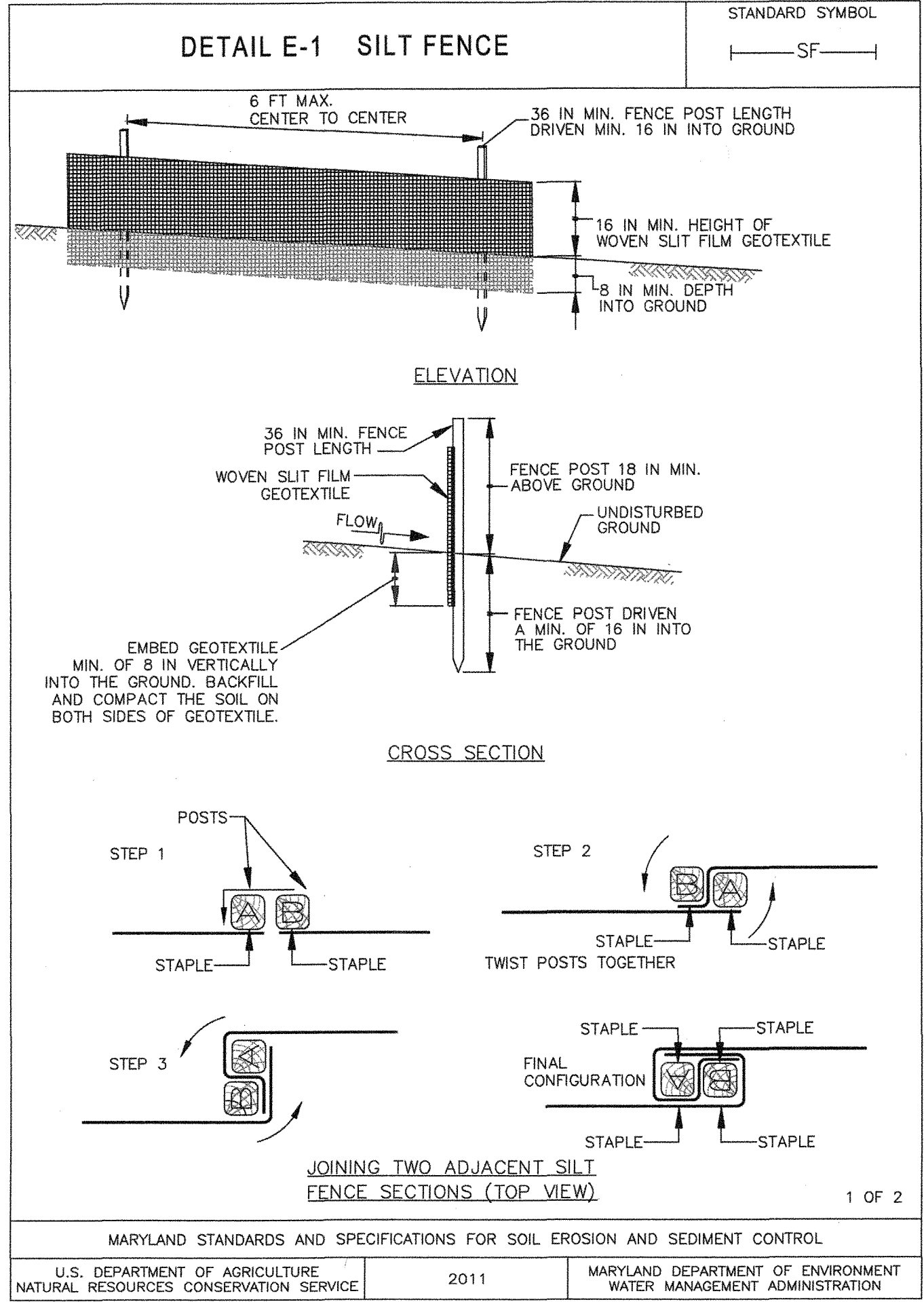
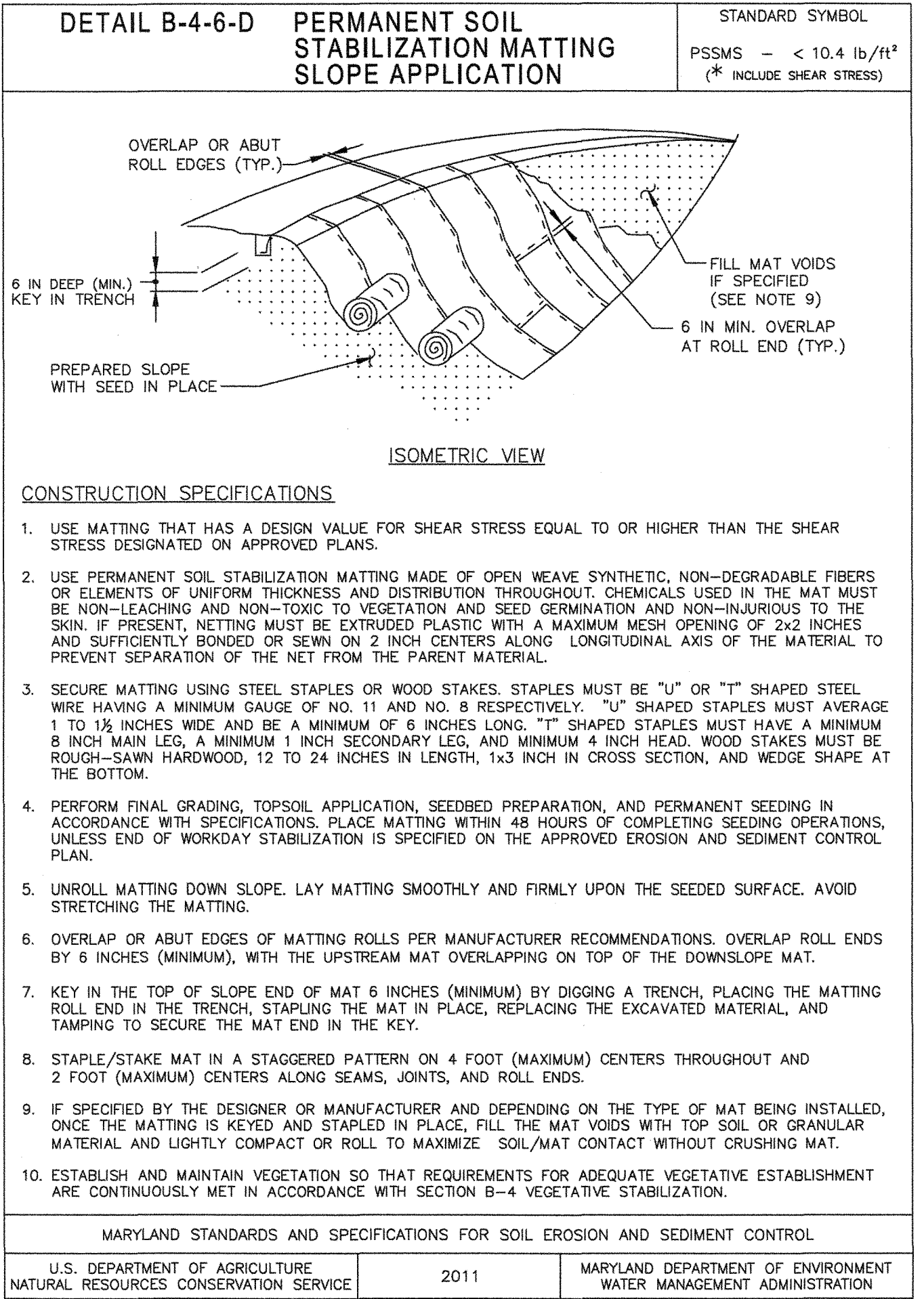
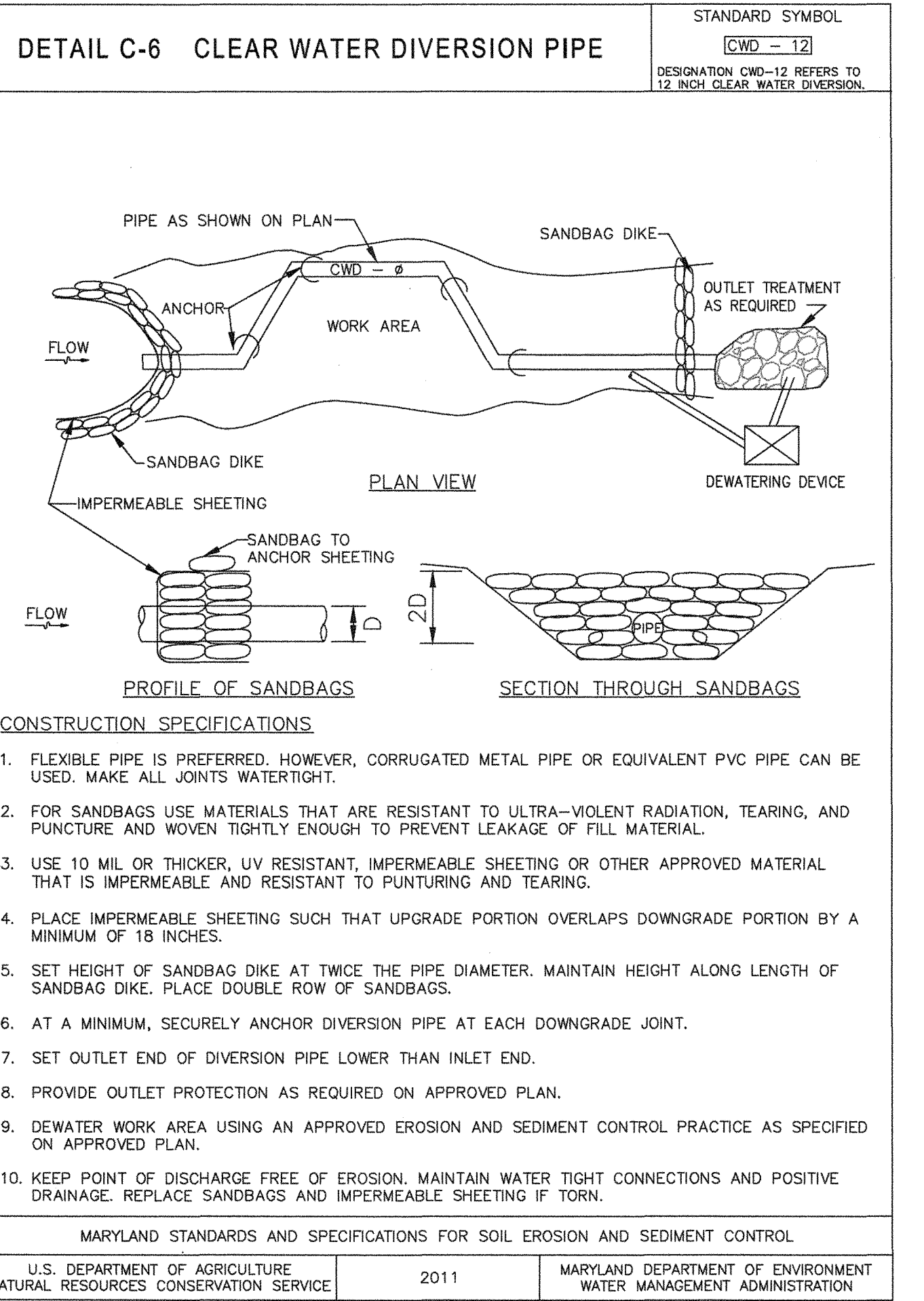
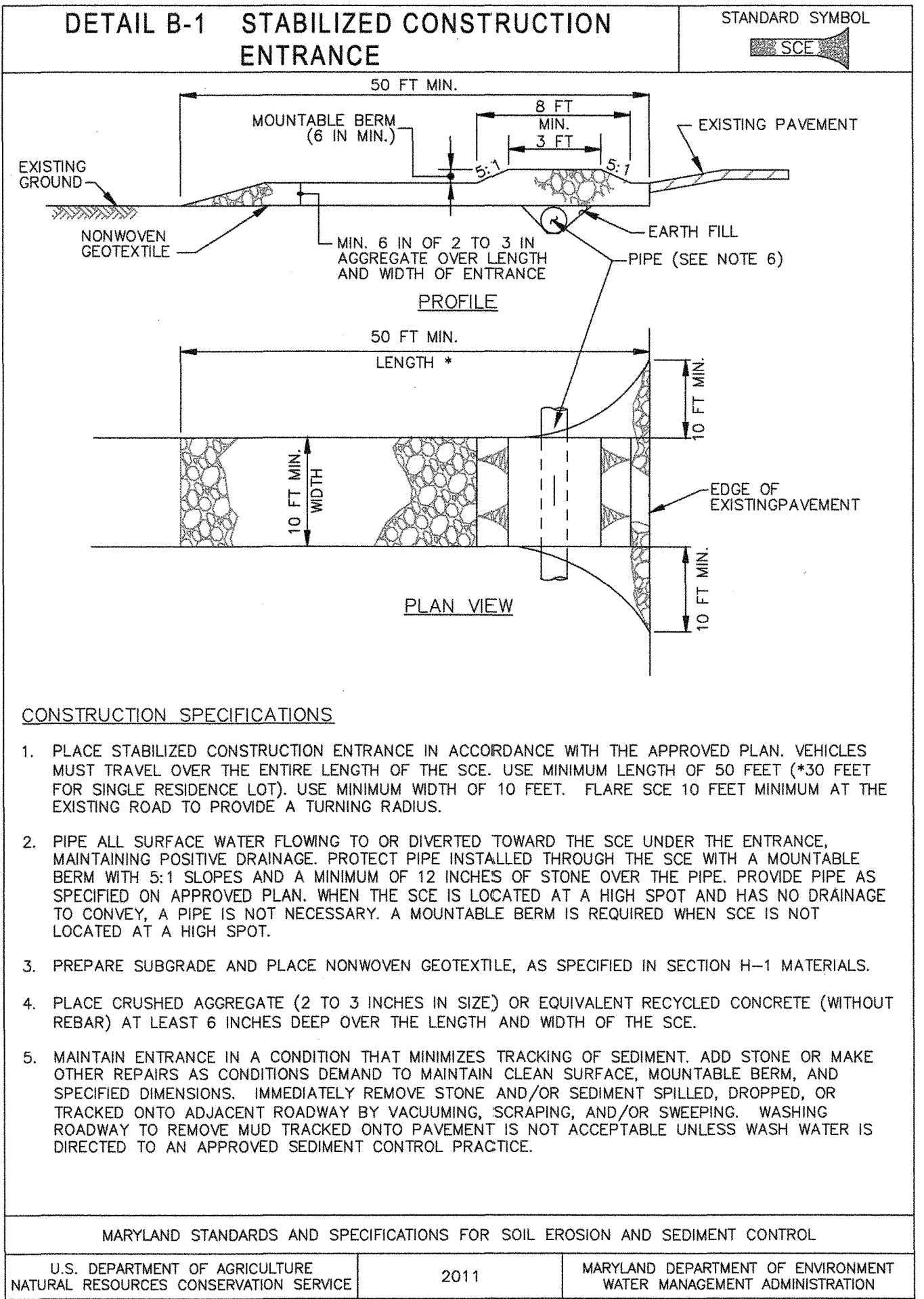
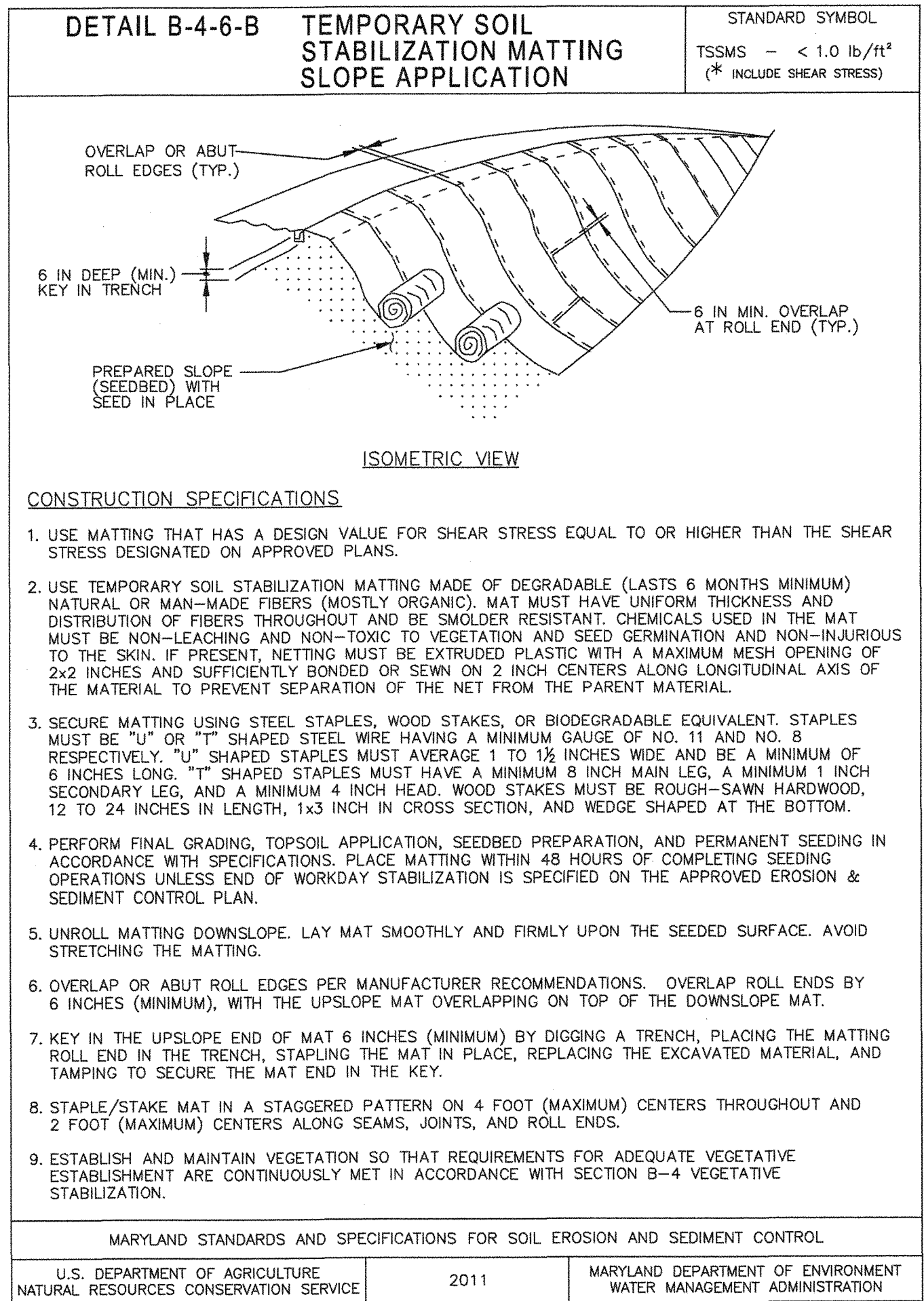


