

US Army Corps
of Engineers
Baltimore District

CONSTRUCTION SPECIFICATIONS

COAN RIVER JETTY

**NORTHUMBERLAND COUNTY,
MARYLAND**

INVITATION NO. **DACW31-02-B-0039**

CONTRACT NO.

DATE: **SEP 18, 2002**

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SECTION 01000

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Title Evidence

Proof of purchase for equipment and/or materials.

Invoice Copies

Proof of rental equipment costs.

Payment Evidence

Proof of full payment.

Photographs

Photographs and, as applicable, negatives showing construction progress.

SD-03 Product Data

Cost or Pricing Data

Proof of actual equipment costs.

SD-05 Design Data

Progress Schedule; G AR.

A schedule that shows the manner in which the Contractor intends to prosecute the work.

1.2 PROGRESS SCHEDULING AND REPORTING (JUN 1975)

The Contractor, shall within five days or as otherwise determined by the Contracting Officer, after date of commencement of work, submit for approval a practicable progress schedule showing the manner in which he intends to prosecute the work. Contractor prepared form shall contain the same information as shown on the attached NADB Form 1153 ("Physical Construction Progress Chart") will be furnished upon request for use in preparing this schedule. If a Contractor form is used, the same information as shown in the NADB Form 1153 shall be provided. Preparation and updating of the schedule shall be as follows:

1.2.1 Preparation

The progress schedule shall be prepared in the form of time-scaled summary network diagram graphically indicating the sequence proposed to accomplish each work activity or operation, and appropriate interdependencies between the various activities. The chart shall show the starting and completion dates of all activities on a linear horizontal time scale beginning with the dates of Notice to Proceed and indicating calendar days to completion. Each activity in the construction shall be represented by an arrow and shall have a beginning and ending node (event). The entire project shall have only one beginning node and one ending node. The arrangement of arrows shall be such that they flow from left to right. Each arrow representing an activity shall be annotated to show the activity description, duration and cost. The Contractor shall indicate on the chart the important work activities that are critical to the timely overall completion of the project. Key dates for important features or portions of work features are milestone dates and shall be so indicated on the chart. Based on this chart, the Contractor shall prepare an earnings-time curve ("S" Curve) showing the rate of progress in terms of money and percent completion. Schedule progress may not include the value of materials or equipment delivered to the job site but not yet incorporated into the work. This schedule shall be the medium through which the timeliness of the Contractor's construction effort is appraised.

1.2.2 Updating

The Contractor shall update the schedule by entering actual progress thereon at monthly intervals. The status of activities completed or partially completed as of the end of each period shall be shown, as well as the percentage of work completed. In computing actual progress, the value of material and equipment on site but not incorporated into the work may not be considered. When changes are authorized that result in contract time extensions, the Contractor shall submit a modified chart for approval by the Contracting Officer. The Contract Clause entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS" with reference to overtime, extra shifts,

etc., may be invoked when the Contractor fails to start or complete work activities or portions of same by the dates indicated on the approved progress chart, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met. (CENAB-CO-E)

1.3 PAYMENTS TO CONTRACTORS: (NOV 1976)

For payment purposes only, an allowance will be made by the Contracting Officer of 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS". The Contracting Officer may also, at his discretion, take into consideration the cost of materials or equipment stored at locations other than the jobsite, when making progress payments under the contract. In order to be eligible for payment, the Contractor must provide satisfactory evidence that he has acquired title to such material or equipment, and that it will be utilized on the work covered by this contract. Further, all items must be properly stored and protected. Earnings will be computed using 100% of invoiced value. (CENAB-CO-E)

1.4 IDENTIFICATION OF EMPLOYEES: (OCT 1983)

Each employee assigned to this project by the Contractor and subcontractors shall be required to display at all times, while on the project site, an approved form of identification provided by the Contractor, as an authorized employee of the Contractor/subcontractor. In addition, on those projects where identification is prescribed and furnished by the Government, it shall be displayed as required and it shall immediately be returned to the Contracting Officer for cancellation upon release of the assigned employee and or completion of project. (CENAB)

1.5 PURCHASE ORDER: (SEP 1975)

One readable copy of all purchase orders for material and equipment, showing firm names and addresses, and all shipping bills, or memoranda of shipment received regarding such material and equipment, shall be furnished the appointed Contracting Officer's Representative as soon as issued. Such orders, shipping bills or memoranda shall be so worded or marked that all material and each item, piece or member of equipment can be definitely identified on the drawings. Where a priority rating is assigned to a contract, this rating, the required delivery date, and the scheduled shipping date shall also be shown on the purchase order. At the option of the Contractor, the copy of the purchase order may or may not indicate the purchase price. (CENAB-CO-E)

1.6 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (EFARS 52.0231.5000 (OCT 1995))

(a) This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable conditions owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual costs data for each piece of equipment or groups of similar serial and services for which the government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs can not be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP1110-1-8 Construction Equipment Ownership and Operating Expenses Schedule, Region East. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d) (ii) and Far 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated leasees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet. CENAB-CT/SEP 95 (EFARS 52.231-5000)

1.7 NEGOTIATED MODIFICATIONS: (OCT 84)

Whenever profit is negotiated as an element of price for any modification to this contract with either prime or subcontractor, a reasonable profit shall be negotiated or determined by using the OCE Weighted Guidelines method outlined in EFARS 15.902. (Sugg. NAB 84-232)

1.8 PHOTOGRAPHS

PHOTOGRAPHIC COVERAGE: (SEP 85) The Contractor shall furnish ten each 8" x 10" (commercial grade color photographs of the project (with negatives) to the Contracting Officer. These photographs shall be taken at systematic intervals during the contract where and when directed by the Contracting Officer. (CENAB-CO)

1.9 PERMITS

The permits listed below have been obtained by the Government or are in the approval process and may require additional action by the Contractor to become complete. After final approvals by the respective state agencies are received, the Government will furnish approval letters and permits to the Contracting Officer who will furnish the Contractor all such permits before or during construction. The Contractor shall abide by all permit requirements.

- a. Virginia Water Protection (VWP) Permit No. 01-1614
- b. Northumberland County Wetland Permit.
- c. Virginia Marine Resource Commission Permit.

PART 2 PRODUCTS

NOT APPLICABLE

PART 3 EXECUTION

NOT APPLICABLE

ATTACHMENTS:

NADB Form 1153 ("Physical Construction Progress Chart")

-- End of Section --



COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

VWP Individual Permit Number: 01-1614
Effective Date: May 21, 2002
Expiration Date: May 21, 2012

VIRGINIA WATER PROTECTION PERMIT

ISSUED PURSUANT TO THE STATE WATER CONTROL LAW

AND SECTION 401 OF THE CLEAN WATER ACT

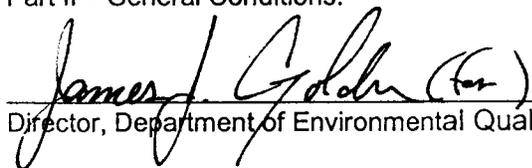
Based upon an examination of the information submitted by the owner and in compliance with Section 401 of the Clean Water Act as amended (33 USC 1251 et seq.) and the State Water Control Law and regulations adopted pursuant thereto, the Board has determined that there is a reasonable assurance that the activity authorized by this permit, if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The Board finds that the effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to a significant impairment to state waters or fish and wildlife resources.

Permittee: U. S. Army Corps of Engineers
Address: Baltimore District
P. O. Box 1715
Baltimore, MD 21203-1715

Activity Location: The navigational dredging site is located 280 feet west of Walnut Point in the Coan River in Northumberland County, Virginia. The open water placement site is located in the Coan River at Public Ground (PG) 78.

Activity Description: The project will include the construction of a new navigational channel to the west of Walnut Point in the mouth of the Coan River. The dimensions of the new channel will be 1,000 feet long by 100 feet wide to a depth of -12 feet MLLW (to include allowable overdepth). The channel will be hydraulically dredged and the 10,000 cubic yards (92% sand, 3% silt, 2% gravel, and 3% clay) of dredged material will be placed on Public Ground 78 for oyster bar restoration purposes. The navigational dredging and open water placement project will result in no impact to vegetated or non-vegetated wetlands.

The permitted activity shall be in accordance with this Permit Cover Page, Part I – Special Conditions, and Part II – General Conditions.


Director, Department of Environmental Quality


Date

PART I - SPECIAL CONDITIONS

A. Authorized Activities

1. This permit authorizes the construction of a new U. S. Army Corps of Engineers navigational channel located to the west of Walnut Point in the mouth of the Coan River, to be dredged by hydraulic method, and placement at Public Ground (PG) 78 as indicated in the Joint Permit Application dated August 29, 2001, received on September 19, 2001 and supplemental information received on September 19, 2001, revisions received on March 14, 2002 and March 21, 2002, which was deemed complete on March 21, 2002.
2. The project activities, including any conditions and limitations, described in the Joint Permit Application and any supplemental materials submitted by the applicant, or authorized agent, shall be adhered to for the term of this permit.
3. The permittee shall notify the Department of Environmental Quality (DEQ) Piedmont Regional Office (PRO) of any additional impacts to State waters, including wetlands, associated with this project. Any additional impacts to State waters, including wetlands, shall be subject to individual permit review or modification of this permit, and compensatory mitigation will be required.
4. This permit is valid for **ten (10) years** from the date of issuance. Re-issuance of the permit may be necessary if any portion of the authorized activities or any permit requirement (including compensatory mitigation provisions) have not been completed. The permit term, including any extensions, cannot exceed the **maximum of fifteen (15) years**. The extension may be requested through written notification to the Department of Environmental Quality Piedmont Regional Office, provided that there are no changes in the authorized activities.
5. This permit does not satisfy the need to obtain a Virginia Pollutant Discharge Elimination System (VPDES) permit for outfall structures.

B. Standard Project Conditions:

1. The activities authorized by this permit shall be executed in a manner to minimize any adverse impact on stream beneficial uses, as defined in § 62.1-10(b) of the Code.
2. The permittee shall employ measures to prevent spills of fuels, lubricants, or other pollutants into State waters.
3. All dredging and/or filling in State waters shall be accomplished in a manner that minimizes stream bottom disturbances and turbidity increases.

4. No activity shall substantially disrupt the movement of aquatic life indigenous to the water body, including those species that normally migrate through the area, unless the primary purpose of the activity is to impound water. Culverts placed in streams must be installed to maintain low flow conditions. No activity may cause more than minimal adverse effect on navigation. Furthermore the activity must not impede the passage of normal or expected high flows and the structure or discharge must withstand expected high flows. Flows downstream of the project area shall be maintained to protect all uses.
5. Modification of this permit may be required for activities involving the construction of instream impoundments, stream modifications, dredging, or water withdrawals where DEQ determines, upon consultation with the Virginia Department of Game & Inland Fisheries, that time-of-year restrictions are appropriate in State waters critical to the movement and reproduction of anadromous fish.
6. All construction, construction access (for example, cofferdams, sheetpiling, and causeways) and demolition activities associated with this project shall be accomplished in a manner that minimizes construction or waste materials from entering surface waters to the maximum extent practicable, unless authorized by this permit.
7. Immediately downstream of the project area, water quality standards shall not be violated as a result of the construction activities.
8. Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992. These controls shall be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls shall remain in place until the area stabilizes.
9. Any exposed slopes or streambanks must be stabilized immediately upon completion of the project at each water body. All denuded areas shall be properly stabilized in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.
10. Untreated stormwater runoff shall be prohibited from directly discharging into any surface waters. Appropriate best management practices (BMP) shall be deemed suitable treatment prior to discharge into state waters.
11. No machinery may enter flowing waters, unless authorized by this permit.
12. All fill material shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.
13. Continuous flow of perennial springs shall be maintained by the installation of spring boxes, french drains, or other similar structures.
14. Wet or uncured concrete shall be prohibited from entry into flowing surface waters.

15. In issuing this permit, the Board has not taken into consideration the structure's stability of any proposed structure(s).

C. Construction Monitoring

1. Photo stations shall be established to document the construction activities within impact areas authorized by this permit. Photographs shall be taken to document the activities during construction.
2. The permittee shall make provisions to monitor for any spills of petroleum products or other materials during the construction process. These provisions shall be sufficient to detect and contain any spill and notify the appropriate authorities.

D. Required Notifications and Submittals

1. All written communications required by this permit shall be submitted to the Department of Environmental Quality, Piedmont Regional Office, 4949-A Cox Road, Glen Allen, Va. 23060. Please include the permit number on all correspondence.
2. Properly labeled photographs shall include the following information: date and time of the photograph, name and signature of the person taking the photograph, photograph orientation, permit number, and identifying name/description of the photograph.
3. The DEQ-PRO Virginia Water Protection Program shall be notified in writing by certified mail to Department of Environmental Quality, Piedmont Regional Office, 4949-A Cox Road, Glen Allen, Va. 23060 at least ten (10) days prior to the start of activities authorized under this permit so that inspections of the project can be planned, if deemed necessary. The notification shall include identification of the impact area and compensation site (if applicable) at which work will occur and a projected schedule for completing work at each permitted impact area and compensation site (if applicable).
4. The DEQ-PRO Virginia Water Protection Program shall be notified in writing by certified mail within thirty (30) days following the completion of all activities in permitted impact areas authorized under this permit.
5. The permittee shall report any fish kills or spills of fuels or oils immediately upon discovery. If spills or fish kills occur between the hours of 8:15 AM to 5:00 PM Monday through Friday, DEQ shall be notified at (804) 527-5020; otherwise, the Department of Emergency Services shall be notified at 1-800-468-8892.
6. Violations of State water quality standards shall be reported within twenty-four (24) hours to the DEQ at (804) 527-5020.
7. The permittee shall notify the DEQ-PRO in writing when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to remove the obstruction, material, or toxic

substance or to change the location of any structure are prohibited until approved by the DEQ.

8. A quarterly construction monitoring report shall be submitted to the DEQ-PRO by January 10, April 10, July 10, and October 10 documenting progress of construction activities authorized by this permit. The reports shall include, at a minimum, the following:
 - a. A written narrative stating whether work was performed, when work started in the identified impact area, where work was performed, what work was performed, and what work was completed during the quarter.
 - b. Properly labeled photographs (to include date and time, name and signature of the person taking the photograph, and permit number) showing representative construction activities including, but not limited to, dredging, open water placement, etc.
9. All reports required by this permit and other information requested by the DEQ shall be signed by the applicant or a person acting in the applicant's behalf, with the authority to bind the applicant. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above; and
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
 - c. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Board prior to or together with any separate information, or applications to be signed by an authorized representative.
10. All submittals required by this permit shall contain the following signed certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

E. Dredging and Disposal

1. The maximum depth of the access channel shall not be deeper than the controlling water depths immediately outside the area to be dredged.
2. Dredging shall be accomplished to minimize disturbance of the bottom and minimize turbidity levels in the water column.
3. The double handling of dredged material in State Waters shall not be permitted.
4. Dredging shall be accomplished by hydraulic method using a pipeline to transport the dredged material from the cutterhead to the placement site and shall be done in such a manner as to prevent leakage or discharge into State waters until offloading occurs at Public Ground (PG) 78. In the event of a ruptured pipeline, dredging/disposal operations shall immediately cease until repairs are accomplished.
5. Side slope cuts of the dredging area shall not exceed a two horizontal to one vertical (2:1) slope to prevent slumping of material into the dredged area.
6. The proposed entrance channel bottom width dredge cut shall not exceed one hundred (100) feet in width. The maximum channel length shall be no greater than 1,000 linear feet.
7. Dredging is allowed to a maximum of -12 feet Mean Lower Low Water (MLLW) (to include allowable overdepth).
8. The dredging cycle shall remove no more than 10,000 cubic yards of material over the life of this permit.
9. Dredging shall be prohibited each year during the period June 1 through September 30 and December 1 through March 15, inclusive.
10. No hazardous materials shall be disposed of at this site.
11. For navigation channels the following shall apply:
 - a. A minimum of 15 feet shall be maintained between the top of the dredge cut and the toe of the bank.
 - b. A buffer of four times the depth of the dredge cut shall be maintained between the top of the dredge cut and the channelward limit of wetlands or mean low water.
12. A post-dredging bathymetric survey shall be submitted to DEQ within 30 days following completion of the dredging activity.

Part II – General Conditions

A. Duty to comply

The permittee shall comply with all conditions of the VWP permit. Nothing in the VWP permit regulations shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any VWP permit violation is a violation of the law, and is grounds for enforcement action, VWP permit termination, revocation, modification, or denial of an application for a VWP permit extension or reissuance.

B. Duty to Cease or Confine Activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a VWP permit has been granted in order to maintain compliance with the conditions of the VWP permit.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the permit which may have a reasonable likelihood of adversely affecting human health or the environment.

D. VWP Permit Action

1. A VWP permit may be modified, revoked and reissued, or terminated as set forth in 9 VAC 25-210 et seq.
2. If a permittee files a request for VWP permit modification, revocation, or termination, or files a notification of planned changes, or anticipated noncompliance, the VWP permit terms and conditions shall remain effective until the request is acted upon by the board. This provision shall not be used to extend the expiration date of the effective VWP permit. If the permittee wishes to continue an activity regulated by the VWP permit after the expiration date of the VWP permit, the permittee must apply for and obtain a new VWP permit or comply with the provisions of 9 VAC 25-210-185 (VWP Permit Extension).
3. VWP permits may be modified, revoked and reissued or terminated upon the request of the permittee or other person at the board's discretion, or upon board initiative to reflect the requirements of any changes in the statutes or regulations, or as a result of VWP permit noncompliance as indicated in the Duty to Comply subsection above, or for other reasons listed in 9 VAC 25-210-180 (Rules for Modification, Revocation and Reissuance, and Termination of VWP permits.).

E. Inspection and Entry

Upon presentation of credentials, any duly authorized agent of the board may, at reasonable times and under reasonable circumstances:

1. Enter upon any permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the VWP permit conditions;
2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit, and
3. Sample or monitor any substance, parameter or activity for the purpose of ensuring compliance with the conditions of the VWP permit or as otherwise authorized by law.

F. Duty to Provide Information

1. The permittee shall furnish to the board any information which the board may request to determine whether cause exists for modifying, revoking, reissuing or terminating the VWP permit, or to determine compliance with the VWP permit. The permittee shall also furnish to the board, upon request, copies of records required to be kept by the permittee.
2. Plans, specifications, maps, conceptual reports and other relevant information shall be submitted as required by the board prior to commencing construction.

G. Monitoring and Records Requirements

1. Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Test Procedures for the Analysis of Pollutants.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the VWP permit, and records of all data used to complete the application for the VWP permit, for a period of at least three years from the date of the expiration of a granted VWP permit. This period may be extended by request of the board at any time.
4. Records of monitoring information shall include:
 - a. The date, exact place and time of sampling or measurements;
 - b. The name of the individuals who performed the sampling or measurements;
 - c. The date and time the analyses were performed;
 - d. The name of the individuals who performed the analyses;
 - e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;

f. The results of such analyses; and

g. Chain of custody documentation.

H. Transferability

This VWP permit may be transferred to a new permittee only by modification to reflect the transfer, by revoking and reissuing the permit, or by automatic transfer. Automatic transfer to a new permittee shall occur if:

1. The current permittee notifies the board within 30 days of the proposed transfer of the title to the facility or property;
2. The notice to the board includes a written agreement between the existing and proposed permittee containing a specific date of transfer of VWP permit responsibility, coverage and liability to the new permittee, or that the existing permittee will retain such responsibility, coverage, or liability, including liability for compliance with the requirements of any enforcement activities related to the permitted activity; and
3. The board does not within the 30-day time period notify the existing permittee and the new permittee of its intent to modify or revoke and reissue the VWP permit.

I. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize injury to private property or any invasion of personal rights or any infringement of federal, state or local law or regulation.

J. Reopener

This permit may be reopened to modify conditions to meet new regulatory standards duly adopted by the board. Cause for reopening VWP permits includes, but is not limited to when the circumstances on which the previous VWP permit was based have materially and substantially changed, or special studies conducted by the board or the permittee show material and substantial change, since the time the VWP permit was issued and thereby constitute cause for VWP permit modification or revocation and reissuance.

K. Compliance with State and Federal Law

Compliance with this VWP permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities, or other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

L. Severability

The provisions of this VWP permit authorization are severable.

M. Permit Modification

A VWP permit may be modified, but not revoked and reissued except when the permittee agrees or requests, when any of the following developments occur:

1. When additions or alterations have been made to the affected facility or activity which require the application of VWP permit conditions that differ from those of the existing VWP permit or are absent from it;
2. When new information becomes available about the operation or activity covered by the VWP permit which was not available at VWP permit issuance and would have justified the application of different VWP permit conditions at the time of VWP permit issuance;
3. When a change is made in the promulgated standards or regulations on which the VWP permit was based;
4. When it becomes necessary to change final dates in schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Act;
5. When changes occur which are subject to “reopener clauses” in the VWP permit; or
6. When the board determines that minimum instream flow levels resulting from the permittee’s withdrawal of water are detrimental to the instream beneficial use and the withdrawal of water should be subject to further net limitations or when an area is declared a Surface Water Management Area pursuant to §§ 62.1-242 through 62.1-253 of the Code of Virginia, during the term of the VWP permit.

N. Permit Termination

After notice and opportunity for a formal hearing pursuant to Procedural Rule No. 1 (9 VAC 25-230-100) a VWP permit can be terminated for cause. Causes for termination are as follows:

1. Noncompliance by the permittee with any condition of the VWP permit;
2. The permittee’s failure in the application or during the VWP permit issuance process to disclose fully all relevant facts or the permittee’s misrepresentation of any relevant facts at any time;
3. The permittee’s violation of a special or judicial order;

4. A determination by the board that the permitted activity endangers human health or the environment and can be regulated to acceptable levels by VWP permit modification or termination;
5. A change in any condition that requires either a temporary or permanent reduction or elimination of any activity controlled by the VWP permit; and
6. A determination that the permitted activity has ceased and that the compensatory mitigation for unavoidable adverse impacts has been successfully completed.

O. Civil and Criminal Liability

Nothing in this VWP permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability

Nothing in this VWP permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Clean Water Act or §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Unauthorized Discharge of Pollutants

Except in compliance with this VWP permit, it shall be unlawful for the permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;
2. Excavate in a wetland;
3. Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses.
4. On or after October 1, 2001 conduct the following activities in a wetland:
 - a. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;
 - b. Filling or dumping;
 - c. Permanent flooding or impounding; or
 - d. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

R. VWP Permit Extension

Any permittee with an effective VWP permit for an activity that is expected to continue after the expiration date of the VWP permit, without any change in the activity authorized by the VWP permit, shall submit written notification requesting an extension. The permittee must file the request prior to the expiration date of the VWP permit. Under no circumstances will the extension be granted for more than 15 years beyond the original effective date of the VWP permit. If the request for extension is denied, the VWP permit will still expire on its original date and, therefore, care should be taken to allow for sufficient time for the board to evaluate the extension request and to process a full VWP permit modification, if required.

VIRGINIA WATER PROTECTION INDIVIDUAL PERMIT ISSUANCE FACT SHEET

**Department of Environmental Quality – Water Division
Piedmont Regional Office
4949-A Cox Road, Glen Allen, VA 23060**

SUBJECT: Issuance of Virginia Water Protection Individual Permit Number 01-1614
U.S. Army Corps of Engineers, Baltimore District – Coan River
Navigational Dredging and Open Water Placement Project
Northumberland County, VA

TO: Curtis J. Linderman, P.E.
Water Permit Manager

FROM: Deborah G. Morgan 
Permit Writer

DATE: May 16, 2002

COPY: VWP permit file

DEQ has reviewed the application for the Virginia Water Protection (VWP) Individual Permit Number 01-1614 and has determined that the project qualifies as a VWP Category II project. Based on the information provided in the application and in compliance with § 401 of the Clean Water Act as amended (33 USC 1251 et seq.) and the State Water Control Law and regulations, DEQ has determined that there is a reasonable assurance that the activity authorized by this permit will protect instream beneficial uses, will not violate applicable water quality standards, and will not cause or contribute to significant impairment of state waters or fish and wildlife resources provided the permittee complies with all permit conditions.

Surface water impacts have been avoided and minimized to the maximum extent practicable. Permitted wetland impacts have been inventoried in evaluating this proposed permit.

The following details the application review process and summarizes relevant information for developing the Part I – Special Conditions for permit issuance.

VWP PERMITS PROGRAM FACT SHEET
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1. Contact Information: Mr. Wesley Coleman
U.S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203-1715

Permittee Legal Name and Address: Mr. Wesley Coleman
U.S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203-1715

2. Processing Dates:

Received Application: September 19, 2001, Supplemental information October 26, 2001, Revisions March 14, 2002 and March 21, 2002
Application Complete: March 21, 2002
Permit Fee Received by Accounting: Exempt per Section 62.1.44.15:6.B of the Code of Virginia
Draft Permit Package Issued: February 14, 2002, Revised April 3, 2002
Public Notice Published: April 10, 2002
End of 30-Day Public Comment Period: May 10, 2002
Received Verification of Publication: May 6, 2002
Public Meeting or Hearing (if applicable): N/A

3. Project Location: The navigational dredging site is located 280 feet west of Walnut Point in the Coan River in Northumberland County, Virginia. The open water placement site is located in the Coan River at Public Ground (PG) 78.

City/County:	Northumberland County
Waterbody:	Coan River
Basin:	Potomac River
Subbasin:	Potomac River
Section:	1
Class:	II
Special Standards:	a
HUC:	2070011

Compensation Site City/ County:	N/A
Compensation Site Basin:	N/A
Compensation Site Subbasin:	N/A
Compensation Site HUC:	N/A

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4. Project Description:

The permittee proposes to construct a new navigational channel to the west of Walnut Point in the mouth of the Coan River. The dimensions of the new channel will be 1,000 feet long by 100 feet wide to a depth of -12 feet MLLW (to include allowable overdepth). (Note: The Corps objected to standard wording in the permit and fact sheet regarding the -12 foot depth MLLW which was "to include advance maintenance and overdepth" The wording has therefore been struck from the permit but it is noted that the Corps understands that the depth specified includes advance maintenance). The channel will be hydraulically dredged and the 10,000 cubic yards (92% sand, 3% silt, 2% gravel, and 3% clay) of dredged material will be placed on Public Ground (PG) 78 for oyster bar restoration purposes.

