DNR

# Specifications
# for
# U.S. Military Academy
# Motor Pool East Landfill Closure
# West Point, New York

Prepared for:

U.S. Army Corps of Engineers
Baltimore District
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**REFERENCE DRAWING NUMBERS:**

**12243**
**12244**
**12245**
**12246**
**12247**

**Index for Motor Pool Landfill Closure**
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SECTION 00800

SPECIAL CONDITIONS

| PARA No. | TITLE |
|---|---|
| SC-01 | WORKING CONDITIONS |
| SC-02 | SCHEDULES FOR CONSTRUCTION CONTRACTS |
| SC-03 | CONSTRUCTION LIGHTING |
| SC-04 | ARTIFACTS, PRESERVATION ARCHAELOGICAL AND CULTURAL RESOURCES |
| SC-05 | SUBMITTAL PROCESS |
| SC-06 | SUBMITTAL PROCEDURE |
| SC-07 | GOVERNMENT FURNISHED PROPERTY |
| SC-08 | SALVAGE |
| SC-09 | FIELD OFFICE, SHOP OR STORAGE |
| SC-10 | PARKING FACILITIES |
| SC-11 | HOUSEKEEPING |
| SC-12 | DISPENSARY AND HOSPITAL FACILITIES |
| SC-13 | TOILET FACILITIES |
| SC-14 | IDENTIFICATION |
| SC-15 | DISPOSAL AND BURNING |
| SC-16 | PROTECTION OF BUILDING AND CONTENTS |
| SC-17 | RECORDS DRAWINGS |
| SC-18 | SCAFFOLDING |
| SC-19 | COORDINATION |
| SC-20 | EPA OR DEC INSPECTIONS |
| SC-21 | PROJECT SIGN |
| SC-22 | QUALITY CONTROL SUPERVISOR |
| SC-23 | CONTRACTOR QUALITY CONTROL |

| PARA No. | TITLE |
|---|---|
| SC-24 | CERTIFICATE OF COMPLIANCE |
| SC-25 | IMPLEMENTING GUARANTEES |
| SC-26 | SAFETY |
| SC-27 | DIGGING PERMIT |
| | PROJECT SIGN DIAGRAM |

# SPECIAL CONDITIONS

## SC-01. WORKING CONDITIONS

The Contractor shall submit for approval by the Contracting Officer a construction plan indicating the type and extent of construction to be performed. The plan shall be submitted 14 calendar days prior to actual construction. Open trenches or road restrictions will not be permitted without the approval of the Contracting Officer.

Parades, reviews, or similar ceremonies are routinely conducted three or four times a week. Hours of such ceremonies are normally 5:00 p.m. on weekdays and 11:30 a.m. on Saturdays, although there are exceptions to these hours. Detailed schedules of ceremonies may be obtained two (2) months in advance on request from the Contracting Officer. In addition the following requirements shall apply to all Contractor's activities in connection with these ceremonies.

(a) Right of way shall be given to cadets marching in formation to or from ceremonies.

(b) During the actual ceremonies, the Contractor's activities that produce noise to an extent which would distract or interfere with the ceremony, such as the operation of loud and noisy machinery, shall be suspended until the ceremony is over.

Sallyports and other access ways shall be fully usable. The sallyports will be actively used by the Corps of Cadets.

All cost for conformance with the above stated requirements shall be included with contract amount and no claim for extra cost shall be considered.

## SC-02. SCHEDULES FOR CONSTRUCTION CONTRACTS:

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three (3) copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three (3) copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer,

without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

SC-03. CONSTRUCTION LIGHTING: As work progresses and individual landfill areas are deemed ready for reuse by U. S. Military Academy, the Contractor shall provide temporary lighting in the completed areas throughout the contract term, or until released from this requirement by the Contracting Officer.

SC-04. ARTIFACTS, PRESERVATION & PROTECTION OF HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES: Any and all items of prehistoric, historic, and military relics or memorabilia, which may be discovered in the course of the construction activities, shall remain the property of the Government. Examples of such items include but are not limited to: printed matter or other papers, buttons, buckles, or fragments of uniforms, buried weapons, bayonets, sabers, cannon balls, ammunition, fragments of structures or foundations, in short any item of historical or archaeological value. Federal legislation provides for the protection, preservation, and collection of scientific, prehistorical, historical, and archaeological data, including relics and specimens which might otherwise be lost due to alteration of terrain or building features as a result of any federal construction project. Any person who, without permission, injures, destroys, excavates, appropriates, or removes any historical or prehistorical artifact, object of antiquity, or archaeological resource from public lands of the United States is subject to arrest and penalty of law.

Cultural resources on Federal property are protected and managed by the Archaeological Resources Protection Act of 1979 and other applicable laws. The Contractor shall exercise care so as not to disturb or damage artifacts or fossils (should any be uncovered) during the excavation operations. Should the Contractor or any parties operating or associated with the performance of this contract discover evidence of possible scientific, prehistoric, historic, or archaeological finds within the work limit lines or adjacent to work area shall immediately cease work at that location and notify the Contracting Officer, in accordance with USMA SOP 16.1. The Contractor shall provide the Contracting Officer with all information as to the specific location and nature of the findings. USMA SOP 16.1 will be furnished to the Contractor at the pre-construction meeting. The Contractor shall cooperate fully with the Contracting Officer in implementing the procedures of USMA SOP 16.1, except that all notifications by the Contractor shall be to the Contracting Officer and that all directions to the Contractor will be from the Contracting Officer. Where appropriate by reason of discovery, the Contracting Officer

may order delays in time of performance or changes in the work or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of the contract.

SC-05. SUBMITTAL PROCESS: See Technical Specifications, Section 01330.

SC-06. SUBMITTAL PROCEDURE: See Technical Specifications, Section 01330.

SC-07. GOVERNMENT FURNISHED PROPERTY: The Government will not furnish the Contractor with any equipment or property for installation.

SC-08. SALVAGE: Not used.

SC-09. FIELD OFFICE, SHOP OR STORAGE: Suitable space will be allocated to the Contractor within 4 miles of the construction site, to set up his trailer for use as an office, shop, or storage area.

SC-10. PARKING FACILITIES: See Technical Specifications, Section 01500.

SC-11. HOUSEKEEPING:

a. The Contractor shall take into full account the special Public, Military, and Academic nature of the United States Military Academy and its prominence as a tourist attraction, all of which will be in operation during the course of this construction. Where materials or plants cannot be kept on the designated site area in neat, clean, and orderly fashion, and thereby cause an unnecessary eyesore, they shall be moved to other locations, on or off Government property, as directed by the Contracting Officer. The Contractor shall, at all times, furnish from his own organization a sufficient force to carry out the housekeeping and cleanup requirements on both exterior and interior areas affected by his contract operations, on a day to day basis throughout the life of the contract. On Fridays before the home football game, the Contractor shall either temporarily backfill all excavations or plate them.

b. The Contractor shall provide & maintain a dumpster of sufficient size at each project site. The dumpster shall be replaced at regular intervals to avoid overfilling and spillage, and the area around the dumpster shall be kept clean at all times.

c. If, at any time during the progress of the work, the Contracting Officer determines that the Contractor is failing to comply with the requirements of the subparagraph above, he may direct the Contractor to take such measures as he deems necessary to constitute corrective action. Such measures may include the requirement to increase the work force assigned to the housekeeping and cleanup operations or to work overtime during evenings or weekends until proper job conditions have been restored.

SC-12. DISPENSARY AND HOSPITAL FACILITIES: The facilities of the United States Military Academy Post Hospital are available for use by the Contractor only for the emergency treatment of his personnel injured at the job site. Charges to the Contractor for the use of said facilities will be at prevailing rates for the services provided, and billing and payment will be made by separate transaction between the USMA Hospital and the Contractor.

SC-13. TOILET FACILITIES: Portable toilets shall be located as directed by the Contracting Officer's Representative. Upon completion of contract, all temporary toilet facilities shall be removed and any damage to the areas rectified.

SC-14. IDENTIFICATION: The Contractor shall supply identification badges, which shall be worn by all the Contractor's personnel while working at the USMA. The badges shall be visible and contain the Contractor's name, employee's name, and contract number and project description.

SC-15. DISPOSAL AND BURNING: Construction debris and other rubbish shall be disposed of off of the Military Reservation. Burning of rubbish or site removal items will not be permitted. Scrap, debris, and surplus construction materials are not to be disposed of in the "Post Sanitary Disposal Containers" (Dumpsters), which are distributed throughout the area, but must be loaded in the Contractor's dumpsters for disposal at a location other than the United States Military Academy.

SC-16. PROTECTION OF BUILDING AND CONTENTS: Refer to Section 01050, Paragraph 7.

SC-17. RECORD DRAWINGS: See Technical Specifications, Section 01720.

SC-18. SCAFFOLDING: Not used.

SC-19. COORDINATION: It shall be the responsibility of the prime Contractor to be fully informed of the extent of the limits of work to be performed by his sub-contractors. The prime Contractor shall coordinate and be responsible for all coordination of various trades and work.

SC-20. EPA OR DEC INSPECTION: The Contractor shall immediately inform the Environmental Management Division (EMD), Directorate of Engineering and Housing, USMA THROUGH the Contracting Officer or the Contracting Officer's Representative when the United States Environmental Protection Agency (EPA) and/or the New York State Department of Environmental Conservation (DEC) inspector visits the site for an official inspection.

SC-21. PROJECT SIGN: The Contractor shall furnish and erect a project sign at a location directed by the Contracting Officer. The castle and helmet logo to be used on the sign will be Government furnished. The Contractor will be given this logo at the time of the pre-construction conference and shall position the logos on the sign in accordance with the sample sign drawing listed at the end of this section. The decal shall receive a thin coat of clear spar varnish after application. The Contractor shall maintain the sign in good condition throughout the construction period. Upon completion of the project, the Contractor shall remove the sign from the work site.

SC-22. QUALITY CONTROL SUPERVISOR: The Contractor shall employ a competent Quality Control Supervisor who shall be in attendance at the project site at all times during performance of the work. The Quality Control Supervisor and the Construction Superintendent shall not be the same person.

SC-23. CONTRACTOR QUALITY CONTROL: The Contractor shall provide and maintain an effective quality control program that complies with contract clause of the contract entitled "Inspection of Construction."

a. The Contractor shall establish a quality control system to perform sufficient inspection and tests of all items of work, including that of his sub-contractors, to ensure conformance to applicable specifications and drawings with respect to the materials, workmanship, construction, finish, functional performance, and identification. This control will be established for all construction except where the Technical Provisions of the contract provide for specific Government control by inspections, tests, or other means. The Contractor's control system will specifically include the surveillance and tests required in the Technical Provisions of the contract specifications. For purposes of the above description, shop manufacture of standard products is not defined as construction.

(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.

(2) Testing Laboratories: 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. If the selected laboratory fails the capability check, the Contractor will be assessed a charge of $1,500.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor. 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. Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

b. The Contractor's quality control system is the means by which he assures himself that his construction complies with the requirements of all construction operations, including both onsite and offsite fabrication, and will be keyed to the proposed construction sequence and shall include as a minimum at least three phases of inspection for all definable items or segments of work, as follows:

(1) Preparatory Inspection: To be performed prior to beginning any work on any definable segment of work. To include a review of contract requirements; a check to assure that all new materials and/or equipment have been tested, submitted, and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work had been completed; and a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all materials and/or equipment are on hand. The Contractor shall submit to the Contracting Officer a memo for record of the preparatory inspection within two (2) days after the inspection is held.

(2) Initial Inspection: To be performed as soon as a representative segment of the particular item of work has been accomplished and to include examination of the quality of workmanship and a review of control testing for compliance with contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.

(3) Follow-Up Inspection: To be performed daily or as frequently as necessary to assure continuing compliance with contract requirements, including control testing, until completion of the particular segment of work.

c. As part of the quality control system, completion inspections shall be performed together by the Contractor and the Government as described below.

(1) Punch-Out Inspection: Near the completion of all work or any increment thereof established by a completion time stated in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation 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.

(2) Pre-Final Inspection: The Government will perform this 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 thereof if the project is divided into increments by separate completion dates.

(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 (COR) shall be in attendance at this 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".

d. The Contractor shall maintain current records of all inspections and tests performed. These records should provide factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, cause for rejection, etc.; proposed remedial action; and corrective actions taken. The Contractor shall not build upon or conceal any feature of the work containing uncorrected defects, and payment on deficient items will be withheld until they are satisfactorily corrected or other action has been taken as authorized, pursuant to the contract clause entitled "INSPECTION OF CONSTRUCTION". These records must cover both conforming and defective items and must include signed statements verifying that the designated person in the Contractor's quality control organization has personally checked the materials, methods and workmanship installed on that day. Legible copies of these records must be furnished to the Contracting Officer's Representative no later than 0800 hours the day after the work has been accomplished. This reporting is a daily requirement.

e. The Contractor shall furnish the Contracting Officer within fifteen (15) days of award, an original and four (4) copies of a quality control plan which shall include the personnel, procedures, instructions, and records to be used.

(1) The quality control organization.

(2) Qualifications of personnel to be used for this purpose.

(3) Authority and specific areas of responsibilities of each of the quality control personnel.