REVISIONS		
NO.	BY	DESCRIPTION
1	SP	09/14 RESPONSE TO MDE COMMENTS DATED 08/14
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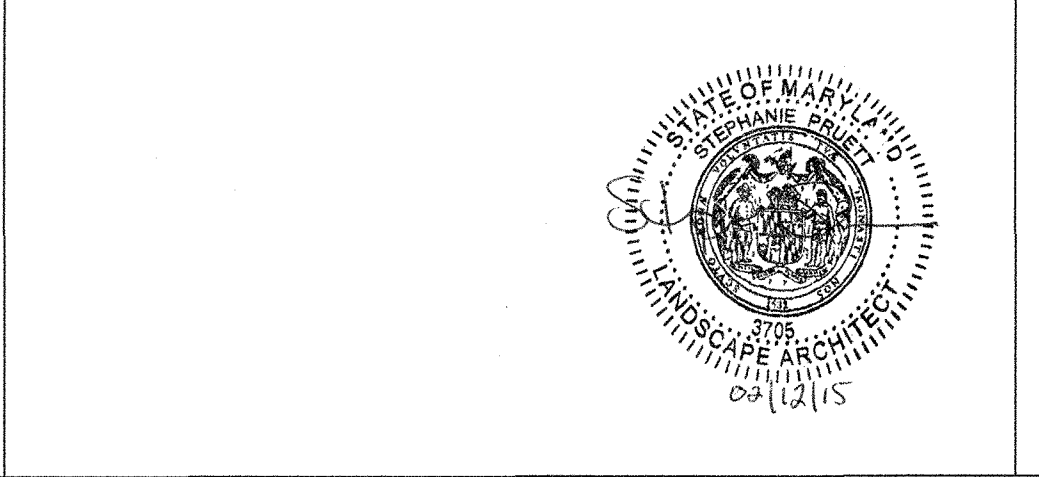
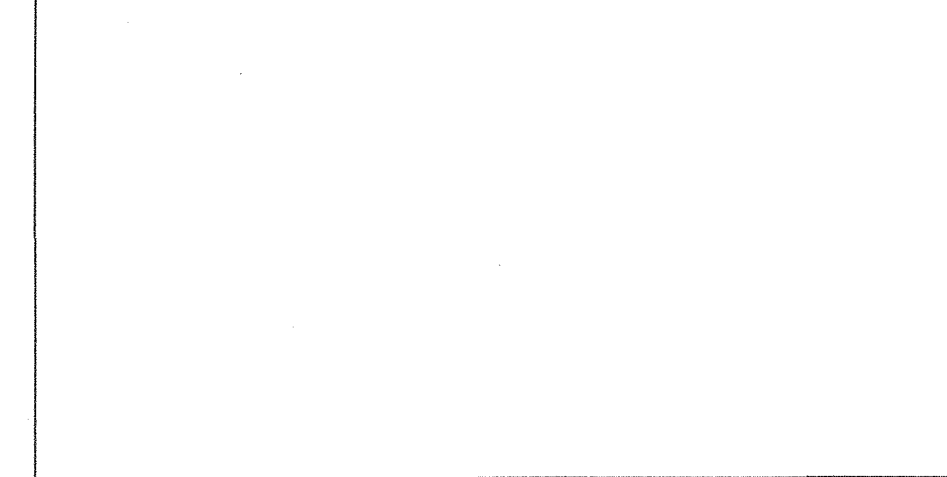
Survey:
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401 Post Office Road, Suite 103
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Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