The permittee also proposes construction of a 485 foot long jetty and a temporary tie-in road to access the jetty location, however no permit is required for this portion of the project. If submitted separately, this portion of the application would not require a permit or mitigation, therefore, these activities have been carved out of this permit as per Central Office advisement on October 22, 2001.

5. Project Impacts:

The proposed dredging and dredge material placement project results in no impacts to vegetated or non-vegetated wetlands. The open water placement of the mostly sand material will aid in the State's oyster bar restoration project. There will be some wetland impacts with the jetty tie-in road and a loss of state waters which shall occur with the jetty construction, however this portion of the project has been carved out of the permit per Central Office advisement as noted above. Water quality impacts are expected to be temporary and minimal provided the permittee abides by the conditions of the permit. Impacts have been avoided and minimized to the greatest extent practicable.

6. Avoidance and Minimization Efforts:

Due to the existence of oyster grounds throughout the proposed project area and adjacent areas, impacts to oyster grounds could not be avoided, only minimized. The channel dredging will result in an impact to a currently unproductive public oyster ground and a small portion on productive, privately leased oyster bed. The jetty will require the placement of fill (rock) in the oyster bar area. All of these impacts were minimized to the greatest extent practicable. A time of year restriction for work around the oyster beds will be adhered to as well as use of best management practices to minimize further impact to this resource. Dredging will be prohibited during the period June 1 through September 30 and December 1 through March 15, inclusive, per the application. Potential impacts to other aquatic species are expected to be minor and temporary in nature.

7. Compensation for Unavoidable Impacts:

No mitigation is required, since there are no proposed impacts to vegetated tidal wetlands from the dredging and dredged material placement project.

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8. Site Inspection:

A site visit was conducted on February 7, 2002. This channel has a navigation problem due to sand filling in the channel. The Corps plans to enhance the dredging portion of the project by installing a 485 foot long jetty 100 feet east of Walnut Point in the Coan River. A temporary jetty tie-in road on private land will allow access so the jetty may be constructed. The dredging and jetty will be beneficial to future navigation and the open water placement at PG 78 will aid in oyster bar restoration.

9. Riparian Landowner Notification:

All 50 riparian landowners located adjacent to the impact area and within one-half mile downstream of each distinct impact area were notified on December 17, 2001 in accordance with 62.1-44.15:4.D of the Code of Virginia. Five people responded to the riparian notification. There were no objections to the project and four of the five respondents were in favor of the project.

The Northumberland County Administrator was notified of the pending application on November 9, 2001 and was further advised when the public notice went out on April 3, 2002. The Commissioner of Revenue was notified of the project on November 15, 2001 and provided DEQ with riparian owner address information on November 20, 2001. The Northumberland Board of Supervisors and the Northern Neck Planning District was also notified when the public notice went out on April 3, 2002. Local notification was in accordance with 62.1-44.15:4.D and 62.1-44.15:01.2 of the Code of Virginia.

10. Relevant Regulatory Agency Comments:

As part of the application review process, DEQ contacted the appropriate state regulatory agencies and coordinated with various federal regulatory agencies, including the United States Army Corps of Engineers (USACE). All relevant agency comments were addressed in the VWP individual permit Part I - Special Conditions. Therefore, the staff anticipates no adverse effect on water quality and fish and wildlife resources provided the applicant adheres to the permit conditions.

Summary of State Agency Comments and Actions

Agency comments were requested from the Department of Game and Inland Fisheries, the Virginia Marine Resources Commission, the Virginia Department of Health, the Department of Conservation and Recreation, and the U.S. Fish and Wildlife Service on November 15, 2001 in accordance with 62.1-44.15:5.F of the Code of Virginia and the November 2000 MOU between Department of Conservation and Recreation, Division of Natural Heritage and Virginia Department of Agriculture and Consumer Services.

The Department of Game and Inland Fisheries advised that there are no documented occurrences of threatened or endangered species within that project area and that they expect no adverse impacts to species under their jurisdiction as a result of the proposed project.

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The Department of Health advised that they have no objections to the issuance of this permit. The Bureau of Shellfish Sanitation, Richmond Office has advised that there will be no shellfish condemnation or closure as a result of this project.

The Virginia Marine Resources Commission has advised that the dredging activity is exempt by their statute. However, the open water placement does require Commission approval and they will issue a permit for this. The Corps has been working very closely with Habitat Division staff and Dr. Jim Wesson, their Oyster Replenishment Officer and they have located a section of public ground suitable for the open water placement of this sandy material. The ground is presently unsuitable, a "mucky bottom". The sandy dredge material will effectively cap the mucky bottom with material potentially suitable for the propagation of oysters. The open water placement site is located in public ground No. 78 and only a short distance from the dredge cut. VMRC staff is very much in favor of this manner of disposal finding that the public and private benefit outweigh any anticipated detriment. They believe the grain size of the material is sufficiently large enough that, with care, the material could be pumped to the disposal site and spread out using a subsurface pipe allowing the material to settle out faster.

The Department of Conservation and Recreation (DCR) indicated that there are documented natural heritage resources in the project area, however, due to the scope of the activity and the distance to the resource, they do not anticipate that this project will adversely impact these natural heritage resources.

Summary of Federal Agency Comments and Actions

The U.S. Army Corps of Engineers, Baltimore District, issued a Public Notice advising that they are conducting a public review of the Environmental Assessment (EA) of the proposed dredging and jetty construction project in the Coan River. The draft finding indicated No Significant Impact.

The United States Fish and Wildlife Service (USFWS) advised that they have no objection to the proposed project plan.

11. Changes in Permit Part I - Special Conditions Due to Public Comments:

The public notice was published in the Northumberland Echo on April 10,2002.

No public comments were received during the public comment period. Therefore, no changes have been made to the permit conditions.

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12. Permit Conditions Developed to Protect Water Quality:

The following conditions were developed to protect instream beneficial uses, to ensure compliance with applicable water quality standards, to prevent significant impairment of state waters or fish and wildlife resources, and to provide for no net loss of wetland acreage and function through compensatory mitigation and success monitoring and reporting.

Part I – Special Conditions:

Part A **Authorized Activities:**

- No. 1 addresses the activities authorized by this permit, including impact types and limits.
- No. 2 ensures that all conditions and limitations in the application and associated submittals will be adhered to for the entire permit term.
- No. 3 directs the permittee to notify DEQ of additional impacts to state waters.
- No. 4 addresses the permit term. The applicant, on February 7, 2002, indicated the 10 year permit term was necessary to insure that permit conditions are completed.
- No. 5 qualifies that the permit does not satisfy the requirements of a Virginia Pollutant Discharge Elimination System permit.

Part B **Standard Project Conditions:**

- No. 1 addresses the requirement for the minimization of adverse impacts to instream beneficial uses.
- Nos. 2, 6, 10, 12, and 14 provide requirements and limitations on the entry of various materials (including concrete, fill, construction and waste material, fuels, lubricants, and untreated stormwater runoff) into state waters.
- No. 3 ensures that dredging and filling operations will minimize stream bottom disturbances and turbidity.
- No. 4 ensures that the project will be executed in a manner so as to minimize impacts to instream beneficial uses by imposing limitations on the disruption of the movement of aquatic life, and setting requirements for the maintenance of low flow conditions, provision for high flows, and minimization of adverse effects on navigation.
- No. 5 requires that the permittee adhere to time-of-year restrictions recommended by the Department of Game and Inland Fisheries or the Virginia Marine Resources Commission for the protection of fish and wildlife resources. This is a customized condition developed for use in the Piedmont Regional Office.
- No. 7 requires that Water Quality Standards downstream of the construction area must not be violated as a result of the site activities. The word "construction" was substituted for the word "project" that was used in the permit manual.

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Nos. 8 and 9 require the use of erosion and sedimentation controls during excavation and construction operations to minimize sedimentation of surface waters.

No. 11 limits the use of machinery and equipment in surface waters to protect beneficial uses.

Note: No. 15 from the permit manual was deleted in lieu of Part I, E.12 .

No. 13 requires maintenance of continuous flow of perennial springs for the protection of instream beneficial use.

No. 15 determines that the permit does not take into consideration the structural stability of any proposed structure.

Note: Nos. 16, 17, and 18 from the manual dealing with impacts to wetlands have been deleted from the permit as they are not relevant to the dredging and open water placement activities authorized in the permit. They would relate to the jetty and access road but this portion of the project has been carved out of this permit due to Central Office advisement.

Part C Construction Monitoring

No. 1 requires photographs of the construction so that the board may track the progress of the project and monitor permit compliance, modified with clarifying language requiring photographs to be representative of site conditions. The permit manual requirement for the photographs to be taken at the end of the first, second and twelfth months of construction and then annually for the remainder of the construction project seemingly conflicts with condition D.10.b. requiring their submittal as part of the quarterly report, so that sentence was deleted from this condition. Due to the Corps' objections, C.1 has also been modified to delete the requirement to document pre construction conditions and post construction conditions as all work is being done in open water.

A permit manual condition requiring water quality monitoring to ensure compliance with the Water Quality Standards was deleted as it is superfluous with the condition B.7 which states that water quality standards shall not be violated.

No. 2 is a customized condition used in the DEQ-PRO that requires the permittee to provide for monitoring any spills during the construction process. These provisions shall be sufficient to detect and contain any spill and notify the appropriate authorities. This condition sets up the mechanism for spill detection that is reported in accordance with condition D.5.

A permit manual condition requiring the measurement of stream bottom elevations at road crossings was removed. Because the jetty access road is not part of this permit, per Central office advisement, this condition is not considered relative and has, therefore, been deleted.

Monitoring for Dissolved Oxygen was not believed to be necessary and, therefore, not included in the permit due to the high sand and gravel content of the dredged material.

Part D Required Notifications and Submittals

Nos. 1 through 10 list the notification, submittal, and reporting requirements to ensure compliance with all permit conditions.

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No. 9 is customized with previously approved standard condition language for the .
submittal of a quarterly report.

A permit manual condition requiring the submittal of final Plans and Specifications has
been deleted as it is not applicable to this permit and not considered relative to
addressing activities in the permit.

Two permit manual conditions regarding compensatory mitigation monitoring and stream
mitigation monitoring have been deleted as they are not applicable to this permit.

Part E Dredging and Disposal

Nos. 1, 2, and 5 provide limits for dredging to avoid and minimize disturbance and
prevent unpermitted impacts.

No. 3 prohibits double handling of dredge material to prevent unpermitted impacts to
surface waters. This condition is not interpreted to mean that it will apply to the
subsequent open water placement at PG 78.

No. 4 provides guidance for hydraulic dredging to prevent unpermitted impacts to
surface waters and requires using a pipeline to transport the dredged material from
the cutterhead to the disposal site.

Nos. 6, 7, and 8 relate specifically to this project and to the allowable dredge cut
specifications and quantity of material to be dredged.

No. 9 specifies a time restriction for dredging as per the application.

No. 10 prohibits any hazardous material being discharged at the disposal site.

No. 11 defines the requirements for navigation channels. In No. 11.a., the second
sentence from the manual has been deleted; dredging will occur over 200 feet from the
shoreline so the flagging requirement is not believed to be necessary.

No. 12 requires a bathymetric survey following dredging activities.

Part II - General Conditions:

General Conditions are applied to all VWP individual permits, as stated in the VWP
Permit Program regulation.

13. General Standard:

This project may result in negligible, temporary impacts to beneficial uses related to the
propagation and growth of aquatic life as defined in the General Standard. Provided the
permittee abides by the conditions of the permit, no substances shall enter state waters
in concentrations, amounts or combinations that would contravene established
standards or interfere with beneficial uses or are inimical or harmful to human, animal,
plant, or aquatic life.

14. Staff Recommendations:

Based on the review of the permit application, the staff provides the following
determinations.

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- The proposed activity is consistent with the provisions of the Clean Water Act and State Water Control Law, and will protect instream beneficial uses.
- The proposed permit addresses avoidance and minimization of wetland impacts to the maximum extent practicable.
- The effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to significant impairment of state waters or fish and wildlife resources.
- This permit is proposed to prevent unpermitted impacts.

The staff provides the following recommendations:

- (1) Find the above determinations to be appropriate.
- (2) Approve the attached VWP individual permit and conditions.
- (3) Direct the staff to issue VWP Individual Permit Number 01-1614.

Approved: _____

James J. Golden (for)
Water Permit Manager

Date: _____

5/21/02

Permit # 01-1614



Commonwealth of Virginia
Marine Resources Commission
Authorization

A Permit has been issued to: U. S. Army Corps of Engineers
ATTN: Mr. Wesley Coleman
Baltimore District
P.O. Box 1715
Baltimore, Maryland 21203-1715

The Permittee is hereby authorized to:

Install an approximately 485-foot long by 45-foot wide continuous height riprap jetty which will extend approximately 400 feet channelward of mean low water at the mouth of the Coan River and to place approximately 6,000 cubic yards of sandy material onto Public Ground #78 in conjunction with the dredging of the Coan River federal navigation channel in Northumberland County.

Issuance Date: 2-26-2002

Expiration Date: 2-26-2005

Commissioner or Designee

This Notice Must Be Conspicuously Displayed At Site Of Work

Sir/Madam:

Please be advised that I will commence work on 01-1614 *on*
(Permit Number)

in Coan River/Northumberland County
(Date) *(Waterway)* *(City/County)*

I expect the work to be completed no later than _____

Attention: Jeffrey P. Madden
(Environmental Engineer)

(Name of Permittee)
Army Corps of Engineers



COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission

*2600 Washington Avenue
Third Floor
Newport News, Virginia 23607*

William A. Pruitt
Commissioner

August 20, 2002

Mr. Wesley Coleman
U.S. Army Corps of Engineers
Baltimore District
Post Office Box 1715
Baltimore, Maryland. 21203-1715

Re: VMRC # 01-1614
(Modification)

Dear Mr. Coleman:

This is to advise you that the Commission, at its July 23, 2002, meeting, approved your request to place an additional 2000 cubic yards of sandy material on Public Ground #78 as part of the maintenance dredging of the Federal Navigation Channel at the mouth of the Coan River in Northumberland County.

Please attach this letter and the enclosed drawings to your previously issued permit as evidence of the authorization contained herein. If this office can be of further assistance, please feel free to contact Mr. Jeffrey P. Madden of my staff at (757) 247-2256.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Grabb".

Robert W. Grabb
Chief, Habitat Management

RWG/ncp
HM
Enclosure

cc: Northumberland County Wetlands Board
U. S. Army Corps of Engineers, Norfolk District
Applicant

An Agency of the Natural Resources Secretariat

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

= 116872.91

= 1465957.23

= 116861.27

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X = 1466298.90

Y = 116054.89

X = 1466324.56

Y = 116066.53

X = 1466235

Y = 116354.4

X = 1466

Y = 116

★ DAYMARKER #12

★ DAYMARKER #13

MARINE RESOURCES COMMISSION
RECEIVED

JUL 29 1982

BY

**NORTHUMBERLAND COUNTY
WETLANDS PERMIT**

KEEP FOR YOUR RECORDS

Effective Date: October 15, 2001

Pursuant to Title 28.2-1302 of the Code of Virginia (1950), as amended, the Northumberland County Wetlands Board, hereinafter referred to as the Board hereby grants unto Army Corps of Engineers hereinafter referred to as the permittee, permission to undertake the following described project:

To dredge a new navigational channel to the west of Walnut Point to improve navigational access at the mouth of the Coan River, construct a new 480' stone jetty, and dispose of the dredge material in a upland agricultural field at Walnut Point, Tax Map Parcel #11-1-1.

For a more complete description of such project, reference is hereby made to permittee's application for wetlands permit, V.M.R.C. No. 01-1614 which application is attached hard and made a part hereof.

This permit is granted subject to the following terms and conditions:

1) Except as hereinafter provided, all phases of the project shall conform in all particulars to the permittee's application for wetlands permit. The duly authorized agents of the Board and Marine Resource Commission shall have the right to enter upon the premises at any reasonable time for the purpose of inspecting the work being done pursuant to this permit.

2) Permittee shall, comply with all applicable laws, ordinances, rules and regulations affecting the conduct of the project. The granting of this permit shall not relieve the permittee of the responsibility of obtaining any and all other permits or authority required by the Department of Environmental Quality, the U. S. Army Corps of Engineers, and the Virginia Marine Resource Commission.

3) The permittee shall, to the greatest extent practical, minimize the adverse effects of the project upon adjacent properties and wetlands and upon the natural resources of the Commonwealth: The recommendations of VIMS concerning the access road across the wetlands are to be followed.

4) The project shall be completed on or before October 15, 2002 after which time this permit shall be void; provided, however, that upon proper application to the Board, the item for the completion of the property may be extended by the Board at its discretion. Any such application for extension of time shall be in writing prior to the expiration date hereof and shall specify the reasons for such extension and the expected date of completion of the project.

5) This permit may be revoked at any time by the Board upon the failure of the permittee to comply with any of the terms and conditions hereof.

6) The permittee, his agent, or the contractor must notify the Board at the commencement and completion of the project and no project is considered complete and in compliance until all necessary erosion control measures are in place and all graded areas have been adequately stabilized.

7) Such other terms and conditions peculiarly applicable to the particular project being permitted in order to promote the greatest extent possible the public policy expressed in the Act and to minimize the impact of the project upon the right and property of others and upon the ability of the local government to provide governmental services. (To be inserted after #3)

IN WITNESS WHEREOF, the County of Northumberland, Virginia, Wetlands Board has caused this present to be executed in its behalf by **GEORGE REW**, Chairman, whose signature is affixed hereto as evidence of his acceptance of the terms and conditions hereof.

County of Northumberland, Virginia
Wetlands Board

By: *George C. Rew*

Craig [unclear]
Permittee or Agent

**STATE OF VIRGINIA,
County of Northumberland, to-Wit:**

I, WELLINGTON H. SHIRLEY, JR., a notary public in and for said state and County, hereby certify that GEORGE REW, Chairman, Northumberland County Wetlands Board, whose name is signed to the foregoing Wetlands Permit, has this day personally appeared before me on ~~3rd~~^{4th} day of ~~MAY~~^{Oct}, 2001.

Wellington H. Shirley
Notary Public

My Commission expires on JULY 31, 2002.

**STATE OF Maryland,
County of Baltimore, to-Wit:**

I, Mary E. Daly, a notary public in and for said state and County, hereby certify that *Cheryl L. Janiszewski*, Permittee or Agent, whose name is signed to the foregoing Wetlands Permit, has this day personally appeared before me on 31 day of October, 2001.

Mary E. Daly
Notary Public

My Commission expires on 5/1/2004.

NORTHUMBERLAND COUNTY, VIRGINIA
Office of Building and Zoning

P.O. Box 129, Heathsville, Virginia 22473 Voice (804)580-8910, Fax (804)580-8082, wshirley@co.northumberland.va.us

MEMORANDUM

TO: Wetlands Applicant or Agent

FROM: Wellington H. Shirley, Jr., Wetlands Agent

DATE: October 15, 2001

SUBJECT: Enclosed Wetlands Permit

Please find enclosed your permit for the Wetlands project for which you applied. Please sign it, have it notarized and return to me or come by my office and I will notarize the permit. A copy of the permit is enclosed for your records.

*The bright FLUORESCENT card **MUST** be posted (facing the water) prior to any marine construction and remain on the site 10 to 20 days after the project has been completed. You must inform this office prior to beginning work and after the work has been completed. The project will be inspected at this time in order to check for compliance with what was approved. PLEASE NOTE THAT NO PROJECT IS COMPLETE AND IN COMPLIANCE UNTIL ALL NECESSARY EROSION CONTROL MEASURES ARE IN PLACE AND ALL GRADED AREAS HAVE BEEN ADEQUATELY STABILIZED.*

If you have any questions please feel free to contact our office.

Enclosures:

WETLANDS PERMIT

Northumberland County, Virginia
Wetlands Permit Section
P. O. Box 129
Heathsville, Virginia 22473

No.: 01-1614
Date: October 15, 2001
Expiration Date: October 15, 2002

Permit to: CONSTRUCT _____ REPLACE _____ ALTER _____ OTHER Dredge
To dredge a new navigational channel

OWNER
Army Corps of Engineers/Baltimore Dist.
P.O. Box 1715
Baltimore, MD 21203-1715

AGENT
SAME

CONTRACTOR
~~XXXXX~~

LOCATION
Coan River west of Walnut Point

SPECIAL CONDITIONS: The recommendations
of VIMS concerning the access road across
the wetlands are to be followed.

Approved By:
George P. Reed

WETLANDS PERMIT

This permit is issued in accordance with regulations set forth in the Northumberland County Wetlands Zoning Ordinance. Construction must be located on the property and shoreline in the exact position shown on the plan submitted with the application. This project must be completed within the approved time and may be revoked at any time by the board upon the failure of the permittee to comply with any of the terms and conditions set forth.

POST THIS CARD SO IT IS VISIBLE FROM THE WATER

**THE PERMITTEE, AGENT OR CONTRACTOR MUST NOTIFY THE
WETLANDS BOARD AT THE COMMENCEMENT AND COMPLETION
OF THE PROJECT.**

WETLANDS PERMIT

Northumberland County, Virginia
Wetlands Permit Section
P. O. Box 129
Heathsville, Virginia 22473

No.: 01-1614
Date: October 15, 2001
Expiration Date: October 15, 2002

Permit to: CONSTRUCT _____ REPLACE _____ ALTER _____ OTHER Dredge
To dredge a new navigational channel

OWNER
Army Corps of Engineers/Baltimore Dist.
P.O. Box 1715
Baltimore, M.D. 21203-1715

AGENT
SAME

CONTRACTOR
[Signature]

LOCATION
Coan River west of Walnut Point

SPECIAL CONDITIONS: The recommendations
of VIMS concerning the access road across
the wetlands are to be followed.

Approved By: [Signature]

WETLANDS PERMIT

This permit is issued in accordance with regulations set forth in the Northumberland County Wetlands Ordinance. Construction must be located on the property and there shall be no encroachment on the wetlands outlined with the application. This project must be completed within the approved time period or suspended at any time by the board upon the failure of the permittee to comply with any of the terms and conditions of the permit.

POST THIS CARD SO IT IS VISIBLE FROM THE WATER

THE PERMITTEE, AGENT OR CONTRACTOR MUST NOTIFY THE WETLANDS BOARD AT THE COMMENCEMENT AND COMPLETION OF THE PROJECT.

VIMS Shoreline Permit Application Report # 01-1614

APPLICANT:	U.S. ARMY CORPS OF ENGINEERS
Immediate Waterway:	Coan River
Locality:	NORTHUMBERLAND COUNTY
Purpose:	Improve Navigation
Application Type:	Wetlands, Subaqueous
Site Inspection:	9/20/01
Report Date:	10/2/01

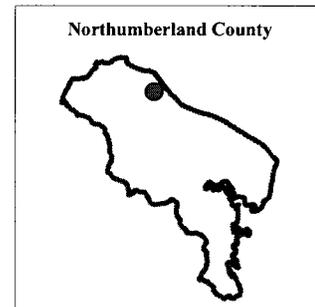


Type of Activity

Proposed Extent

Project Location

Groins (ft)	485
Groins	1 Unit(s)
Impact Brackish Water Mixed Community (Type XII) (ft2)	1950
Impact Sand/Mud Mixed Flat Community (Type XV) (ft2)	526
Fill Sand/Mud Mixed Flat Community (Type XV) (ft2)	263
Fill Brackish Water Mixed Community (Type XII) (ft2)	975
Impact Subaqueous Bottom (ft2)	17800
Fill Subaqueous Bottom (ft2)	8900
Aquatic Disposal (ft2)	267023
Aquatic Disposal (yd3)	6000
Fill Subaqueous Bottom (ft2)	267023
New Dredging (yd3)	6000
Impact Subaqueous Bottom (ft2)	34320
Temporary Fill (ft2)	9700
Fill Brackish Water Mixed Community (Type XII) (ft2)	9700



Virginia Institute of Marine Science
 School of Marine Science
 P.O. Box 1346, Route 1208 Greete Road
 Gloucester Point, Virginia 23062-1346
 phone: (804)684-7380, fax: (804)684-7179, e-mail: wetlands@vims.edu



Shoreline Permit Application Report VMRC # 01-1614

Total Impacts (ft2)	54596
Total Impacts (Wetlands)	2476
Total Impacts (Subaqueous)	52120
Total Impacts (Beach/Dune)	0
Total Built (ft2)	0
Total Built (Wetlands)	0
Total Built (Subaqueous)	0
Total Built (Beach/Dune)	0
Total Fill (ft2)	286861

VIMS Shoreline Permit Application Report # 01-1614

ANNOUNCEMENT

Information provided in this report is only the environmental and marine resources input into the decision making process and is based on biological, chemical, geological, and physical factors affecting the marine environment at and in the vicinity of the proposed activity. Parameters of the marine environment which may influence recreational, commercial, or industrial activities which are dependent on the marine environment are also considered where applicable.

The Virginia Institute of Marine Science (VIMS) is aware that regulatory or administrative bodies who weigh the overall potential public and private benefits and detriments in arriving at decisions must also consider other factors such as economics, aesthetics, zoning, or community desires.

Comments:

This project by the U.S. Army Corps of Engineers includes dredging a new navigation channel at the mouth of the Coan River and construction of a 485-foot stone jetty. The 6000 cubic yards of dredge material will be placed either in an upland agricultural field or on Public Ground 78 for oyster restoration purposes. A temporary construction access road through tidal wetlands is also required for equipment to reach the proposed jetty site.