(4) Methods of performing quality control inspections including that for his sub-contractors' work. Mechanical and electrical testing procedures shall be described in quality control plan in detail and approved prior to performing actual work. Where technical specifications require recording of test data, a proposed test log including planned duration of tests, readings to be taken, and instrumentation to be used, will be made a part of the Quality Control Program. Tests of air conditioning systems, boilers, chillers and the like would be covered as described above.

(5) The Contractor's Quality Control Plan shall include a subplan titled "Testing Plan". The Testing Plan shall include the following:

(a) Designate how testing will be performed either by technical employee, by the Contractor, or an industry recognized testing laboratory.

(b) Name and qualifications of each employee designated for the performance of specific types of tests.

(c) A list of the control tests which he understands he is to perform, not only by name, but also by numerical designation; section of specifications, feature of work, and frequency of testing. A statement to the effect that the laboratory has a copy of each such procedure and has facilities and serviceable testing equipment to perform tests conforming thereto.

(d) His understanding of the procedure to be followed should his test results indicate lack of compliance with the specification requirement.

(6) Method of documenting quality control operation, inspection, and testing. A copy of proposed daily record form shall be made a part of the submittal.

(7) A copy of a letter of direction to the Contractor's representative responsible for quality control, outlining his duties and responsibilities and signed by a responsible officer of the firm.

f. Before Construction operations are commenced, the Contractor shall meet with the Contracting Officer or his representative and discuss his quality control plan. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the quality control operations, inspections, administration of the system, and the interrelationship of Contractor and Government inspection.

g. Unless specifically authorized by the Contracting Officer, no construction and/or offsite fabrication shall be started until the Contractor's quality control plan is approved. Construction of any feature of work will only be permitted after approval of the quality control plan, or at

least approval of that portion of the plan applicable under this contract until the quality control program has been approved by the Government. The Contractor shall notify the Contracting Officer or his representative in writing of any proposed change to this inspection system; no such change shall be implemented prior to approval in writing by the Contracting Officer or his authorized representative.

h. If recurring deficiencies in an Item or Items indicate that the quality control system is not adequate, such corrective actions will be taken as directed by the Contracting Officer. 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.

i. The Contractor agrees to insert the substance of this clause, including this paragraph h, in all subcontracts hereunder.

A copy of these records and corrective tests, as well as the records of corrective action taken, shall be furnished to the Government as directed by the Contracting Officer.

SC-24. CERTIFICATES OF COMPLIANCE: Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 4 copies. Each certificate shall be signed by an official authorized to certify in behalf of 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. (ECI 7-670-3).

SC-25. IMPLEMENTING GUARANTEES: At any time subsequent to the acceptance by the Government of a completed installation under this contract, which installation is required to be covered by a specific guarantee under terms of the various sections in the TECHNICAL PROVISIONS, the Contracting Officer will be an authorized party for the purpose of implementing the provisions of such guarantees in behalf of the Government.

SC-26. SAFETY: In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoiding work interruptions. For these purposes, the Contractor shall--

a. Provide appropriate safety barricades, signs, and signal lights. Plastic safety fencing is not considered adequate at USMA. The Contractor

shall as a minimum provide wooden lath, standard height, snow fence, rigidly supported with metal posts on 8-ft centers.

b. Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for this purpose are taken. All work done on USMA reservation shall be performed in a safe manner, that is, in compliance with Corps of Engineers, Federal, State, and local safety laws and regulations.

To ensure this is accomplished, prior to commencement of work at any job site an acceptable accident prevention plan, written by the prime Contractor for the specific work and implementing in detail pertinent requirements of US Corp of Engineers Safety and Health Requirements Manual CEM 385 1-1, September 1996, and other applicable regulations, shall be forwarded to the Contracting Officer and USMA Safety Manager. The plan shall include but not be limited to control measures the Contractor shall take to control hazards associated with materials, services, operations, or equipment.

The accident prevention plan shall provide for frequent and regularly scheduled safety/health inspections of the work site by contractor management who are knowledgeable of OSHA 1910 (Industrial), OSHA 1926 Construction and EM 385 1-1, September 1996. The Safety/Health representative shall correct any unsafe/violated condition immediately.

Prior to bringing hazardous substances, as defined in 29 CFR 1910.1200, on to the job site, all employees involved shall be advised of Material Safety Data Sheet (MSDS) information and a copy of each hazardous substance's MSDS shall be provided to the Contracting Officer. All materials requiring MSDS information shall be inventoried by the Contractor on a weekly basis. This inventory shall be put into a report named "Hazardous Substances Location Report" (HS). For all materials requiring MSDS information, the report shall include as a minimum the following:

a. Common Name for each material
b. Location of each material
c. Hazardous substance & Chemical Abstract Substance Registry Number (CAS)
d. Quantity of each substance

The inventory shall be conducted every Friday by the Contractor and shall be submitted the following Tuesday morning at 0800 to the Contracting Officer. This requirement is in accordance with the Emergency Planning and Community Right to Know Act (EPCRA) Inventory. Additional instruction on this act can be acquired from the West Point Environmental Management Office upon request through the Contracting Officer.

Any job performed in an unsafe or hazardous manner that creates an imminent danger to USMA or contractor employees will be shut down by the USMA Safety Manager or his designate.

The following publications/standards are recommended for contractor reference files. This is not intended as an all encompassing list.

OSHA 1926 Construction

OSHA 1910 Industrial

EM 385 1-1 (September 1996 or most recent version)

Applicable ANSI Standards

National Electric Code (NEC)

National Fire Protection Association Codes (NFPC)

New York State Vehicle Traffic Law (most recent edition)

New York State Building Construction Code

New York State Industrial Code Rule 23 (Dept of Labor)

SC-27. DIGGING PERMIT

The Contractor shall be responsible for obtaining a digging permit prior to commencing any excavation. The digging permit is referred to as the "Dig-Safe Permit" and the procedure for obtaining this permit is as follows:

a. The Contractor shall notify the Contracting Officer in writing 20 working days prior to commencing any excavation. Notification letter shall include areas to be excavated, reason for excavation, depth of excavation, and any supporting information such as drawings to allow the processing of permit. A copy of the Dig Safe Permit Request is at Section J. The top portion of this request shall be filled out by Contractor and submitted to the Contracting Officer. The Contractor shall not be compensated for any delay caused by failure to notify government on timely basis to obtain the digging permit.

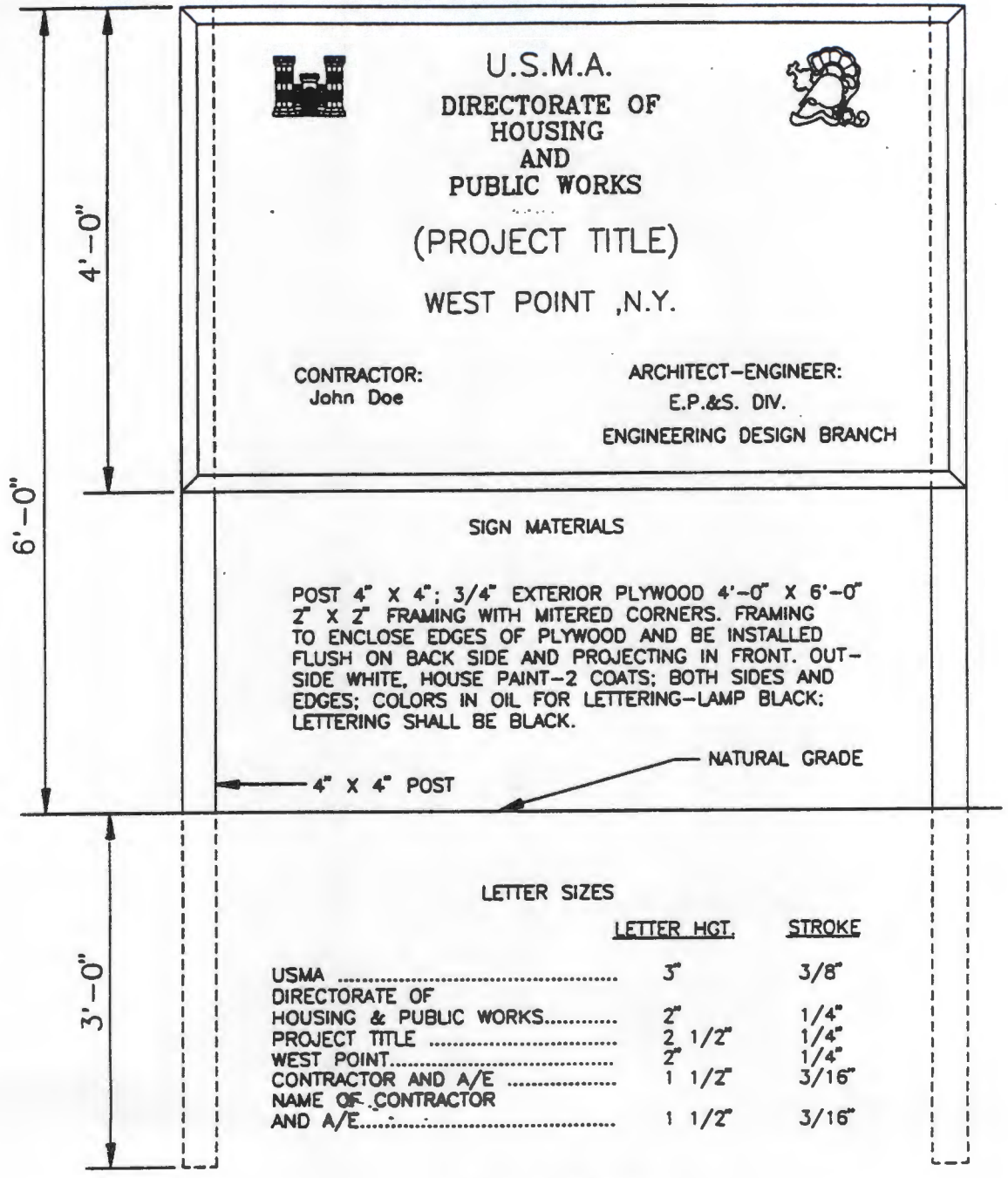
b. Government personnel will mark the APPROXIMATE location of utilities in the area of the proposed work at least 5 workdays prior to the planned excavation date. In the event these markings are damaged or washed-off, the Contractor shall contact the Contracting Officer. Since markings are approximate, excavation must be performed with due care. When excavating in areas adjacent to marked utilities, only hand excavation will be acceptable.

c. Once the permit is approved and signed by the Chief of the Utilities Division a Dig-Safe Permit will be issued to the Contractor. From the issuance of the Dig-Safe permit, the Contractor has two weeks to commence excavation, after that the permit will no longer be valid and will have to be re-submitted.

d. In the event that any utility line is damaged during excavation, all excavation will stop, and the Contracting Officer will be contacted immediately. The Contractor shall take immediate action to repair the damaged utility at no additional cost to the Government. If utility lines are uncovered which were not identified in the Dig-Safe Permit, the Contracting Officer or COR shall be contacted, a determination will be made as to which utility is involved, and it will be determined whether the lines are active or

abandoned. When an unknown line is uncovered, it will be treated as "live" until determined otherwise.

-- End of Section --




PROJECT SIGN

SECTION 01010

STATEMENT OF WORK

PART 1 GENERAL

1.1 INTENT

1.1.1 It is the General intent of the drawings and specifications that the Contractor be responsible for all work to furnish and install complete, workable systems in compliance with all applicable codes and regulations and to the satisfaction of the U.S. Military Academy.

1.1.2 The Contractor shall furnish to the job site and install all equipment and materials specified. Installation shall be in accordance with locations as indicated on the drawings, as detailed, as scheduled, and as specified in the technical specification sections. Installation shall include all accessories required to assure a complete and workable installation of the equipment and system.

1.1.3 The work shall include the furnishing of all labor, materials, tools, equipment, transportation, permits, inspection fees, services, and all necessary related items required for complete and operational systems.

1.1.4 As minimum requirements, Contractor shall observe and follow all appropriate and relevant applicable procedures identified in applicable Federal, State, and local rules and regulations in conducting the work. Other applicable regulations not explicitly included in these Specifications shall be adhered to in conducting the work. The Contractor shall be responsible for contacting and informing the proper Federal, State, and local agencies of the nature and timing of work onsite (including transportation of materials off the site not required to construct the work covered by this contract). The Contractor is responsible for establishing a schedule, to be approved by the Contracting Officer, for the sequence and progress of work. The Contractor is solely responsible for coordination of all the work to ensure completion of the work within the time limits specified in the Contract.

1.2 WORK SCOPE

1.2.1 Background

The Motor Pool East Landfill is located between Route 218 and Building 793 and 795 near Washington Gate. The site is fenced and paved, currently serving as the Consolidated Repair and Maintenance Lot. The parking lot occupies an estimated total area of 1.7 acres. An unnamed stream flows along the landfill to the east. The site reportedly received garbage, household items, trees, and brush from 1964 to 1969. Sources of the materials were reportedly USMA and surrounding municipalities. The waste bearing layer may range from 10 to 30 ft below ground surface. It was reportedly USMA practice to place waste material using the pit and fill method with excavated soil used as daily cover. Wastes types (e.g. garbage, wood, metals, and construction materials) were initially segregated and placed into designated areas. However, these materials were reportedly mixed during subsequent regrading activities. The Motor Pool East parking area reportedly received large boulders and blast spoils

(from past USMA building construction) as supplemental fill material. Soil cover was placed over the boulders, and a 2-ft sub-base of gravel was placed and graded.