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



NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071



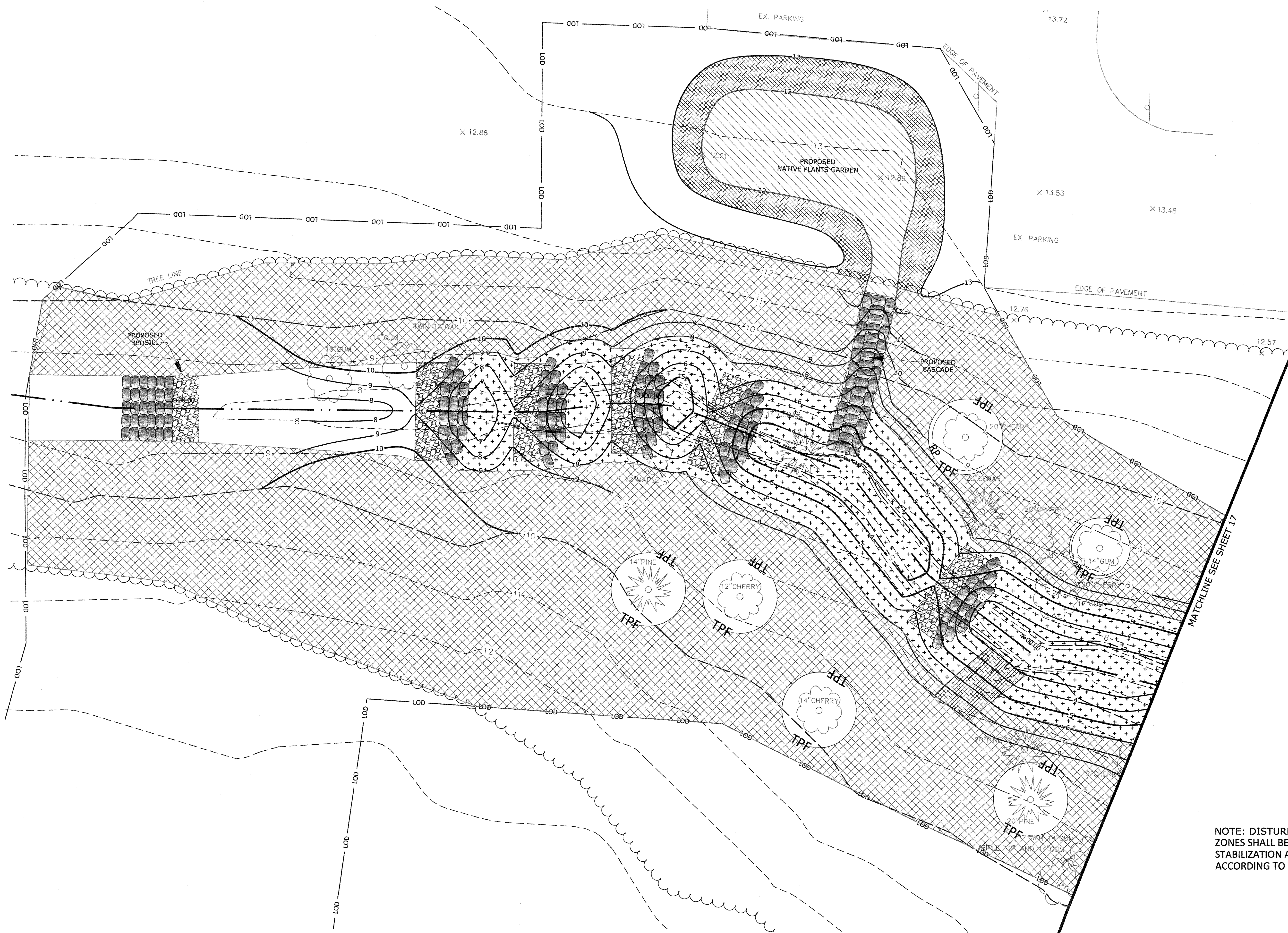
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Annapolis, MD 21401

EROSION AND SEDIMENT CONTROL DETAILS
MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND
SCALE: NTS
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvement/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 15 of 22



- LEGEND**
- EXISTING ELECTRIC
 - EXISTING WATER VALVE
 - EXISTING CABLE TV BOX
 - EXISTING FIRE HYDRANT
 - EXISTING SEWER MANHOLE
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
 - EXISTING MARSH GRASS
 - EXISTING RIPRAP
 - EXISTING TREES
 - STREAM BASELINE
 - PROPOSED RIFFLE WEIR
 - PROPOSED POOL
 - PERMANENT SOIL STABILIZATION MATTING & PLANTING ZONE 1
 - PLANTING ZONE 1
 - PLANTING ZONE 2
 - PLANTING ZONE 3
 - PLANTING ZONE 4
 - LOD LIMITS OF DISTURBANCE
 - RP PROPOSED ROOT PRUNE
 - TPF PROPOSED TREE PROTECTION FENCE
 - PROPOSED CONTOURS
 - MHW MEAN HIGH WATER

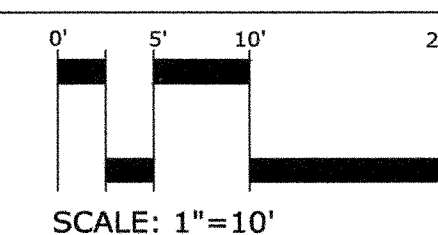
NOTE: DISTURBED AREAS NOT INCLUDED IN ONE OF THE FOUR PLANTING ZONES SHALL BE PERMANENTLY STABILIZED WITH THE 'PERMANENT STABILIZATION AREAS' SEED MIX, LISTED ON SHEET 20, AND MULCHED ACCORDING TO THE PLANS.

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

PLANTING PLAN-WESTERN TRIBUTARY

MOLLS COVE

AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND



SCALE: 1"=10'



NORTH

SCALE: 1"=10'

DATE: February 2014

ESA PROJECT FILE

12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvement/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 16 of 22



REVISIONS			
NO.	BY	DATE	DESCRIPTION
1	SP	09/14	RESPONSE TO MDE COMMENTS DATED 08/14
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Survey:

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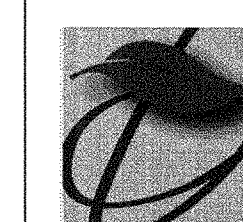
WALDORF OFFICE
401 Post Office Road, Suite 103
Waldorf, MD 20602
t. 301.870.2166 f. 301.870.2884

Prepared for/Applicant:



Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:



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



- LEGEND**
- EXISTING ELECTRIC
 - EXISTING WATER VALVE
 - EXISTING CABLE TV BOX
 - EXISTING FIRE HYDRANT
 - EXISTING SEWER MANHOLE
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING FENCE
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 - PLANTING ZONE 4
 - LOD LIMITS OF DISTURBANCE
 - RP PROPOSED ROOT PRUNE
 - TPF PROPOSED TREE PROTECTION FENCE
 - PROPOSED CONTOURS
 - MHW MEAN HIGH WATER

MOLLES COVE
EDGE WATER = -1.42 ft.
FIELD LOCATED ON JANUARY 2, 2013
AT 9:48 AM

WESTERN TRIBUTARY PLANTING SCHEDULE

ZONE 1 (7,570 SF or 0.17 AC)				
Percentage of Mix	Scientific Name	Common Name	Condition	Application Rate
Seed				
10%	<i>Lolium multiflorum</i>	Annual Ryegrass	Seed	100 lbs/acre
25%	<i>Festuca rubra</i> var. <i>commutata</i>	Chewings Fescue	Seed	
20%	<i>Panicum virgatum</i>	Switchgrass	Seed	
15%	<i>Andropogon scoparius</i>	Little Bluestem	Seed	
15%	<i>Agrostis stolonifera</i>	Redtop	Seed	
15%	<i>Poa palustris</i>	Fowl Meadow Grass	Seed	

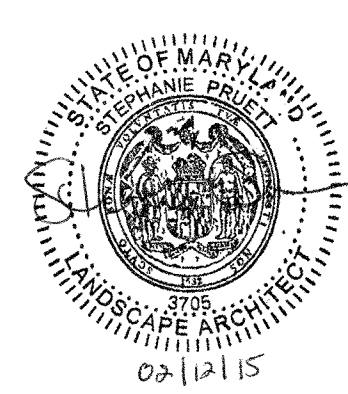
ZONE 2 (UPLAND AREAS 22,830 SF or 0.52 AC)						
Quantity	Scientific Name	Common Name	Size	Spacing	Condition	Height
Trees and Shrubs						
32	<i>Platanus occidentalis</i>	American Sycamore	5 gal.	12'	container	5-6'
32	<i>Acer rubrum</i>	Red Maple	5 gal.	12'	container	5-6'
32	<i>Liriodendron tulipifera</i>	Tulip Poplar	5 gal.	12'	container	5-6'
32	<i>Liquidambar styraciflua</i>	Sweetgum	5 gal.	12'	container	5-6'
28	<i>Ilex opaca</i> 'Jersey Knight'	American Holly	2-3 Gallon	10'	container	4-5'
27	<i>Kalmia latifolia</i>	Mountain Laurel	2-3 Gallon	10'	container	2-3'
27	<i>Hamamelis virginiana</i>	Witch Hazel	2-3 Gallon	10'	container	2-3'

Percentage of Mix	Scientific Name	Common Name	Condition	Application Rate
Seed				
10%	<i>Lolium multiflorum</i>	Annual Ryegrass	Seed	100 lbs/acre
25%	<i>Festuca rubra</i> var. <i>commutata</i>	Chewings Fescue	Seed	
20%	<i>Panicum virgatum</i>	Switchgrass	Seed	
15%	<i>Andropogon scoparius</i>	Little Bluestem	Seed	
15%	<i>Agrostis stolonifera</i>	Redtop	Seed	
15%	<i>Poa palustris</i>	Fowl Meadow Grass	Seed	

ZONE 3 (TIDAL ZONE 2,261 SF or 0.05 AC)					
Quantity	Scientific Name	Common Name	Size	Spacing	Condition
Grasses					
678	<i>Spartina alterniflora</i>	Saltmarsh cordgrass	2"	2'	plug

ZONE 4 (NATIVE PLANTS GARDEN 2,049 SF or 0.05 AC)					
Quantity	Scientific Name	Common Name	Size	Spacing	Condition
Shrubs					
13	<i>Photinia pyrifolia</i>	Red Chokeberry	2-3 Gallon	6'	container
13	<i>Ilex verticillata</i>	Winterberry	2-3 Gallon	6'	container
13	<i>Ilex glabra</i>	Inkberry	2-3 Gallon	6'	container
13	<i>Photinia melanocarpa</i>	Black Chokeberry	2-3 Gallon	6'	container
13	<i>Morella cerifera</i>	Wax Myrtle	2-3 Gallon	6'	container

NOTE: DISTURBED AREAS NOT INCLUDED IN ONE OF THE FOUR PLANTING ZONES SHALL BE PERMANENTLY STABILIZED WITH THE 'PERMANENT STABILIZATION AREAS' SEED MIX, LISTED ON SHEET 20, AND MULCHED ACCORDING TO THE PLANS.