Channel Dredging

The Coan River is a productive growing area for oysters and there are extensive private leases and public oyster grounds in the project vicinity. The channel location has been negotiated with lease holders and VMRC to minimize the amount of dredging needed while also minimizing impacts to productive oyster grounds. The channel will be dredged hydraulically and the target depth is 11 feet below mean low water. Temporary dredging induced turbidity should not be severe due to the proposed method and the high percentage of sand in the bottom sediments. However, if there is direct marketing of shellfish from adjacent leases within 500 yards of the channel, then time of year restrictions are recommended during critical spawning and harvest periods (July-September, December-February).

Dredge Material Disposal

Two potential dredge material disposal sites have been identified. An agricultural field nearby provides a location for a bermed upland disposal area. An alternative aquatic disposal site has also been identified on 6 acres of Public Ground 78 located northeast of the jetty. The material will be pumped to existing unproductive, soft bottom in water depths of 12-14 feet to provide a substrate for future deposition of oyster shell. Although sediment analysis indicates the dredge material is mostly sand, there is enough silt to warrant careful handling of the material. If there are productive oyster resources within 500 yards of the disposal site, then a directed, subsurface discharge as close to the bottom as possible would minimize siltation of the adjacent oyster resources. Monitoring of the disposal area is also suggested to study the fate of the material and the effects on oyster reproduction to evaluate the feasibility of this approach.

Jetty

The nearshore littoral transport in the area is mostly from east to west. The proposed 485-foot jetty at the west end of the Walnut Point spit is intended to intercept sand and retain it on the east side of the jetty. This will result in accretion of sand along the eroding north shoreline of the point and will minimize the amount of

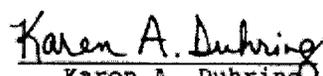
material transported into the new channel. The area of the spit located west or downdrift of the jetty may be deprived of sand and the existing shoreline may change as a result of jetty construction.

Jetty Access Road

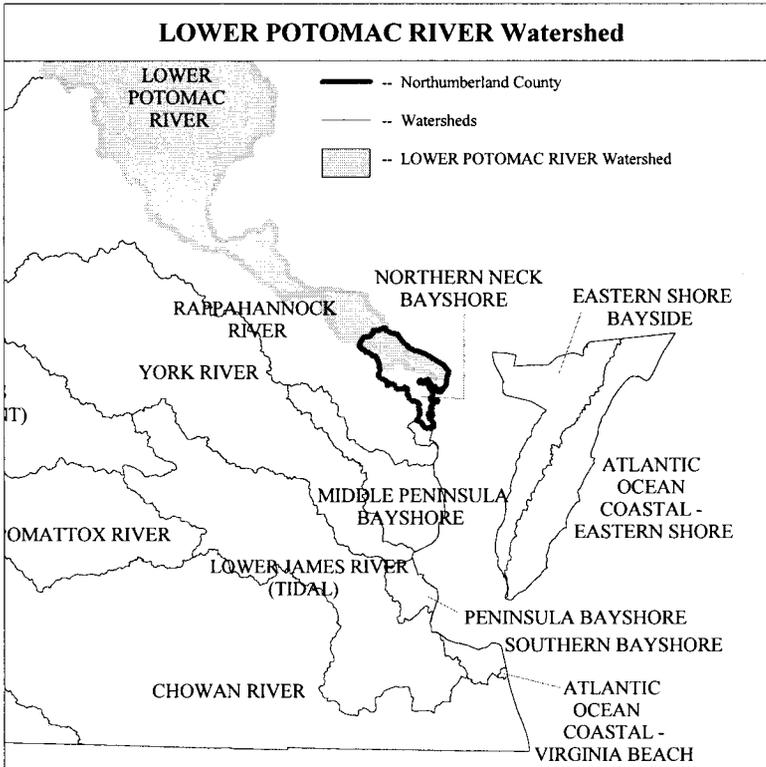
Construction access from the water is prohibited by shallow water depths in the vicinity and additional dredging would be required. A temporary access road is proposed which will impact approximately 9700 square feet of tidal wetlands located at the west end of Walnut Point. Geotextile material will be placed underneath the road base to minimize settling and compaction as a result of heavy equipment traffic. Upon completion of the project, the access road through wetlands will be removed. The natural wetland vegetation is expected to re-colonize the disturbed area and no additional restoration activities are planned by the applicant after road removal. A post-construction monitoring period of at least 1 year is recommended to ensure the wetland area recovers as expected. If the wetland vegetation does not become re-established or if existing stands of Phragmites become invasive as a result of the disturbance, then additional activities may need to be considered to restore the area to pre-construction conditions.

Summary of Recommendations

Time of year restrictions to protect shellfish resources are recommended for the channel dredging. If the dredge material will be placed on Public Ground 78 and there are productive oyster resources within 500 yards, then a subsurface discharge as close to the bottom as possible is recommended. Monitoring the aquatic disposal site to determine the feasibility of this beneficial use is suggested. A post-construction monitoring period of at least 1 year is also recommended to ensure recovery of the tidal wetland after removal of the temporary access road.


Karen A. Duhring
Marine Scientist

VIMS Shoreline Permit Application Report # 01-1614



Total Permitted Wetlands Loss by Type for LOWER POTOMAC RIVER : 1996-1999

Community Type	Extent
Vegetated Wetlands	143892 ft ²
Non-Vegetated Wetlands	126780 ft ²
Subaqueous Bottom	93578 ft ²

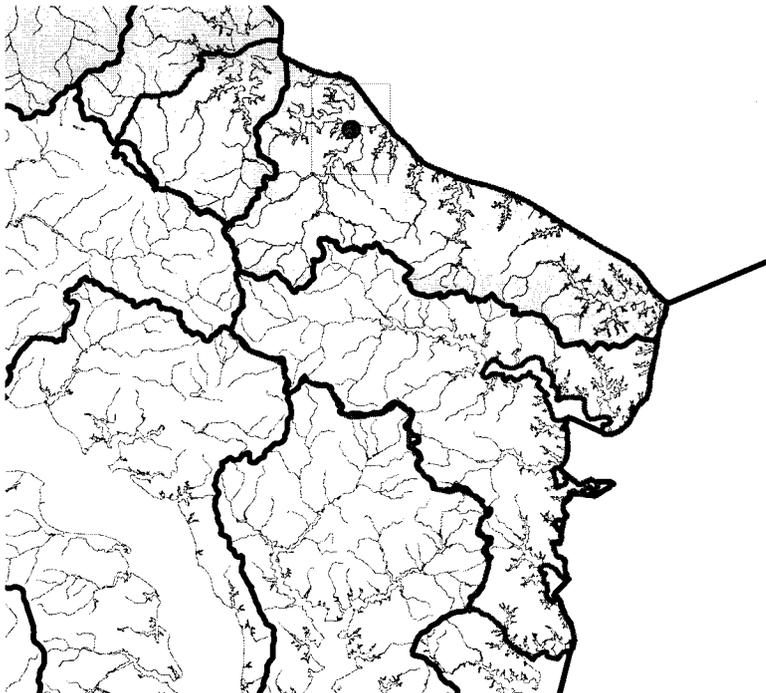
Total Permitted Wetlands Loss by Type for Northumberland County : 1996-1999

Community Type	Extent
Vegetated Wetlands	20202 ft ²
Non-Vegetated Wetlands	108479 ft ²
Subaqueous Bottom	68037 ft ²

Total Proposed Shoreline Structures and Activities for Northumberland County -- 1996-1999

Structure Type	Extent
Boat Ramps	2032 ft ²
Boat Ramps	1 Openpile
Breakwater	930 ft
Bulkhead	8127 ft
Commercial Structure	12280 ft ²
General Fill	60135 ft ²
Groins	352
Groins	4268 ft
Bulkhead Toe Protection	2097 ft
Bulkhead Replacement	1327 ft
Beach Nourishment	20850 ft ²
Beach Nourishment	810 ft
New Dredging	1238 yd ³
Maintenance dredging	247 yd ³
Riprap	34104 ft
Submarine Crossings	160 ft

Northumberland County



Hydrologic units represent smaller, isolated watersheds defined by topography and flow direction. These units can be thought of as insulated ecosystems or landscapes within which resources can be managed at a larger scale. The cumulative impact of a project to resources within a hydrologic unit may be significantly greater than the impact to the larger watershed above.

Permit Site Study Area

Northumberland County
LOWER POTOMAC RIVER
Coan River

Project site



Lower Potomac River watershed



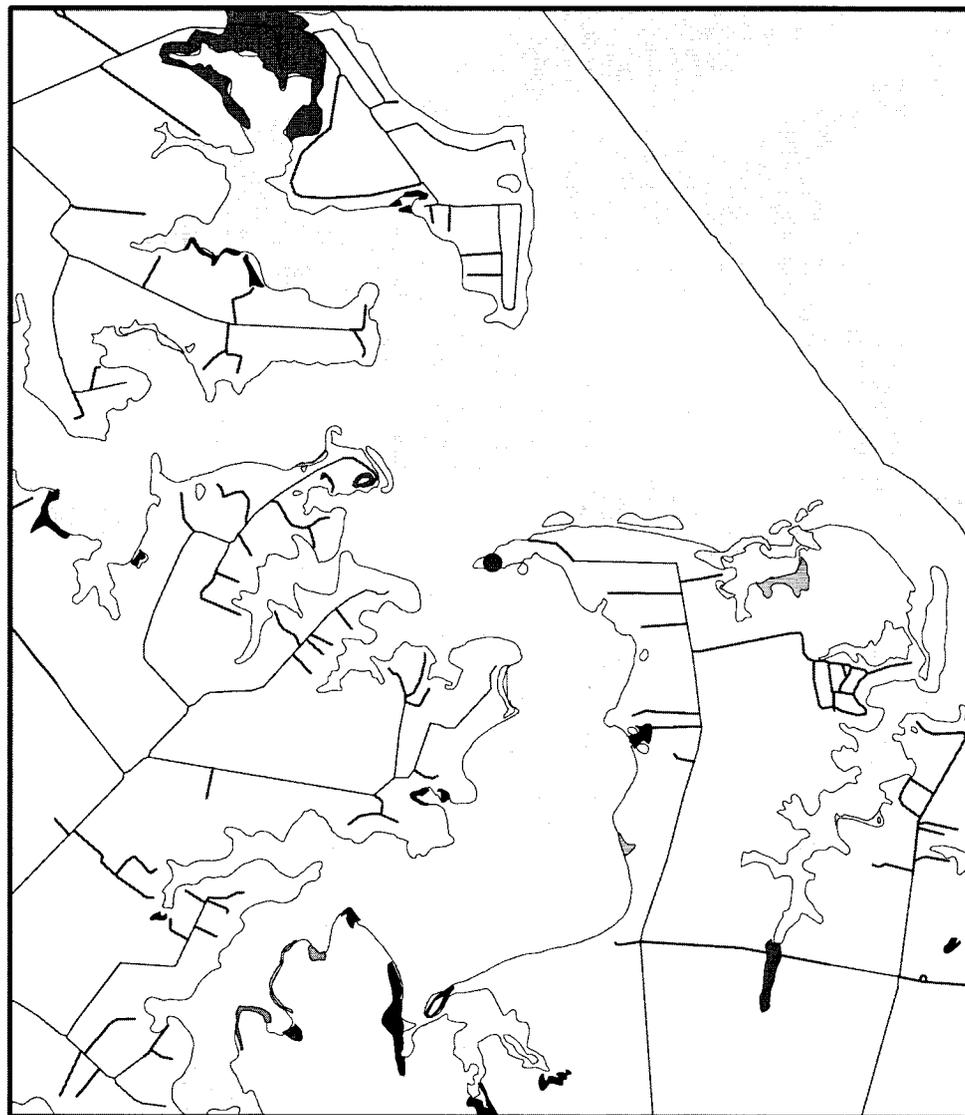
Tidal Marsh Inventory - TMI

-  Arrow Arum-Pickerelweed
-  Big Cordgrass
-  Black Needlerush
-  Brackish Water Mixed
-  Cattail
-  Freshwater Mixed
-  Reed Grass
-  Saltbush
-  Saltmeadow
-  Saltmarsh Cordgrass
-  Yellow Pond Lily

Roads

-  Primary
-  Secondary
-  Tertiary

 Open water



SECTION 01050
JOB CONDITIONS

PART 1 GENERAL

1.1 LAYOUT OF WORK

ALTERNATE 1: CIVIL WORK PROJECTS

LAYOUT OF WORK: (APR 1965 OCE)

The Government has established bench marks and horizontal control points at the site of the work. These are described and indicated on contract drawings.

From these control points the Contractor shall lay out the work by establishing all lines and grades at the site necessary to control the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings. The Contractor shall establish and maintain at the site of the work as a minimum requisite the following horizontal and vertical controls:

The above are minimum requirements and the Contractor shall place and establish such additional stakes and markers as may be necessary for control and guidance of his construction operations. All survey data shall be recorded in accordance with standard and approved methods. All field notes, sketches, recordings and computations made by the Contractor in establishing above horizontal and vertical control points shall be available at all times during the progress of the work for ready examination by the Contracting Officer or his duly authorized representative.

The Contractor shall furnish, at his own expense, all such stakes, spikes, steel pins, templates, platforms, equipment tools and material and all labor as may be required in laying out any part of the work from the control points established by the Government. It shall be the responsibility of the Contractor to maintain and preserve all stakes and other markers established by him until authorized to remove them. If any of the control points established at the site by the Government are destroyed by or through the negligence of the Contractor prior to their authorized removal, they may be replaced by the Contracting Officer, and the expense of replacement will be deducted from any amount due or which may become due the Contractor. The Contracting Officer may require that work be suspended at any time when horizontal and vertical control points established at the site by the Contractor are not reasonably adequate to permit checking the work. Such suspension will be withdrawn upon proper replacement of the control points. (ECI 7-672.2)

1.2 PHYSICAL DATA: (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation or conclusion drawn from the data or information by the Contractor. (CENAB)

1.2.1 Transportation Facilities

This project is located in Northumberland County, VA. From U.S. Route 17 in Tappahannock, Virginia proceed east on route 360 to route 630. The project site is located at the end of Rte 630.

1.2.2 Explorations

The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys and drill holes. Foundation exploration logs are inserted at the end of this Section. Whenever subsurface exploration logs are presented in the contract documents, soil test results are available for inspection in the Baltimore District, Corps of Engineers, Geotechnical Engineering Branch, Room 9250, City Crescent Building, 10 South Howard Street, Baltimore, Maryland. Soils samples are also available for inspection; however, prospective bidders are required to call (410) 962-4045 between the hours of 9:00 a.m. and 3:30 p.m., Monday through Friday (excluding Federal Holidays), a minimum of 24 hours in advance to arrange a time and date for the inspection of the samples.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Survey Data; G AR

The establishing of bench marks and horizontal control points.

Quantity Surveys

The furnishing of all original field notes and all other records relating to the survey or to the layout of the work.

1.4 UTILITIES

1.4.1 Availability of Utilities Including Lavatory Facilities: (JUN 1980)

It shall be the responsibility of the Contractor to provide all utilities he may require during the entire life of the contract. He shall make his own investigation and determinations as to the availability and adequacy of utilities for his use for construction purposes and domestic consumption. He shall install and maintain all necessary supply lines, connections, piping, and meters if required, but only at such locations and in such manner as approved by the Contracting Officer. Before final acceptance of work under this contract, all temporary supply lines, connections and piping installed by the Contractor shall be removed by him in a manner satisfactory to the Contracting Officer. (CENAB)

1.4.2 Utility Markings

The Contractor shall contact the One-Call Service (Miss Utility), a minimum of 72 hours prior to any excavation requesting utility location markings. The Contractor shall not proceed with any excavation until all utilities, including abandoned utilities, have been marked to the satisfaction of the Contracting Officer. Prior to requesting the marking of utilities, the Contractor shall stake out proposed excavations and limits of work with white lines ("White Lining"). It is the Contractor's responsibility to ensure that all permits (excavation or otherwise, including DPW permits) are current and up-to-date without expiration. In addition to the above requirements the Contractor shall:

- a) Visually survey and verify that all utility markings are consistent with existing appurtenances such as manholes, valve boxes, poles, pedestals, pad-mounted devices, gas meters, etc. prior to any excavation.
- b) Hand dig test holes to verify the depth and location of all utilities prior to any mechanical excavation within the limits of work. Other non-damaging methods for utility verification, as indicated in (d) below, may be considered subject to approval by the Contracting Officer. Also, verify that any abandoned utilities are not active.
- c) Preserve all utility markings for the duration of the project to the furthest extent possible.
- d) When excavation is performed within 2 feet of any utility line, a non-damaging method of excavation shall be used. The non-damaging method shall be hand digging. Other non-damaging methods, such as, soft digging, vacuum excavation, pneumatic hand tools, may be considered subject to approval by the Contracting Officer.
- e) Regardless of the type of excavation, the Contractor shall notify the Contracting Officer a minimum of 72 hours prior to any excavation activity. Failure to notify the Contracting Officer can result in the issuance of a "Stop Work" order, which shall not be justification for contract delay or time extension. The Government reserves the right to have personnel present on site during any type of excavation.
- f) The Contractor's Quality Control System Manager shall ensure that all excavation requirements herein are met at the time of the preparatory phase of quality control, and that the excavation procedures are reviewed during the preparatory phase meeting. This preparatory phase of control shall also establish and document contingency plans and actions to be followed in the event that existing utilities are damaged or interrupted. Locations of shut off or isolation devices along with other safety features shall be established and their operation reviewed.
- g) Any work other than excavation in the vicinity of a utility, that could damage or interrupt a utility, such as, exterior or interior work near transformers, power lines, poles, above ground gas lines, gas meters, etc., shall be done with extreme care. The Contractor shall specifically note during the preparatory phase of quality control, the construction techniques to be used to preclude damaging or interrupting any utility. This preparatory phase of control shall also establish and document contingency plans and actions to be followed in the event that existing utilities are damaged or interrupted. Locations of shut off or isolation devices along with other safety features shall be established and their operation reviewed.
- h) The Contractor shall complete a risk assessment, using the attached checklist, at least one week prior to the start of any excavation or other work in the vicinity of a utility. The risk assessment shall be submitted for government approval prior to any excavation or other work in the vicinity of a utility. A risk assessment shall be completed for each definable feature of work encountering utilities and shall include all utilities anticipated to be encountered.

1.5 DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT: (DEC 1975)

All removed, dismantled or demolished material and/or equipment including rubble, scrap and debris not specified or indicated to be Government salvaged, reinstalled under this contract or otherwise retained for disposal on Government land will become the property of the Contractor and shall be promptly removed from the site and disposed of by the Contractor at his own expense and responsibility. (CENAB)

1.6 COMPLIANCE WITH NORTHUMBERLAND COUNTY REGULATIONS: (JUL 1980)

The site of the work is in Northumberland County, Virginia and all rules and regulations issued by the county representative covering general safety, security, sanitary requirements, pollution control, traffic regulations and parking, shall be observed by the Contractor. Information regarding these requirements may be obtained by contacting the Contracting Officer, who will provide such information or assist in obtaining same from appropriate authorities. (MEMO)

1.7 MAINTENANCE OF ACCESS: (DEC 1975)

The Contractor shall not block passage through roads during performance of work under this contract.

1.8 PROTECTION OF GOVERNMENT AND PRIVATELY OWNED PROPERTY AND PERSONNEL: (DEC 1975)

1.8.1 Protection of Equipment

All existing Government and privately owned equipment within the work area shall be protected by the Contractor from damage caused by construction operations. As a minimum, the Contractor shall protect such items from any damage due to dust, vibration, water, heat or other conditions resulting from construction activities. Existing work damaged by construction operations shall be promptly repaired by the Contractor at his own expense.

1.8.2 Protection of Personnel

The Contractor shall protect personnel and onlookers by installing safety rails and/or barricades as applicable to prevent injury from unauthorized entry of personnel into work areas. Warning signs shall be erected as necessary to indicate Construction areas or hazardous zones. Work shall proceed in such manner as to prevent the undue spread of dust and flying particles.

1.8.3 Measures to Prevent Damage/Injury

The Contractor shall take such additional measures as may be directed by the Contracting Officer to prevent damage or injury to Government property or personnel. (CENAB)

1.9 STREET CLOSINGS: (MAY 1978)

When operations in connection with contract work necessitate the closing of streets, it shall be the Contractor's responsibility to arrange in advance with the Contracting Officer for such street closings and to provide appropriate barricades, signs, markers, flares, and other devices as may be required by the Contracting Officer's Representative for traffic guides and public safety. (CENAB)

1.10 ORDER OF WORK AND COORDINATION WITH OTHER CONTRACTORS: (FEB 1979)

Other Contractors may be presently working in the same area. After award of this contract a meeting will be held with all contractor representatives and the Contracting Officer to develop a plan of work coordination. In case of disagreement regarding use of an area the decision of the Contracting Officer will control. (CENAB)

1.11 MAINTENANCE OF UTILITIES: (FEB 1985)

Throughout construction, the Contractor shall provide and/or maintain toilet facilities for Government personnel. The Contractor shall provide alternate space heating for Government personnel when necessary during shutdown of the heating system. (CENAB)

1.12 ASBESTOS HANDLING AND REMOVAL (FEB 85)

Through site investigations, friable asbestos has not been found, however if asbestos is encountered, its testing, removal and disposal is covered in "CHANGES" clause of the Contract Clauses. (CENAB)

1.13 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

1.13.1 Procedure for Determination

This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance the contract clause entitled "Default: (Fixed Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

1.13.2 Anticipated Adverse Weather Delays

The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
7	6	6	7	7	6	4	5	3	5	4	4

1.13.3 Impact

Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph "Anticipated Adverse Weather Delays", above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)".

1.14 WORKING HOURS

WORKING HOURS: (DEC 93) It shall be the Contractors responsibility to obtain the working hours other than the normal five (5) day work week 08:00 am to 4:30 pm.

1.15 LIMITS OF WORK AREAS

The limits of work areas as shown on the drawings are necessarily approximate. In case of doubt as to the actual limits of any work area, determination as to the actual limits will be made by the Contracting Officer.

1.16 QUANTITY SURVEYS:

Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.

The Contractor shall conduct the original and final surveys and surveys for any periods for which progress payments are requested. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.

Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer. (FAR 52.236.16 APR 1984)

1.17 DAMAGE TO WORK (1966 MAR OCE)

ALTERNATE 1:

The responsibility for damage to any part of the permanent work shall be as set forth in the "Permits and Responsibilities" clause of the Contract Clauses. However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane or tornado which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor will make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work an equitable adjustment pursuant to the "Changes" clauses of the Contract Clauses, will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work(including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage. (CENAB)

PART 2 PRODUCTS

NOT APPLICABLE

PART 3 EXECUTION

NOT APPLICABLE

ATTACHMENT

RISK ASSESSMENT CHECKLIST

-- End of Section --

RISK ASSESSMENT FOR
EXCAVATION AND OTHER WORK IN THE VICINITY OF UTILITIES

PROJECT NAME: _____

CONTRACT NUMBER: _____

PROJECT INSTALLATION AND LOCATION: _____

PROPOSED EXCAVATION START DATE: _____

1. ESTABLISH EXCAVATION DETAILS AND DRAWINGS (check when completed)
2. PROPOSED EXCAVATION AREA MARKED ("white lining") (check when completed)
3. CONTACT APPROPRIATE ONE-CALL SERVICE FOR PUBLIC UTILITIES:
MD: Miss Utility 1-800-257-7777 N Y : New York City - Long Island One Call Center 1-800-272-4480
N. VA: Miss Utility 1-800-552-7777 PA: Pennsylvania One-Call System Incorporated 1-800-242-1776
VA: Miss Utility of VA 1-800-552-7001 DC: Miss Utility 1-800-257-7777
ONE-CALL NATIONAL REFERRAL CENTER: 1-888-258-0808
- CONTACT INSTALLATION/OWNERS OF ALL PRIVATELY OWNED UTILITIES (NON ONE-CALL MEMBERS)
4. DATE UTILITIES MARKED AND METHOD OF MARKING
ONE-CALL LOCATORS _____
OTHER LOCATORS _____
5. CONTACT APPROPRIATE DPW REPRESENTATIVES AND COMPLY WITH INSTALLATION PERMIT REQUIREMENTS: _____
6. UTILITIES IDENTIFIED ON-SITE:
 NONE ELECTRIC GAS WATER TELEPHONE CATV SEWER OTHER _____
7. LEVEL OF RISK: (Based upon personnel safety and consequences of utility outages.)
 SEVERE: Excavation required within the immediate vicinity (<2-ft) of a MARKED utility.
 MODERATE: Excav. required outside the immediate vicinity (> 2-ft) of MARKED utility.
 MINIMAL: Excavation required in an area with NO utilities.
8. EXISTING FACILITIES/UTILITIES IN VICINITY:
 NON-CRITICAL MISSION CRITICAL HIGH-PROFILE CEREMONIAL
 OTHER _____
 CONSEQUENCES IF EXISTING UTILITIES ARE DAMAGED/DISRUPTED _____

9. ENGINEERING CONTROLS REQUIRED:
 NONE HAND EXCAVATE TO LOCATE UTILITY EXCAVATE WITH DUE CARE
 OTHER _____
10. ADMINISTRATIVE CONTROLS REQUIRED:
 Notification of Contracting Officer's Representative, NOTIFIED on: _____
 Notification of Installation/DPW Representative, NOTIFIED on: _____
11. EMERGENCY NOTIFICATION AT INSTALLATION: POC & PHONE NUMBER _____

THE INFORMATION NOTED ABOVE IS ACCURATE AND THE WORK IS READY TO PROCEED
SIGNED and DATE _____ CQC MANAGER

12. ON-SITE GOVERNMENT REP. RECOMMENDATION FOR APPROVAL TO EXCAVATE:
 YES NO SIGNATURE AND DATE: _____
Comments: _____
13. AREA ENGINEER APPROVAL TO EXCAVATE:
 APPROVED DENIED SIGNATURE AND DATE: _____
Comments: _____
14. CHIEF, _____ DIVISION APPROVAL TO EXCAVATE:
 APPROVED DENIED SIGNATURE AND DATE: _____
Comments: _____

SUBSURFACE EXPLORATION NOTES
COAN RIVER
LEWISSETTA, NORTHUMBERLAND COUNTY, VA
PHASES I & II

1. EXPLORATION WAS PERFORMED DURING AUGUST 1997 AND MARCH 2001.
2. ALL BORINGS WERE ACCOMPLISHED AS INDICATED USING EITHER A TRIPOD WITH CATHEAD OR A CME 45 SKID-RIG PLACED ON A BARGE.
3. DRILL HOLES (DH-1 THRU DH-6) WERE ACCOMPLISHED BY STANDARD PENETRATION TEST PROCEDURE (SPT) USING A 1-3/8" X 2'-8" LONG SPLIT SPOON. SAMPLE SPOONS WERE ADVANCED BY A 140# HAMMER FALLING 30". THESE HOLES WERE ADVANCED BETWEEN SAMPLING EVENTS BY DRIVING A 4" ID CASING WHILE JETTING WATER UNDER PRESSURE AT THE SAME TIME. BLOW COUNTS ARE FOR 0.5' OF DRIVE, UNLESS OTHERWISE INDICATED.