The Motor Pool East Landfill is currently paved with asphalt and is used as a parking area for heavy equipment and USMA service vehicles. The pavement system exhibits areas of cracking and disintegration particularly in the western quadrant. Small isolated areas of surface subsidence are also evident.

1.2.2 Project Scope

For the execution of the project, the landfill has been divided into two discrete work areas in order to maintain secure parking for government vehicles during construction. Construction shall conform to the design plans and specifications. The project entails the following:

a. Perform a preconstruction survey.

b. Re-grade and improve perimeter drainage ditches.

c. Re-grade landfill, stabilizing in designated areas, and pave.

d. Reinstall chain-link fencing removed during the project.

Project award date is subject to available funding.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

# SECTION 01050

# JOB CONDITIONS

## PART 1 GENERAL

### 1.1 LAYOUT OF WORK

The Contractor shall layout the work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at his own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

### 1.2 PHYSICAL DATA

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.

#### 1.2.1 Transportation Facilities

The facility is accessible from Interstate 87, U.S. Route 9W, and NY State Route 17.

#### 1.2.2 Explorations

The physical conditions indicated on the drawings and in the specifications are the result of site investigations and topographic surveys.

### 1.3 UTILITIES

#### 1.3.1 Availability of Utilities

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. The Contractor shall be advised that phone service, water, and sewer utilities are not available. 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. Electrical service will be provided free from the Government; however, all connections are the responsibility of the Contractor and shall be overseen by USMA DHPW High Voltage personnel. 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.

1.3.2 Interruption of Utilities

1.3.2.1 No utility services shall be interrupted by the Contractor to make connections, to relocate, or for any purpose without approval of the Contracting Officer.

1.3.2.2 Request for permission to shut down services shall be submitted in writing to the Contracting Officer not less than 17 days prior to date of proposed interruption. The request shall give the following information:

1.3.2.2.1 Nature of Utility (Gas, L.P. or H.P., Water, Etc.).

1.3.2.2.2 Size of line and location of shutoff.

1.3.2.2.3 Buildings and services affected.

1.3.2.2.4 Hours and date of shutoff.

1.3.2.2.5 Estimated length of time service will be interrupted.

1.3.2.3 Services will not be shut off until receipt of approval of the proposed hours and date from the Contracting Officer.

1.3.2.4 Shutoffs that will cause interruption of Government work operations as determined by the Contracting Officer shall be accomplished during regular non-work hours or on non-work days of the Using Agency without any additional cost to the Government.

1.3.2.5 Operation of valves on water mains will be by Government personnel. Where shutoff of water lines interrupts service to fire hydrants or fire sprinkler systems, the Contractor shall arrange his operations and have sufficient material and personnel available to complete the work without undue delay or to restore service without delay in event of emergency.

1.3.2.6 Flow in gas mains which have been shut off shall not be restored until the Government inspector has determined that all items serviced by the gas line have been shut off.

1.4 DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT

All removed, dismantled, or demolished material and/or equipment including rubble, scrap, and debris not specified or indicated to be Government salvaged or reinstalled under this contract shall be handled as stated in Section 00800, SC-15.

1.5 COMPLIANCE WITH POST/BASE REGULATIONS

The site of the work is on a military reservation and all rules and regulations issued by the Commanding Officer 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.

1.6 MAINTENANCE OF ACCESS (DEC 1975)

The Contractor shall not block passage through sidewalks, roads, alleys or entranceways to buildings during performance of work under this contract.

1.7 PROTECTION OF GOVERNMENT PROPERTY AND PERSONNEL

1.7.1 All existing Government owned equipment within the work area shall be protected by the Contractor from damage caused by construction operations. Existing work damaged by construction operations shall be promptly repaired by the Contractor at his own expense.

1.7.2 The Contractor shall protect personnel by installing safety fence 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.

1.7.3 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.

1.8 STREET CLOSINGS

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.

1.9 ORDER OF WORK AND COORDINATION WITH OTHER CONTRACTORS

The Government is 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.

1.10 SALVAGE MATERIAL AND EQUIPMENT

Not used.

1.11 CONTRACTOR USE OF HEATING PLANT

Not used.

1.12 MAINTENANCE OF UTILITIES

Not used.

1.13 ASBESTOS HANDLING AND REMOVAL

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.

1.14 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

1.14.1 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.

1.14.2 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

(a) U.S. MILITARY ACADEMY, WEST POINT, NEW YORK.

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (8) | (7) | (7) | (9) | (9) | (8) | (5) | (7) | (5) | (8) | (6) | (9) |

1.14.3 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, 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)."

1.15 WORK IN QUARANTINED AREA

Not used.

1.16 AIRFIELD SAFETY PRECAUTIONS

Not used.

1.17 SOIL BORING LOGS

The soil boring logs have been included at the end of this section.

1.18 WELL CONSTRUCTION

The field records of well construction have been included at the end of this section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

# Soil Boring Logs (1995)

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## LOG OF SOIL BORING

| | |
|---|---|
| Coordinates: | N 509548.13: E 596147.80 |
| Surface Elevation: | 418.20 |
| Casing Below Surface: | 417.78 |
| Reference Elevation: | Top of PVC casing |
| Reference Description: | Permanent marker |

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-01 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 1 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | 0.71 | 0.80 | | | Start | Finish |
| Time | | | | | 1050 | 1230 |
| Date | 04/27/95 | 06/05/95 | | | 18 April 1995 | 18 April 1995 |
| Reference | TOC | TOC | | | | |

Surface Conditions: North end of asphalt parking lot, upgradient to the landfill.

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | |
|---|---|---|---|---|---|---|---|---|
| SS | 24 / 12 | 0 | 1 / 2 | 0.6 | 8<br>12<br>14<br>17 | 0<br>1 | FILL | Top 1 in. asphalt fragments<br>Middle 2 in. brown fine sand; loose; dry<br>Bottom 9 in. brown - grey clayey SAND with numerous rock fragments; medium dense; dry |
| SS | 6 / 4 | 0 | 2 / 2.4 | 0.0 | 35<br>50/0.1 | 2<br>3 | FILL | Brown - grey silty SAND; dense; moist<br>Rock fragments (quartz) at bottom of spoon |
| | | | | | | 4 | | Hit something hard at 4 ft. No split barrel sample, augered through |
| | | | | | | 5 | | |
| SS | 24 / 1 | 6 | 3 / 8 | 0.0 | 6<br>7<br>11<br>10 | 6<br>7 | | Brown silty SAND with fragments of fine gravel; loose; wet<br>Water table at 6.5 ft |
| SS | 24 / 16 | 8 | 4 / 10 | 0.0 | 3<br>4<br>6<br>6 | 8<br>9 | FILL | Brown silty SAND with fragments of fine gravel; loose; wet |
| | | | | | | 10 | | |
| | | | | | | 11 | | |
| | | | | | | 12 | | |
| | | | | | | 13 | | |
| | | | | | | 14 | | |
| SS | 24 / 12 | 15 | 5 / 17 | 0.0 | 10<br>32<br>22<br>20 | 15<br>16 | FILL | Top 2 in. brown-grey fine SAND and silty CLAY; loose; saturated<br>Middle 6 in. grey wheathered shale<br>Bottom 4 in. brown-grey fine SAND and silty CLAY; medium dense; saturated |
| | | | | | | 17 | | End of boring 16 ft |
| | | | | | | 18 | | |
| | | | | | | 19 | | |
| | | | | | | 20 | | |

SS = Split barrel sampler

Logged by: Suzanne Chase Date: 18 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

WELL SPECIFICATIONS:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Diam of casing: | 2 in. | Screen Interval | 4.5 ft - 15 ft | Filter Pack: | 4.0 ft - 16.0 ft | Grout: | 0.0 ft - 3.0 ft |
| BOH: | 16 ft | Riser Interval: | 0.0 ft - 4.5 ft | Bentonite: | 3.0 ft - 4.0 ft | Cover: | 8 in. bolt down curb box |

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## LOG OF SOIL BORING

Coordinates: N 509451.36: E 596285.41
Surface Elevation: 412.67
Casing Below Surface: 412.17
Reference Elevation: Top of PVC casing
Reference Description: Permanent marker

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-02 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 1 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | 8.85 | 6.73 | | | Start | Finish |
| Time | | | | | 1510 | 1600 |
| Date | 04/27/95 | 06/05/95 | | | 18 April 1995 | 18 April 1995 |
| Reference | TOC | TOC | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: South end of asphalt parking lot, adjacent to seep area, north of stream. |
|---|---|---|---|---|---|---|---|---|
| SS | 24 12 | 0 | 1 2 | 0.0 | 13 10 | 0 | FILL | Top 2 in. asphalt fragments<br>Brown silty SAND with some gravel (up to 0.5 in. diameter); loose; moist |
| | | | | | 9 5 | 1 | | |
| SS | 24 14 | 0 | 2 4 | 0.0 | 11 16 | 2 | | Top 2 in. brown silty SAND; loose; moist - wet<br>Grey fine-silty SAND with some gravel and little clay; dense; moist |
| | | | | | 54 7 | 3 | | |
| SS | 24 22 | 4 | 3 6 | 0.0 | 2 2 | 4 | FILL | Grey fine silty SAND with fragments of wood, weeds, and gravel; very loose; moist<br>Band of dark brown SAND with roots and wood at 5.5 ft |
| | | | | | 3 4 | 5 | | |
| SS | 23 6 | 4 | 4 7 | 0.0 | 3 6 | 6 | FILL | Top 2 in. loose; wet<br>Bottom 4 in. loose; moist |
| | | | | | 54/0.3 | 7 | | Dark grey silty SAND with some clay; gravel at bottom 2 in. |
| SS | 24 6 | 8 | 5 10 | 0.7 | 5 5 | 8 | | Brown silty CLAY with some gravel and rock fragments (quartz and muscuvite); loose; moist |
| | | | | | 4 8 | 9 | | Water table at 9.0 ft |
| SS | 24 12 | 10 | 6 12 | 1.1 | 6 6 | 10 | FILL | Brown silty CLAY with gravel, muscuvite, and iron staining; loose; wet |
| | | | | | 6 6 | 11 | | |
| SS | 24 21 | 10 | 7 14 | 1.3 | 3 5 | 12 | | Top 6 in. brown silty CLAY with gravel; loose; wet<br>Grey silty CLAY with iron staining and gravel; loose; wet |
| | | | | | 8 16 | 13 | | |
| SS | 24 14 | 14 | 8 16 | 0.0 | 3 4 | 14 | FILL | Top 6 in. brown fine-medium SAND; very loose; wet<br>Brown fine-silty CLAY with some gravel; loose; wet |
| | | | | | 6 6 | 15 | | |
| SS | 24 24 | 14 | 9 18 | 0.0 | 10 12 | 16 | | Top 20 in. brown fine-medium SAND with some gravel; loose; wet<br>Band of brown fine-silty CLAY 17.0-17.2 ft |
| | | | | | 14 8 | 17 | | Bottom 4 in. brown fine-silty CLAY; loose; wet |
| | | | | | | 18 | | |
| | | | | | | 19 | | End of boring 19 ft |
| | | | | | | 20 | | SS = Split barrel sampler |

Logged by: Jeanette Scalzo
Date: 18 April 1995

Drilling Contractor: Parratt Wolff, Inc.
Driller: Ronald Bush

WELL SPECIFICATIONS:

| | | | | | | |
|---|---|---|---|---|---|---|
| Diam of casing: | 2 in. | Screen Interval: | 5.0 ft - 18 ft | Filter Pack: | 4.0 ft - 19.0 ft | Grout: | 0.0 - 3.0 ft |
| BOH: | 19 ft | Riser Interval: | 0.0 ft - 5.0 ft | Bentonite: | 3.0 ft - 4.0 ft | Cover: | 8 in. bolt down curb box |

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**LOG OF SOIL BORING**

| | |
|---|---|
| Coordinates: | N 509666.07: E 596408.18 |
| Surface Elevation: | 409.52 |
| Casing Below Surface: | 409.12 |
| Reference Elevation: | Top of PVC casing |
| Reference Description: | Permanent marker |