REVISIONS	
NO.	DESCRIPTION
1	SP 09/14 RESPONSE TO MDE COMMENTS DATED 08/14
2	MR 11/14 REVISE ESC PLAN, MHW
3	MR 1/15 REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14

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Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON
Contract #: N40080-12-D-0350
Task Order: 0009

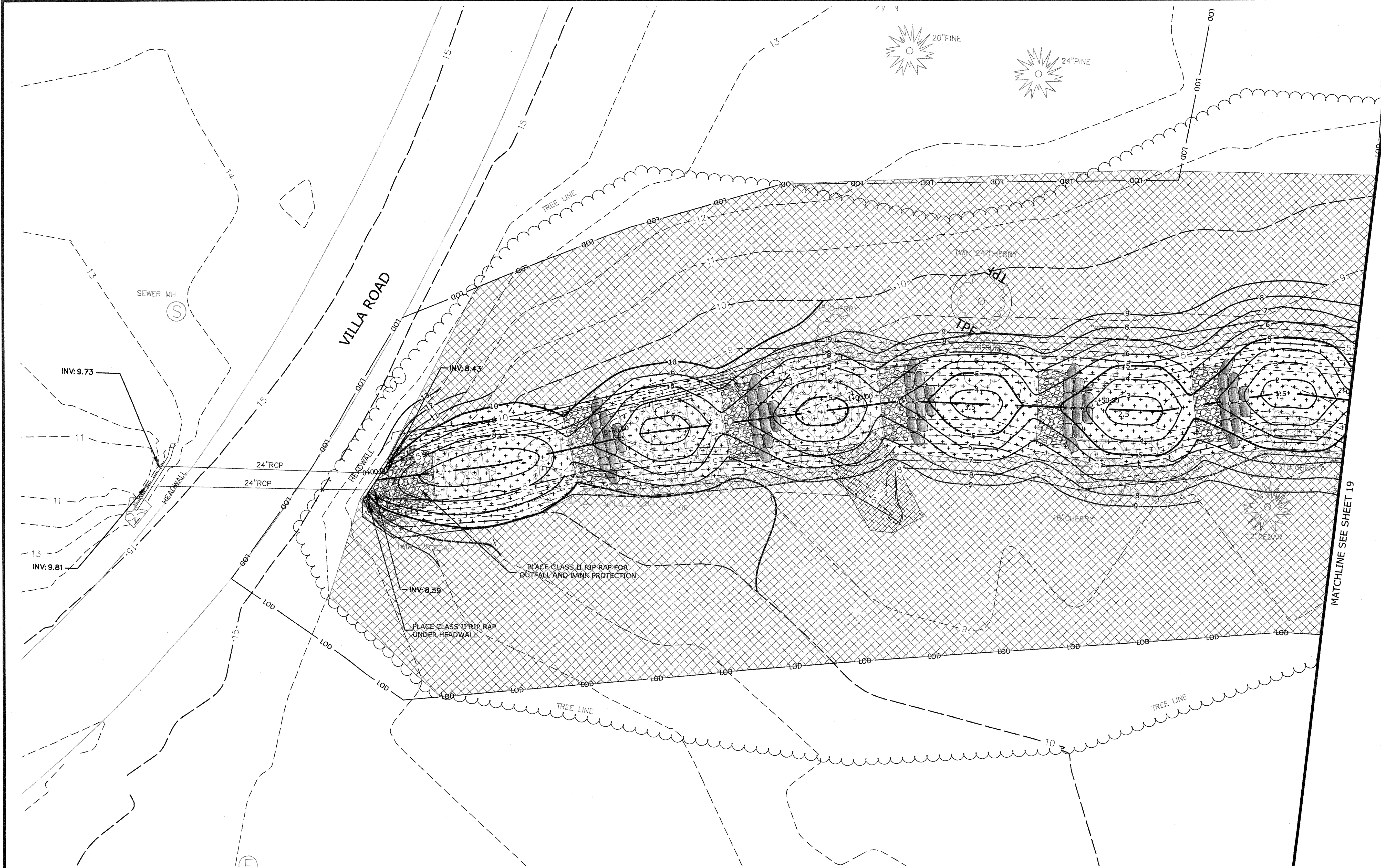
Prepared by:
Environmental Systems Analysis, Inc.
Natural Resources Management
Ecological Restoration
162 West Street
Annapolis, MD 21401

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

PLANTING PLAN-WESTERN TRIBUTARY

MOLLES COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'
DATE: February 2014
ESA PROJECT FILE
WashDelivery Order 0009 - Surveys for Wildlife and Habitat Improvement/Surveys for Wildlife and Habitat Improvement/Molles Cove Stream Restoration/CAD_GIS/Molles Cove/Individual Drawings
SHEET: 17 of 22

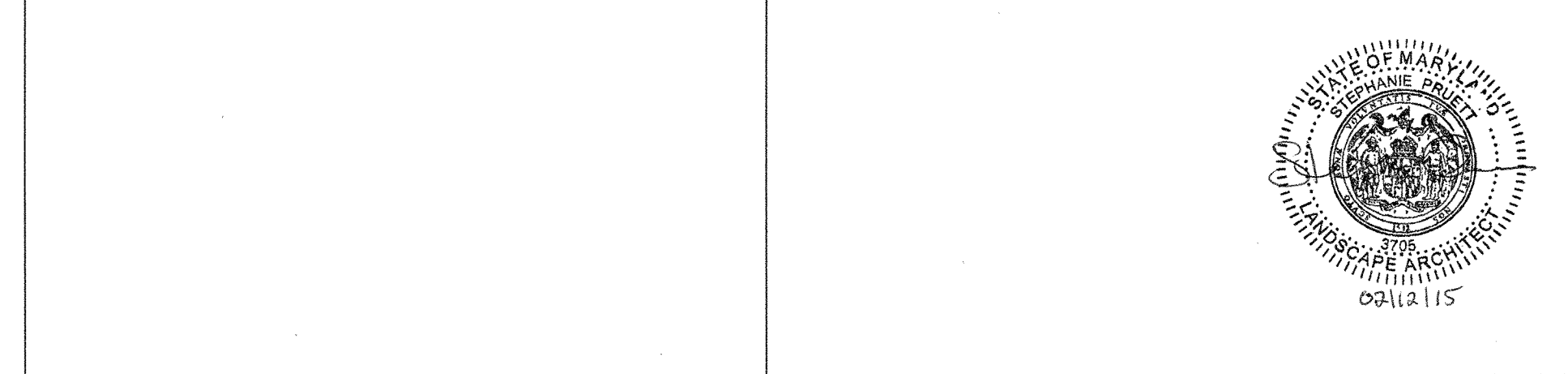


LEGEND

- EXISTING ELECTRIC
- EXISTING WATER VALVE
- EXISTING CABLE TV BOX
- EXISTING FIRE HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING MARSH GRASS
- EXISTING RIPRAP
- EXISTING TREES
- STREAM BASELINE
- PROPOSED RIFFLE
- PROPOSED POOL
- PERMANENT SOIL STABILIZATION MATTING & PLANTING ZONE 1
- PLANTING ZONE 1
- PLANTING ZONE 2
- PLANTING ZONE 3
- PLANTING ZONE 4
- TPF
- PROPOSED TREE PROTECTION FENCE
- RP
- PROPOSED ROOT PRUNE
- LOD
- LIMITS OF DISTURBANCE
- MHW
- MEAN HIGH WATER

NOTE: DISTURBED AREAS NOT INCLUDED IN ONE OF THE FOUR PLANTING ZONES SHALL BE PERMANENTLY STABILIZED WITH THE 'PERMANENT STABILIZATION AREAS' SEED MIX, LISTED ON SHEET 20, AND MULCHED ACCORDING TO THE PLANS.

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071



REVISIONS		
NO.	BY	DATE
1	SP	09/14
2	MR	11/14
3	MR	1/15
DESCRIPTION		
RESPONSE TO MDE COMMENTS DATED 08/14		
REVISE ESC PLAN, MHW		
REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14		

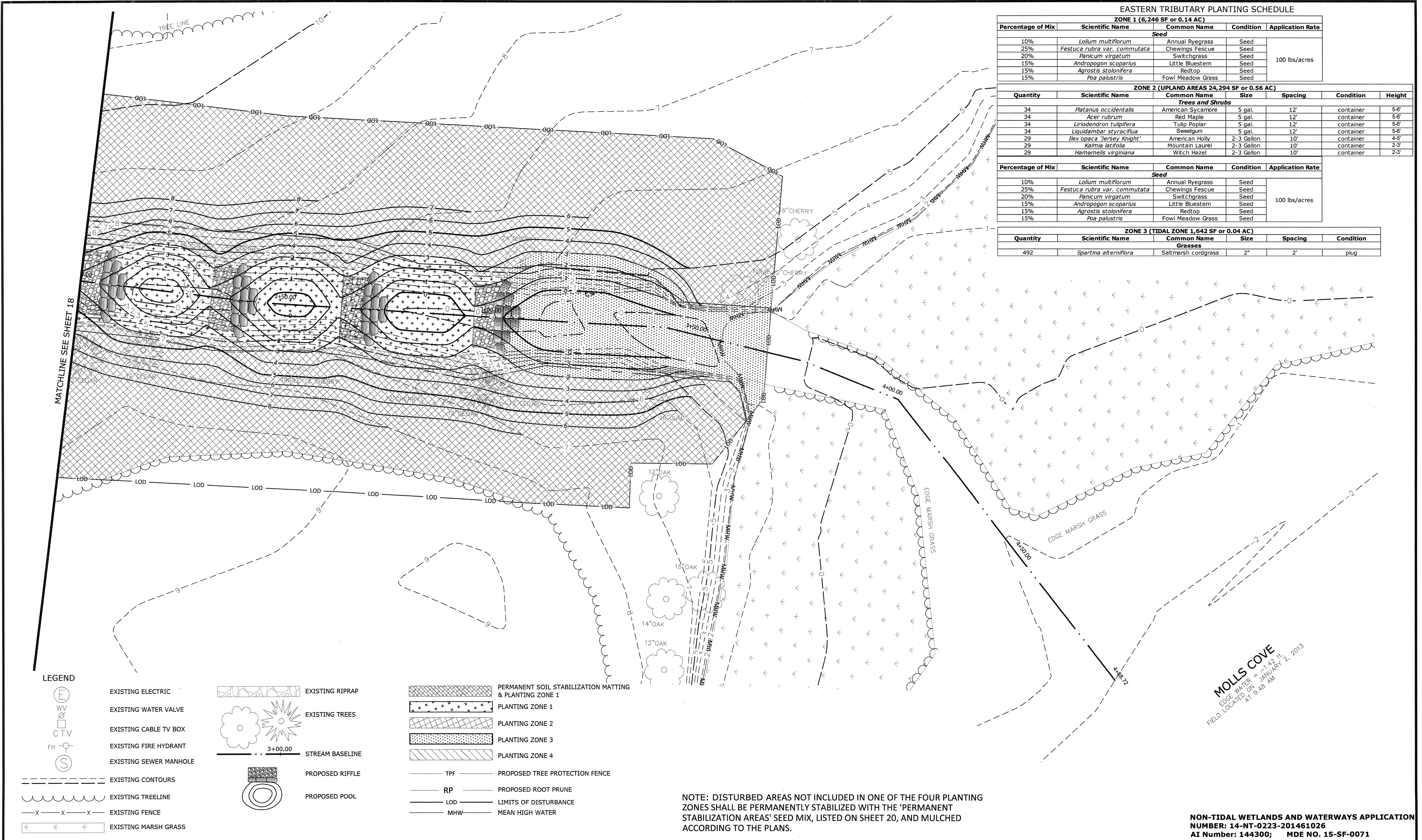
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Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
Contract #: N40080-12-D-0350
Task Order: 0009

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

PLANTING PLAN-EASTERN TRIBUTARY
MOLLE COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat Improvement/Surveys for Wildlife and Habitat Improvement/Molle Cove Stream Restoration/CAD_GIS/Molle Cove/Individual Drawings
SHEET: 18 of 22



EASTERN TRIBUTARY PLANTING SCHEDULE					
ZONE 1 (6,246 SF or 0.14 AC)					
Percentage of Mix	Scientific Name	Common Name	Condition	Application Rate	
10%	Lolium multiflorum	Annual Ryegrass	Seed	100 lbs/acres	
25%	Festuca rubra var. commutata	Chewings Fescue	Seed		
20%	Panicum virgatum	Switchgrass	Seed		
15%	Andropogon scoparius	Little Bluestem	Seed		
15%	Agrostis stolonifera	Redtop	Seed		
15%	Poa palustris	Fowl Meadow Grass	Seed		

ZONE 2 (UPLAND AREAS 24,294 SF or 0.56 AC)						
Quantity	Scientific Name	Common Name	Size	Spacing	Condition	Height
Trees and Shrubs						
34	Platanus occidentalis	American Sycamore	5 gal.	12'	container	5-6'
34	Acer rubrum	Red Maple	5 gal.	12'	container	5-6'
34	Liriodendron tulipifera	Tulip Poplar	5 gal.	12'	container	5-6'
34	Liquidambar styraciflua	Sweetgum	5 gal.	12'	container	5-6'
29	Ilex opaca 'Jersey Knight'	American Holly	2-3 Gallon	10'	container	4-5'
29	Kalmia latifolia	Mountain Laurel	2-3 Gallon	10'	container	2-3'
29	Hamamelis virginiana	Witch Hazel	2-3 Gallon	10'	container	2-3'

Percentage of Mix	Scientific Name	Common Name	Condition	Application Rate	
10%	Lolium multiflorum	Annual Ryegrass	Seed	100 lbs/acres	
25%	Festuca rubra var. commutata	Chewings Fescue	Seed		
20%	Panicum virgatum	Switchgrass	Seed		
15%	Andropogon scoparius	Little Bluestem	Seed		
15%	Agrostis stolonifera	Redtop	Seed		
15%	Poa palustris	Fowl Meadow Grass	Seed		

ZONE 3 (TIDAL ZONE 1,642 SF or 0.04 AC)					
Quantity	Scientific Name	Common Name	Size	Spacing	Condition
492	Spartina alterniflora	Saltmarsh cordgrass	2"	2'	plug

NOTE: DISTURBED AREAS NOT INCLUDED IN ONE OF THE FOUR PLANTING ZONES SHALL BE PERMANENTLY STABILIZED WITH THE 'PERMANENT STABILIZATION AREAS' SEED MIX, LISTED ON SHEET 20, AND MULCHED ACCORDING TO THE PLANS.