DRILL HOLES (DH-C1 THRU DH-C9) WERE ACCOMPLISHED BY STANDARD PENETRATION TEST PROCEDURE (SPT) USING A 1-3/8" X 2'-8" LONG SPLIT SPOON. SAMPLE SPOONS WERE ADVANCED BY A 140# HAMMER FALLING 30". THE RIVER SEDIMENTS WERE COLLECTED CONTINUOUSLY THROUGH THE CASING BY SPT METHOD. THESE HOLES WERE ADVANCED BETWEEN SAMPLING EVENTS BY DRIVING A 4" ID CASING WHILE JETTING WATER UNDER PRESSURE AT THE SAME TIME. BLOW COUNTS ARE FOR 0.5' OF DRIVE, UNLESS OTHERWISE INDICATED.

WH - DENOTES WEIGHT OF HAMMER

WR - DENOTES WEIGHT OF ROD

P - INDICATED LOCATION OF PRESSED SHELBY TUBE SAMPLE

4. BLOW COUNTS REQUIRED TO ADVANCE SAMPLE ARE SHOWN IN COLUMN (a).
5. COLUMN (b) SHOWS THE NATURAL WATER CONTENTS IN PERCENT OF DRY WEIGHT OF THOSE SAMPLES TESTED.
6. SOIL DESCRIPTIONS ARE SHOWN IN COLUMN (c).
7. SOIL DESCRIPTIONS ARE LABORATORY CLASSIFICATIONS BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487/2488), EXCEPT THOSE INDICATED THUS (**), WHICH ARE FIELD INSPECTOR'S CLASSIFICATIONS.

THE ORGANIC TEST (ASTM D 2974, METHOD "C"; OR LOSS ON IGNITION TEST (LOI) (AASHTO-T-267) WAS USED TO EVALUATE AND DESCRIBE THE ORGANIC CONTENT OF SOILS FOR DESIGN AND CONSTRUCTION AS FOLLOWS:

<u>LOI</u>	<u>SOIL DESCRIPTION</u>
<12	INORGANIC
12 TO 24	ORGANIC
25 TO 60	VERY ORGANIC
>60	PEAT (Pt)

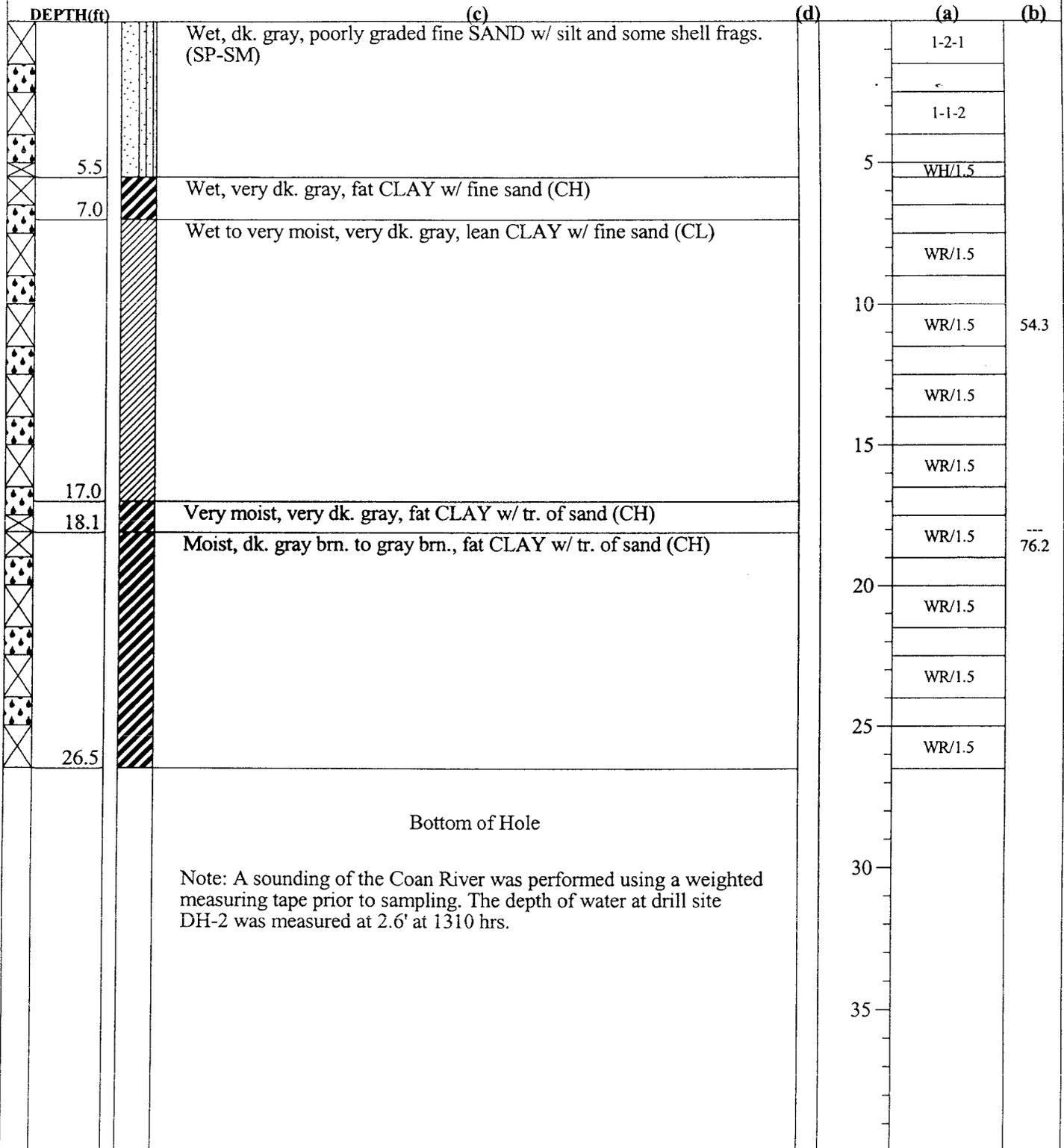
8. A SOUNDING OF THE COAN RIVER WAS PERFORMED USING A WEIGHTED MEASURING TAPE PRIOR TO SAMPLING. THE DEPTH OF WATER AT EACH DRILL SITE WAS MEASURED AND RECORDED. DEPTHS ARE REFERENCED TO MLLW.
9. ELEVATIONS SHOWN ON THE BORING LOGS ARE GROUND SURFACE ELEVATIONS AT THE TIME OF EXPLORATION. THEY WERE DETERMINED BY ESTIMATION FROM SPOT ELEVATIONS ON SURVEY MAPS.
10. POSITIONING FOR THE BORINGS DRILLED IN MARCH 2001 WAS OBTAINED USING EITHER A TRIMBLE DMS 212 GPS SYSTEM.
11. FOR LOCATIONS OF SUBSURFACE EXPLORATIONS, SEE BORING LOCATION PLAN.

STA.
 OFFSET:
 TOP ELEV: -1.200

Coan River
 Lewisetta, Northumberland County, VA
 Phase I

N 6684349.000
 E 12069365.000
 COMPLETED: August 7, 1997

DH-2
 1 of 1



GEO-2 COAN-RIV.GPJ 7/23/01 15:48

DH-2
 GROUNDWATER DATA
 WHILE DRILLING: °
 ON COMPLETION:
 Hr. READING:

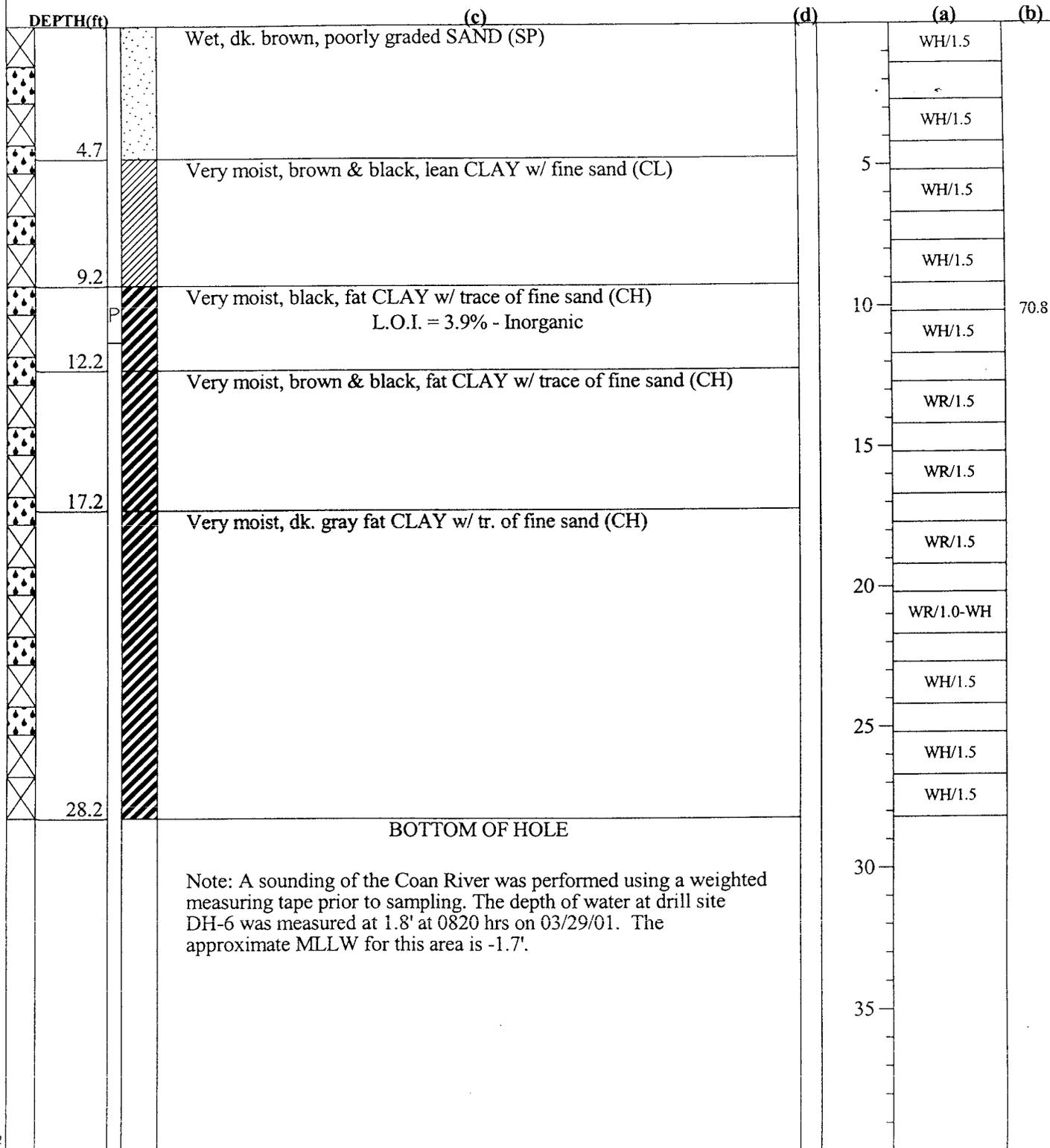
- ◊ Fill
- ⊔ Auger
- ⊗ SPT
- ⊘ RB
- ◻ Cored
- ⊠ 300 lb
- ⊞ Tubex
- ⊞ Hand
- ⊣ Fish Tail
- ⊞ Vibra Core
- ⊞ Water Jet
- ◻ -

STA.
 OFFSET:
 TOP ELEV: -1.250

Coan River
 Lewisetta, Northumberland County, VA
 Phase I

N 6684274.000
 E 12069477.000
 COMPLETED: March 29, 2001

DH-6
 1 of 1



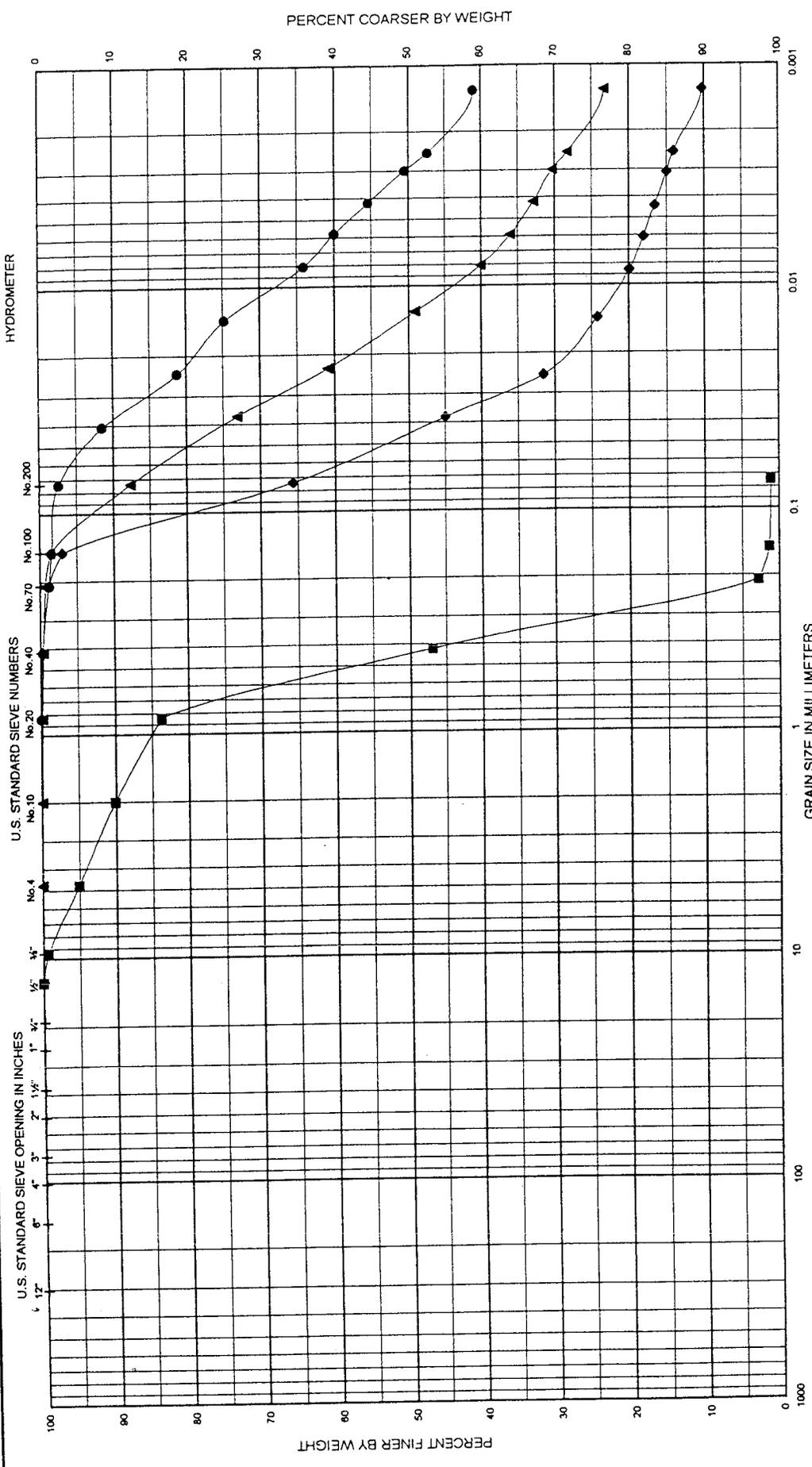
GEO-2 COAN-RIV.GPJ 7/23/01 15:48

DH-6
 GROUNDWATER DATA
 WHILE DRILLING: *
 ON COMPLETION:
 Hr. READING:

DH-6B
 GROUNDWATER DATA
 WHILE DRILLING:
 ON COMPLETION:
 Hr. READING:

P - indicates pressed shelly tube sample obtained from an additional boring.

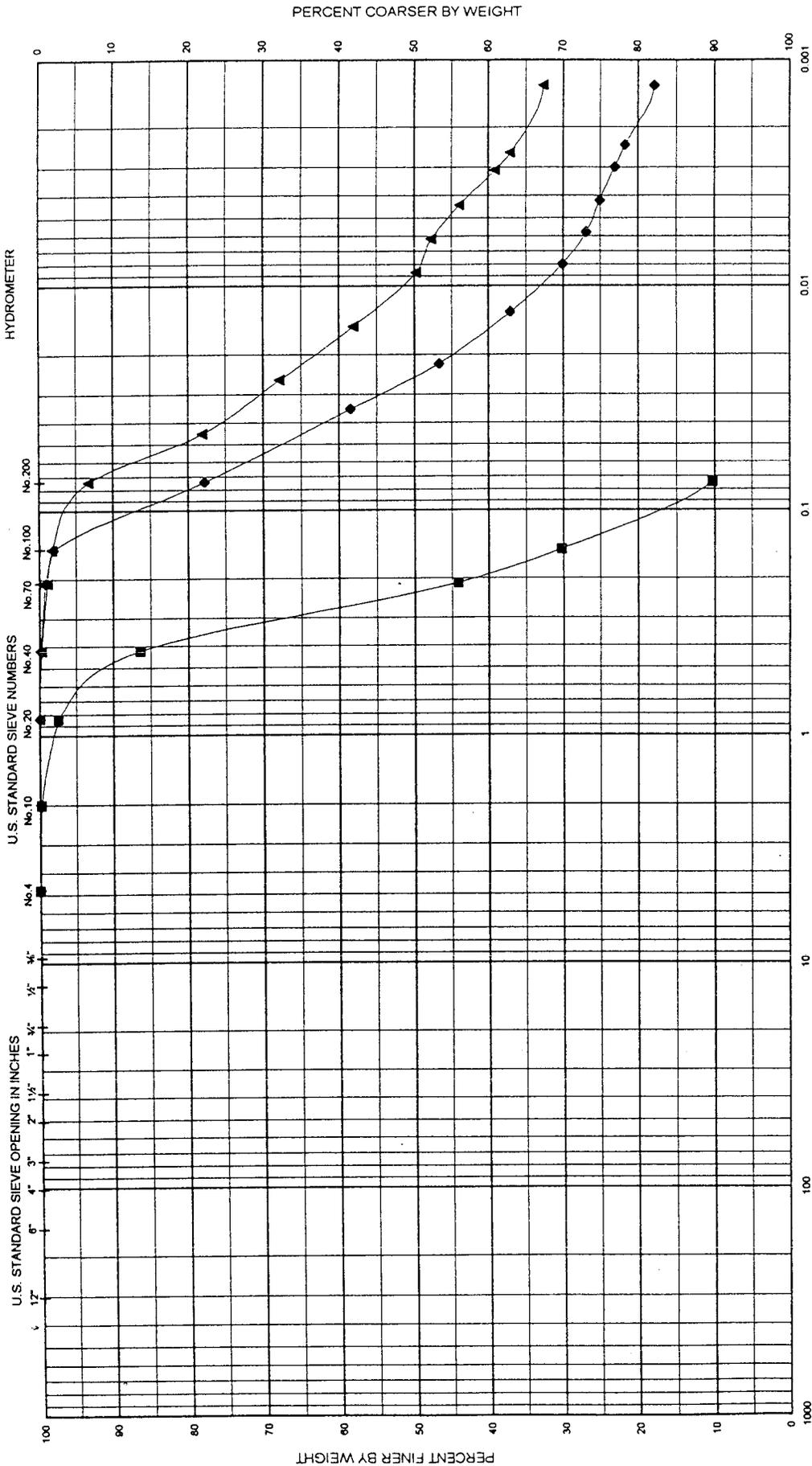
- | | | | |
|-----------|------------|-----------|--------------------------|
| Fill | Auger | SPT | RB |
| Cored | 300 lb | Tubex | Hand |
| Fish Tail | Vibra Core | Water Jet | <input type="checkbox"/> |



Legend	Sample No.	Depth (ft)	Classification	SAND			SILT or CLAY		
				Mat w%	LL	PL	PI	PL	PI
■	Jar-2	2.5-4.0	Poorly graded sand (tr. gravel)	(SP)					
◆	Jar-3+4	5.0-9.0	Sandy silt	(ML)					
▲	Jar-6	12.5-14.0	Fat clay (tr. sand)	(CH)	59.3	51	20	31	
●	Jar-10	22.5-24.0	Fat clay (tr. sand)	(CH)	93.2	123	34	89	

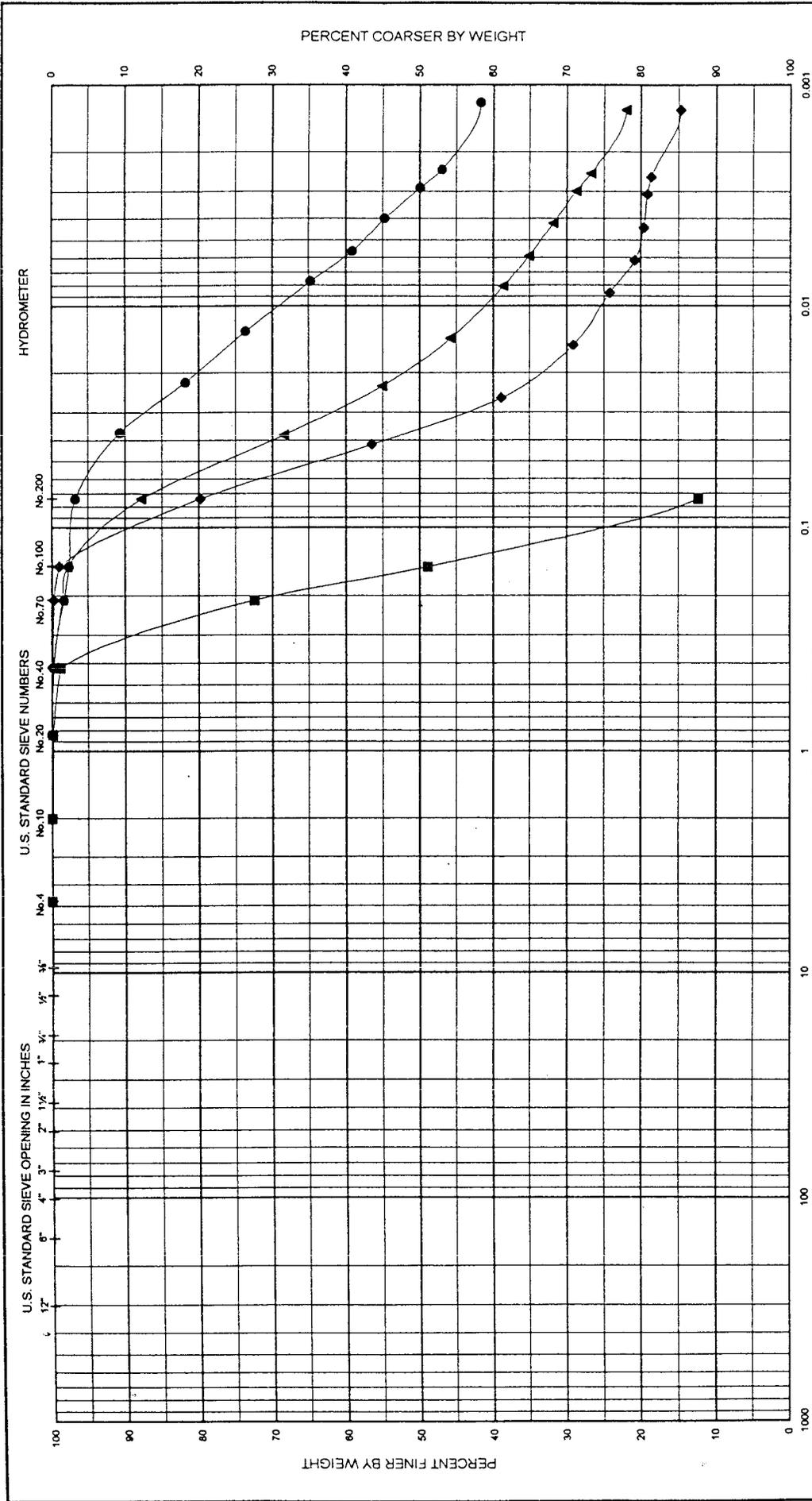
PROJECT: Coan River
 AREA: Northumberland County, VA
 Boring No.: DH-1
 DATE: Sep 1997

GRADATION CURVES



Legend	Sample No.	Depth (ft)	Classification	SAND			FINE			PI
				COARSE	MEDIUM	FINE	LL	PL	PI	
—■—	Jar-1-3	0.0-5.5	Poorly graded sand with silt (SP-SM)	—	—	—	—	—	—	—
—◆—	Jar-6	10.0-11.5	Lean clay with sand (CL)	54.3	45	20	25	25	25	25
—▲—	Jar-10	18.1-19.0	Fat clay (tr. sand) (CH)	76.2	88	28	60	60	60	60

PROJECT: Coan River
AREA: Northumberland County, VA
Boring No.: DH-2
DATE: Sep 1997