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-03 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 2 |

| | | | | | Drilling Start | Drilling Finish |
|---|---|---|---|---|---|---|
| Water Lev. | 7.38 | 7.35 | | | | |
| Time | | | | | 830 | 1110 |
| Date | 04/28/95 | 06/08/95 | | | 19 April 1995 | 19 April 1995 |
| Reference | TOC | TOC | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: South end of asphalt parking lot, north of Bldg. 795 |
|---|---|---|---|---|---|---|---|---|
| | 24 / 16 | 0 | 1 / 2 | 0.0 | 7<br>5 | 0 | FILL | Top 2 in. asphalt fragments<br>Middle 10 in. brown silty SAND with some gravel; loose; moist |
| | | | | | 6<br>6 | 1 | | Bottom 4 in. yellow brown fine-medium SAND with some gravel; loose; wet |
| | 24 / 18 | 0 | 2 / 4 | 0.0 | 6<br>11 | 2 | | Top 1 in. gravel<br>Middle 12 in. increasing brown SAND with some silt; medium dense; wet |
| | | | | | 15<br>18 | 3 | FILL | Bottom 5 in. dark grey silty CLAY with some gravel and sand; cohesive; wet |
| SS | 18 / 5 | 4 | 3 / 4.4 | 0.0 | 50/0.4 | 4 | | Grey CLAY with some sand and gravel; dense; wet<br>Bottom 2 in. rock fragments (quartz); noncohesive |
| | | | | | | 5 | | |
| | | | | | | 6 | | |
| | | | | | | 7 | | |
| SS | 11 / 11 | 8 | 4 / 8.9 | 0.0 | 16<br>50/0.4 | 8 | FILL | Top 8 in. dark grey silty CLAY with wood and seed type particles; wet<br>Bottom 3 in. rock fragments (quartz) |
| | | | | | | 9 | | Auger refusal 9 ft.<br>Moved drill rig 10' west |
| | | | | | | 10 | | |
| | | | | | | 11 | | |
| | | | | | | 12 | | |
| | | | | | | 14 | | |
| | 24 / 20 | 15 | 5 / 17 | 0.0 | 3<br>4 | 15 | FILL | Brown SAND with some gravel; loose; wet<br>Bottom 6 in. silty CLAY with a trace of gravel; loose; wet |
| | | | | | 8<br>8 | 16 | | |
| | | | | | | 17 | | |
| | | | | | | 18 | | |
| | | | | | | 19 | | |
| | | | | | | 20 | | SS = Split barrel sampler |

Logged by: Jeanette Scalzo Date: 19 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

WELL SPECIFICATIONS:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Diam of casing: | 2 in. | Screen Interval: | 8.0 - 22.0 ft | Filter Pack: | 6.0 - 23.0 ft | Grout: | 0.0 - 3.0 ft |
| TH: | 23 ft | Riser Interval: | 0.0 - 8.0 ft | Bentonite: | 3.0 -6.0 ft | Cover: | 8 in. bolt down curb box |

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**LOG OF SOIL BORING**

Coordinates:
Surface Elevation:
Casing Below Surface:
Reference Elevation: Top of PVC casing
Reference Description: Permanent marker

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-03 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 2 of 2 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | | | | | Start | Finish |
| Time | | | | | 830 | 1110 |
| Date | | | | | 19 April 1995 | 19 April 1995 |
| Reference | | | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: South end of asphalt parking lot, north of Bldg. 795 |
|---|---|---|---|---|---|---|---|---|
| SS | 24 | | 6 | | 3 | 20 | | Dark grey silty CLAY with medium brown sand layers; very loose; wet |
| | 24 | 20 | 22 | 0 | 3 | | FILL | Bottom 6 in. yellow brown silty SAND; loose; wet |
| | | | | | 4 | 21 | | |
| | | | | | 4 | | | End of boring 23 ft |
| | | | | | | 22 | | |
| | | | | | | 23 | | |
| | | | | | | 24 | | |
| | | | | | | 25 | | |
| | | | | | | 26 | | |
| | | | | | | 27 | | |
| | | | | | | 28 | | |
| | | | | | | 29 | | |
| | | | | | | 30 | | |
| | | | | | | 31 | | |
| | | | | | | 32 | | |
| | | | | | | 33 | | |
| | | | | | | 34 | | |
| | | | | | | 35 | | |
| | | | | | | 36 | | |
| | | | | | | 37 | | |
| | | | | | | 38 | | |
| | | | | | | 39 | | |
| | | | | | | 40 | | SS = Split barrel sampler |

Logged by: Jeanette Scalzo Date: 19 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

WELL SPECIFICATIONS:

Diam of casing: 2 in. Screen Interval: 8.0 - 22.0 ft Filter Pack: 6.0 - 23.0 ft Grout: 0.0 - 3.0 ft

BOH: 23 ft Riser Interval: 0.0 - 8.0 ft Bentonite: 3.0 -6.0 ft Cover: 8 in. bolt down curb box

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**LOG OF SOIL BORING**

Coordinates:
Surface Elevation:
Casing Below Surface:
Reference Elevation: Top of PVC casing
Reference Description: Permanent marker

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-04 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 1 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | | | | | Start | Finish |
| Time | | | | | 1340 | 1645 |
| Date | | | | | 20 April 1995 | 20 April 1995 |
| Reference | | | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: Middle of asphalt parking lot between SB11-01 and SB11-02 |
|---|---|---|---|---|---|---|---|---|
| S | 24 11 | 0 | 1 2 | 0.0 | 12 6 | 0 | FILL | Top 2 in. asphalt |
| | | | | | 7 6 | 1 | | Middle 3 in. grey, reddish brown SAND and GRAVEL (up to 2 in. diameter); loose |
| SS | 24 12 | 0 | 2 4 | 0.0 | 5 6 | 2 | FILL | Bottom 6 in. fine-medium SAND with some gravel; yellow and brick color staining; loose; moist |
| | | | | | 7 7 | 3 | | Grey fine SAND with a trace of silt; large gravel (up to 2 in. diameter) with some coarse sand; loose; dry |
| | | | | | | 4 | | Auger refusal 4-5 ft; moved south 5 ft |
| S | 24 13 | 5 | 3 7 | 0.0 | 10 14 | 5 | | Water table 4.5 ft |
| | | | | | 9 8 | 6 | | Grey brown SILT with some sand and gravel (up to 2 in. diameter); dark grey greenish and yellowish brown lenses; loose; wet |
| | | | | | | 7 | FILL | |
| S | 24 11 | 8 | 4 10 | 0.0 | 12 9 | 8 | | Top 3 in. yellow brown SAND and GRAVEL (up to 3/4 in. diameter) with some silt; loose; wet |
| | | | | | 8 8 | 9 | | Middle 2 in. coarse SAND with iron staining; loose; wet |
| S | 24 13 | 10 | 5 12 | 0.5 | 5 5 | 10 | | Bottom 6 in. yellow brown SAND and GRAVEL (up to 3/4 in. diameter) with some silt; loose; wet |
| | | | | | 5 6 | 11 | | Grey fine-medium SAND with trace of gravel and some clay; yellowish brown lenses; loose; wet |
| S | 24 13 | 12 | 6 14 | 0.5 | 6 11 | 12 | FILL | Bottom 2 in. brick color rock frament and quartz fragments |
| | | | | | 6 8 | 13 | | Top 3 in. grey SAND and GRAVEL; dense; wet |
| SS | 24 10 | 14 | 7 16 | 0.5 | 5 2 | 14 | | Middle 5 in. brown silty fine SAND with little clay; gravel (up to 1.5 in. diameter); loose; wet |
| | | | | | 5 11 | 15 | | Bottom 2 in. large GRAVEL (garnite and pyrite); loose; wet |
| SS | 24 24 | 16 | 5 18 | 0.0 | 14 50/0.3 | 16 | | Brown sandy CLAY; loose; wet |
| | | | | | | 17 | | Bottom 2 in. angular GRAVEL; dark brown CLAY; dense; wet |
| | | | | | | 18 | | Bottom 2 in. angular GRAVEL; dark brown CLAY; dense; wet |
| | | | | | | 19 | | Auger refusal |
| | | | | | | 20 | | End of boring 19.6 ft |
| | | | | | | | | SS = Split barrel sampler |

Logged by: Jeanette Scalzo Date: 20 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

EA® EA Engineering, Science, and Technology

**LOG OF SOIL BORING**

Coordinates: _____
Surface Elevation: _____
Casing Below Surface: _____
Reference Elevation: Top of PVC casing
Reference Description: Permanent marker

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-04A |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 1 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | | | | | Start | Finish |
| Time | | | | | 730 | 1100 |
| Date | | | | | 21 April 1995 | 21 April 1995 |
| Reference | | | | | | |

Surface Conditions: Middle of asphalt parking lot between SB11-01 and SB11-02, approximately 10' east of the first attempt, SB11-04

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | |
|---|---|---|---|---|---|---|---|---|
| SS | 24 6 | 0 | 1 2 | 0.0 | 21 | 0 | | Top 2 in. asphalt |
| | | | | | 10 | | | Brown fine-medium SAND with gravel; loose; moist |
| | | | | | 15 | 1 | | Bottom 2 in. large GRAVEL |
| | | | | | 18 | | FILL | |
| SS | 24 5 | 0 | 2 4 | 0.0 | 27 | 2 | | Top 1 in. large GRAVEL; dense; dry |
| | | | | | 26 | | | Brown fine SAND with some silt and gravel; green staining; dense; moist |
| | | | | | 27 | 3 | | |
| | | | | | 22 | | | |
| SS | 24 14 | 4 | 3 6 | 1.8 | 5 | 4 | | Greenish grey silty SAND with large gravel, wood, and slate fragments; loose; moist |
| | | | | | 4 | | | Bottom 2 in. brown yellowish staining |
| | | | | | 5 | 5 | FILL | |
| | | | | | 6 | | | |
| SS | 24 14 | 4 | 4 8 | 0.0 | 3 | 6 | | Top 2 in. greenish grey silty SAND with large gravel, wood, and slate fragments; loose; moist |
| | | | | | 3 | | | Middle 4 in. light grey silty CLAY with a large wood fragment; loose; moist |
| | | | | | 6 | 7 | | Bottom 8 in. dark grey silty SAND with some clay; wood; large gravel; moist |
| | | | | | 8 | | | Water table at 7 ft |
| SS | 24 4 | 8 | 5 10 | 0.0 | 6 | 8 | | Top 3 in. grey CLAY; medium dense; wet |
| | | | | | 11 | | | GRAVEL (up to 1 in. diameter) with some clay; medium dense; wet |
| | | | | | 17 | 9 | FILL | |
| | | | | | 10 | | | |
| SS | 24 2 | 10 | 6 12 | 0.0 | 10 | 10 | | No recovery in split spoon; pushed spoon down and recovered 2 in. |
| | | | | | 19 | | | Brown-dark yellow fine-medium SAND with some clay, silt and gravel; medium dense; saturated |
| | | | | | 18 | 11 | | |
| | | | | | 15 | | | |
| SS | 24 3 | 10 | 7 14 | 0.0 | 7 | 12 | | Top 2 in. brown-dark yellow fine-medium SAND with some clay, silt and gravel; |
| | | | | | 17 | | | medium dense; saturated |
| | | | | | 15 | 13 | | Bottom 1in. large GRAVEL |
| | | | | | 12 | | FILL | |
| SS | 24 12 | 14 | 8 16 | 0.2 | 17 | 14 | | Brown silty CLAY with some gravel; cohesive; medium dense; wet |
| | | | | | 19 | | | |
| | | | | | 16 | 15 | | |
| | | | | | 22 | | | |
| SS | 24 20 | 14 | 9 18 | 0.2 | 20 | 16 | | Top 2 in. brown silty CLAY with some gravel; cohesive; medium dense; wet |
| | | | | | 22 | | | Middle 2 in. large GRAVEL |
| | | | | | 24 | 17 | | Bottom brown reddish fine-medium SAND with some silt and clay; |
| | | | | | 20 | | FILL | large gravel (up to 1 in. diameter); slate; iron staining; medium dense; wet |
| SS | 21 12 | 18 | 10 19.3 | 0.3 | 14 | 18 | | |
| | | | | | 17 | | | Brown fine-medium SAND with some gravel; reddish orange staining; medium dense; wet |
| | | | | | 18 | 19 | | Auger refusal |
| | | | | | 50/0.3 | | | End of boring 19.3 ft |
| | | | | | | 20 | | |

SS = Split barrel sampler

Logged by: Jeanette Scalzo Date: 21 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

EA® *EA Engineering, Science, and Technology*

**LOG OF SOIL BORING**

| | |
|---|---|
| Coordinates: | |
| Surface Elevation: | |
| Casing Below Surface: | |
| Reference Elevation: | Top of PVC casing |
| Reference Description: | Permanent marker |