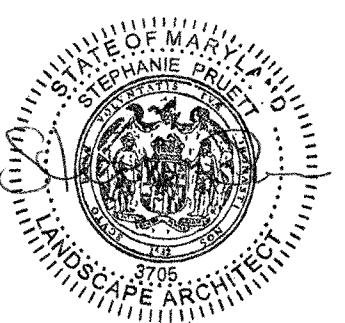
MOLLS COVE
EDGE WATER = -1.42 ft
FIELD LOCATED ON JANUARY 2, 2013
AT 9:48 AM

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

PLANTING PLAN-EASTERN TRIBUTARY

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE: 1"=10'
DATE: February 2014
ESA PROJECT FILE 12-01 NAVFAC
Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement/Surveys for Wildlife and Habitat Improvements/Molls
Cove Stream Restoration/CAD_GIS/Molls Cove/Individual Drawings
SHEET: 19 of 22



02/13/15

REVISIONS		
NO.	BY	DATE
1	SP	09/14
2	MR	11/14
3	MR	1/15

WALDORF OFFICE
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Survey:
SOLTESZ

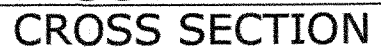
Prepared for/Applicant:
NAVFAC
Naval Facilities Engineering Command
NAVFAC WASHINGTON

Contract #: N40080-12-D-0350
Task Order: 0009

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

*All disturbed areas outside of the permanent planting areas (e.g. staging & stockpile areas).

CROSS SECTION



1. Cut and/or excavate a hole 2 inches wider than the width of the plug container and to a depth which is equal to the depth of the container.
2. Remove the plant either by cutting or inverting the container.
3. Install plant in the center of the hole such that the top of the rootball is flush with the finished grade.
4. Backfill planting hole with existing soil. Firmly pack backfill to remove air voids.
5. If applicable, re-fasten soil stabilization around plant using U-shaped staples.
6. Thoroughly water each plant after installation. Watering shall be performed even if it is raining. A second watering may be necessary to insure saturation of the rootball and elimination of the air voids.
7. Remove all tags and labels.

CROSS SECTION



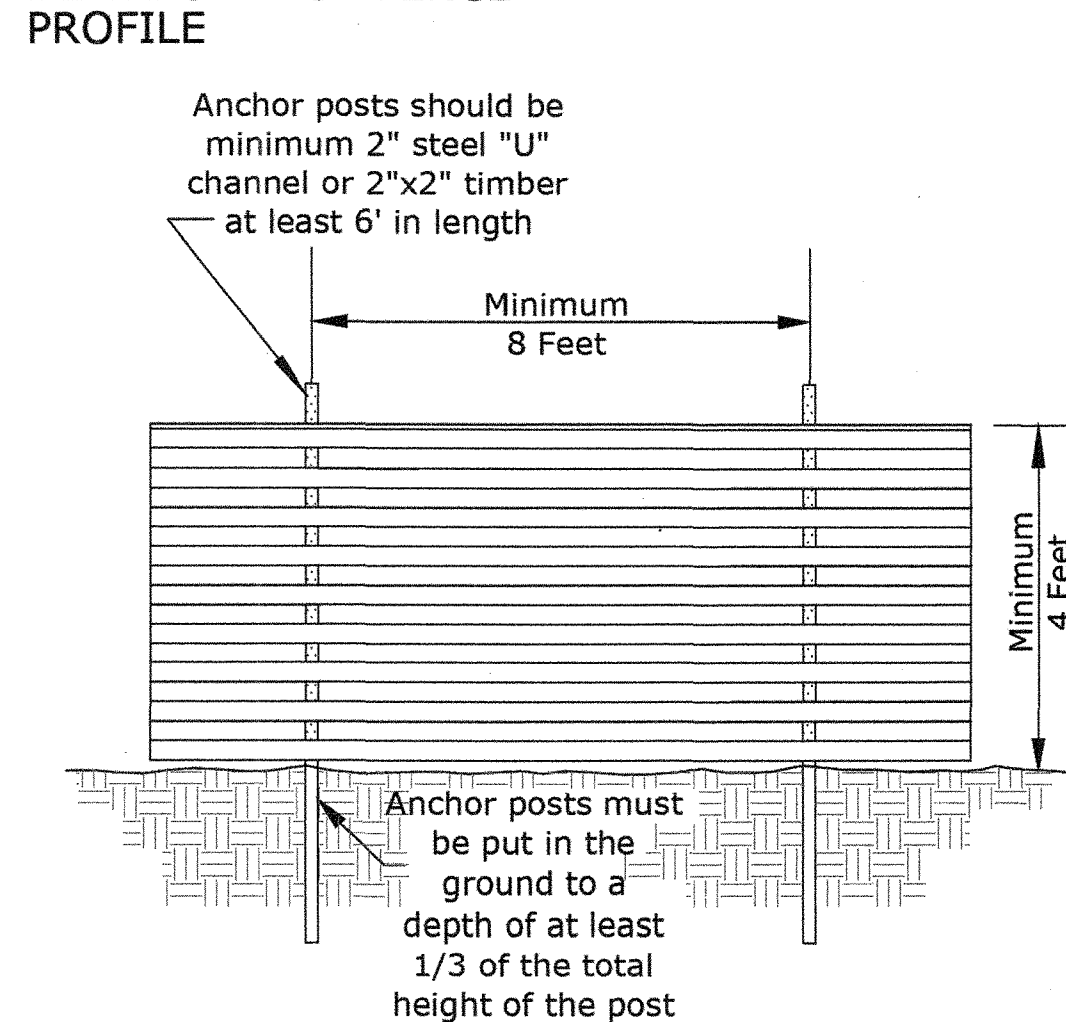
1. For trees and shrubs, excavate a hole at least 12" wider than the width of the rootball and to a depth which leaves approximately 1/8 of the rootball above the existing grade. For herbaceous stock, excavate hole at least 3" wider than the width of the rootball.
2. Remove the plant either by cutting or inverting the container.
3. To encourage the outward growth of the roots, make 4 to 5, 1" deep cuts the length of the rootball with a sharp knife or blade.
4. Install containerized plant in the center of the hole with approximately 1/8 of the rootball above finished landscape grade.
5. Backfill planting hole with two thirds existing soil and one third organic matter.
6. Any surplus soil which remains after planting shall be used to create a small mound around the edge of the planting hole to hold water during watering operations.
7. Thoroughly water each plant after installation. Watering shall be performed even if it is raining. A second watering may be necessary to insure saturation of the rootball and elimination of the air pockets.
8. Place a 3" diameter mulch ring around each tree and shrub. Mulch shall be minimum depth of 2" and a maximum depth of 3". **DO NOT PLACE MULCH AGAINST THE MAIN STEM.**
9. Prune any and all tree branches that are dead diseased, damaged, or conflicting.
10. Remove all tags labels, string and wire.

CROSS SECTION



1. Root pruning locations are shown on the plans.
2. Trench the area 1' beyond the TPF and excavate approximately 24 inches deep with a 4-6 inch trencher.
3. Immediately after trenching and cutting through all roots in the trench area, prune the root so as to provide good clean cuts. Backfill the trench with the excavated material or topsoil with a high organic content.
4. Water the backfilled trench immediately, until trench overflows. Settled areas should be filled with backfill until level with the existing ground.
5. Apply a 3" deep, 3' wide band of mulch to the tree's critical root zone at the limit of project work (adjacent to the TPF).

BLAZE ORANGE FENCE



GENERAL PLANTING NOTES

1. The Landscape Contractor shall notify the Navy of the scheduled date for commencement of planting so that all planting materials and planting methods may be inspected and approved by the Navy. No plants shall be installed without a representative of the Navy on site.
2. All plants shall be placed within the Limits of Disturbance.
3. The Landscape Contractor is responsible for locating all underground utilities and for understanding and honoring property boundaries. Any utilities or other property damaged during planting shall be corrected by the Contractor at the Contractor's expense.

STANDARDS

1. All plant material shall conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen and as specified below.
2. All container stock shall be nursery-grown within a 100 mile radius of the site. Plant materials, with the exception of live stakes, that are collected from the wild will be rejected.
3. Plant material shall be obtained from nurseries that have been inspected and certified by state plant inspectors.
4. The root system of container grown plants shall be white, well-developed, and well-distributed throughout the container with the roots visibly extending to the inside face of the growing container.
5. If in leaf, the plants shall appear healthy with no leaf spots, leaf damage, leaf discoloration, leaf wilting or evidence of insects on the plant.
6. There shall be no change in the quantity, size or species of scheduled plant material without the prior approval of the Navy.

STORAGE AND DELIVERY

1. Seed shall be delivered in containers (bottles, jars, paper/cloth bags/sacks) having labels that report the origin of the seed, the purity of the seed and the germination percentage, and date of germination testing of the seed.
2. 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.
3. All masses shall be thoroughly moist upon delivery to the site. Dry or light weight plants shall be rejected. 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.
4. All rejected material shall be immediately removed from the site.

PRODUCTS

1. **Mulching Material:**
 - a. **Straw:** Small grained, such as wheat or barley which is free of rot, mildew, and noxious weed seeds.
 - b. **Wood Mulch:** Shall be from hardwood or pine sources and may include bark and wood fragments that are brown in color and aged.

MAINTENANCE AND GUARANTEE

1. Plant material shall be maintained by the Landscape Contractor for one year from the date of initial inspection and acceptance of the planting by the Navy Maintenance shall include all watering, fertilization and animal repellents necessary to ensure the survival and growth of the plants.
2. The landscape contractor shall guarantee that 85% of the planted TREES ANS SHRUBS and 50% of the HERBACEOUS stock shall be alive and healthy one year after the initial inspection and acceptance by the Navy. At the end of this period, The Navy shall conduct a final inspection with the Landscape Contractor. All failed material exceeding those thresholds shall be replaced by the Landscape Contractor at the Contractor's expense. This guarantee shall cover all damages except vandalism, fire, and flood, and animal predation.
3. Plant material which is 25% dead or more shall be considered dead.
4. 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.
5. Plants shall be furnished and planted as specified in these plans.

GENERAL PLANTING PROCEDURES

1. Planting shall be performed in accordance with the latest edition of the Landscape Contractors Association's "Landscape Specification Guidelines" and as specified below.
2. Container Stock may be installed from September 1 to December 1 and from March 15 to June 15. Planting shall not be performed outside of these dates without the expressed permission of the Navy. 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.