PROJECT: Coan River

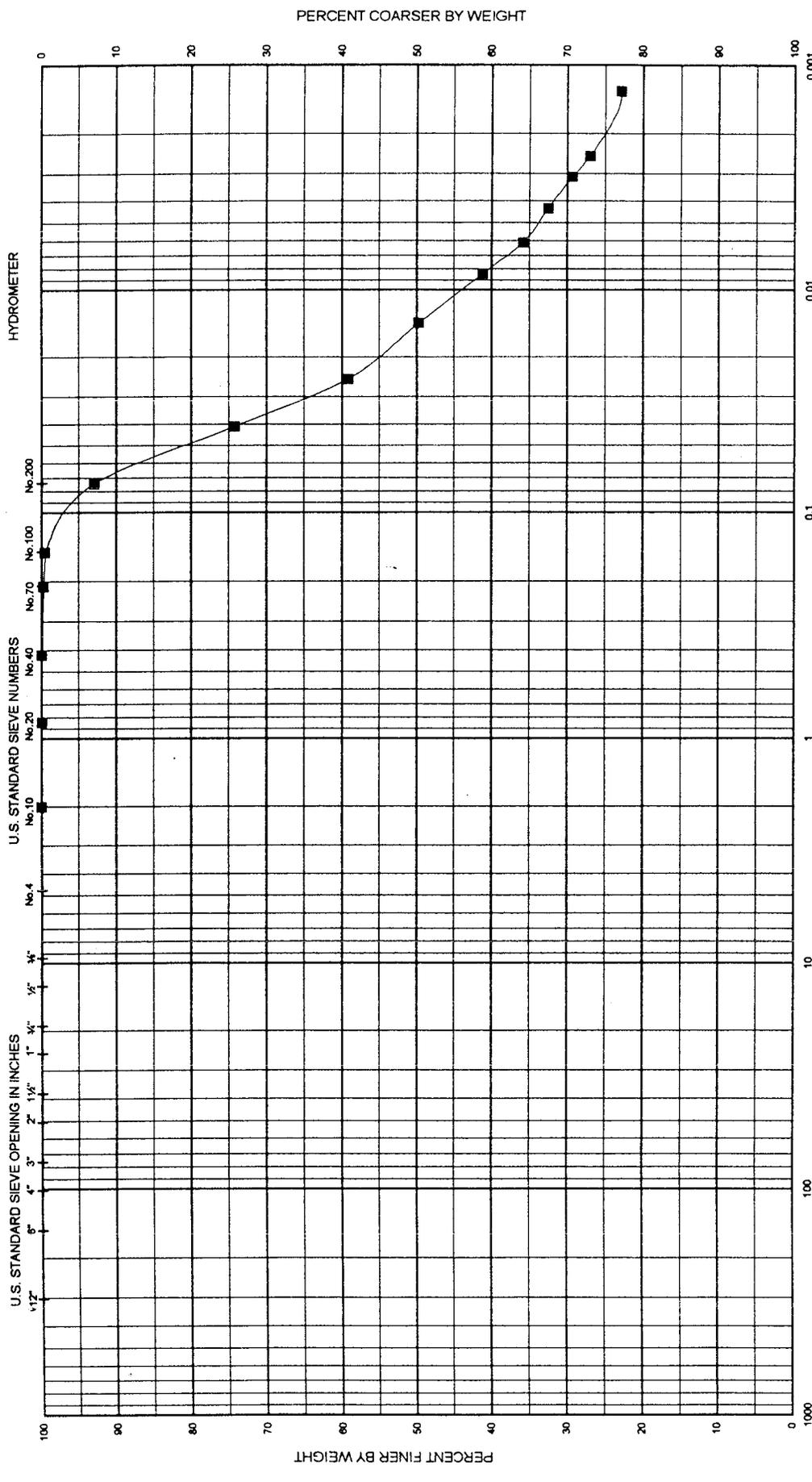
AREA: Northumberland County, VA

Boring No.: DH-3

DATE: Sep 1997

ENG FORM 2087

GRADATION CURVES



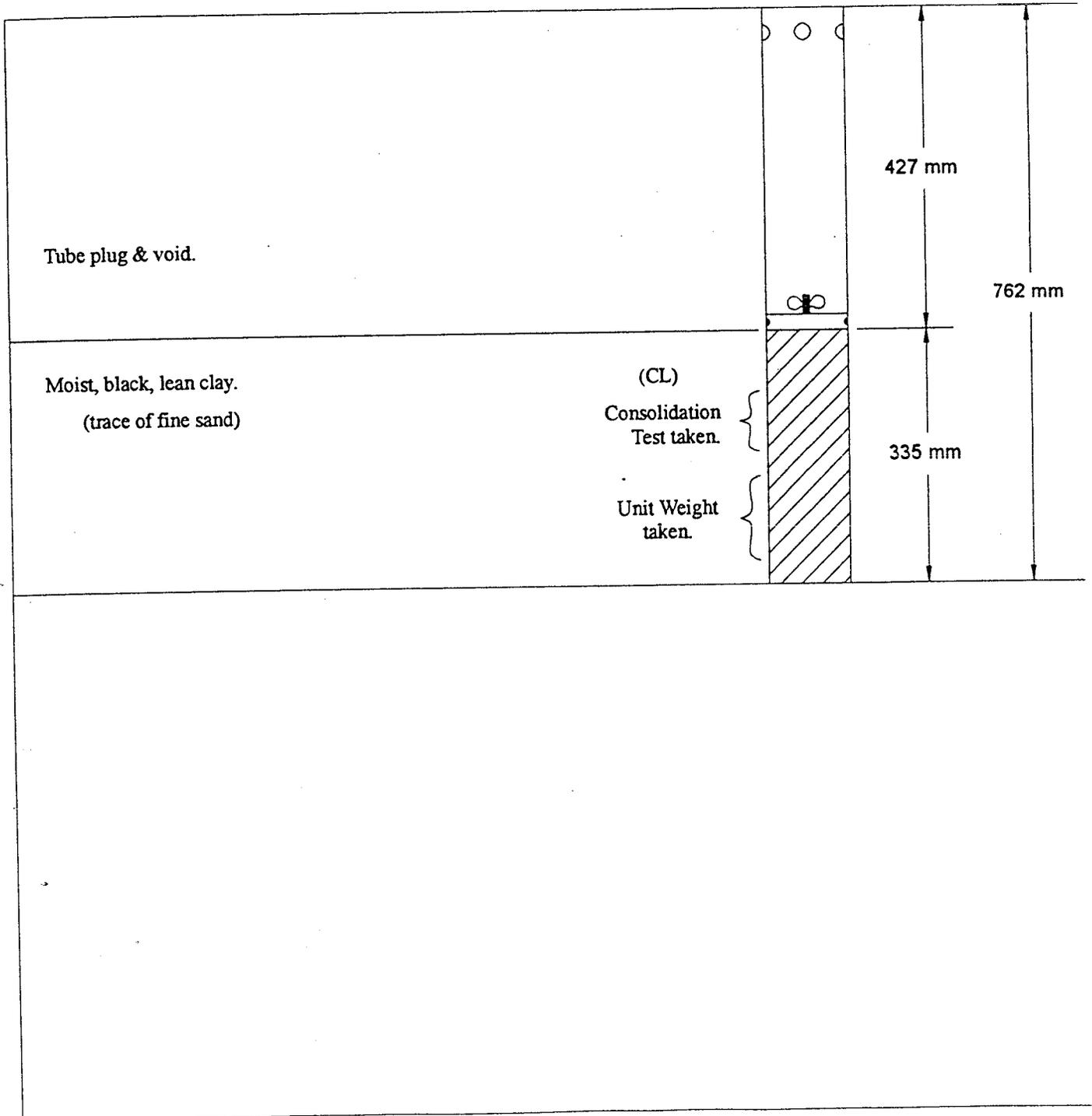
VISUAL CLASSIFICATION

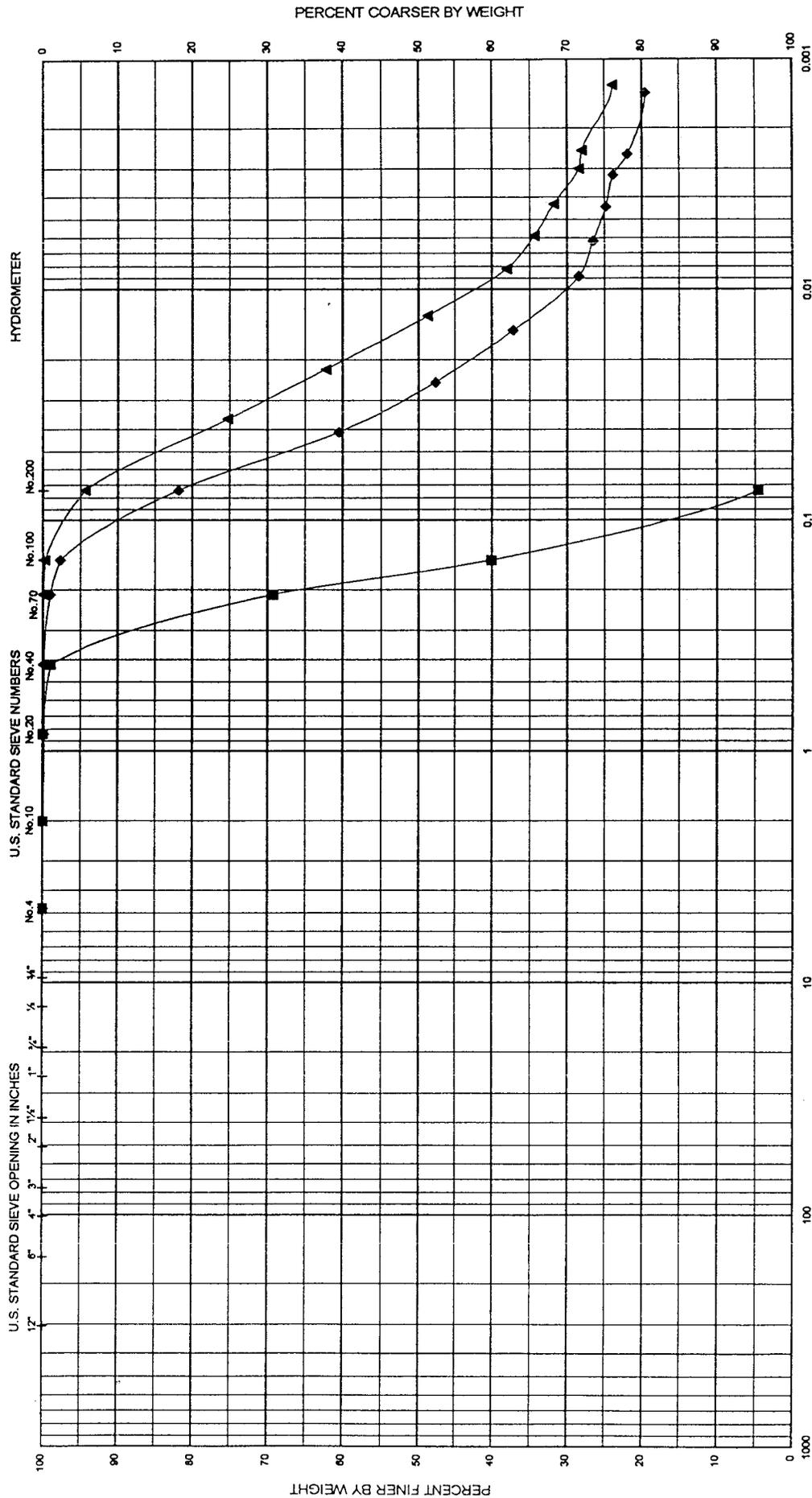
PROJECT: Coan River

DATE: Sep. 1997

AREA: Northumberland County, VA

Hole No.	Sample No.	Depth (ft)
DH-3	Shelby-1	10.0-12.0





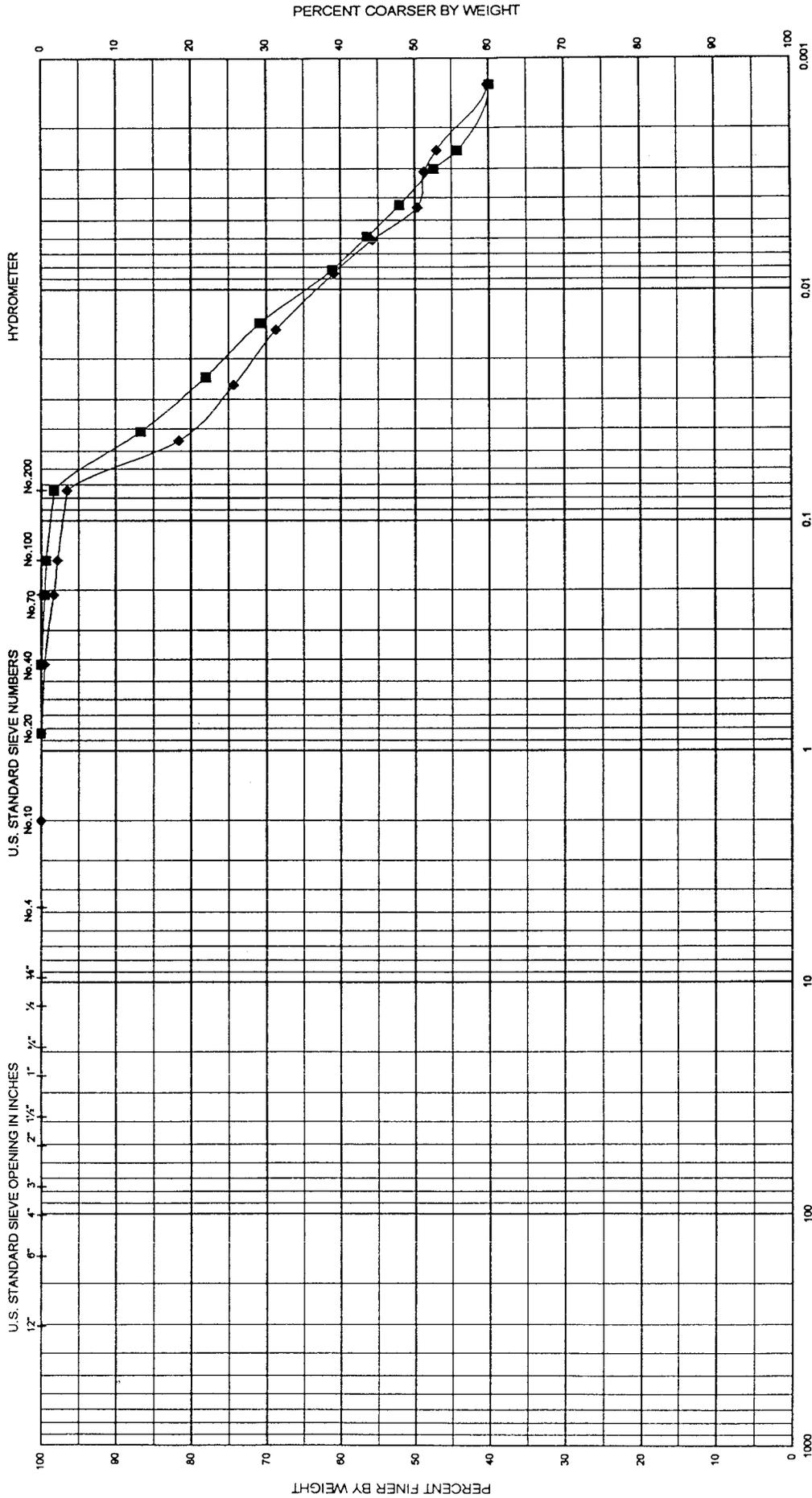
Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Net w%	LL	PL	PI
—■—	Jars 1, 2	0.0-4.2	Poorly graded sand (SP)	—	—	—	—
—◆—	Jars 3-5	5.2-11.7	Lean clay with sand (CL)	49	20	29	
—▲—	Jars 6, 7	12.7-16.7	Fat clay (tr. sand) (CH)	54	21	33	

PROJECT: Coan River
 AREA: Northumberland County, VA
 Borling No.: DH-6 Sht. 1 of 2

DATE: May 2001

(Sieve Analysis: ASTM D422)

GRADATION CURVES



PROJECT: Coan River						
AREA: Northumberland County, VA						
Boring No.: DH-6 Sht 2 of 2'						
DATE: May 2001						
GRADATION CURVES						
(Sieve Analysis: ASTM D422)						
Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	LL	PL	PI
—■—	Jan 9	20.2-21.7	Fat clay (tr. sand) (CH)	96	31	65
—◆—	Jan 11	25.2-26.7	Fat clay (tr. sand) (CH)	95	32	63

SECTION 01060

SAFETY

PART 1 GENERAL

1.1 APPLICABLE PUBLICATION

The publications listed below form a part of this specification and are referred to in the text by the basic designation only. All interim changes (changes made between publications of new editions) to the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, will be posted on the Headquarters Website. The date that it is posted shall become the official effective date of the change and contracts awarded after this date shall require to comply accordingly. The website location where these changes can be found is under the button entitled "Changes to EM", located at:
"http://www.hq.usace.army.mil/soh/hqusace_soh.htm".

U.S. ARMY CORPS OF ENGINEERS:

EM 385-1-1 (3 Sep 1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Safety Supervisor; G AR.

A safety supervisor shall be responsible for overall supervision of accident prevention activities.

Accident Prevention Plan; G AR.

The Contractor shall submit his Accident Prevention Plan for review and approval a minimum of 15 days prior to commencing work at the job site.

Activity Phase Hazard Analysis Plan; G AR.

The addressing of the activity phase hazard analysis plan for each activity performed in a phase of work.

Outline Report

A report for each past activities review.

OSHA Log

SD-07 Certificates

Language Certification

It is the Contractors responsibility to ensure that all employees understand the basic english language.

A log shall be reported monthly for injuries.

1.3 GENERAL

The U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, and all subsequent revisions referred to in the Contract Clause ACCIDENT PREVENTION of this contract, are hereby supplemented as follows:

a. The Contractor shall designate an employee responsible for overall supervision of accident prevention activities. Such duties shall include: (1) assuring applicable safety requirements are (a) communicated to the workers in a language they understand (reference EM 385-1-1, September 1996, 01.A.04). It is the Contractor's responsibility to ascertain if there are workers on the job who do not speak and/or understand the English language, if such workers are employed by the prime contractor or subcontractors, at any tier, it is the prime contractor's responsibility to insure that all safety programs, signs, and tool box meetings are communicated to the workers in a language they understand, and that a bilingual employee is on site at all time. If the contractor contends that interpreters and/or bilingual signs are not required, language certification must be provided which verifies that all workers (whose native tongue is other than English) have a command of the English language sufficient to understand all direction, training and safety requirements, whether written or oral, and (b) incorporated in work methods, and (2) inspecting the work to ensure that safety measures and instructions are actually applied. The proposed safety supervisor name and qualifications shall be submitted in writing for approval to the Contracting Officer's Representative. This individual must have prior experience as a safety engineer or be able to demonstrate his/her familiarity and

understanding of the safety requirements over a prescribed trial period. The safety engineer shall have the authority to act on behalf of the Contractor's general management to take whatever action is necessary to assure compliance with safety requirements. The safety supervisor is required to be on the site when work is being performed.

b. Prior to commencement of any work at a job site, a preconstruction safety meeting shall be held between the Contractor and the Corps of Engineers Area/Resident Engineer to discuss the Contractor's safety program and in particular to review the following submittals:

(1) Contracts Accident Prevention Plan: An acceptable accident prevention plan, written by the prime Contractor for the specific work and implementing in detail the pertinent requirements of EM 385-1-1, shall be submitted for Government approval.

(2) Activity Phase Hazard Analysis Plan: Prior to beginning each major phase of work, an activity hazard analysis (phase plan) shall be prepared by the Contractor for that phase of work and submitted to the Contracting Officer's Representative for approval. A phase is defined as an operation involving a type of work presenting hazards not experienced in previous operations or where a new subcontractor or work crew is to perform work. The analysis shall address the hazards for each activity performed in the phase and shall present the procedures and safeguards necessary to eliminate the hazards or reduce the risk to an acceptable level.

c. Subsequent jobsite safety meetings shall be held as follows:

(1) A safety meeting shall be held at least once a month for all supervisors on the project to review past activities, to plan ahead for new or changed operations and to establish safe working procedures to anticipated hazards. An outline report of each monthly meeting shall be submitted to the Contracting Officer's Representative.

(2) At least one safety meeting shall be conducted weekly, or whenever new crews begin work, by the appropriate field supervisors or foremen for all workers. An outline report of the meeting giving date, time, attendance, subjects discussed and who conducted it shall be maintained and copies furnished the designated authority on request.

1.4 ACCIDENTS

Chargeable accidents are to be investigated by both Contractor personnel and the Contracting Officer.

1.4.1 Accident Reporting, ENG FORM 3394

Section 1, Paragraph 01.D, OF EM 385-1-1 and the Contract Clause entitled ACCIDENT PREVENTION are amended as follows: The prime Contractor shall report on Eng Form 3394, supplied by the Contracting Officer, all injuries to his employees or subcontractors that result in lost time and all damage to property and/or equipment in excess of \$2,000 per incident. Verbal notification of such accident shall be made to the Contracting Officer within 24 hours. A written report on the above noted form shall be submitted to the Contracting Officer within 72 hours following such accidents. The written report shall include the following:

a. A description of the circumstances leading up to the accident, the cause of the accident, and corrective measures taken to prevent recurrence.

b. A description of the injury and name and location of the medical facility giving examination and treatment.

c. A statement as to whether or not the employee was permitted to return to work after examination and treatment by the doctor, and if not, an estimate or statement of the number of days lost from work. If there have been days lost from work, state whether or not the employee has been re-examined and declared fit to resume work as of the date of the report.

1.4.2 OSHA Requirements

1.4.2.1 OSHA Log

A copy of the Contractor's OSHA Log of Injuries shall be forwarded monthly to the Contracting Officer.

1.4.2.2 OSHA Inspections

Contractors shall immediately notify the Contracting Officer when an OSHA Compliance official (Federal or State representative) presents his/her credentials and informs the Contractor that the workplace will be inspected for OSHA compliance. Contractors shall also notify the Contracting Officer upon determination that an exit interview will take place upon completion of the OSHA inspection. (NABSA OCT 05, 1976)

1.5 GOVERNMENT APPROVAL

Submittals shall be in accordance with Section 01330 SUBMITTAL PROCEDURES. All required submittals of items specified in this section shall be for information only, except for those items including, but not limited to, the following which shall be submitted for Government approval:

- a. Written designation of safety representative.
- b. Written project specific accident prevention plan.
- c. Written activity phase hazard analysis plan.

PART 2 PRODUCT

NOT APPLICABLE

PART 3 EXECUTION
NOT APPLICABLE

-- End of Section --

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals
SD-03 Product Data
SD-05 Design Data
SD-06 Test Reports
SD-07 Certificates
SD-11 Closeout Submittals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. Submittal Register ENG FORM 4288, column labeled "Reviewer", this column is blank and is understood that the reviewer is "AR" (Area Office).

1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.5 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER

At the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor will also be given the submittal register files, containing the computerized ENG Form 4288 and instructions on the use of the files. These submittal register files will be furnished on a separate diskette. Columns "c" through "f" have been completed by the Government; the Contractor shall complete columns "a" and "g" through "i" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The Contractor shall keep this diskette up-to-date and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

3.5 SUBMITTAL PROCEDURE

Six (6) copies of submittals shall be made as follows:

3.5.1 Procedures

In the signature block provided on ENG Form 4025 the Contractor certifies that each item has been reviewed in detail and is correct and is in strict conformance with the contract drawings and specifications unless noted otherwise. The accuracy and completeness of submittals is the responsibility of the Contractor. Any costs due to resubmittal of documents caused by inaccuracy, lack of coordination, and/or checking shall be the responsibility of the Contractor. This shall include the handling and review time on the part of the Government. Each variation from the contract specifications and drawings shall be noted on the form; and, attached to the form, the Contractor shall set forth, in writing, the reason for and description of such variations. If these requirements are not met, the submittal may be returned for corrective action.

3.5.2 Responsibility

The Contractor is responsible for the total management of his work. The quantities, adequacy and accuracy of information contained in the submittals are the responsibility of the Contractor. Approval actions taken by the Government will not in any way relieve the Contractor of his quality control requirements.

3.5.3 Additional Requirements

The above is in addition to the requirements set forth in Contract Clause entitled "Specifications and Drawings for Construction". (ER 415-1-10)

3.5.4 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four (4) copies of the submittal will be retained by the Contracting Officer and two (2) copies of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does

not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

<p>CONTRACTOR</p> <p>(Firm Name)</p> <p>_____ Approved</p> <p>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>
--

3.10 CERTIFICATES OF COMPLIANCE: (MAY 1969)

Any Certificate required for demonstrating proof of compliance of materials with specification requirements shall be executed in four (4) copies. Each certificate shall be signed by an official authorized to certify in behalf on the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements. (CENAB)

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
COAN RIVER JETTY

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY				REMARKS		
						SUBMIT	BY	MATERIAL NEEDED BY	ACTION	DATE OF ACTION	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION		DATE OF ACTION	DATE RCD FRM APPR AUTH
(a)	(b)	(c)	(d)	(e)	(f)												(r)
	01000		SD-01 Preconstruction Submittals														
			Title Evidence														
			Invoice Copies														
			Payment Evidence														
			Photographs	1.15													
			SD-03 Product Data														
			Cost or Pricing Data	1.7													
			SD-05 Design Data														
			Progress Schedule	1.2	G AR												
	01060		SD-01 Preconstruction Submittals														
			Safety Supervisor	1.3	G AR												
			Accident Prevention Plan		G AR												
			Activity Phase Hazard Analysis Plan	1.3	G AR												
			Outline Report														
			OSHA Log														
			SD-07 Certificates														
			Language Certification	1.3													
	01451		SD-01 Preconstruction Submittals														
			CQC Plan	3.2	G AR												
			Phase Notification														
			Request		G AR												
			CQC Mgr Qualification		G AR												
			SD-05 Design Data														
			Notification of Changes	3.2.4													
			Punchlist	3.8.1													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
COAN RIVER JETTY

CONTRACTOR

A C T I V I T Y N O	T R A N S M I T T A L N O	S P E C I F I C S E C T	D E S C R I P T I O N	P A R A G R A P H G #	G O V T C L A S S I F I C A T I O N S I T E C A R T H R E W N G	C O N T R A C T O R : S C H E D U L E D A T E S		C O N T R A C T O R A C T I O N		A P P R O V I N G A U T H O R I T Y				M A I L E D T O C O N T R A C T O R / A U T H O R I T Y	R E M A R K S	
						S U B M I T T E D B Y	M A T E R I A L N E E D E D B Y	A C T I O N C O D E	D A T E O F A C T I O N	D A T E F O R W A R D T O A P P R O V I N G A U T H O R I T Y	D A T E F O R W A R D T O O T H E R R E V I E W E R	D A T E F O R W A R D F R O M O T H E R R E V I E W E R	D A T E O F A C T I O N			D A T E F O R W A R D F R O M A P P R O V I N G A U T H O R I T Y
	01451		Minutes	3.3												
			SD-06 Test Reports													
			Tests	3.7.1												
			Documentation	3.9												
			Tests Performed	3.7.1												
			QC Records		G AR											
	01561		SD-01 Preconstruction Submittals													
			Facility Plan	1.9.4	G AR											
			Temporary Plan	1.9.5	G AR											
	01720		SD-11 Closeout Submittals													
			Progress Prints		G AR											
			Final Requirements	1.6	G AR											
			CADD Files													

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
 2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
 3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.
 4. Submittals requiring expeditious handling will be submitted on a separate form.
 5. Separate transmittal form will be used for submittals under separate sections of the specifications.
 6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
 7. Form is self-transmittal, letter of transmittal is not required.
 8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
 9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.
- | | | | |
|------|--|-------|--|
| A .. | Approved as submitted. | E .. | Disapproved (See attached). |
| B .. | Approved, except as noted on drawings. | F .. | Receipt acknowledged. |
| C .. | Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX .. | Receipt acknowledged, does not comply as noted with contract requirements. |
| D .. | Will be returned by separate correspondence. | G .. | Other (Specify) |
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1999b) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Price Schedule.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

CQC Plan; G AR.