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-05 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 1 of 2 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | | | | | Start | Finish |
| Time | | | | | 1600 | 1100 |
| Date | | | | | 19 April 1995 | 20 April 1995 |
| Reference | | | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: Middle of asphalt parking lot, north of the northest corner of Bldg. 795 |
|---|---|---|---|---|---|---|---|---|
| S | 24 | | 1 | | 22 | 0 | | Top 2 in. asphalt fragments |
| | 15 | 0 | 2 | 0.0 | 11 | | FILL | Brown reddish SAND with some gravel; dense; dry |
| | | | | | 9 | 1 | | |
| | | | | | 8 | | | |
| S | 24 | | 2 | | 11 | 2 | | Top 14 in. brown reddish SAND with some gravel; dense; dry |
| | 20 | 0 | 4 | 0.0 | 17 | | | Grey silty SAND with some gravel up to 1"; dry |
| | | | | | 25 | 3 | FILL | |
| | | | | | 32 | | | |
| | | | | | | 4 | | |
| | | | | | | | | Auger refusal 4.5 ft; moved approximately 4 ft south towards Bldg. 795 |
| S | 24 | | 3 | | 3 | 5 | | Water table at 5.5 ft |
| | 19 | 5 | 7 | 0.2 | 6 | | | Grey fine SAND with some silt and gravel; wood ; loose; moist |
| | | | | | 5 | 6 | | |
| | | | | | 4 | | | |
| S | 24 | | 4 | | 5 | 7 | | Grey fine SAND with silt and gravel; noncohesive; loose; moist |
| | 24 | 6 | 9 | 0.0 | 7 | | | Bottom 4 in silty CLAY with organic matter; cohesive; loose; wet |
| | | | | | 6 | 8 | FILL | |
| | | | | | 5 | | | |
| SS | 12 | | 5 | | 2 | 9 | | Grey sandy SILT with some gravel (up to 1/2 in. diameter); cohesive; medium dense; wet |
| | 8 | 8 | 10 | 0.0 | 2 | | | Bottom 3 in. greyish brown CLAY and SAND; medium dense; wet |
| S | 12 | | 6 | | 16 | 10 | | |
| | 12 | 8 | 11.2 | 0.0 | 20 | | | Greyish brown silty SAND with some clay; cohesive; dense; wet |
| | | | | | 50/0.2 | 11 | | |
| | | | | | | | | |
| S | 24 | | 7 | | 4 | 12 | | Grey fine-medium SAND with some gravel; loose; saturated |
| | 10 | 10 | 14 | 0.0 | 7 | | FILL | |
| | | | | | 8 | 13 | | |
| | | | | | 8 | | | |
| S | 24 | | 8 | | 5 | 14 | | Tan-brown coarse SAND with iron staining; large gravel; loose; saturated |
| | 12 | 10 | 16 | 0.0 | 6 | | | |
| | | | | | 8 | 15 | | |
| | | | | | 6 | | | |
| SS | 24 | | 5 | | 7 | 16 | | Brown well sorted silty SAND; loose; saturated |
| | 24 | 16 | 18 | 0.0 | 6 | | FILL | Bottom 3" coarse gravel up to 3"; loose; saturated |
| | | | | | 6 | 17 | | |
| | | | | | 7 | | | |
| SS | 24 | | 6 | | 6 | 18 | | Brown CLAY with fine sand lens; cohesive; loose; wet |
| | 16 | 18 | 20 | | 6 | | | |
| | | | | | 8 | 19 | | |
| | | | | | 8 | | | |
| | | | | | | 20 | | |
| | | | | | | | | SS = Split barrel sampler |

Logged by: Jeanette Scalzo Date: 19 - 20 April 1995

Drilling Contractor: Parratt Wolff, Inc. Driller: Ronald Bush

EA Engineering, Science, and Technology

**LOG OF SOIL BORING**

Coordinates:
Surface Elevation:
Casing Below Surface:
Reference Elevation: Top of PVC casing
Reference Description: Permanent marker

| Job. No. | Client | Location |
|---|---|---|
| 60787.50 | U.S. Army Corps of Engineers | West Point 11A |
| Drilling Method: Diedrich D-50 drill rig 4 1/4 in. ID hollow stem auger | | Boring No. SB11-05 |
| Sampling Method: 2 in. OD split barrel, 2 ft length 140-lb hammer falling 30 in. | | Sheet 2 of 2 |

| | | | | | Drilling | |
|---|---|---|---|---|---|---|
| Water Lev. | | | | | Start | Finish |
| Time | | | | | 1600 | 1100 |
| Date | | | | | 19 April 1995 | 20 April 1995 |
| Reference | | | | | | |

| Sample Type | Inches Drvn/In. Recvrd. | Depth Casing | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Surface Conditions: Middle of asphalt parking lot, north of the northest corner of Bldg. 795 |
|---|---|---|---|---|---|---|---|---|
| SS | 24 / 14 | 20 | 7 / 22 | 0.0 | 5 | 20 | | Brown CLAY with fine sand lens; cohesive; loose; wet |
| | | | | | 8 | | | |
| | | | | | 7 | 21 | FILL | Bottom 3" brown coarse SAND with some gravel and slate fragments; medium dense; saturated |
| | | | | | 11 | | | |
| SS | 24 / 20 | 20 | 8 / 24 | 0.0 | 15 | 22 | | Brown coarse SAND with gravel; medium dense; saturated |
| | | | | | 12 | | | Bottom 6 in. rock fragments (quartz); coarse SAND with gravel; medium dense; saturated |
| | | | | | 10 | 23 | | |
| | | | | | 17 | | | |
| SS | 24 / 10 | 24 | 9 / 26 | 0.0 | 69 | 24 | | Brown fine-coarse SAND; medium dense; wet |
| | | | | | 60 | | | Bottom 6 in. finer SAND with rock fragments (up to 2 in. diameter) |
| | | | | | 30 | 25 | FILL | |
| | | | | | 27 | | | |
| SS | 24 / 22 | 24 | 10 / 28 | 0.0 | 18 | 26 | | Brown fine-medium SAND; medium dense; saturated |
| | | | | | 10 | | | Bottom 2 in. coarse SAND with gravel; medium dense; saturated |
| | | | | | 13 | 27 | | |
| | | | | | 13 | | | |
| SS | 24 / 20 | 28 | 11 / 30 | 0.0 | 6 | 28 | | Brown fine-medium SAND with large gravel; loose; saturated |
| | | | | | 5 | | | |
| | | | | | 8 | 29 | | |
| | | | | | 9 | | | |
| SS | 24 / 16 | 30 | 12 / 32 | 0.0 | 6 | 30 | FILL | Top 4 in. brown fine-medium SAND with gravel; medium dense; wet |
| | | | | | 10 | | | Fine SAND with little silt and some gravel; slate fragments; dense; wet |
| | | | | | 28 | 31 | | |
| | | | | | 31 | | | |
| SS | 24 / 11 | 30 | 13 / 33.5 | 0.0 | 13 | 32 | | Brown fine-medium SAND with gravel; dense; wet |
| | | | | | 31 | | | Bottom 2 in. banded rock fragments (slate, quartz) |
| | | | | | 65/0.5 | 33 | | Auger refusal 32 ft |
| | | | | | | 34 | | End of boring 33.5 ft |
| | | | | | | 35 | | |
| | | | | | | 36 | | |
| | | | | | | 37 | | |
| | | | | | | 38 | | |
| | | | | | | 39 | | |
| | | | | | | 40 | | |

SS = Split spoon sampler

Logged by: Jeanette Scalzo
Date: 19 - 20 April 1995

Drilling Contractor: Parratt Wolff, Inc.
Driller: Ronald Bush

# Field Records of Monitoring Well Construction

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: NAVEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/18/95 COMPLETED: 4/18/95 | LOCATION: (COORDINATES OR STATION) MW-11-01 |
| ELEVATION TOP OF BORING: 418.198 | SIGNATURE OF INSPECTOR: |
| ELEVATION TOP OF CASING: 417.778 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-01 |
| DEPTH TO WATER: 6.5 | DATE/TIME: 4/18/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

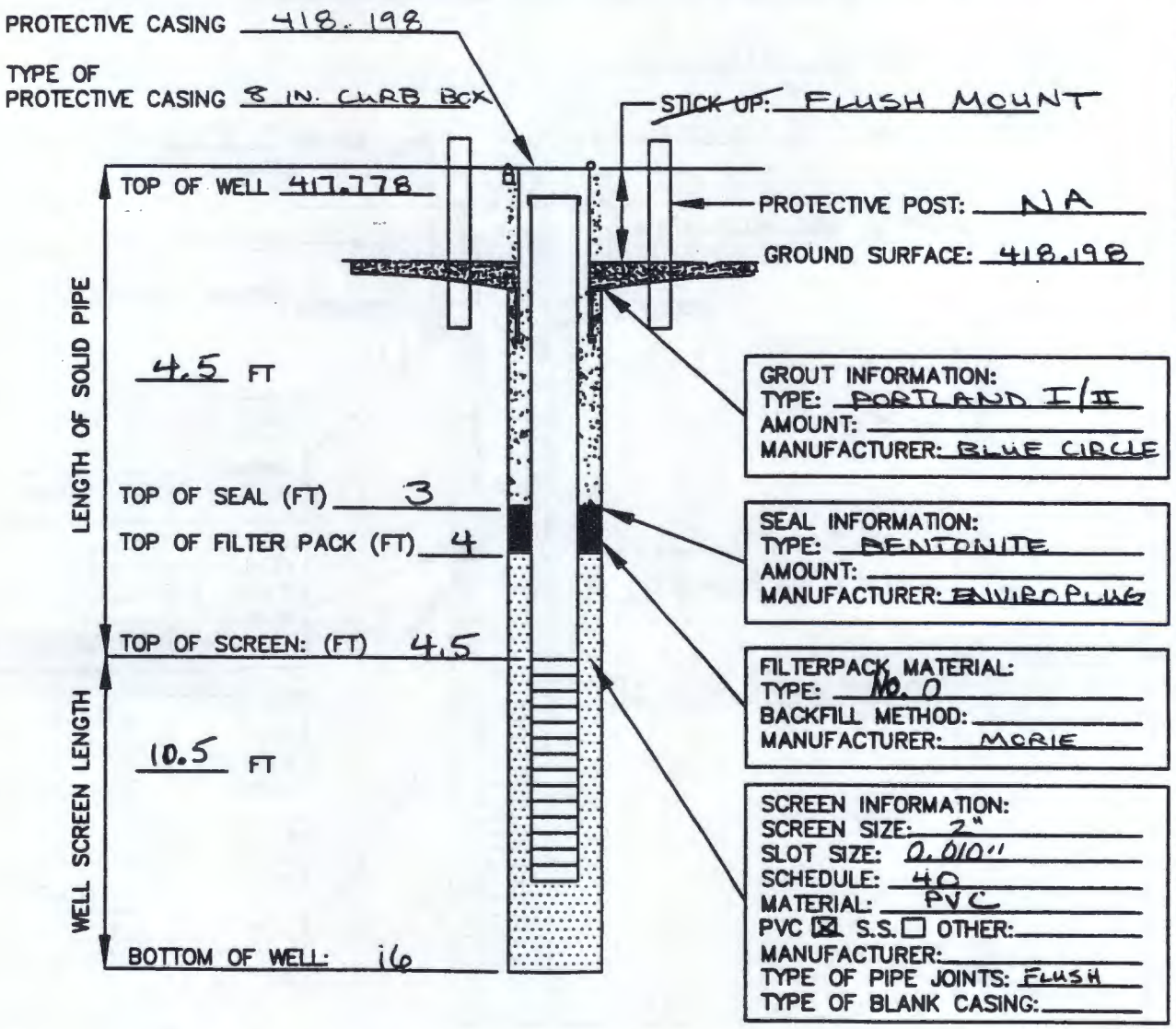



FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DR\0001

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: WEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/18/95 COMPLETED: 4/18/95 | LOCATION: (COORDINATES OR STATION) MW-11-02 |
| ELEVATION TOP OF BORING: 412.666 | SIGNATURE OF INSPECTOR: |
| ELEVATION TOP OF CASING: 412.166 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-02 |
| DEPTH TO WATER: 9.0 | DATE/TIME: 4/18/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