SEED

1. Apply seed when the soil is friable (soil should break up easily and not form clods when worked using a broadcast seeder or a hydroseeder).
2. If a broadcast seeder is used, mix the seed with a carrier of similar weight (perlite, vermiculite, sawdust, or similar product) and make two passes over each area. The second pass shall be made at a 90 degree angle to the first pass to ensure even seed distribution. Work seed into the soil with the back of a hand rake. Finally, press the seed into the soil with a hand roller or by simply walking over the seeded areas following the rake to ensure soil to seed contact.
3. If using a hydroseeder, no carrier is required and one pass over each area will be sufficient provided that all portions of the site to be seeded are covered.
4. Mulch all seeded areas (except of those covered with soil stabilization matting) with straw at a rate of 100 bales/acre.

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION

NUMBER: 14-NT-0223-201461026

AI Number: 144300; MDE NO. 15-SF-0071

PLANTING NOTES AND DETAILS

MOLLS COVE
AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE:NTS

DATE: February 2014

ESA PROJECT FILE 12-01 NAVFAC
Wash\Delivery Order 0009 - Surveys for Wildlife and Habitat
Improvement\Surveys for Wildlife and Habitat Improvements\Molls

SHEET: 20 of 22

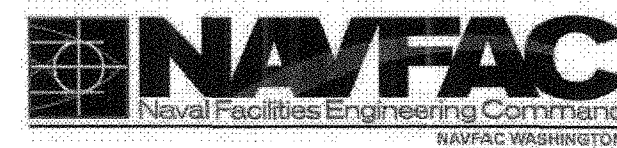
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Survey:

SOLTESZ

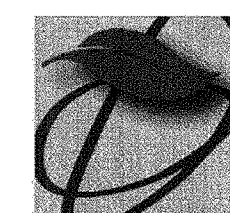
WALDORF OFFICE
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t. 301.870.2166 f. 301.870.2884

Prepared for/Applicant:



Contract #: N40080-12-D-0350
Task Order: 0009

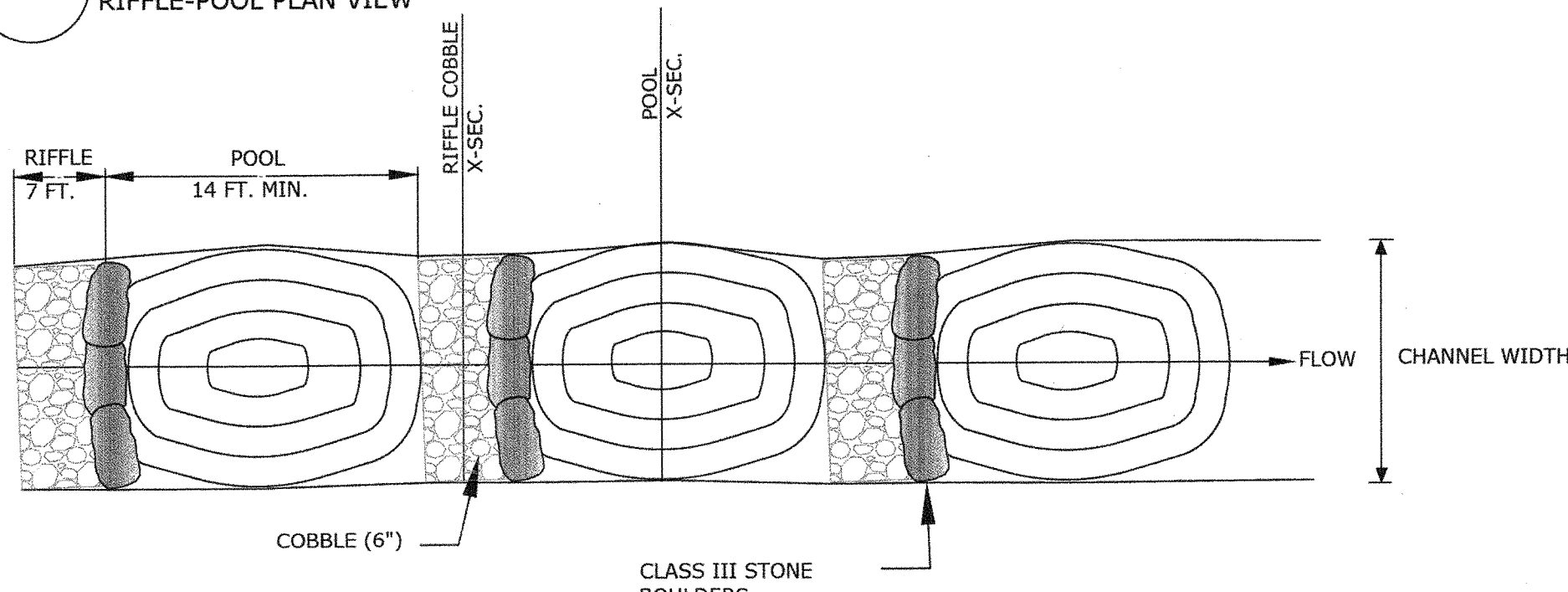
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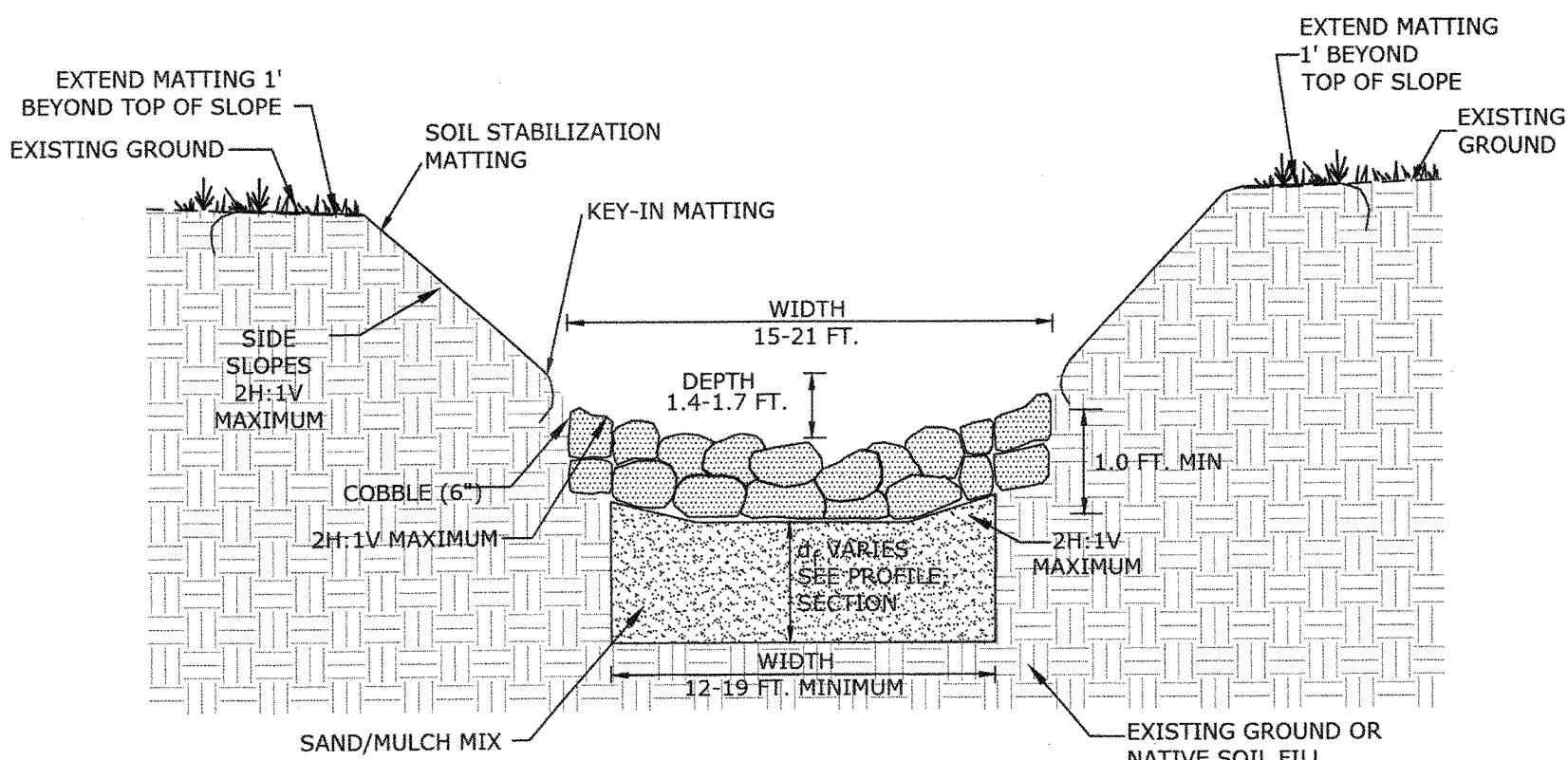
**Environmental
Systems
Analysis, Inc.**
Natural Resources Management
Ecological Restoration

162 West Street
Annapolis, MD 21401

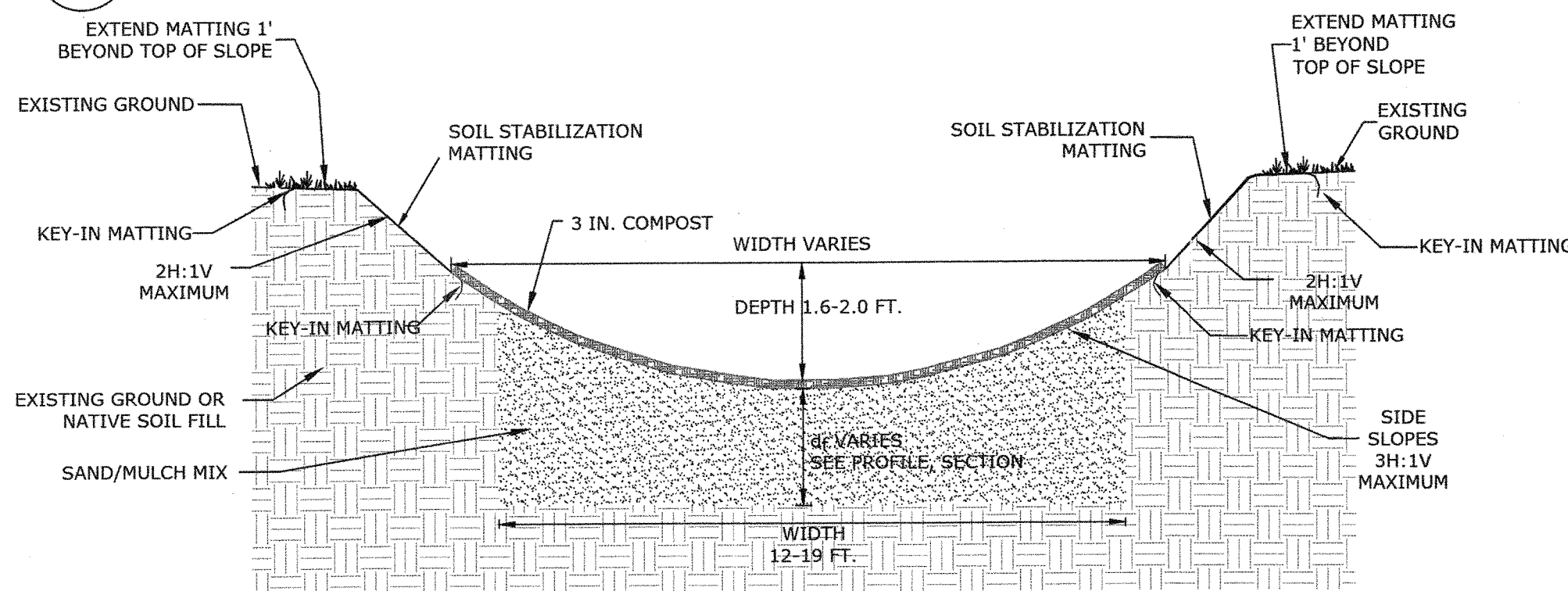
SPSC STEP-POOL STORM CONVEYANCE
RIFLE-POOL PLAN VIEW