Identifies personnel, procedures, control, instructions, test, records, and forms to be used.

Phase Notification

The Government shall be notified in a specified amount of time in advance of beginning the preparatory control phase.

Request; G AR.

The requesting of specialized individuals in specific disciplines to perform quality control.

CQC Mgr Qualification; G AR.

The evaluation of the project to determine the level of CQC System Manager required.

SD-05 Design Data

Notification of Changes

Any changes made by the Contractor.

Punchlist

Near the completion of all work, the CQC System Manager shall prepare a list of items which do not conform to the approved drawings and specifications.

Minutes

Prepared by the Government and signed by both the Contractor and the Contracting Officer and shall become a part of the contract file.

SD-06 Test Reports

Tests

Specified or required tests shall be done by the Contractor to verify that control measures are adequate.

Documentation

Results of tests taken.

Tests Performed

An information copy provided directly to the Contracting Officer.

QC Records; G AR.

Provide factual evidence that required quality control activities and/or tests have been performed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 CQC PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. The Contractor shall include a copy of his proposed laboratory's latest Corps of Engineers inspection report in the Quality Control Plan. The inspection report details the tests that the lab has been validated to perform under Corps of Engineers contracts. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: submittals clerk. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

Experience Matrix

<u>Area</u>	<u>Qualifications</u>
a. Submittals	Submittal Clerk with 1 yr experience

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management for Contractors" within 45 calendar days after NTP is a mandatory requirement for the position of the Quality Control Systems Manager. Certification is good for five (5) years at which time re-training is required. The Contractor's QC Systems Manager may be appointed and serve fully in that capacity pending certification. If the CQC Systems Manager fails to successfully complete the training, the Contractor should promptly appoint a new CQSM who shall then attend the next available course. The course is nine (9) hours long (1 day). The Construction Quality Management Course (CQMC) will be

taught at least nine (9) times per year by the Baltimore District Corps of Engineers, at various locations around Baltimore and Washington, DC, or at another site if conditions warrant. The CQMC cost will be borne by the Contractor and is one hundred and twenty-five dollars (\$125.00) per course, per person. Payment shall be made by check payable to either sponsors of the course: Associated Builders and Contractors, Inc, (ABC) 14120 Park Long Court, Suite 111, Chantilly, Virginia 20151 (Phone: 703-968-6205), or to The Associated General Contractors of America (AGC), Maryland Chapter, 1301 York Road, Heaver Plaza, Suite 202, Lutherville, Maryland 21093 (Phone: 410-321-7870) prior to the start of the course. Reservations to attend the course should be made directly to the organization sponsoring the course they attend. The Contractor has forty-five (45) calendar days to attend the course after the issuance of the NTP. The contractor shall contact the Contracting Officer upon award of the contract for arrangements for the course.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 72 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards.

Compare with required sample panels as appropriate.

- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 72 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Laboratory Approval

The Contractor shall use a testing laboratory that has been previously approved by the Corps of Engineers or obtain approval for a laboratory established at the project site. Approved laboratories are listed at the following web site: <http://www.wes.army.mil/SL/MTC/ValStatesTbl.htm> If the Contractor elects to set up an on-site laboratory at the project site, the Contractor will be assessed \$4500.00 for the cost of inspection of this lab by the Corps of Engineers.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Furnishing or Transportation of Samples for Testing: Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the following address:

Field Exploration Unit
or
Soils Laboratory Unit
(indicate which on shipping or mailing forms)
Fort McHenry Yard
Baltimore, Maryland 21230"

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause in Section 00800 of the Solicitation entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punchlist of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and

workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

Contractor's Name:	_____
Address:	_____ _____
Phone Number:	_____

CONSTRUCTION QUALITY CONTROL REPORT

PROJECT NAME: _____
 LOCATION: _____ DATE: _____
 CONTRACT NUMBER: _____ REPORT NO.: _____

SUPERINTENDENT: _____			
TYPE OF WORKERS	NUMBER	TYPES OF CONSTRUCTION EQUIPMENT ON SITE	NUMBER
SUBCONTRACTORS			
COMPANY	RESPONSIBILITY	FOREMAN	NO. OF WORKERS
TOTALS			
NO. OF WORKERS TODAY	MANHOURS TODAY	MANHOURS FOR THIS PERIOD	
CONTRACT MATERIALS AND EQUIPMENT DELIVERED TO SITE:			
WEATHER: _____		SITE CONDITIONS: _____	
DID A DELAY OR WORK STOPPAGE OCCUR TODAY? _____ IF YES, EXPLAIN.			
HAS ANYTHING DEVELOPED IN THE WORK WHICH MAY LEAD TO A CHANGE OR FINDING OF FACT? _____ IF YES, EXPLAIN.			

DESCRIPTION OF ALL WORK PERFORMED TODAY
(LIST BY DEFINABLE FEATURES OF WORK)

PREPARATORY INSPECTION:

LIST ALL INSPECTIONS BY SUBJECT AND SPECIFICATION LOCATION.
ATTACH MINUTES OF MEETING AND LIST OF ALL ATTENDEES.

HAVE ALL REQUIRED SUBMITTALS AND SAMPLES OF CONSTRUCTION BEEN
APPROVED.

DO THE MATERIALS AND EQUIPMENT TO BE USED CONFORM TO THE SUBMITTALS?

HAS ALL PRELIMINARY WORK BEEN INSPECTED, TESTED, AND COMPLETED?

TEST REQUIRED AND INSPECTION TECHNIQUES TO BE EXECUTED TO PROVE
CONTRACT COMPLIANCE (INCLUDE BOTH EXPECTED AND ACTUAL RESULTS)

HAS A PHASE HAZARD ANALYSIS BEEN PERFORMED?

COMMENTS AND DEFICIENCIES NOTED AND CORRECTIVE ACTIONS TAKEN:

ALL INSTRUCTIONS RECEIVED FROM QA PERSONNEL AND ACTIONS TAKEN:

JOB SAFETY (INCLUDE MEETINGS HELD AND DEFICIENCIES NOTED WITH CORRECTIVE ACTIONS):

INITIAL INSPECTION:

LIST ALL INSPECTIONS BY SUBJECT AND SPECIFICATION LOCATION.
COMMENTS AND/OR DEFICIENCIES NOTED AND CORRECTIVE ACTION TAKEN:

FOLLOW-UP INSPECTION:

LIST ALL INSPECTIONS BY SUBJECT AND SPECIFICATION LOCATION.
COMMENTS AND/OR DEFICIENCIES NOTED AND CORRECTIVE ACTION TAKEN.

SIGNATURE: _____
QUALITY CONTROL REPRESENTATIVE/MANAGER

THE ABOVE REPORT IS COMPLETE AND CORRECT. ALL MATERIALS AND EQUIPMENT USED AND ALL WORK PERFORMED DURING THIS REPORTING PERIOD ARE IN COMPLIANCE WITH THE CONTRACT SPECIFICATIONS, AND SUBMITTALS, EXCEPT AS NOTED ABOVE.

SIGNATURE: _____
CONTRACTOR'S APPROVED AUTHORIZED REPRESENTATIVE

SECTION 01510

TEMPORARY CONSTRUCTION ITEMS

PART 1 GENERAL

1.1 General

The work covered by this section consists of furnishing all labor, materials, equipment, and services and performing all work required for or incidental to the items herein specified. No separate payment will be made for the construction and services required by this section, and all costs in connection therewith shall be included in the overall cost of the work unless specifically stated otherwise.

1.2 PROJECT SIGN: (AUG 1974)

A project sign shall be provided and erected at a location designated by the Contracting Officer. The sign shall conform to the requirements as shown on Attachment No. 1, a copy of which is attached hereto. The sign shall be erected as soon as possible and within 15 days after the date of receipt of notice to proceed. Upon completion of the project, the sign shall be removed and disposed of by the Contractor. (CENAB)

1.3 SAFETY SIGN (AUG 1974)

A safety sign shall be provided and erected at a location designated by the Contracting Officer. The sign shall conform to the requirements as shown on Attachment No. 2, a copy of which is attached hereto. The sign shall be erected as soon as possible and within 15 days after the date of receipt of notice to proceed. The data required by the sign shall be corrected daily, with light colored metallic or non-metallic numerals. Numerals, including mounting hardware, shall be subject to the approval of the Contracting Officer. Upon completion of the project, the sign shall be removed and disposed of by the Contractor. (CENAB)

1.4 GOVERNMENT FIELD OFFICE

1.4.1 Resident Engineer's Office

The Contractor shall provide the Government Resident Engineer with an office, approximately 200 square feet in floor area, located where directed, and providing space heat, electric light and power, toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer mains. A mail slot shall be provided in the door, or an apartment-type lockable mail box mounted on the surface of the door. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. All utility connections shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer. If a window style air conditioner is used then the refrigerant shall be one of the fluorocarbon gases that is in accordance with FS BB-F-1421 and has an Ozone Depletion Potential (ODP) of less than or equal to 0.05.

1.4.2 Trailer-Type Mobile Office (Contractor's Option)

In lieu of constructing, maintaining and, at end of construction period, removing a temporary type field office, the Contractor may, at his option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds.

1.5 BULLETIN BOARD: (NOV 1983)

Immediately upon beginning of work under this contract, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 x 48 inches in size, for displaying the Equal Employment Opportunity Poster, a copy of the wage decision contained in the contract, Wage Rate Information Poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the site of work in a conspicuous place easily accessible to all employees as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work under the contract is complete. Upon completion of work under this contract the bulletin board shall be removed by and remain the property of the Contractor. (AFRCE)

1.6 HAUL ROADS (1967)

The Contractor shall, at his expense, construct such access roads and haul roads as may be necessary for proper prosecution of the work under this contract. Haul roads shall be constructed in a workmanlike manner with suitable grades and widths. The road shall include a geotextile equivalent to that described in Section 02272 and shall include a minimum of 6 inches of 2-3 inch aggregate stone or similar. Sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide all necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control although optional shall be adequate to insure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval of the Contracting Officer. Upon completion of the work, haul roads as designated by the Contracting Officer shall be removed at the expense of the Contractor except the section of road from Sta. 0+00 to 7+10 that shall be left in place. Lighting shall be adequate to assure full and clear visibility for full width of haul and work areas during any night work operations. (CENAB)

1.7 PLANT COMMUNICATION (JAN 63)

Whenever the Contractor has the individual elements of his plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The facilities shall be made available for use by Government personnel. (CENAB)

1.8 BARRICADES

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazardous areas during both day and night. (CENAB)

PART 2 PRODUCT
NOT APPLICABLE

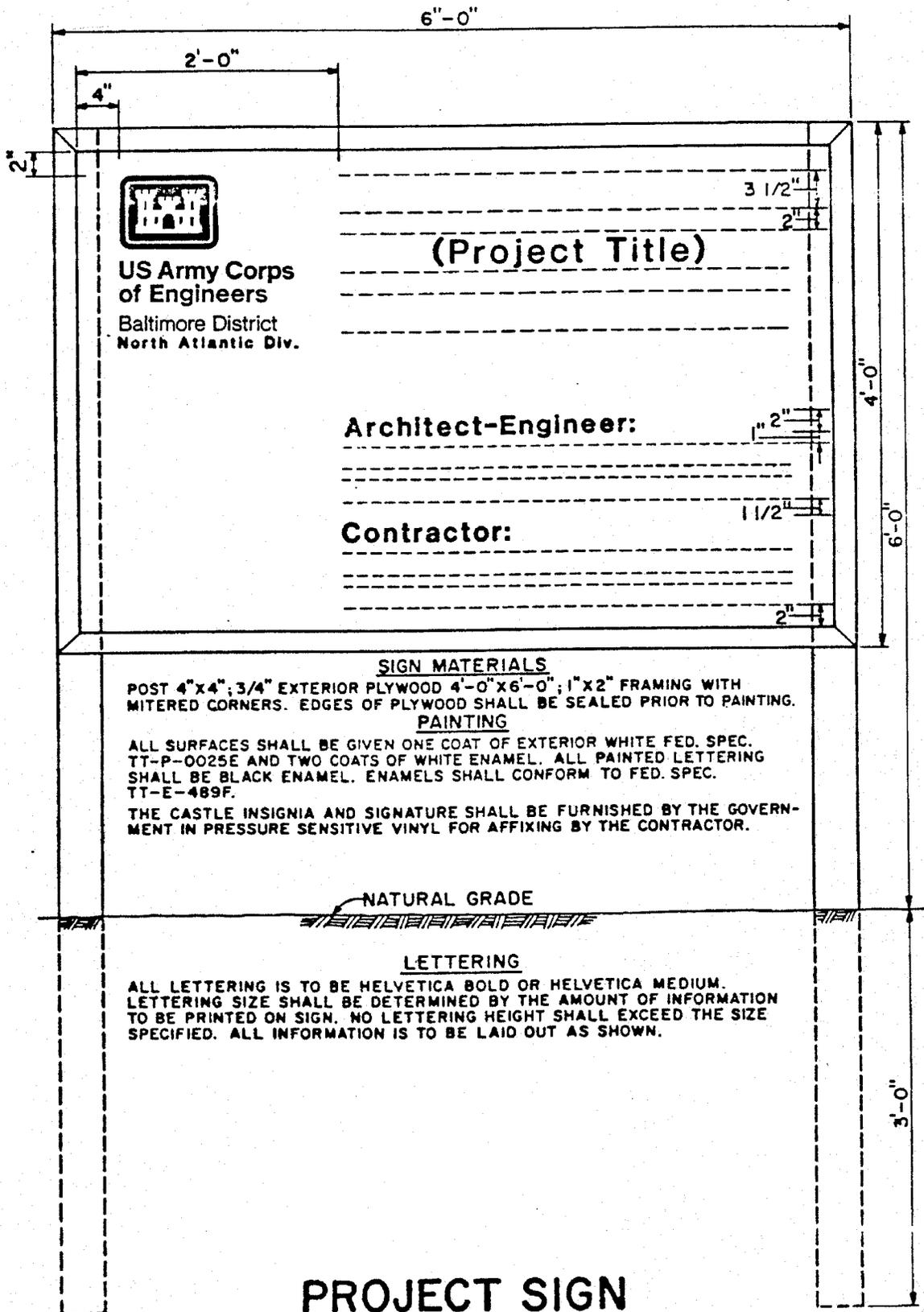
PART 3 EXECUTION
NOT APPLICABLE

ATTACHMENTS:

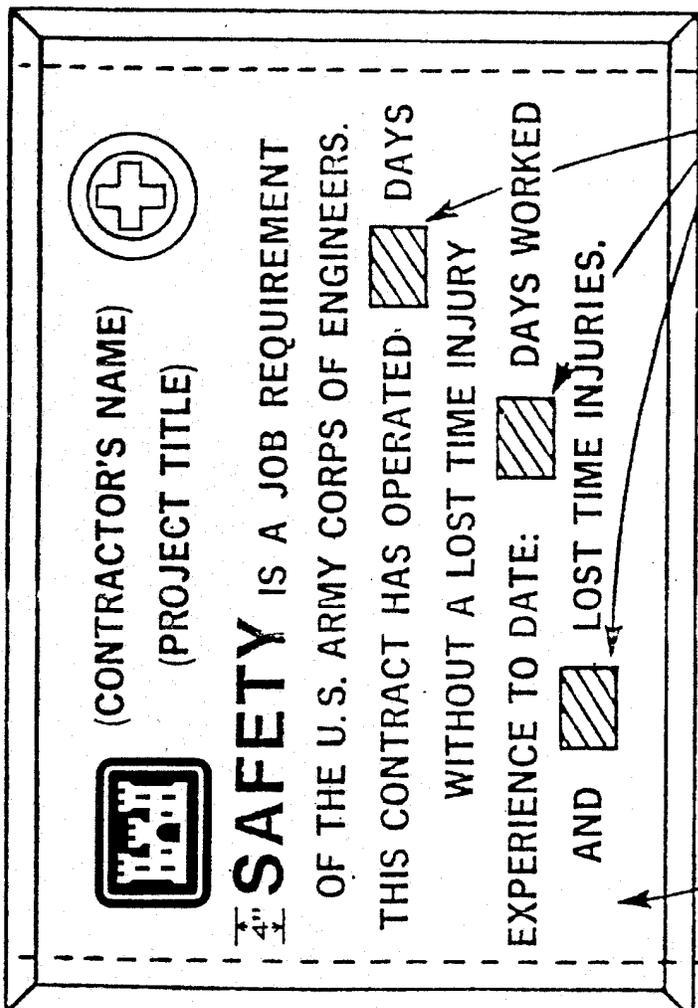
Attachment 1 Project Sign

Attachment 2 Safety Sign

-- End of Section --



6'-0"



3/4" EXTERIOR PLYWOOD 4" x 6" PAINTED BLACK

GRADE

4" x 4" POST

	LETTER HGT	STROKE
CONTRACTORS NAME	4"	3/16"
PROJECT TITLE	3"	3/16"
"SAFETY"	4"	1/2"
REMAINING STATEMENT	2 1/2"	1/4"

SAFETY SIGN

SIGN MATERIALS

POST 4"x4"; 3/4" EXTERIOR PLYWOOD 4'-0"x6'-0", 2"x2" FRAMING WITH MITERED CORNERS. FRAMING ENCLOSED EDGES OF PLYWOOD AND BE INSTALLED FLUSH ON BACK SIDE AND PROJECTING IN FRONT. OUTSIDE WHITE, HOUSE PAINT-2 COATS; BOTH SIDES AND EDGES; COLORS IN OIL FOR LETTERING - LAMP BLACK AND BULLETIN RED; CASTLE SHALL BE RED; LETTERING SHALL BE BLACK; THE CROSS SHALL BE GREEN

THE CASTLE INSIGNIA SHALL BE FURNISHED BY THE GOVERNMENT IN PRESSURE SENSITIVE VINYL FOR AFFIXING BY THE CONTRACTOR.

SECTION 01561

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

The work covered by this section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution during, and as the result of, construction operations under this contract except for those measures set forth in the Technical Provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life or affect other species of importance to man. The control of environmental pollution requires consideration of air, water, and land.

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Facility Plan; G AR.

Location of storage and service facilities.

Temporary Plan; G AR.

Temporary excavation and embankments.

1.2 APPLICABLE REGULATIONS

The Contractor and his subcontractors in the performance of this contract, shall comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement in effect on the date of this solicitation, as well as the specific requirements stated elsewhere in the contract specifications.

1.3 NOTIFICATION

The Contracting Officer will notify the Contractor of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of time lost due to any such stop order shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.4 SUBCONTRACTORS

Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.5 PROTECTION OF WATER RESOURCES

The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acid construction wastes or other harmful materials. All work under this contract shall be performed in such a manner that objectionable conditions will not be created in streams through or adjacent to the project areas.

1.5.1 Turbidity Curtain

A turbidity curtain shall be maintained around the jetty as it is constructed. It must be weighted at the bottom to insure that it sits on the river bottom and the top must float. It must be of sufficient height to provide complete coverage at high tide. The turbidity curtain should be maintained approximately 25 feet from the toe of the structure and be advanced as necessary during construction. The fabric should be strong enough to remain standing with currents and tides. It should be installed in accordance with the manufacturer's specifications. If any section fails, it should be immediately repaired or replaced. At the conclusion of construction, all fabric and supporting structures shall be removed.

1.6 EROSION AND SEDIMENTATION CONTROL

The Contractor shall accomplish the erosion and sedimentation control in accordance with the contract drawings.

1.7 BURNING

Burning will not be allowed.

1.8 DUST CONTROL

The Contractor shall maintain all work area free from dust which would contribute to air pollution. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Sprinkling, where used, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

1.9 PROTECTION OF LAND RESOURCES

1.9.1 General

It is intended that the land resources within the project boundaries and outside the limits of permanent work performed under this contract be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. Insofar as possible, the Contractor shall confine his construction activities to areas defined by the plans and specifications or to be cleared for other operations. The following additional requirements are intended to supplement and clarify the requirements of the CONTRACT CLAUSES:

1.9.2 Protection of trees retained

1.9.2.1 Contractors Responsibility

The Contractor shall be responsible for the protection of the tops, trunks and roots of all existing trees that are to be retained on the site. Protection shall be maintained until all work in the vicinity has been completed and shall not be removed without the consent of the Contracting Officer. If the Contracting Officer finds that the protective devices are insufficient, additional protection devices shall be installed.

1.9.2.2 Stockpiling

Heavy equipment, vehicular traffic, or stockpiling of any materials shall not be permitted within the drip line of trees to be retained.

1.9.2.3 Storage

No toxic materials shall be stored within 100 feet (30.5 m) from the drip line of trees to be retained.

1.9.2.4 Confined Area

Except for areas shown on the plans to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without special authority. Existing near by trees shall not be used for anchorage unless specifically authorized by the Contracting Officer. Where such special emergency use is permitted, the Contractor shall first adequately protect the trunk with a sufficient thickness of burlap over which softwood cleats shall be tied.

1.9.2.5 Tree Defacing

No protective devices, signs, utility boxes or other objects shall be nailed to trees to be retained on the site.

1.9.3 Restoration of landscape damage

Any trees or other landscape feature scarred or damaged by the Contractor's operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Contracting Officer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of. All scars made on trees, designated on the plans to remain, and all cuts for the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted. Where tree climbing is necessary, the use of climbing spurs will not be permitted. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Contracting Officer, shall be immediately removed and replaced with a nursery-grown tree of the same species. Replacement trees shall measure no less than 2 inches in diameter at 6 inches above the ground level.

1.9.4 Location of Storage and Services Facilities

The location of the Contractor's storage and service facilities, required temporarily in the performance of the work, shall be upon cleared portions of the job site or areas to be cleared. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. A facility plan showing storage and service facilities shall be submitted for approval to the Contracting Officer. Where buildings or platforms are constructed on slopes, the Contracting Officer may require cribbing to be used to obtain level foundations. Benching or leveling of earth may not be allowed, depending on the location of the proposed facility.

1.9.5 Temporary Excavation and Embankment

If the Contractor proposes to construct temporary roads, embankments or excavations for plant and/or work areas, he shall submit a temporary plan for approval prior to scheduled start of such temporary work.

PART 2 PRODUCT
NOT APPLICABLE

PART 3 EXECUTION

NOT APPLICABLE

-- End of Section --

SECTION 01720

AS-BUILT DRAWINGS - CADD

PART 1 GENERAL

1.1 Preparation

This section covers the preparation of as-built drawings complete, as a requirement of this contract. The terms "drawings," "contract drawings," "drawing files," and "final as-built drawings" refer to a set of computer-aided design and drafting (CADD) contract drawings in electronic file format which are to be used for as-built drawings.

1.2 PROGRESS MARKED UP AS-BUILT PRINTS

The Contractor shall revise one set of paper prints to show the as-built conditions during the prosecution of the project. These as-built marked prints shall be kept current and available on the jobsite at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. The as-built marked prints will be jointly reviewed for accuracy and completeness by the Contracting Officer and a responsible representative of the construction Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings and will continue the monthly deduction of the 10% retainage even after 50% completion of the contract. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and a representative of the Contractor regarding the accuracy and completeness of updated drawings. The prints shall show the following information, but not be limited thereto:

1.2.1 Location and Description

The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.

1.2.2 Location and Dimensions

The location and dimensions of any changes within the building or structure.

1.2.3 Corrections

Correct grade, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

Correct elevations if changes were made in site grading.

1.2.4 Changes

Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

The topography, invert elevations and grades of all drainage installed or affected as a part of the project construction.

All changes or modifications which result from the final inspection.

1.2.5 Options

Where contract drawings or specifications present options, only the option selected for construction shall be shown on the as-built prints.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

Progress Prints; G AR.

Preparation of two copies of as-builts from the Contractor to the Contracting Officer for review and approval.

Final Requirements; G AR.

CADD Files.

Shall consist of two sets of completed as-built contract drawings on separate media consisting of both CADD

files (compatible with the Using Agency/Sponsor's system on electronic storage media identical to that supplied by the Government) and a CALS Type 1, Group 4, Raster Image File of each contract drawing.

Receipt by the Contractor of the approved marked as-built prints.