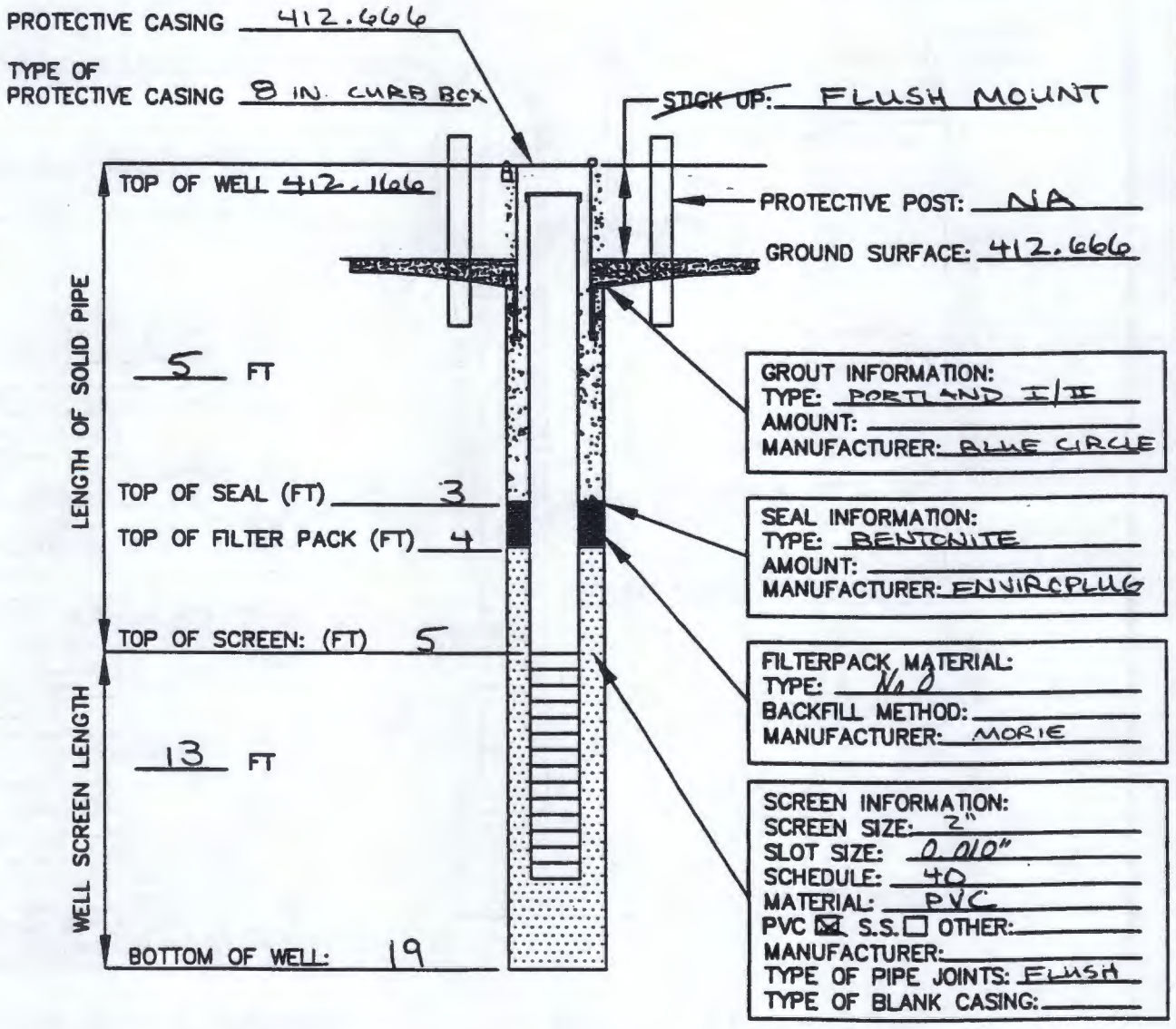



FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DIF\0001

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: WEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/18/95 COMPLETED: 4/18/95 | LOCATION: (COORDINATES OR STATION) MW-11-01 |
| ELEVATION TOP OF BORING: 418.198 | SIGNATURE OF INSPECTOR: |
| ELEVATION TOP OF CASING: 417.778 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-01 |
| DEPTH TO WATER: 6.5 | DATE/TIME: 4/18/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

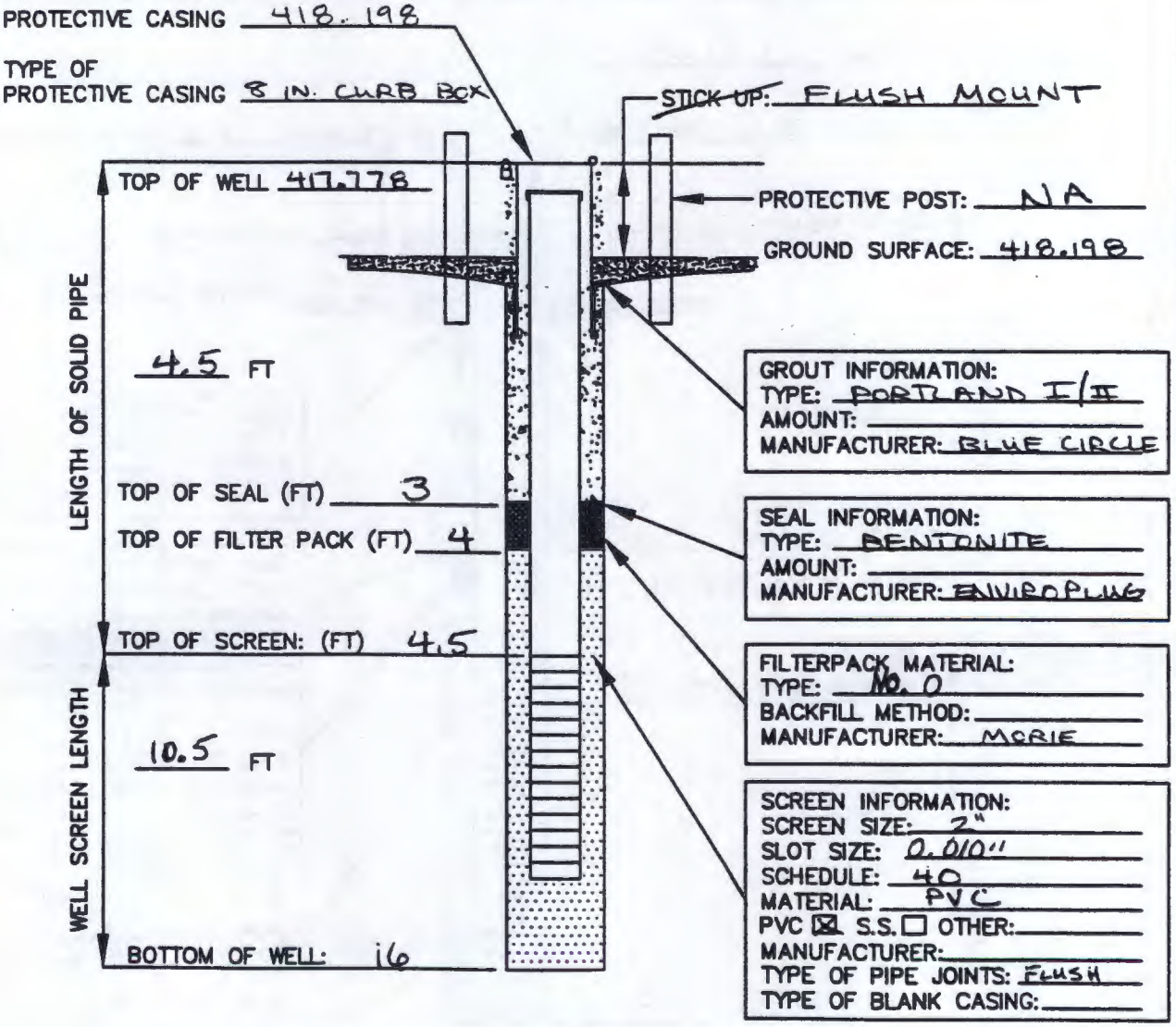



FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DRW\0001

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: WEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/18/95 COMPLETED: 4/18/95 | LOCATION: (COORDINATES OR STATION) MW-11-02 |
| ELEVATION TOP OF BORING: 412.666 | SIGNATURE OF INSPECTOR: [signature] |
| ELEVATION TOP OF CASING: 412.166 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-02 |
| DEPTH TO WATER: 9.0 | DATE/TIME: 4/18/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

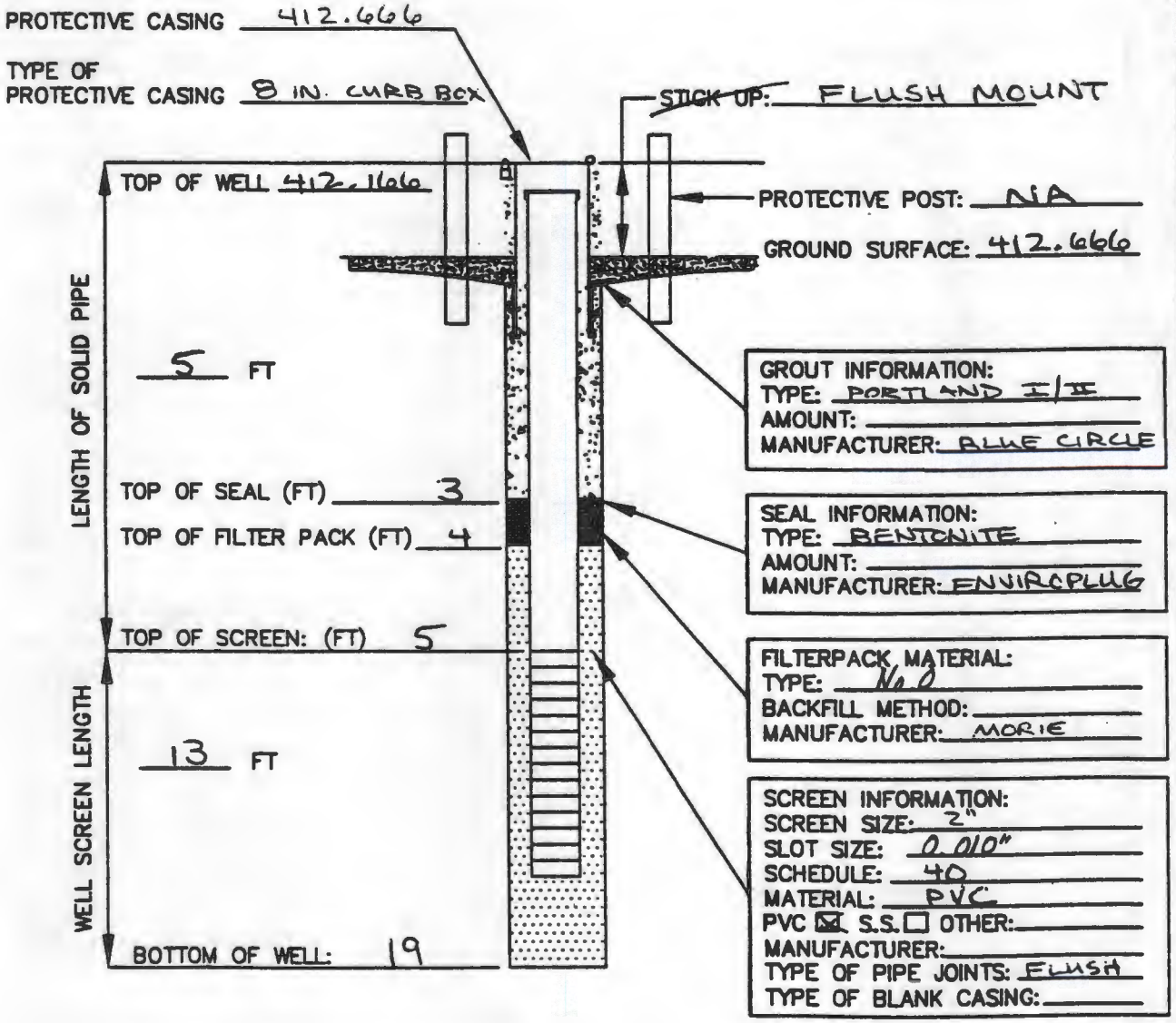



FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DRF\2001

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

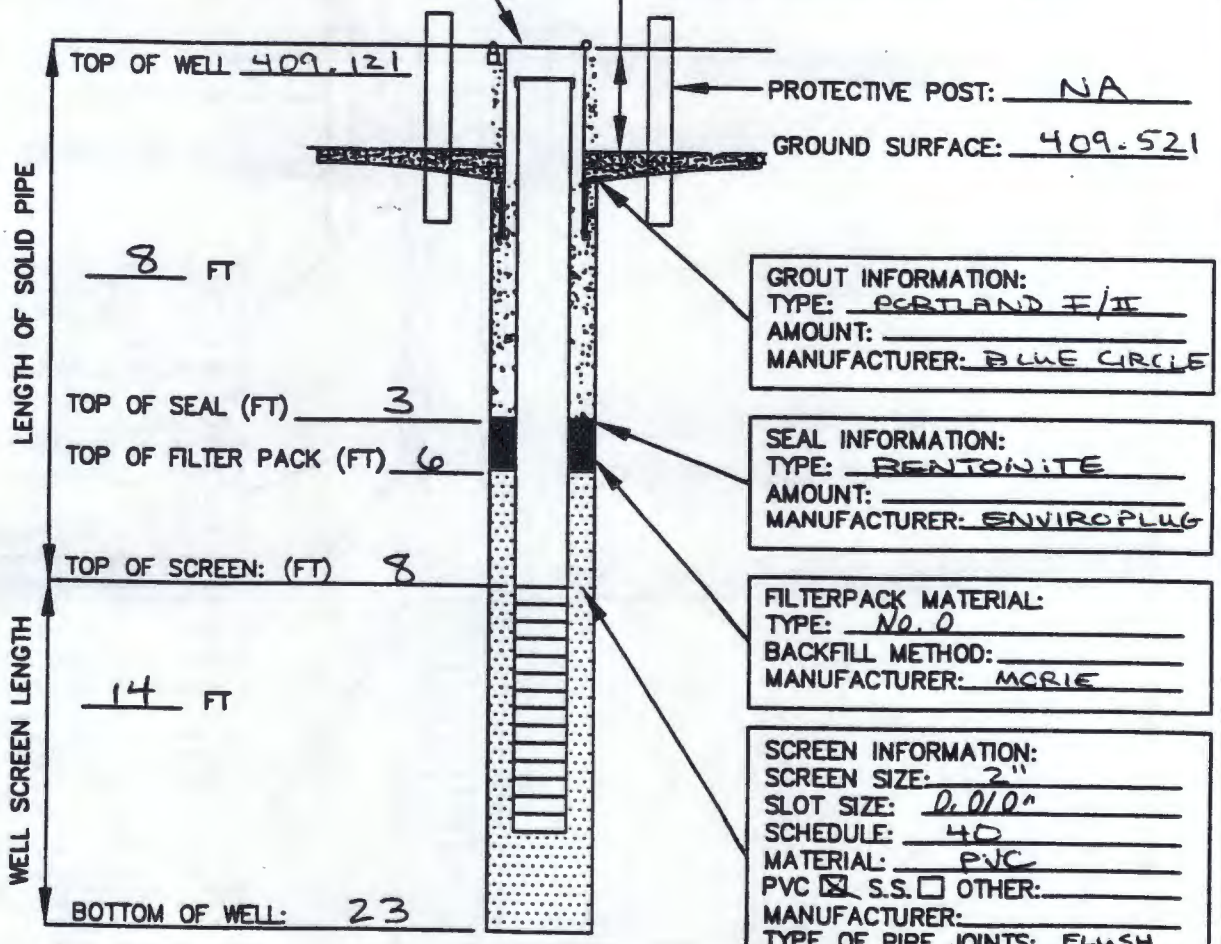
(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: WEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/19/95 COMPLETED: 4/19/95 | LOCATION: (COORDINATES OR STATION) MW-11-03 |
| ELEVATION TOP OF BORING: 409.521 | SIGNATURE OF INSPECTOR: J Scahy |
| ELEVATION TOP OF CASING: 409.121 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-03 |
| DEPTH TO WATER: 1.0 | DATE/TIME: 4/19/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