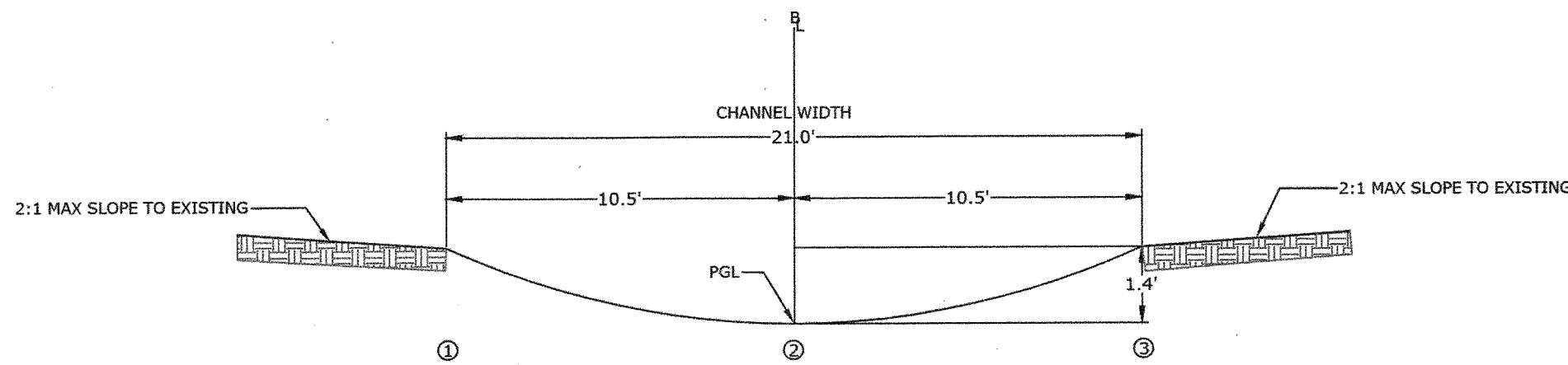
SPSC STEP POOL STORM CONVEYANCE
RIFLE WEIR CROSS-SECTION



SPSC STEP POOL STORM CONVEYANCE
POOL CROSS-SECTION

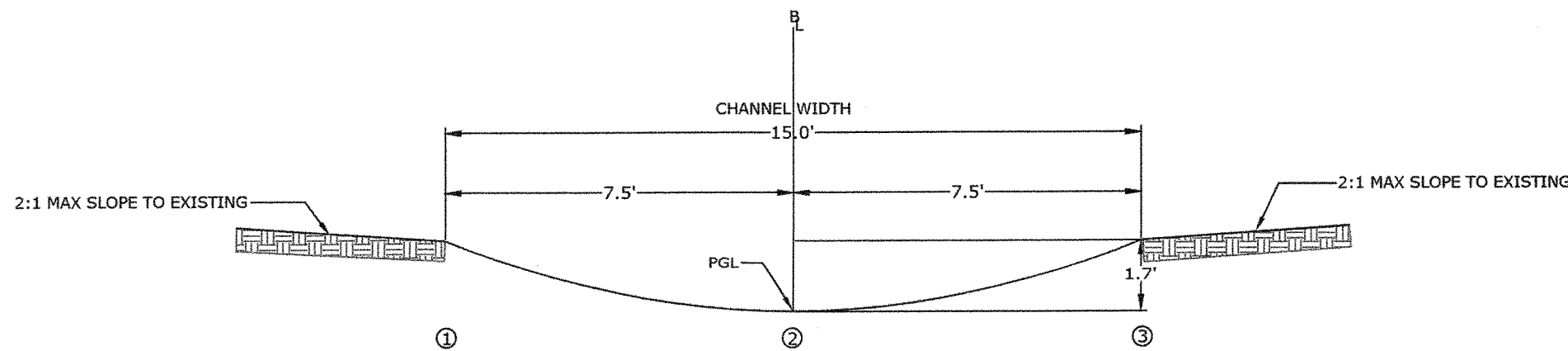


WESTERN TRIBUTARY



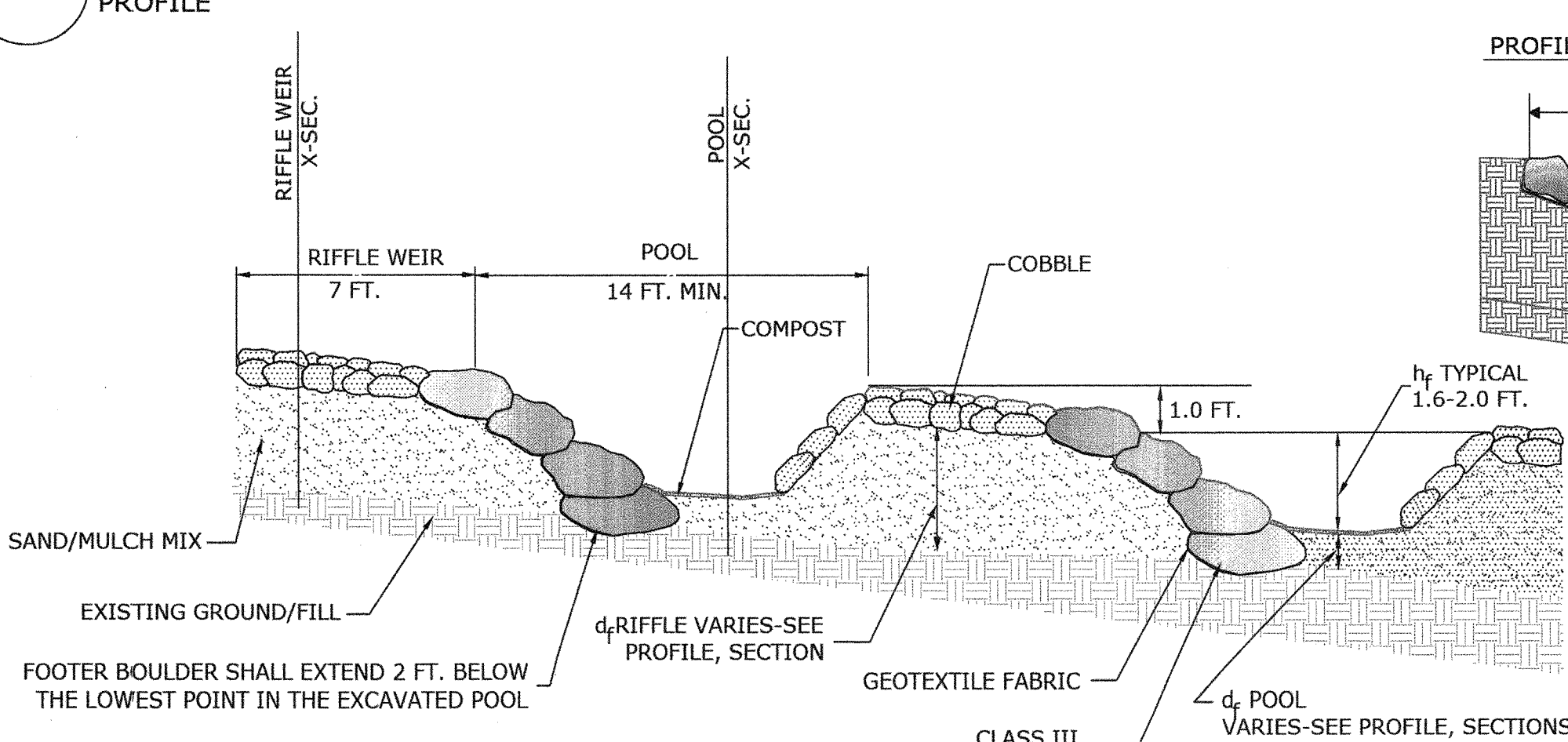
TYPICAL RIFLE WEIR

EASTERN TRIBUTARY



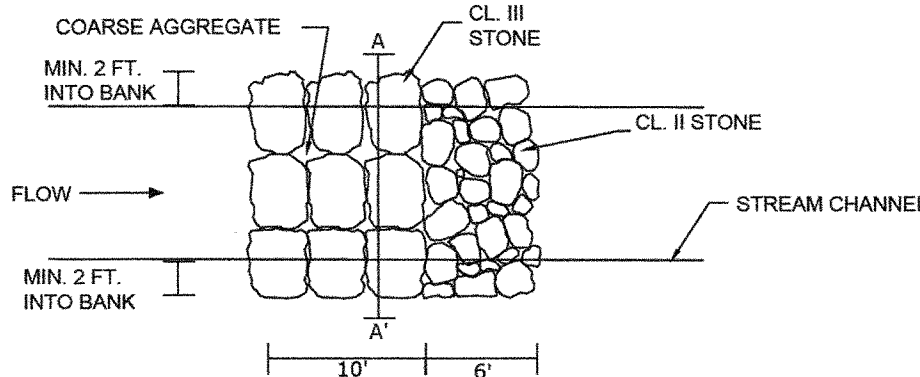
TYPICAL RIFLE WEIR

SPSC STEP-POOL STORM CONVEYANCE
PROFILE

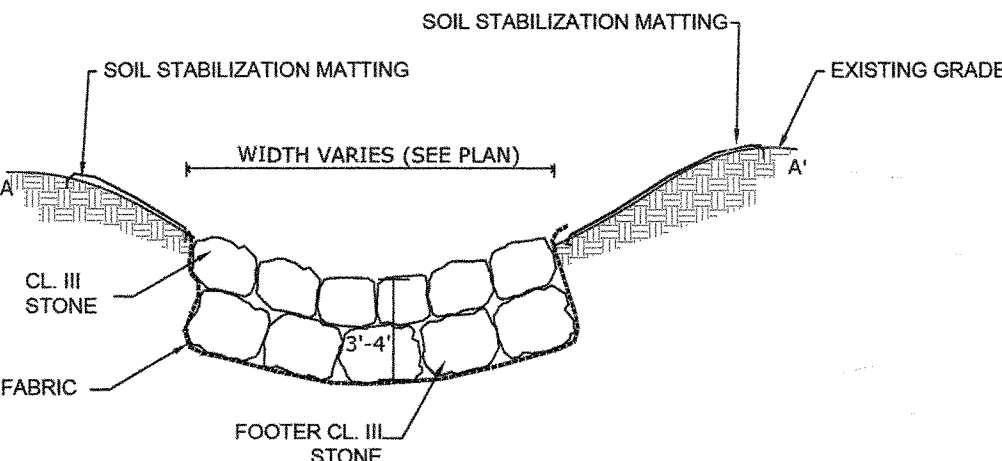


BEDSILL

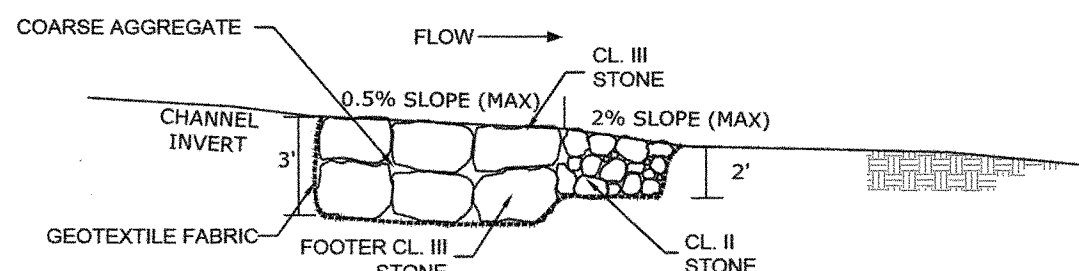
PLAN



CROSS-SECTION



PROFILE

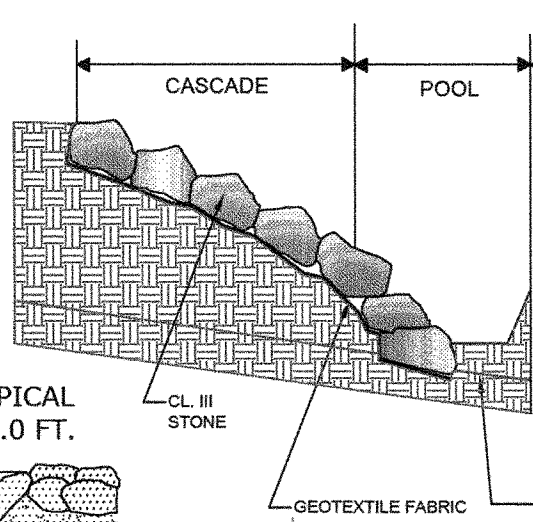


INSTALLATION SEQUENCE

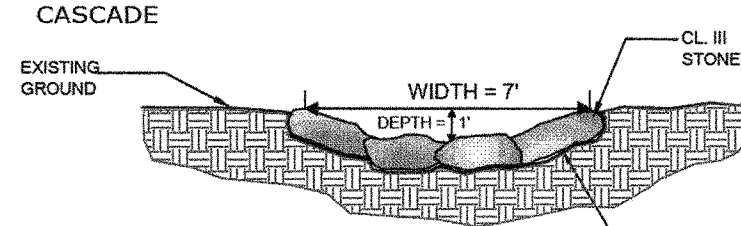
1. EXCAVATE A TRENCH FOR THE BED SILL, EXTENDING ACROSS THE CHANNEL AND APPROXIMATELY TWO FEET INTO BOTH BANKS. THE TRENCH SHALL BE DEEP ENOUGH TO ACCOMMODATE TWO LAYERS OF FOOTER STONE, APPROXIMATELY 3' BELOW THE PROPOSED INVERT OF THE CHANNEL.
2. LINE THE TRENCH WITH GEOTEXTILE FABRIC AND PLACE FOOTER BOULDERS IN THE TRENCH SUCH THAT THE TOPS OF THE BOULDERS ARE RELATIVELY FLAT, TOUCHING, AND SET AT THE PROPOSED SLOPE OF THE CHANNEL INVERT. REFER TO STRUCTURE TABLE FOR DETAILS. FILL VOIDS BETWEEN BOULDERS WITH COURSE AGGREGATE.
3. INSTALL AN ADDITIONAL LAYER OF NATURAL STONE ATOP THE EXISTING FOOTER BOULDERS. THIS STONE SHOULD BE STAGGERED ON TOP OF THE FOOTER BOULDERS TO ALLOW THE ROCKS TO INTERLOCK. FILL VOIDS WITH COURSE AGGREGATE.
4. THE TOPS OF THE SECOND LAYER OF STONE MUST BE FLUSH WITH THE PROPOSED INVERT OF THE CHANNEL, WITH THE EXCEPTION OF THE CENTER OF THE BED SILL, WHICH SHALL BE 0.1 FEET LOWER THAN THE SIDES. FILL VOIDS BETWEEN BOULDERS WITH COURSE AGGREGATE.
5. COVER SILL STRUCTURE WITH IN-SITU CHANNEL MATERIAL TO FILL VOIDS BETWEEN STONE. TRIM AND REMOVE ANY EXPOSED GEOTEXTILE FABRIC.
6. GRADE BANKS AS SHOWN ON THE PLANS. SEED AND COVER WITH SOIL STABILIZATION FABRIC.

TYPICAL CASCADE

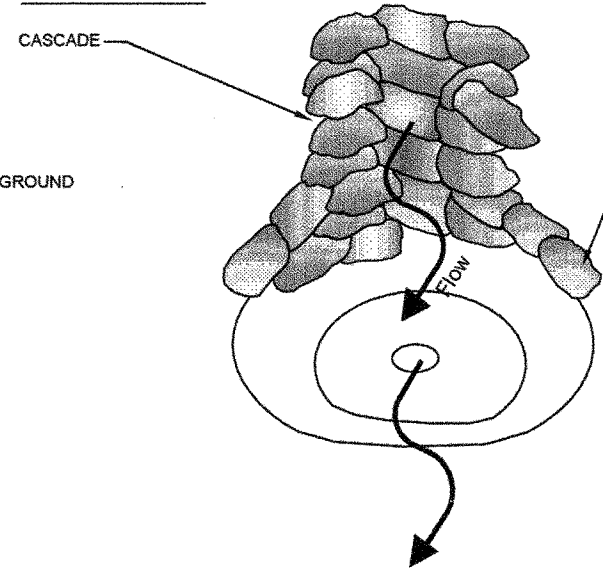
PROFILE



CROSS-SECTION



PLAN VIEW



THE CONSTRUCTION OF THE SPSC SHALL BE AS PER THE PLANS AND AS NOTED HEREIN:

1. STARTING AT THE UPSTREAM LIMIT OF THE SPSC, CONSTRUCT THE CHANNEL SUBGRADE BY FILLING OR EXCAVATING AS NEEDED, TO THE DEPTH OF THE FOOTER BOULDERS OR SAND FILTER MEDIA, AND GRADE BANKS TO ACCOMMODATE PROPOSED CHANNEL DIMENSIONS AND SHAPE.
2. FOR AREAS WHICH ARE UNDERLAIN BY THE SAND/MULCH MIX FILTER BED, PLACE MIXTURE INTO THE CHANNEL TO THE DEPTH AND WIDTH SPECIFIED ON THE PLANS.
3. FOR RIFLE WEIR SECTIONS, PLACE GEOTEXTILE FILTER FABRIC IN THE EXCAVATED OR FILLED STREAM BOTTOM OR SAND FILTER TO COVER THE ENTIRE FOOTPRINT OF THE STRUCTURE. FOOTER BOULDERS SHALL BE FOUNDED ON NATIVE OR COMPACTED-IMPORTED SOIL, NOT SAND FILTER MEDIA. FOR AREAS WHICH REQUIRE FILL, PLACE NATIVE, EXCAVATED SOIL FROM ADJACENT AREAS OR SUITABLE IMPORTED FILL IN THE CHANNEL AS NECESSARY AND COMPACT ACCORDING TO THE SPECIFICATIONS ON THE PLANS TO ELIMINATE ALL VOIDS TO FORM A STABLE SUBGRADE SURFACE PRIOR TO PLACING GEOTEXTILE. PLACE FOOTER BOULDERS ATOP THE GEOTEXTILE SUCH THAT EACH BOULDER IS IN DIRECT CONTACT WITH THE ADJACENT BOULDER TO FORM A STABLE FOUNDATION. FOOTER BOULDERS SHOULD BE PLACED TO APPROXIMATE THE PROPOSED CHANNEL SLOPE.