1.4 PRELIMINARY SUBMITTAL

At the time of final inspection, the Contractor shall prepare two copies of the progress as-built prints and these shall be delivered to the Contracting Officer for review and approval. These as-built marked prints shall be neat, legible and accurate. The review by Government personnel will be expedited to the maximum extent possible. Upon approval, one copy of the as-built marked prints will be returned to the Contractor for use in preparation of final as-built drawings. If upon review, the as-built marked prints are found to contain errors and/or omissions, they shall be returned to the Contractor for corrections. The Contractor shall complete the corrections and return the as-built marked prints to the Contracting Officer within ten (10) calendar days.

1.5 DRAWING PREPARATION

1.5.1 As-Built Drawings Approval

Upon approval of the as-built prints submitted, the Contractor will be furnished by the Government one set of contract drawings, with all amendments incorporated, to be used for as-built drawings. These contract drawings will be furnished on CD-ROM. These drawings shall be modified as may be necessary to correctly show all the features of the project as it has been constructed by bringing the contract set into agreement with the approved as-built prints, adding such additional drawings as may be necessary. These drawings are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.5.2 Proficient Personnel

Only personnel proficient in the preparation of engineering CADD drawings to standards satisfactory and acceptable to the Government shall be employed to modify the contract drawings or prepare additional new drawings. All additions and corrections to the contract drawings shall be equal in quality to that of the originals. Line work, line weights, lettering, layering conventions, and symbols shall be the same as the original line work, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same guidance specified for original drawings. The title block and drawing border to be used for any new as-built drawings shall be identical to that used on the contract drawings. All additions and corrections to the contract drawings shall be accomplished using CADD media files supplied by the Government. These contract drawings will already be compatible with the Using Agency/Sponsor's system when received by the Contractor. The Using Agency/Sponsor uses AutoCAD Release 2000 CADD software system. The media files will be supplied on ISO 9660 Format CD-ROM. The Contractor is responsible for providing all program files and hardware necessary to prepare as-built drawings. The Contracting Officer will review all as-built drawings for accuracy and the Contractor shall make all required corrections, changes, additions, and deletions.

1.5.3 Final Revisions

When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the General Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "As-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. All original contract drawings shall be dated in the revision block (see ATTACHMENT 1 located at the end of this section).

1.6 FINAL REQUIREMENTS

After receipt by the Contractor of the approved marked as-built prints and the original contract drawing files the Contractor will, within 30 days for contracts less than \$5 million or 60 days for contracts \$5 million and above, make the final as-built submittal. The submittal shall consist of the following:

a) Two sets of the as-built contract drawings on separate CD's (ISO 9660 Format CD-ROM) consisting of the updated CADD files and a CALS Type 1 Group 4 Raster Image File of each contract drawing plate. The CALS files shall be exact duplicates of the full sized plots of the completed as-built contract drawings at a resolution of 400 dpi and may be either plotted to CALS files directly from the CADD files, or scanned to file from the prints.

b) Two sets of full size paper prints (plots) of the completed as-built contract drawings.

c) The return of the approved marked as-built prints.

They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any translations or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with its CADD system. All paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit as-built drawing files and marked prints as required herein shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.7 PAYMENT

No separate payment will be made for the as-built drawings required under this contract, and all costs in

connection therewith shall be considered a subsidiary obligation of the Contractor.

PART 2 PRODUCT
NOT APPLICABLE

PART 3 EXECUTION
NOT APPLICABLE

-- End of Section --

**RECORD DRAWING AS-BUILT
XYZ CONTRACTOR**

Plate: 1

Sheet Number: T-1

FT. INDIANTOWN GAP PENNSYLVANIA

EQUIPMENT CONCENTRATION SITE

COVER SHEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND	Designed by:		Date: JAN 2001	Rev.
	Dwn by:	Ckd by:	Design file no.	
A/E FIRM/CONTRACTOR 3 LINES PROVIDED OR LOGO	Reviewed by:		Drawing Number: F-XXX-XX-XX	
	Submitted by: Chief, Branch		File name: FILENAME Plot date: 12/25/00 Plot scale: 1=1	

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.
	AS-BUILT	10 SEP 02					
3	REVISED SECTION A-A AND C-C	5 JAN 01	A.E. D.P.				
2	REVISED PER AMENDMENT NO. 2	30 DEC 00	A.E. D.P.				
1	REVISED PER AMENDMENT NO. 1	25 DEC 00	A.E. D.P.				

SECTION 02272

GEOTEXTILE FOR STONEWORK

1. Scope: The Contractor shall provide all labor, materials, tools, equipment, and incidentals necessary to perform all work required to install geotextile material on the foundation for the jetty, complete as specified herein and shown on the Contract Drawings. This includes maintaining the geotextile until placement of the overlying stone material is completed and accepted.

2. References: The publications listed below form a part of the specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3786	(1987) Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method
ASTM D 4354	(1996) Sampling of Geosynthetics for Testing
ASTM D 4355	(1992) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4491	(1999) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991;R1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4595	(1986) Tensile Properties of Geotextiles by the Wide-Width Strip Method
ASTM D 4632	(1991;R1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999) Determining the Apparent Opening Size of a Geotextile
ASTM D 4759	(1988; R 1996) Determining the Specification Performance of Geosynthetics
ASTM D 4833	(1988;R1996) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4873	(1997) Identification, Storage, and Handling of Geotextiles
ASTM D 4884	(1996) Seam Strength of Sewn Geotextiles

3. Submittals: Submittals required for this section of the specifications are shown on the submittal registers presented in Section 01305, CONTRACTOR SUBMITTAL PROCEDURES. Government approval is required for submittals with a "GA" designation. Submittals having an "FIO" designation are for information only.

4. Delivery, Storage, and Handling:

4.1 General. Geotextile shall be delivered only after the required submittals have been received and approved by the Contracting Officer. Geotextiles shall be labeled, shipped, stored, and handled in accordance with ASTM D 4873 and as specified herein. Each roll shall be wrapped in an opaque and waterproof layer of plastic during shipment and storage. The plastic wrapping shall be placed around the geotextile roll in the manufacturing facility and shall not be removed until deployment. Each roll shall be labeled with the manufacturers name, geotextile type, lot number, roll number, and roll dimensions (length, width, gross weight). Appropriate handling equipment and techniques, as recommended by the manufacturer and approved by the Contracting Officer, shall be used. Geotextile or plastic wrapping damaged as a result of delivery, storage, or handling shall be repaired or replaced, as directed, at no additional cost.

4.2 Handling. No hooks, tongs or other sharp instruments shall be used for handling geotextile. Geotextile shall not be dragged along the ground.

4.3 Storage. Geotextile shall be stored in areas where water cannot accumulate, elevated off the ground, and protected from conditions that will affect the properties or performance of the geotextile. Geotextile shall not be exposed to temperatures in excess of 140 degrees F or less if recommended by the manufacturer. Outdoor storage shall not be for periods which exceed the manufacturers recommendations, or for two months, whichever is less.

5. Materials:

5.1 General Requirements. The geotextile shall be a woven pervious sheet of polymeric yarn. Fibers used in the manufacture of the geotextile shall consist of long-chain synthetic polymers composed of at least 85% by weight polyolefins, polyesters, or polyamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration by ultra-violet light and heat exposure. Reclaimed or recycled fibers or polymer shall not be added to the formulation. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. The geotextile physical properties shall equal or exceed the minimum average roll values listed in Table 1. Acceptance of geotextile shall be in accordance with ASTM D 4759. Strength values shown are for the weaker principle direction. The Contractor shall submit a minimum 12 inch by 12 inch sample of the geotextile to the Contracting Officer. A written certificate of compliance or affidavit signed by the legally authorized official from the geotextile manufacturer, certifying that the material meets the specified properties, shall be submitted at least 14 days before delivery of the geotextile to the site.

TABLE 1. GEOTEXTILE PHYSICAL PROPERTIES

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>TEST VALUE</u>
Apparent Opening	ASTM D 4751	No finer than the (U.S. Sieve) No. 100 and no coarser than the No.70
Permittivity, sec ⁻¹	ASTM D 4491	0.2
Puncture, lbs.	ASTM D 4833	80
Grab Tensile, lbs.	ASTM D 4632	200
Burst Strength, psi	ASTM D 3786	300
Trapezoidal Tear, lbs.	ASTM D 4533	120
Ultraviolet Degradation (percent strength retained at 500 hours)	ASTM D 4355	70%
Factory Seam Strength, (seam efficiency in percent of fabric strength as determined by ASTM D 4595)	ASTM D 4884	90%
Field Seam Strength, (percent of grab tensile strength of the geotextile)	ASTM D 4632	85%

5.2 Manufacturing, Sampling, and Testing. Geotextiles and factory seams shall meet the requirements specified in Table 1. Conformance testing shall be performed on random samples in accordance with the manufacturers approved quality control manual.

6. Installation: Within 10 days after notice to proceed, the Contractor shall submit his Plan of Installation for the geotextile to the Contracting Officer for approval. The plan should incorporate the requirements of these specifications with respect to materials, deployment, anchoring, and placement procedures. Alternate fabrication details or installation techniques may be submitted for consideration by the Contracting Officer. However, rejection of alternate methods suggested by the Contractor shall not constitute a basis for claim against the Government.

6.1 Surface Preparation. The underlying surface shall be smooth and free of protrusions which could damage the geotextile.

6.2 Placement. The Contracting Officer shall visually inspect geotextile rolls, prior to installation, for damage and imperfections. Defective rolls shall be marked and repaired. The geotextile shall be laid smooth so as to minimize tension, stress, folds, wrinkles, or creases. Trimming shall be

performed using only an upward cutting hook blade. Uplifted geotextile shall be approved prior to reuse.

6.3 Protection. The geotextile shall be protected during installation from binding, clogging, penetrations, tears, or other damage. Damaged geotextile shall be repaired or replaced. Adequate ballast (e.g. sand bags) shall be used to prevent uplift by wind, wave action, or water currents. The geotextile shall not be exposed to sunlight for more than 5 days during installation. Overlying materials shall be deployed such that the geotextile is not shifted, damaged, or placed in tension. During placement, the height of drop of stone shall be no greater than 12 inches above the water surface or 36 inches below the water surface. In no case shall any type of equipment be allowed on the geotextile until at least 1 foot of cover has been placed on the geotextile.

6.4 Overlap Seams. Geotextile panels shall be continuously overlapped a minimum of 36 inches. The Contractor has the option of field sewing instead of overlapping.

6.5 Sewn Seams. If the Contractor elects to utilize sewn seams instead of overlapping the fabric as specified above, the thread for the sewn seams shall meet the chemical compatibility and ultraviolet light stability requirements for the geotextile and the color shall contrast with the geotextile. Seams shall be continuously sewn using a flat seam with a two-thread chain stitch unless otherwise recommended by the manufacturer. The minimum distance from the geotextile edge to the stitch line nearest to that edge shall be 3-inches unless otherwise recommended by the manufacturer. Seams shall be continuously sewn and tested at a minimum frequency as specified in ASTM D 4884. Seam strength shall meet the minimum requirements specified in Table 1.

6.6 Repairs. Damaged or defective geotextile shall be repaired by placing a patch of the same type of geotextile which extends a minimum of 24 inches beyond the edge of the damage or defect. Patches shall be adequately anchored using sandbags or other approved methods recommended by the manufacturer and approved by the Contracting Officer. Geotextile which cannot be repaired shall be replaced at no additional cost.

7. Measurement and payment: No separate measurement will be made for geotextile. All payment will be included under the lump sum payment for this contract.

8. Quality Control: The Contractor shall establish and maintain quality control as required in Section: 01451, CONTRACTOR QUALITY CONTROL (CQC) in the GENERAL REQUIREMENTS.

END OF SECTION

SECTION 02486

STONEWORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, equipment, and materials and performing all operations in connection with the construction of the jetty as shown on the Contract Drawings or as directed by the Contracting Officer in accordance with these Specifications and applicable Drawings.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C-97	Absorption and Bulk Specific Gravity of Dimension Stone
ASTM C-127	Specific Gravity and Absorption of Coarse Aggregate
ASTM C-136	Method for Sieve Analysis of Fine and Coarse Aggregate
ASTM C-295	Petrographic Examination of Aggregates for Concrete
ASTM C-535	Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM D-4992	Evaluation of Rock to be Used for Erosion Control
ASTM D-5121 Testing	Practice for Preparation of Rock Slabs for Durability
ASTM D-5312	Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
ASTM D-5519 Materials	Particle Size Analysis of Natural and Man-Made Riprap

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-2-1906	Laboratory Soils Testing
EM 1110-2-2302	Construction with Large Stone
CRD C 144	Method of Testing Stone for Resistance to Freezing and Thawing

CRD C 169 Method of Testing Stone for Resistance to Wetting and Drying

CRD C 107 Standard Test Method for Specific Gravity and Absorption for Coarse Aggregate

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330: SUBMITTAL PROCEDURES:

SD-01 Data

Stone Source (GA):

Within thirty (30) calendar days after Notice To Proceed (NTP) and for each individual stone source (quarry) identified as a potential stone material supplier for use on this project, the Contractor, shall submit in report format quarry information, service history of stone's use as armor stone, test results, and other ancillary data as specified in PART 2 paragraphs 2.2 "SOURCES OF STONE". The Stone Source Submittal(s) shall be prepared, signed, and stamped by an independent state licensed Professional Geologist.

Stone Material Quality Control (SMQC) (GA)

The Contractor shall submit in report format the means and methods to be used for effective individual inspection of armor, scour protection, and core stone, and gradation testing of stone in a manner which will result in a satisfactory quality of in-place stone construction as specified in PART 2 paragraphs 2.3.2 and 2.3.3. The Stone Material Quality Control submittal shall also designate a Stone Material Quality Control Supervisor who shall be responsible for implementation of all functions of the Stone Material Quality Control program.

Placement Methods (GA):

The Contractor shall submit his proposed method of construction, to include the sequence of stone placement, methods of placement, and equipment to be used during each construction phase, to the Contracting Officer for approval at least 30 calendar days prior to the scheduled start of work, in accordance with paragraph 3.2, "PLACEMENT."

Gradations; (GA):

Gradation test results demonstrating compliance with the requirements of paragraph 2.1.3 "Gradation" shall be submitted for review as specified in paragraph 3.2.5.

Check Surveys (GA):

The Contractor shall submit surveys, both field data and plotted cross sections, for each prepared surface for stone placement, and the final stone

surface, in accordance with the requirements presented in paragraph 3.8, "CHECK SURVEYS," of this section of the specifications.

Stone QC Testing (GA):

Prior to shipment of any stone material to the construction site, the Contractor shall submit test results for each distinct lithology (different type material) produced from each source. Quality Control testing shall be performed by an independent and Government approved laboratory. The testing procedures are specified in paragraph 2.3 "EVALUATION AND EXAMINATION OF STONE QUALITY".

SD-18 Records

Quality Control (GA): The Contractor shall establish and maintain quality control (QC) to assure compliance with contract requirements and shall maintain records of his quality control for all stone material inspections, gradation tests, and construction operations required under this section. A copy of these records, as well as records of corrective action taken, shall be furnished to the Government as required in the paragraph 3.7 "Quality Control," of this section and Section 01451 CONTRACTOR QUALITY CONTROL in the General Requirements.

Stone Material Quality Control (SMQC) Supervisor (GA)

The Contractor shall submit evidence that the Stone Material Quality Control (SMQC) Supervisor is a college degreed geologist with not less than two (2) years experience in assessing stone quality or is State Licensed Geologist with at least one (1) year experience in assessing stone quality. The Stone Material Quality Control Supervisor shall not have collateral project duties or responsibilities assigned by the Contractor except those specified in the Stone Material Quality Control submittal during the duration of this project. The SMQC supervisor shall be responsible for preparing a SMQC inspection schedule and for the proper execution of the SMQC plan and shall oversee the work of all SMQC inspectors as specified in paragraph 1.7 and in PART 2 paragraphs 2.3.2 and 2.3.3.

Stone Materials Quality Control (SMQC) Reports (GA):

During all SMQC activities, the Contractor shall submit daily reports of all work performed under the approved SMQC plan. The reports shall be delivered to the Contracting Officer or his designated representative, not later than the day following the next weekly cycle. Each daily report for each inspector shall include, but not limited to, the following information:

- a. SMQC Inspector's name
- b. Identification of the stone handling equipment and name of equipment operator used to accommodate the stone inspection if it appeared that the equipment or operator was a factor in producing unacceptable stone.
- c. Date of stone inspection.
- d. Weather conditions.

- e. Date stone was removed from quarry face, and date and details of blasting.
- f. Location and strata within quarry where stone production took place (horizontally and vertically - use quarry map submitted in the Stone Source Submittal).
- g. Cleaning methods required to remove dirt and/or dust from stone material.
- h. Color(s) and character(s) used by inspector for spray paint marks and the applicable code for stones which are individually picked and for any rejected stone.
- i. Breakdown of the approximate quantity, per gradation range, of accepted and rejected stone processed for the project during the day, and the disposition of the rejected stone materials.
- j. A one sentence summary of the cause or causes for most of the rejection of stone occurring during the day.
- k. Running totals of the quantity of Armor and Intermediate Stone shipped from the source to date.
- l. Running average for the approximate per stone weight per gradation range for stones which are individually picked for the project.

SD-13 Certificates

Weigh Scale Certification (FIO):

If an on-site weight scale is used, prior to the use thereof, the Contractor shall be required to submit pertinent details on the location, type, and construction of the scale, including a copy of the certification of the scale's accuracy from the local weights and measures regulation agency.

1.4 NOT USED

1.5 NOT USED

1.6 DEMONSTRATION STOCKPILE

Following submittal of the Contractor's Stone Source, Stone QC Testing, and Stone Material Quality Control (SMQC) submittals but prior to the Government's approval of a source's SMQC, the Contractor shall make arrangements to provide a pre-production demonstration stockpile for each of the stone size gradation specified herein. For each gradation, the stockpiles shall be segregated by each type of lithology approved by the Government and shall be located at the source of the stone and be shaped in windrow fashion for the Armor Stone Gradation. The Armor Stone shall be placed in a single layer with one (1) foot of clear space around each stone. The Intermediate Stone stockpile shall be stacked such that all stone contained within is readily visible and examinable from the quarry floor. The stones placed in each

demonstration stockpile shall be representative of the overall quality of each lithology type material produced in the source and shall not consist of the most perfect specimens unless it is reasonable to determine that the source will produce the required amount of stone of the applicable size range with a degree of quality no less than that existent in the demonstration stockpile. The following parameters shall apply:

Stone Designation	Demonstration Stockpile Quantity
Intermediate Stone	3 Tons
Armor Stone	20 Tons

The weight of each Armor Stone unit placed in the demonstration Armor Stone stockpile shall also be marked by water proof, spray paint. A stockpile of representative rejected stones marked with a red "X" shall also be maintained at the site as examples of unacceptable materials or shapes.

1.6.1 Evaluation of Demonstration Stockpile

The Contractor shall notify the Contracting Officer, or his designated representative (COR), when stockpiles are ready for evaluation. The Contractor's approved SMQC supervisor and all SMQC inspectors shall accompany the COR during the Government's evaluation of the demonstration stockpiles. The Contractor shall mark rejected stones with a red X and such stones shall be removed to the reject stockpile or to a crusher if one is available. If more than 10 rejected stones are found within a stockpile, the entire stockpile shall be rejected by the Government and a replacement stockpile created for re-evaluation. If the replacement stockpile is rejected, the Contractor shall revise and resubmit its SMQC plan within seven calendar (7) days and shall create another replacement demonstration stockpile for evaluation. If the third demonstration stockpile for a particular size range at a single source is rejected, the entire source will be rejected for such size range and the second source will be identified in a Stone Source submittal. In addition the Contractor shall submit the name and qualification for a person to replace the SMQC supervisor. The replacement of demonstration stockpiles, SMQC supervisors, SMQC inspectors, or stone material shall be at no additional cost to the Government and with no change in the time of completion.

1.6.2 Location and Duration of Demonstration Stockpiles

Upon Government approval of the demonstration stockpiles, the Contractor shall split each size category stockpile. One of each split stockpile for each size category shall be shipped to the project site for SMQC reference. The split stockpiles shall remain at the stone source and project site for the duration of stone placement. Other than for being shipped or used as the final quantities of materials to be placed in the project structure, each demonstration stockpile shall remain unchanged at each stone source site and project site area for until all other material of that size range represented by the stockpile has been shipped. The demonstration stockpile integrity shall be insured by surrounding the stockpile by yellow caution tape secured on wooden or metal posts driven into the ground.

1.7 STONE MATERIAL QUALITY CONTROL (SMQC) STAFFING

The SMQC Supervisor shall be responsible for quality of all stone construction materials at the stone source and at the project construction site. A SMQC Supervisor or SMQC Inspector shall be present at all times that stone production, stone handling, or stone placement operations are taking place at the stone source or project construction site. The SMQC Supervisor shall train the SMQC Inspectors in the proper performance of their duties, offer advice and assistance to the inspectors, and may, if necessary, perform duties also applicable to SMQC Inspectors. The SMQC Supervisor shall provide a telephone number where the SMQC Supervisor or a SMQC Inspector on duty can be reached during working hours. The SMQC supervisor shall maintain a qualified and adequate inspection staff and shall replace any persons not performing satisfactorily.

1.7.1 Qualification and Duties of SMQC Inspectors

The SMQC Inspector(s) at a minimum shall be persons with sufficient training and experience to competently and independently perform the tasks itemized below while under the general supervision of the SMQC Supervisor. Duties of SMQC Inspectors will be at both the stone source and construction site. All SMQC Inspectors shall complete the following tasks:

I) Individual Armor Stone Inspection:

- a. Verify curing periods of Armor and Intermediate Stone.
- b. Complete and submit daily inspection reports to the COR within 24 hours.
- c. Insure all Armor Stone has been cleaned of dirt and dust allowing the stone material to be visual inspected.
- d. Perform visual inspection of all Armor Stone. The examination shall focus on all hairline width fractures, all cracks, defective stone geology and other indicators that may cause the stone to deteriorate into smaller pieces after it is in place in the project structure. Inspection duties also include identifying and marking pieces that do not meet the criteria for acceptability, including size and shape. Rejected stone shall be marked with a highly visible spray painted red X.
- e. Wet Armor Stone areas containing cracks aiding in determination of crack length.
- f. Place an identifying paint spray mark or marks on each acceptable individually picked stone.
- g. Assure that the Contractor places the accepted pieces of stone into the appropriate stockpiles and placement location in accordance with the respective gradation ranges.
- h. Assure that all rejected stone materials are either placed in a "reject" stockpile, are sent directly to a crusher, are re-designated to

another armor stone size classification (if appropriate), or are removed from the site immediately after they are so marked. Rejected stones shall not be mixed with accepted stones at any time.

i. Record all inspection activities on the daily inspection reports including, but not limited to, number of armor stone individual inspected and associated number rejected.

j. Conduct Armor Stone gradation testing recording all results.

II) All other stone products (Intermediate Stone)

a. All other stone shall be visually examined in volume for defects.

b. Conduct stone gradation testing recording all results.

PART 2 - PRODUCTS

2.1 STONE

2.1.1 General

The stone materials to be furnished shall meet all requirements specified herein. Stone shall consist of fresh, sound, hard, dense, durable rock which shall be separated from bedrock by quarrying. Required inspection of Armor Stone by the Contractor's SMC supervisor or SMC inspectors shall be as required in this section. Stone shall also meet all testing criteria specified in this section. Testing criteria is outlined in paragraph 2.1.6 herein. The COR shall, at any time during the contract, reject any stone material not meeting specification requirements at the source, transfer point(s), or job site. Stone material which has been delivered to the project site and is rejected, whether in stockpile or in place in the structure, shall be removed from the project site and replaced at the Contractor's expense. When directed to do so by the COR, rejected stones shall be returned to the stone's source at the Contractor's expense for the purpose of visually showing the SMC inspectors and quarry operators examples of stones which will not be acceptable in the project's structure, in lieu thereof, the SMQC inspectors and quarry operators may be brought to the project site at the Contractor's expense for the same purpose.

2.1.2 Material Quality

All stone shall be of a quality to insure permanence of the structure during its designed project life in the climate and conditions in which it is to be used. Selected granite, quartzite, gabbro, diabase, dolomite, some dolomitic limestones, limestone, marble, and certain sandstones may be able to meet the requirements of these specifications. All stone utilized shall be free of continuous cracks and fractures and shall not contain deleterious features such splits, spalls, delaminations, disaggregations, dissolvment, shaley parting, or any combination of such features. Stone not meeting these criteria shall be rejected by the COR or SMQC inspectors. Additionally, any stone with features such as stylolites, seams, lenses, and bands of similar or different lithologic material which tend to form planes of weakness along

which the stone material breaks or separates shall be rejected. Criteria used by the Contracting Officer for a "fractured" or "cracked" stone is: "any stone which contains one visible and continuous crack or fracture exposed on two or more faces of the stone; or any stone which contains two or more visible continuous cracks or fractures exposed on any single face of the stone." A continuous crack or fracture is defined as "an exposed unbroken and uninterrupted visible crack or fracture with a length equal to or greater than one-half of the dimension of the face on which it is exposed ." Evaluation of a crack or fracture along a stone face shall only be based upon length, not width. The stone shall also be free of any detrimental geologic features or seams such as, but not limited, to: clay or shale seams, argillaceous material, weak stylolites, schistose seams, detrimental vugs, zones of high foliation, and/or other adverse diagenetic features. Inclusion of objectionable quantities of dirt, sand, clay, chert, and rock fines or other deleterious materials shall not be permitted. Inspection for cracks, fractures, seams, defects, and deterioration of each armor or intermediate stone unit shall be made visually by the Contractor's SMQC supervisor or SMQC inspectors. The Contractor shall insure that all dirt and/or dust is cleaned off of each Armor Stone allowing for visual inspection. All stone shall be highly resistant to weathering and disintegration under freezing and thawing conditions.