PROTECTIVE CASING 409.521

TYPE OF PROTECTIVE CASING 8 IN. CURB BOX

STICK UP: FLUSH MOUNT




GROUT INFORMATION:
TYPE: PORTLAND F/II
AMOUNT:
MANUFACTURER: BLUE CIRCLE

SEAL INFORMATION:
TYPE: BENTONITE
AMOUNT:
MANUFACTURER: ENVIROPLUG

FILTERPACK MATERIAL:
TYPE: No. 0
BACKFILL METHOD:
MANUFACTURER: MORIE

SCREEN INFORMATION:
SCREEN SIZE: 2"
SLOT SIZE: 0.010"
SCHEDULE: 40
MATERIAL: PVC
PVC ☒ S.S. ☐ OTHER:
MANUFACTURER:
TYPE OF PIPE JOINTS: FLUSH
TYPE OF BLANK CASING:

FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA® EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DRW\0001

# FIELD RECORD OF MONITORING WELL CONSTRUCTION

(ALL MEASURMENTS FROM GROUND SURFACE)

| | |
|---|---|
| SIT NAME/LOCATION: WEST POINT / MOTOR POOL EAST | PROJECT: 60787.50 |
| DATE INSTALLED: STARTED: 4/19/95 COMPLETED: 4/19/95 | LOCATION: (COORDINATES OR STATION) MW-11-03 |
| ELEVATION TOP OF BORING: 409.521 | SIGNATURE OF INSPECTOR: |
| ELEVATION TOP OF CASING: 409.121 (PVC) | HOLE No. (AS SHOWN ON DRAWING TITLE AND FILE No.) SB-11-03 |
| DEPTH TO WATER: 1.0 | DATE/TIME: 4/19/95 |
| DRILLING METHOD: HSA DIEDRICH D-50 TURBO DRILL RIG | |

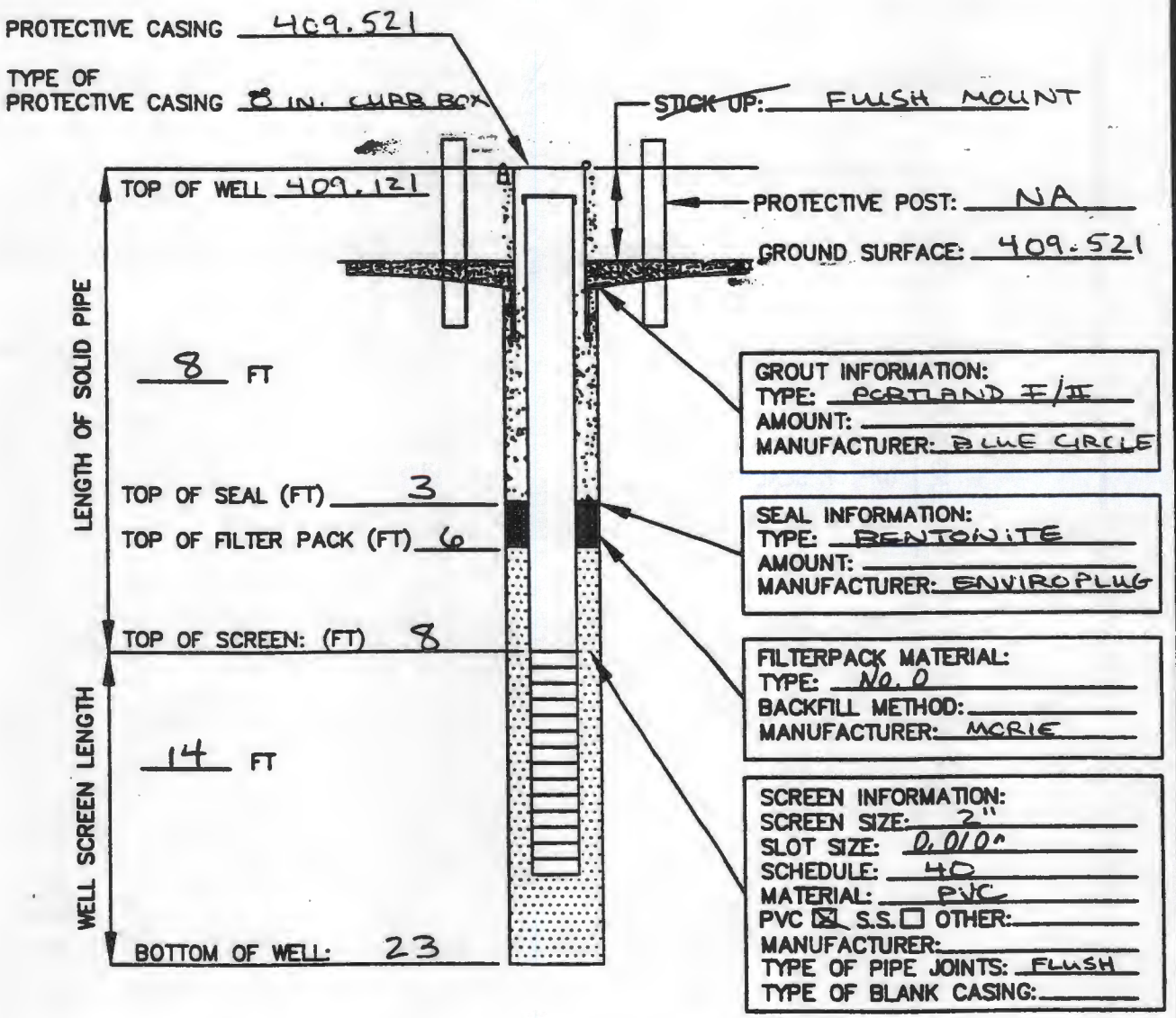



FIGURE --- FIELD RECORD OF MONITORING WELL CONSTRUCTION

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG. FILE No. F:\CAD\60787\DRW\0001

# SECTION 01330

# SUBMITTAL PROCEDURES

## PART 1 GENERAL

### 1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows: SD-01 Data; SD-04 Drawings; SD-06 Instructions; SD-07 Schedules; SD-08 Statements; SD-09 Reports; SD-13 Certificates; SD-14 Samples; SD-18 Records; SD-19 Operation and Maintenance Manuals.

### 1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

#### 1.2.1 Government Approved

Governmental 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.

### 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 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) representative and each item shall be stamped, signed, and dated by the CQC representative 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 (ENG FORM 4288)

ENG Form 4288 shall be obtained from the Contracting Officer. It lists 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 as a diskette containing the computerized ENG Form 4288 and instructions on the use of the diskette. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" and "s" through "u" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 21 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)

The sample transmittal form (ENG Form 4025) shall be obtained from the Contracting Officer and used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

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 Deviations

For submittals that 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. Two (2) copies of the submittal will be retained by the Contracting Officer and five (5) 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:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheet(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

3.10 CERTIFICATES OF COMPLIANCE

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.

3.11 COLOR BOARDS

Not used.

3.12 WIRING/CONTROL DIAGRAMS

Not used.

-- End of Section --

# SUBMITTAL REGISTER

CONTRACT NUMBER:

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR:

SPECIFICATION SECTION
02225 Earthwork

| | | | | TYPE OF SUBMITTAL | | | | | | | | | CLASSIF-ICATION | | | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | |
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| TRANS-MITTAL NO. | ITEM NO. | SPECIFICATION PARAGRAPH NUMBER | DESCRIPTION OF ITEM SUBMITTED | DATA | DRAWINGS | INSTRUCTIONS | SCHEDULES | STATEMENTS | REPORTS | CERTIFICATES | SAMPLES | RECORDS | INFORMATION ONLY | GOVERNMENT APPROVED | REVIEWER | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | CODE | DATE | SUBMIT TO GOVERN-MENT | CODE | DATE | REMARKS |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| | 1 | 1.5 | Calibration Test Results | | | | | | X | | | | X | | A/E | | | | | | | | | |
| | 2 | 1.5 | Qualifications of Testing Laboratory | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 3 | 1.5 | Notification of Encountering Rock, Opening Excavations, and Shoulder Construc. for Rigid Pavements | | | | | | | | | X | | X | A/E | | | | | | | | | |
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ENG FORM 4288, May 91 Version

Edition of Aug. 89 is obsolete

# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02230 Clearing and Grubbing

| | | | | TYPE OF SUBMITTAL | | | | | | | | | | CLASSIF-ICATION | | | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | |
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| | 1 | 1.2 | Disposal of Materials | | | | | | | | | X | | X | A/E | | | | | | | | | |
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ENG FORM 4288, May 91 Version

Edition of Aug. 89 is obsolete

Page _____ of _____ Pages

# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02232 Subbase

| | | | | TYPE OF SUBMITTAL | | | | | | | | | CLASSIF-ICATION | | | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | |
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| | 1 | 1.3.1 | Subbase Certification | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 2 | 1.3.2 | Material Handling/Transport | | | | | | X | | | | | X | A/E | | | | | | | | | |
| | 3 | 1.3.3 | Lab/Field Test Results | X | | | | | | | | | | X | A/E | | | | | | | | | |
| | 4 | 1.3.4 | Delivery Tickets | | | | | | | | | X | X | | A/E | | | | | | | | | |
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# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02272 Separation/
Filtration Geotextile

| TRANS-MITTAL NO. | ITEM NO. | SPECIFICATION PARAGRAPH NUMBER | DESCRIPTION OF ITEM SUBMITTED | TYPE OF SUBMITTAL | | | | | | | | | CLASSIF-ICATION | | REVIEWER | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | REMARKS |
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| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| | 1 | 1.5 | Thread Type for Sewn Seams | X | | | | | | | | | X | | A/E | | | | | | | | | |
| | 2 | 1.5 | Geotextile Penetration Details | | X | | | | | | | | | X | A/E | | | | | | | | | |
| | 3 | 1.5 | Manaufacturers Qual. Control Manual | | | X | | | | | | | X | | A/E | | | | | | | | | |
| | 4 | 1.5 | Independ. Laboratory Qualifications | | | | | X | | | | | | X | A/E | | | | | | | | | |
| | 5 | 1.5 | Site Verification Testing Results Seaming, Seam Strength Test Results | | | | | | X | | | | X | | A/E | | | | | | | | | |
| | 6 | 1.5 | Geotextile- Certif. Of Compliance with Requirements from Manufacturer | | | | | | | X | | | X | | A/E | | | | | | | | | |
| | 7 | 1.5 | Sample of Geotextile | | | | | | | | X | | X | | A/E | | | | | | | | | |
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# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02513 Bituminous Concrete Pavement

| TRANSMITTAL NO. | ITEM NO. | SPECIFICATION PARAGRAPH NUMBER | DESCRIPTION OF ITEM SUBMITTED | TYPE OF SUBMITTAL | | | | | | | | | CLASSIFICATION | | REVIEWER | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | REMARKS |
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| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| | 1 | 1.3.1 | Asphalt Plant Certification | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 2 | 1.3.2 | Job Mix Formula | | | | | | X | | | | | X | A/E | | | | | | | | | |
| | 3 | 1.3.2 | Prime Coat Certification | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 4 | 1.3.2 | Tack Coat Certification | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 5 | 1.3.2 | Testing Laboratory | | | | | | X | | | | | X | A/E | | | | | | | | | |
| | 6 | 1.3.2 | Delivery Tickets | | | | | | | | | X | X | | A/E | | | | | | | | | |
| | 7 | 1.3.2 | Density Test Results | X | | | | | | | | | | X | A/E | | | | | | | | | |
| | 8 | 1.3.2 | Licensed Surveyor | | | | | | X | | | | | X | A/E | | | | | | | | | |
| | 9 | 1.3.2 | Equipment List and Catalog Data | | | | | | X | | | | | X | A/E | | | | | | | | | |
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# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02831 Chain Link Fence

| | | | | TYPE OF SUBMITTAL | | | | | | | | | CLASSIF-ICATION | | | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | |
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| TRANS-MITTAL NO. | ITEM NO. | SPECIFICATION PARAGRAPH NUMBER | DESCRIPTION OF ITEM SUBMITTED | DATA | DRAWINGS | INSTRUCTIONS | SCHEDULES | STATEMENTS | REPORTS | CERTIFICATES | SAMPLES | RECORDS | INFORMATION ONLY | GOVERNMENT APPROVED | REVIEWER | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | CODE | DATE | SUBMIT TO GOVERN-MENT | CODE | DATE | REMARKS |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| | 1 | 1.3 | Manufacturer's Catalog Data and Specifications | X | | | | | | | | | | X | A/E | | | | | | | | | |
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Edition of Aug. 89 is obsolete