4. PLACE BOULDERS ATOP FOOTER BOULDERS TO ACHIEVE THE SHAPE AND ELEVATION OF THE RIFLE WEIR. ALL BOULDERS SHALL REST SECURELY ON THE FOOTER BOULDERS AND SHALL BE IN DIRECT CONTACT WITH ADJACENT BOULDERS SUCH THAT VOID SPACES BETWEEN THE BOULDERS ARE MINIMIZED.
5. IN RIFLE WEIR AND TRANSITION AREAS (NOT POOL BOTTOM SECTIONS), PLACE COBBLE MATERIAL ATOP SAND FILTER MEDIA TO ATTAIN PROPOSED CHANNEL CONFIGURATION AND ELEVATIONS. COBBLE SHALL BE PLACED TO FORM A SMOOTH TRANSITION INTO THE RIFLE WEIR STRUCTURE, AND SHALL BE PLACED AND WORKED INTO VOIDS WITHIN THE TOP SURFACE OF THE WEIR TO FILL EVERY VOID, TO THE DOWNSTREAM LIMIT OF THE WEIR.
6. AFTER THE SAND, BOULDERS, AND COBBLE ARE PLACED SUCCESSFULLY, FINE GRADE THE BANKS TO ACHIEVE FINAL DIMENSIONS.
7. PLACE SPECIFIED SEED MIX ONTO THE BANKS, THEN INSTALL SOIL STABILIZATION MATTING AS SHOWN ON THE TYPICAL DETAILS. 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.
8. APPLY 3 INCHES OF COMPOST TO COVER THE BOTTOMS OF THE POOLS, AS SHOWN ON THE TYPICAL DETAIL. APPLY THE SPECIFIED SEED MIX ONTO THE COMPOST.
9. SEED AND MULCH ALL GRADED AREAS (EXCLUDING AREA COVERED BY MATTING), AND ALL OTHER AREAS DISTURBED AS A RESULT OF THIS WORK (INCLUDING AREAS USED FOR ACCESS AND STOCKPILE) ACCORDING TO THE PLANS.

CASCADE

THE CONSTRUCTION OF THE CASCADE SHALL BE AS PER THE PLANS AND AS NOTED HEREIN:

1. STARTING AT THE UPSLOPE LIMIT OF THE CASCADE, EXCAVATE THE CHANNEL SUBGRADE AND GRADE THE BANKS TO ACCOMMODATE THE PROPOSED CHANNEL DIMENSIONS AND SHAPE.
2. PLACE GEOTEXTILE FILTER FABRIC IN THE EXCAVATED CHANNEL TO COVER THE ENTIRE FOOTPRINT OF THE STRUCTURE.
3. PLACE BOULDERS ATOP THE FILTER FABRIC TO ACHIEVE THE SHAPE AND ELEVATION OF THE CASCADE. ALL BOULDERS SHALL REST SECURELY ON THE FABRIC/GROUND AND SHALL BE IN DIRECT CONTACT WITH ADJACENT BOULDERS SUCH THAT VOID SPACES BETWEEN THE BOULDERS ARE MINIMIZED.
4. AFTER THE BOULDERS ARE PLACED SUCCESSFULLY, FINE GRADE THE BANKS TO ACHIEVE FINAL DIMENSIONS.
5. PLACE SPECIFIED SEED MIX ONTO THE BANKS, THEN INSTALL SOIL STABILIZATION MATTING AS SHOWN ON THE TYPICAL DETAIL. 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.
6. SEED AND MULCH ALL GRADED AREAS (EXCLUDING AREA COVERED BY MATTING), AND ALL OTHER AREAS DISTURBED AS A RESULT OF THIS WORK (INCLUDING AREAS USED FOR ACCESS AND STOCKPILE) ACCORDING TO THE PLANS.

NON-TIDAL WETLANDS AND WATERWAYS APPLICATION
NUMBER: 14-NT-0223-201461026
AI Number: 144300; MDE NO. 15-SF-0071

TYPICAL NOTES AND DETAILS

MOLLS COVE

AT WEBSTER FIELD
STREAM RESTORATION PLAN
ST. MARY'S COUNTY, MARYLAND

SCALE:NTS

DATE: February 2014

ESA PROJECT FILE 12-01 NAVFAC

Wash/Delivery Order 0009 - Surveys for Wildlife and Habitat

Improvements/Surveys for Wildlife and Habitat Improvements/Molls

Cove Stream Restoration/CAD - GIS/Molls Cove/Individual Drawings

SHEET: 22 of 22



REVISIONS			
NO.	BY	DATE	DESCRIPTION
1	SP	09/14	RESPONSE TO MDE COMMENTS DATED 08/14
2	MR	11/14	REVISE ESC PLAN, MHW
3	MR	11/15	REVISE ESC PLAN-MDE COMMENTS DATED 12/4/14

Survey:

SOLTESZ

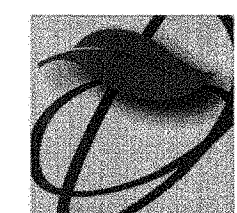
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Prepared for/Applicant:



Contract #: N40080-12-D-0350
Task Order: 0009

Prepared by:



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