2.1.3 Gradation

Stone shall conform to the following gradations:

- a) Armor Stone - Armor Stone shall consist of select quarry stone ranging between 1500 and 2500 pounds. In addition, at least 50% of the individual stones shall weigh at least 2000 pounds.
- b) Intermediate stone - Intermediate stone shall consist of select quarry stone ranging between 140 and 260 pounds.
- c) Core Stone - Core Stone shall consist of graded stone ranging in size from 3-inches to 8-inches.

2.1.4 Size and Shape of Stone

Armor Stone shall be furnished in blocky and angular shapes, with its greatest dimension not greater than three times its least dimension. The maximum dimension of a stone shall be defined as the maximum distance that can be obtained between two parallel planes by placing and rotating, in all directions, the stone between the planes while having the stone "touch" both planes. The minimum dimension of a stone shall be defined as the minimum distance that can be obtained by the procedures specified above. All flat stones, slabs, boulders and parts of boulders will be rejected. A boulder is here defined as "any rounded stone material not have sharp edges."

2.1.5 Petrography & X-Ray Diffraction

Armor and Intermediate Stone shall be subjected to petrographic and x-ray diffraction analysis in accordance with ASTM C-295. Rock shall be fresh (no signs of weathering), interlocking crystalline structure, and free of objectionable material such as clays. Crystalline structure refers to

igneous, metamorphic, or sedimentary rock texture consisting of interlocking, crystalline grains. Matrices of any rock consisting of argillite, sericite, smectite, talc, chloritic, soft material, or highly weathered material shall be identified and noted. The petrographic examination shall be conducted by a Petrographer trained in the profession of Petrography. Photographs of stone material examined shall accompany the petrography testing results.

2.1.6 Evaluation Testing

Testing for the purpose of evaluating the proposed stone source or combination of stone sources shall be made at the Contractor's expense. Selection of testing samples shall be made under supervision of the COR and shipped to an independent geotechnical laboratory. Stone shall satisfy the following test criteria:

Property	Test	Method	Test Value
Petrography & X-Ray Diffraction		ASTM C-295	Fresh, interlocking crystalline, with few vugs [petrology], no planes of weakness, no clay minerals and no soluble minerals*
Specific Gravity		ASTM C-97	2.65 minimum
Absorption		ASTM C-127	Less than 1%
Abrasion		ASTM C-535	Less than 20% loss for 500 revolutions
Freezing and Thawing		ASTM D-5312	Less than 2% loss for 30 cycles *

*Note: indicates that photographs taken before and after testing should accompany test reports

2.2 SOURCES OF STONE

2.2.1 Sources of Stone

The Contractor may utilize one or more stone sources (quarries) during the period of this contract; however, each quarry must be identified in a Stone Source Submittal specified herein. Each Stone Source Submittal shall be prepared, signed, and stamped by an independent state licensed Professional Geologist.

2.2.1.1 Stone Source Submittal: The Stone Source Submittal shall include information on the stone source (quarry), including but not limited to, location, name of geologic formation mined, geologic structure of the local formation, structure within the quarry (rock out cropping pattern) including joint and fracturing sets, stratigraphic column and/or bench profile(s), and each lithology within that quarry proposed as stone material to be used for stone products for this project. Production information on the total quarry reserve estimates, areas of the quarry (ledges, benches, or specific strata)

that will be used to produce stone for this project, quarrying procedures/practices, total daily production rates for each class of stone material produced, description of armor stone production methods including all resources and equipment used in this process, and shipping methods shall be discussed in this submittal. The written submittal shall likewise include both a general and site specific map for each source. The general map will show the local region of the quarry including major access and shipping routes. The site-specific map should fully define the area of operations within the quarry including the boundaries and working benches of the quarry. The written submittal shall discuss and identify at least two separate sites where the Contracting Officer, or his designated representative, may observe that stone of the sizes required herein have performed satisfactorily in similar marine environment.

2.2.1.2 Stone Source Submittal Format: The report format of the submittal shall conform to the following outline (all subjects listed below shall be discussed):

Title Page

1. Introduction

- i) Brief history, ownership, and description of Stone Source.
- ii) Location (attach region and site specific map in Appendix 1).
- iii) Major access and shipping routes to Stone Source
- iv) Products.

2. Regional Geology

- i) Geologic history of regional area of Stone Source.
- ii) Tectonic events.
- iii) Geologic Formations in region.

3. Geology Of The Stone Source

- i) Name of the Geological Formation(s) mined.
- ii) Natural formation (rock) outcropping pattern.
- ii) Geologic structure at Stone Source including seam, strata, and bedding thicknesses (attach stratigraphic column/unit profile in Appendix 2).
- iii) Joint and Fracture Set(s) present in quarry and their limitation on the maximum size of armor stone produced from this source.
- iv) Lithologies present at the Stone Source and their description.

v) Reserve estimate and data (geological or geotechnical report) that proves or shows that this source can be used to produce all or a percentage of the stone material need for this project.

4. Test Results

i) Existing test data from the last 2 years on each lithology proposed for use for in project. Testing data shall include date conducted, test method, and results in table format. (attach individual laboratory tests results in Appendix 3).

5. Operation & Production

i) Main stone product(s), size, and daily, monthly, & yearly volumes (weight) produced.

ii) Quarrying procedures/practices.

iii) Blasting design and percent yield per shot of main blast design stone size.

iv) Prior Stone Source internal QA/QC practices.

v) Estimated total daily production rates (for each class of stone material required in these specifications).

vi) Detailed description of armor, intermediate, and core stone production including all resources and equipment used in this production process (for each gradation of stone material required in these specifications).

vii) Face, benches, seams, strata, or ledges used in production of project specified armor and core stone products (refer to site specific map in Appendix 1).

viii) Areas with in the Stone Source where project specified stone products will be produced and/or processed.

ix) Blasting design (for each class of stone material required in these specifications).

6. Handling, Storage, & Transportation

i) Stockpile location and integrity method during Curing period.

ii) Method of loading and shipping to the project construction site.

iii) Method of segregation and integrity of stone products.

iii) All transfer points (storage areas) where stone material will be loaded/unloaded.

7. Service Record

Information for each item listed below for each project where similar size stone material was produced at the Stone Source including (If a history usage of similar size stone material in a similar marine environment does not exist - then state this fact):

- i) Project name.
- ii) Project location.
- ii) Date of construction of project.
- iii) Size and/or gradation of stone material used in the project.
- iv) Construction company building project.
- v) Customer project was constructed for.

2.2.2 Stone Source Approval

After Government receipt of the Stone Source Submittal but before stone placement, the quarry shall also be subsequently inspected by the Contracting Officer, or his designated representative, to verify the presence of material that meets all requirements specified herein. The acceptability and approval of each stone source shall be determined from the following: Stone Source Submittal(s), Stone Material Quality Control Submittal(s), Stone Material Quality Control Supervisor Submittal, Stone QC Testing Submittal, Demonstration Stockpiles, and the Contracting Officer's visual examination of the stone products within that quarry. Prior to shipment of any stone material to the construction site, the Contractor shall have received Government approval on all submittals from each stone source designated by the Contractor as a supplier of stone material for this project. Approval of any stone source stone shall not be construed as approval of all of the stone produced from that source. Rejection or disapproval of any source or any material in an approved source by the Contracting Officer shall not be grounds for time extension nor for a change in the contract price

2.3 EVALUATION AND EXAMINATION OF STONE QUALITY

2.3.1 Stone Quality Control (QC) Testing

Each distinct lithology from each stone source shall be subject to quality control tested initially before source approval. All testing required, for determining stone acceptability, shall be at the Contractor's expense and shall have been performed within the last two (2) years. Testing procedures and criteria are those specified in paragraph 2.1.6 "Evaluation Testing". Testing procedures and criteria different from those specified in 2.1.6 will not be accepted. Quality control tests to which the materials will be subjected include petrographic analysis, specific gravity, abrasion, absorption, unit weight measurement, freezing and thawing, and such other

tests as may be considered necessary to demonstrate to the satisfaction of the Contracting Officer that the materials are acceptable for use in the work. Quality control testing samples shall not be collected from aggregate but from stone material similar in size to armor stone gradations specified herein. The Contractor shall also provide to the Contracting Officer duplicate QC samples.

2.3.2 Stone Material Quality Control Examination

Visual SMQC inspection will consider distinctions based on color, massiveness, structural features, and other visual characteristics such as: detrimental cracks, fractures, seams, stylolites, splits, lenses or any other geologic, lithologic, or structural defects which tend to increase deterioration from natural causes or cause breakage during handling or placing. All stone shall be subject to individual Government QA inspection during production and loading at the source, at all transfer point, and at the site of placement.

2.3.2.1 Stone Material Quality Control Functions

Daily SMQC inspection of all Armor Stone produced for the project structure shall be made by the SMQC inspector(s) at the quarry, and before loading, for curing, size, gradation, elongation, cracks and fractures, deterioration, and other visible defects on the entire area of armor stone. Procedures outlined in the SMQC plan submitted by the Contractor shall be followed. The armor stone material shall be kept clean of dirt and dust allowing SMQC inspector(s) to visual inspection of each armor stone. The daily SMQC inspections at the stone source shall also include comparing the material being produced to that which exists in the pre-production demonstration stockpile. If any significant reduction in overall stone quality, gradation mix, or required sizes are observed to be occurring, the SMQC supervisor shall initiate corrective action. All rejected stones, those not meeting the requirements of these specifications, shall be visibly marked with a reject symbol (painted red X). At the placement site random visual inspections shall be made of Armor Stone by an SMQC Supervisor or SMQC Inspector for size, gradation, elongation, fractures, deterioration, and other defects to assure that handling during loading, transporting, unloading, and placement has not caused damage to the materials and to assure they are placed in accordance with requirement of this Section. Weighing of stones or re-measuring them shall be performed to verify computed weight when the COR brings the size of specific stones into question or when the SMQC Inspector observes the need to do so. Except as allowed by gradation tolerance, any material broken, cracked or fractured, out of gradation or weight limitation, or improperly placed in the work shall be removed and replaced with satisfactory stones and corrective action taken at no additional cost to the Government. Rejected material shall be removed from the project site and disposed of in a manner acceptable to the Contracting Officer.

2.3.2.2 Stone Material Quality Control (SMQC) Submittal:

The Contractor shall submit in report format the means and methods to be used for effective inspection of SMQC inspection of stone materials in a manner which will result in a satisfactory quality of in-place stone construction. Written procedures shall also be included for guiding and instructing the Contractor's SMQC Supervisor and SMQC Inspectors in the techniques and

criteria to be used for examining each individual armor stone unit for quality and acceptability. The SMQC inspectors should also be instructed on the techniques and criteria to be used for testing for the proper production gradations. The SMQC submittal shall propose a method of maintaining stockpile integrity for each class of stone. Methods of cleaning the Armor Stone surface of dirt and dust for visual inspection shall also be described. This submittal shall be presented to the Contracting Officer at least thirty (30) calendar days in advance of the date stone materials are to be shipped from the stone source site. The Stone Material Control submittal shall include a blank weekly SMQC inspection schedule table template which will be used during the duration of material SMQC activities. The Stone Material Control submittal shall also include a blank SMQC Inspector's Daily Record template in a table format. During all SMQC activities, the Contractor shall submit daily reports of all work performed under the approved SMQC Plan. The reports shall be delivered to the Contracting Officer or his designated representative, not later than the first day of the next weekly cycle. The weekly cycle will begin each Monday and end the following Sunday during the duration of project construction.

Each daily report from each inspector shall include, but not limited to, the following information:

- a. SMQC Inspector's name
- b. Identification of the stone handling equipment and name of equipment operator used to accommodate the stone inspection if it appeared that the equipment or operator was a factor in producing unacceptable stone.
- c. Date and time (military time format) of stone inspection.
- d. Weather conditions.
- e. Date stone was removed from quarry face, and date and details of blasting.
- f. Location and strata within quarry where stone production took place (horizontally and vertically - use quarry map submitted in the Stone Source Submittal).
- g. Color(s) and character(s) used by inspector for spray paint marks and the applicable code for stones which are individually picked and for any rejected stone.
- h. Breakdown of the approximate quantity, per gradation range, of accepted and rejected stone processed for the project during the day, and the disposition of the rejected stone materials.
- i. A one sentence summary of the cause or causes for most of the rejection of stone occurring during the day.

2.3.3 Stone Acceptability

Acceptability of the stone shall be based on the results of testing as specified in Section 2.1 "STONE," and visual SMQC inspection of each armor

stone as specified in the above paragraphs. The minimum rock quality criteria which must be met are those specified in paragraph 2.1 and applicable subparagraphs. In addition to the minimum testing criteria, other criteria from SMQC inspections listed above will also be used to establish the acceptability of the stone. The Government may conduct QA testing on some or all of the duplicate stone samples submitted by the Contractor. The right is reserved to reject individual stone, certain localized areas, strata, or channels within the approved source when in the opinion of the Contracting Officer, the stone is disintegrated, badly weathered, contains incipient planes of weakness or hidden joints/fractures, or is otherwise unsatisfactory for use in the work as specified herein. Rejection or disapproval of any source or any material in an approved source by the Contracting Officer shall not be grounds for time extension nor for a change in the contract price. The Government also reserves the right to collect and test stone sample from any production or transport point in an approved stone source.

2.4 CURING STONE

All Armor Stone and Intermediate Stone dimensioned to final size shall be stockpiled at the quarry at least 15 days prior to delivery to the project site to insure that unloading type fractures caused by the release of stored energy concentrations will not take place and that natural moisture has time to escape. A 90 day stockpiling for case hardening purposes shall be required if any sandstones are used. Curing requirements may be waived or reduced by the Contracting Officer if records and /or other evidence are submitted by the Contractor which conclusively supports such a change.

2.5 STONE NOT MEETING THE SPECIFICATIONS

If, during the progress of the work, it is found that the stone being furnished and/or placed by the Contractor does not fully meet all the requirements of the specifications, the Contractor shall be required to furnish other stone that meets the requirements of these specifications. Additionally, the right is reserved to reject certain localized areas, strata, channels, seams, or individual stone within the approved source when in the opinion of the Contracting Officer, the stone is disintegrated, badly weathered, contains incipient planes of weakness or hidden joints/fractures, or is otherwise unsatisfactory for use in the work as specified herein. The Government also reserves the right to collect and test stone sample from any production point in an approved source without the consent of the quarry operators. Any stone rejected at the site of the work as not meeting the requirements of these specifications for quality, condition, size, gradation or otherwise shall be removed from the site by and at the expense of the Contractor, and stone meeting the requirements of the specification shall be furnished and/or placed by the Contractor at no additional cost to the Government. The Contractor shall remove and dispose of all rejected stone in a manner approved by the Contracting Officer.

2.5.1 Stone Breakage

Stones which are broken during shipment to the work site or during placement shall be re-weighed and may be rejected if the new weight of the broken unit does not meet gradation requirements. Stones broken in placement shall be

removed from the structure and returned to the stockpile area to accomplish re-weighing.

2.6 QUALITY ASSURANCE

During the contract period, both prior to and after the materials are delivered to the job site, visual QA inspection and measurements records of all stones produced for this project shall be conducted by the COR. If the COR, during the QA inspection, finds that the stone quality, gradation or weights of the stone being furnished are not as specified or are questionable, re-sampling and re-testing by the Contractor may be required, at no additional cost to the Government. Sampling of the delivered stone for testing and the manner in which the testing is to be performed shall be as directed by the COR. This additional sampling and testing shall be performed at the Contractor's expense.

PART 3 - EXECUTION

3.1 EXCAVATION

Excavation of material at the jetty tie-in to land shall be accomplished in a manner acceptable to the Contracting Officer. Unless otherwise approved by the Contracting Officer, excavated material shall be placed in the updrift side of the jetty.

3.2 PLACEMENT

3.2.1 Method

Prior to initiation of any construction activities under this contract, the Contractor shall submit in duplicate to the Contracting Officer for approval, his proposed method for placing the stone materials to meet the grades, tolerances, and conditions specified herein. This submittal shall include, but not be limited to, a description of the equipment proposed for use in hauling, placing, and positioning the stone in place, as well as the method of placement and positioning of stone. Approval of this submittal by the Contracting Officer will not relieve the Contractor of achieving a structure constructed to the grades, tolerances, and conditions specified. If, in the opinion of the Contracting Officer, the Contractor is not achieving the required results from his placement operations, any and all adjustments in the Contractor's operations shall be made as deemed necessary as directed or approved by the Contracting Officer.

3.2.2 Foundation Preparation

Prior to the placement of stone materials or geotextile in any area of work, all debris shall be cleared from the area by the Contractor as directed by the Contracting Officer and disposed of in an approved manner.

3.2.3 Foundation Conditions

The Contractor should review the logs of foundation exploration contained in these specifications and take particular note of the relatively soft foundation present. It should be expected that some settlement and

displacement of the foundation (mud-waving) may occur during construction and should be taken into account in determining the total volume of stone required. It has been estimated by the Government that up to 2-feet of settlement or displacement may occur during construction requiring an additional amount of stone to be placed. No additional payment will be made for such additional stone required due to settlement or displacement.

3.2.4 Sequence of Stone Placement

Unless otherwise approved in writing by the Contracting Officer, placement of armor toe stone at any given section and at the jetty head shall be accomplished before any other stone is placed in the same section (location).

3.2.5 Gradation

Stone materials used for Armor & Intermediate Stone shall conform to all stone quality and testing requirements presented herein. The Contractor shall test gradation of Armor Stone and Intermediate Stone for gradation compliance on Coan River project site before placement. The Contractor shall conduct gradation testing on the first shipment of Armor Stone and Intermediate Stone size category of stone shipped to the project site. One additional gradation testing event shall be conducted for Armor Stone and Intermediate Stone size categories of stone to demonstrate extended compliance with the specified gradation requirements throughout the period of this contract. These additional tests will be initiated by the COR by verbal request to the Contractor and will be conducted within 48 hours of verbal request. Gradation testing shall be performed in accordance with ASTM D 5519, Test Method A. The right is reserved to require additional confirmatory gradation testing when in the opinion of the Contracting Officer, that shipments, stockpiles, or placed sections stone do not meet gradation requirements.

3.3 CORE STONE

After the geotextile is placed in accordance with the provisions of Section 02272, "Geotextile for Stonework", core stone shall be placed to the lines and grades indicated on the drawings. Core stone in place shall be a reasonably well graded mass with minimum practicable void space. Placing the material by dumping or by other such methods which tend to segregate particle sizes will not be permitted. Compaction of the core stone shall be accomplished by the controlled use of the hauling and spreading equipment or by other acceptable means approved by the Contracting Officer. A tolerance of plus 3-inches measured perpendicular to the exterior surface of the core stone from the lines and grades shown on the Drawings will be permitted except that the extreme of such tolerance shall not be continuous over an area greater than 100 square feet. No minus tolerance will be permitted.

3.4 INTERMEDIATE STONE

After the geotextile is placed in accordance with the provisions of Section 02272, "Geotextile for Stonework", and where core stone is placed, intermediate stone shall be placed to the lines and grades indicated on the Drawings. Intermediate Stone in place shall be a mass with a minimum practicable void space. Placing of material by dumping from the top of slope or by other methods which will tend to segregate particle sizes will not be

permitted. A tolerance of plus 6-inches, measured perpendicular to the exterior surface of the Intermediate Stone layer, from the lines and grades shown on the drawings, will be permitted except that the extreme of such tolerance shall not be continuous over an area greater than 100 square feet. No minus tolerance will be permitted.

3.5 ARMOR STONE

Armor Stone shall be placed on completed sections of Intermediate Stone, or directly on the geotextile as indicated on the contract drawings. Armor Stone shall be placed in a timely manner to protect the geotextile and other stone layers. Armor Stone shall be carefully placed to ensure proper positioning and contact with adjacent stones. Armor Stone shall be individually placed and shall not be dropped or tipped into position, but shall be placed piece by piece into the structure to achieve a minimum "three-point support" and be stable to the lines and grades shown on the Drawings. "Three point support" requires contact with at least three separate adjacent stones, not to include underlying stones. Individual stones shall be carefully sorted, chosen, and placed (according to their dimensions) to meet the required grades and tolerances. Placement shall be controlled to avoid clustered placement of weights in the lower portion of the permitted range. The long or intermediate axis of the stone shall be placed perpendicular to the structure face. The top of the finished Armor Stone layer shall be reasonably smooth with no abrupt changes or discontinuities between the exposed surfaces of adjacent stones. For each layer, a tolerance of plus 9-inches measured perpendicular to the exterior surface of the stonework from the lines and grades shown on the Drawings shall be permitted except that the extreme of such tolerance shall not be continuous over an area greater than 100 square feet. No minus tolerance will be permitted. The intention is that the jetty will be built to the required elevations, slopes, grades and tolerances and that the outer surface be even and present a generally neat appearance. Placed material not meeting these limits shall be removed and replaced as directed by the Contracting Officer.

3.6 TEMPORARY PROTECTION

If the Contractor anticipates that construction of the stonework will be interrupted for more than four (4) continuous days including holidays and weekends, he shall provide, at his expense, such temporary stone protection necessary to protect all stonework that has been placed. Adequate temporary protection shall also be placed in the event potential damage is anticipated from a predicted storm.

3.7 QUALITY CONTROL

3.7.1 General

The Contractor shall establish and maintain quality control to assure compliance with contract requirements and shall maintain records of his quality control for all construction operations required under this section. A copy of these records, as well as records of corrective action taken, shall be furnished to the Government as required in Section 01451 CONTRACTOR QUALITY CONTROL in GENERAL REQUIREMENTS. The Contractor shall provide all personnel, plant, equipment, and materials necessary to accomplish the testing required

to ensure the material used is within the specified limits and is placed in accordance with these specifications. Reports of all tests performed shall be furnished the Contracting Officer in duplicate. Reports will show all pertinent computations in arriving at the final results.

3.7.2 Core Stone

The gradation of the core stone shall be checked by the Contractor by the performance of sieve analyses, the results of which shall be furnished the Contracting Officer prior to the delivery of the material to the site of placement. The sieve analysis shall be performed in accordance with Corps of Engineers EM 1110-2-1906. A minimum of two (2) tests shall be performed on representative samples.

3.7.3 Armor and Intermediate Stone

The contractor shall make arrangements to provide pre-production demonstration stockpiles for armor and intermediate stone and make all the required weighing and measurement to determine the acceptability of the samples. Sampling, weighing, and measuring operations shall start at least 20 days prior to the anticipated start of stone placement unless otherwise approved by the Contracting Officer. The demonstration stockpile shall be located at the source of the stone and be shaped in windrow fashion. Other requirements for demonstration stockpiles are specified in paragraph 1.6 DEMONSTRATION STOCKPILE. The stones placed in the demonstration stockpiles shall be representative of the overall quality of material in the source and shall not consist of the most perfect specimens unless it is reasonable to determine that the source will produce the required amount of stone of the applicable size range with a degree of quality no less than that existent in the demonstration stockpile. The Contracting Officer also reserves the right to reject any stone that is found to be atypical of the material from the source. Sampling, weighing, and measuring shall also be accomplished intermittently throughout the construction period as necessary. The tests are necessary to obtain data for permanent records and to check compliance with the specifications. The Contractor will provide the necessary equipment and an approved area for weighing and measuring. No stone shall be delivered to the site of permanent work until all sampling, weighing and measuring have been completed and the quarry stockpiles adjusted to meet the size and quality to the satisfaction of the Contracting Officer. The Contractor shall make and record all weight and measurements; and immediately upon completion, submit the data to the field representative of the Contracting Officer. Government personnel will compile and make all computations required to obtain the necessary data. The gradation of the armor and intermediate stone shall be also checked by the Contractor by the performance of gradation testing during production of armor and intermediate stone, the results of which shall be furnished to the Contracting Officer. A minimum of two (2) tests on Armor Stone and one (1) test on intermediate stone shall be performed on representative truck or railroad car loads delivered to the project construction site. The Contractor shall provide standard-make scales so that the weight of each stone in each classification can be determined. The Contractor shall weigh and record the weight of each stone in the truck or railcar load. The results of these tests shall be recorded by the Contractor and delivered to the Contracting Officer at the completion of each test. A number of these stones, if acceptable, may be utilized for comparative

acceptance based on visual means at the project construction site for QC/QA purposes to determine compliance with gradation requirements. The Contracting Officer also reserves the right; however, to require additional gradation test weighing if any stone is suspect or a gradation test fails.

3.8 CHECK SURVEYS

Surveys made by the Contractor will be required of the existing ground, on the prepared subgrade, and on each layer of material placed for determining that the materials are acceptably placed in the work. The Contractor shall make checks as the work progresses to verify lines, grades, and thickness established on completed work. If a delay in the progress of work occurs, additional surveys may be required at the end of the last placement area prior to re-starting placement operations. At least one (1) check survey, as specified below, shall be made by the Contractor for each 50 foot section immediately before and immediately after placement of the first layer of stone material, and as soon as practicable after completion of placement of each type of material. A copy of the record of the check survey shall be provided the Contracting Officer no later than the next work day following the survey. Following placement of each type of material, the cross section of the finished work shall be approved by the Contracting Officer or his authorized representative prior to placement of subsequent layers. Approval of cross sections shall not constitute final acceptance. Cross sections shall be taken by the Contractor on lines a maximum of fifty (50) feet apart. Cross section readings shall be made and recorded at five (5) foot intervals and at breaks along the lines. Other cross section spacings and reading intervals may be used, however, if approved by the Contracting Officer. Additional elevations shall also be taken as the Contracting Officer may deem necessary or advisable. The surveys shall be conducted in the presence of the Contracting Officer's authorized representative unless otherwise waived. Elevations above the water surface shall be determined by the use of a leveling instrument and rod having a base of twelve (12) inches in diameter. Other means, if approved by the Contracting Officer, may also be used. Below the water line, a lead line method may be used. If this method is used, each survey will consist of soundings taken either by means of a sounding pole or a sounding basket weighing 8.5 pounds, each of which has a base measuring twelve (12) inches in diameter.

3.9 MEASUREMENT AND PAYMENT

3.9.1 General

No separate measurement and payment will be made for any work included in this section. All payment will be included under the lump sum payment for this contract.

-- End of Section --