# SUBMITTAL REGISTER

CONTRACT NUMBER

TITLE AND LOCATION
Motor Pool East Landfill Closure
U.S. Military Academy - West Point, New York

CONTRACTOR

SPECIFICATION SECTION
02935 Turf

| | | | | TYPE OF SUBMITTAL | | | | | | | | | CLASSIF-ICATION | | | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | |
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| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
| | 1 | 1.2 | Manufacturer's Literature on Erosion Control and Chem. Treatment Mat'l. | X | | | | | | | | | X | | A/E | | | | | | | | | |
| | 2 | 1.2 | Delivery Schedule | | | | X | | | | | | | X | A/E | | | | | | | | | |
| | 3 | 1.2 | Maintenance Report | X | | | | | | | | | | X | A/E | | | | | | | | | |
| | 4 | 1.2 | Turf Esablishment Period | X | | | | | | | | | | X | A/E | | | | | | | | | |
| | 5 | 1.2 | Certificates of Compliance for Seed | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 6 | 1.2 | Certificates of Compliance for Fertilizer | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 7 | 1.2 | Certificates of Compliance for Agricultural Limestone | | | | | | | X | | | | X | A/E | | | | | | | | | |
| | 8 | 1.2 | Certificates of Compliance for Topsoil | | | | | | | X | | | | X | A/E | | | | | | | | | |
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# SECTION 01350

# SPECIAL SAFETY PROVISIONS

## PART 1 GENERAL

### 1.1 DESCRIPTION

Scope: Site-specific safety and health procedures are required due to the hazardous conditions potentially present onsite during landfill closure activities. These procedures must be written by the Contractor and approved by the Government prior to the initiation of the landfill closure activities. The Contractor shall implement, maintain, and enforce these procedures at the appropriate time prior to and during all phases of the remedial project. PROVISIONS OF THIS SECTION APPLY ONLY TO ACTIVITES IN WHICH THE CONTRACTOR WILL OR MAY COME INTO CONTACT WITH SOLID WASTE MATERIALS, LIQUIDS, OR GAS DUE TO INTRUSIVE ACTIVITIES INTO THE WASTE FILL AREA. THIS INCLUDES, AT A MINIMUM, SUBGRADE PREPARATION AND BORROW PLACEMENT WHERE DISTURBANCE IS MADE INTO THE IN-PLACE FILL MASS.

Limited excavation, if any, will be made into the landfill during regrading of the subgrade and a hazardous situation is not anticipated. Volatile organic compounds and methane may be encountered during grading of the waste. Methane concentrations shall be monitored to ensure work is not performed in an explosive atmosphere.

A Contractor supplied industrial hygienist (IH) shall supervise the development of the Site Safety and Health Plan and sign it, and shall provide continued support for all health and safety activities as needed, including the upgrading and downgrading of personal protective equipment (PPE) levels.

The qualifications of the IH shall include at least 3 years of experience working in the hazardous waste field, as well as demonstrable expertise in the development of air monitoring and PPE programs for work in potentially toxic environments. The IH must have formal training in occupational safety and health and have a working knowledge of applicable federal and state health and safety regulations.

A Site Safety and Health Officer (SSHO) shall participate in the continued daily implementation and enforcement of the Site Safety and Health Plan (SSHP)when intrusive activities are conducted at the site. The SSHO shall be assigned to the site on a full-time basis when intrusive activities are conducted, and shall be either the Contractor's employee or a subcontractor who reports to the Contractor in matters pertaining to site safety and health.

The qualifications of the SSHO shall include a minimum of 1 year working experience at solid waste or equivalent sites where a minimum Level C PPE was required; a working knowledge of federal and state safety and health regulations; specialized training in personal and respiratory protective equipment program implementation and in the proper use of air monitoring instruments, air sampling methods, and procedures; and certification of training in first aid and CPR by a recognized, approved organization such as the American Red Cross.

The name, qualifications, and work experience of the SSHO shall be submitted to the Government prior to the commencement of onsite work operations.

The SSHP shall be consistent with the requirements and guidance provided in the following document: Occupational Safety and Health Administration (OSHA) Standards and Regulations (29 CFR 1926).

The Site Safety and Health Plan will include, at a minimum, the following components:

a. Site overview, including identification of potential intrusive activities and type of waste or hazards, such as leachate discharge or gas release, anticipated to be encountered.

b. Names of key personnel and alternates responsible for site safety and health, including a SSHO.

c. An Accident Prevention Plan in accordance with USACE EM 385-1-1 for each type of intrusive work activity, including methods of reducing hazards. Copies of Accident Report Forms shall be provided.

d. Employee training requirements.

e. PPE requirements for each intrusive work operation, including types/materials, respiratory protection, and site-specific action levels dictating decisions to upgrade or downgrade.

f. Action levels for implementing engineering controls, work practices, halting work, and site evacuation.

g. Location, frequency, and type of air monitoring to be conducted, including instrumentation, methods of maintenance, and calibration of monitoring and sampling equipment to be used.

h. Site control measures, including communications, security, and site access.

i. Heat and cold stress monitoring.

j. Personnel and equipment decontamination procedures.

k. Emergency Response Plan and contingency procedures, including onsite first aid and emergency equipment.

l. Logs, reports, and recordkeeping.

The Site Safety and Health Plan shall be submitted to the Government within 10 days following award of the Contract, in an acceptable format for review and approval prior to commencement of any onsite work.

Specifications delineated in this Section are in addition to or an amplification of procedures and requirements of the above-referenced regulations and documents.

Should any unforeseen or site-specific safety factors, health hazards, or conditions become evident during the performance of work at this site, the

Contractor shall notify the Government verbally and in writing as soon as possible for resolution. The Contractor shall take prudent action to establish and maintain safe working conditions and to safeguard employees, the surrounding community, and the environment.

Should the Contractor seek relief from, or substitution for, any portion or provision of the Site Safety and Health Plan, such requests shall be submitted to the Government in writing, and if approved, shall be authorized in writing.

Any disregard for the provision of these specifications shall be deemed just and sufficient cause for termination of Contract or any subcontract without compromise or prejudice to the rights of the Government.

The Site Safety and Health Plan developed by the Contractor shall include provisions for work related to initial site preparation prior to implementation of the intrusive activities described in the Contract. It shall be the responsibility of the Contractor to conduct whatever testing and monitoring is necessary to ensure a safe operation during the initial site preparation work.

Confined space entry permitting and procedures are to be followed in accordance with OSHA requirements for all work in confined spaces.

1.2 SITE CONTROL

The Contractor shall restrict personnel access to site areas where intrusive activities are occurring. Personnel not directly involved in the performance of work associated with the intrusive activities into the waste fill area shall be maintained a minimum of 50 feet from such work. The initial minimum level of PPE required for the intrusive work activities shall be in accordance with these specifications and with determinations made by the IH after monitoring and onsite evaluation. The Contractor shall establish a decontamination area to provide for the decontamination of both personnel and equipment.

The Site Safety and Health Plan shall include provisions for laying out work zones, exclusion zones, and support zones, if necessary. It shall also identify onsite and offsite communication systems (e.g. cellular phones, air horns, hand signals, etc.) as applicable.

In order to restrict unauthorized access to the site during periods of intrusive activities into the waste fill area, sufficient barricades/ fencing shall be provided and maintained if work operations make it necessary to leave open holes or pits overnight. Vehicular access to areas of the site where intrusive activities are conducted shall be restricted to authorized vehicles only.

1.3 TRAINING REQUIREMENTS

Qualified personnel shall certify that all Contractor and Subcontractor personnel performing intrusive work into the waste fill areas shall have received appropriate health and safety training in accordance with 29 CFR 1910.120 for the planned work activities. Additionally, these workers shall be in a medical surveillance program in accordance with 29 CFR 1926.65. Documentation of all such training shall be submitted to the Government before any employee will be allowed to perform intrusive work

activities, and no unsatisfactorily trained personnel will be allowed to perform intrusive work activities.

In addition to the above training, prior to conducting intrusive work activities, all personnel directly involved with the work (including visitors) shall read and sign the Site Safety and Health Plan and be familiar with the use of safety, respiratory, and protective equipment, and with the health, safety, and security procedures.

1.4 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

The Contractor shall provide an approved emergency eye wash (as per ANSI Z358.1) and minimum rating 2-A:10-B:C type dry chemical fire extinguishers.

The Contractor shall have at least two certified First Aid Technicians on the site at all active times during the execution of intrusive work activities; this First Aid Technicians must be certified by the American Red Cross or other approved agency in first aid and CPR. At least one "industrial" first aid kit shall be provided and maintained fully stocked at an easily accessible location which shall be appropriately marked.

1.5 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

As part of the Site Safety and Health Plan, the Contractor shall develop site-specific emergency response and contingency plans for exposure to leachate, personal injury, potential or actual fire or explosion, and environmental accident. These plans shall include evacuation procedures and routes to places of refuge or safe distances from the danger area.

In case of emergency, the Contractor shall take diligent action to remove or reduce the cause of the emergency, to alert the Government, and institute measures necessary to prevent any repetition of the conditions or actions leading to, or resulting in, the emergency. Written notification of emergencies must be provided to the Government within 24 hours.

The Contractor shall pre-arrange for emergency medical care services at a primary and alternate medical facility located near the site and shall establish emergency routes. These routes shall be shown on a map and posted conspicuously in the support zone. Arrangements for notifying medical staff of the need to contact contaminated skin and/or clothing must be made.

A list of emergency contacts and phone numbers shall be included in the plan and also posted onsite.

1.6 PERSONNEL PROTECTIVE EQUIPMENT REQUIREMENTS

The appropriate level of PPE and procedures to be followed shall be determined by the Contractor IH and periodically evaluated by the SSHO and the IH based on a review of existing data, a site visit, and an air monitoring program. Criteria for upgrading levels of PPE; cleaning, storage, and maintenance of PPE; and onsite respirator fit testing shall be included in the SSHP for Government approval. Based upon the site review, the list of minimum PPE levels required upon initial site entry is provided by work operation below. The Contractor's personnel shall be

prepared to adjust to the next highest level of protection based upon the direction of the IH or SSHO.

| Work Operation | Initial Level of Protection |
|---|---|
| Excavation | Level D |
| Borrow placement | Level D |

The Contractor shall provide all onsite personnel with appropriate PPE, and shall ensure that all safety equipment and protective clothing is kept clean and well maintained. These levels shall be used in conjunction with air monitoring to determine upgrading or downgrading of PPE levels to be worn. Any changes to the entry level of PPE shall be approved by the Government.

Protective clothing consisting of the items listed below shall be furnished for all onsite personnel directly involved in intrusive work activities and shall be worn or available to onsite personnel during all intrusive work operations unless otherwise noted:

a. Level D: Chemical-resistant coveralls, gloves, and safety glasses when potential for direct contact with liquids and contaminated soils (poly/cotton reusable coveralls at all other times); safety shoes or boots; chemical-resistant boot covers; hard hats.

b. Level C: Full-face-piece air purifying respirator with combination organic vapor (depending on the results of air monitoring using a total volatile organics instrument), and high efficiency particulate cartridges (depending on the results of dust monitoring); chemical-resistant coveralls; latex inner gloves; chemical-resistant outer gloves; steel toe/shank chemical-resistant safety boots; latex boot covers; hard hat.

A written respiratory protection program addressing site-specific respirator usage shall be developed by the Contractor and submitted as part of the Safety and Health Plan.

a. If respirators are required onsite based on air monitoring results obtained during intrusive work activities, all personnel performing such work must have passed a respiratory fit test within 12 months prior to the initiation of work operations. Personnel must be found medically fit to wear and work in respiratory protection.

b. Each respirator shall be individually assigned and not interchanged between workers. Cartridges and filters shall be changed daily, when damaged, or upon breakthrough or increase in breathing resistance.

## 1.7 PERSONAL HYGIENE AND CONTAMINATION

The Contractor shall specify personal hygiene concerns and requirements for this site in the Site Safety and Health Plan. The Contractor shall be required to provide and require that personnel use appropriate storage and disposal for used disposable clothing, and to provide a break area.

The Contractor shall specify required decontamination procedures for both personnel and equipment in the Site Safety and Health Plan, including procedures for removing contaminated clothing; procedures, equipment and materials for cleaning personnel and equipment; location of decontamination facilities; disposing of nondisposable clothing; and laundering of reusable clothing.

Personnel engaged in vehicle decontamination shall wear PPE including disposable clothing and respiratory protection consistent with the requirements of this Specification and the Site Safety and Health Plan.

1.8 AIR MONITORING

The Contractor shall develop and implement an air monitoring program conforming with federal, state, and local regulations to detect and quantify methane, volatile organic compounds, and general airborne dust monitoring associated with the intrusive work activities into the waste fill areas. Contractor shall monitor intrusive activities for the presence of oxygen deficient atmosphere conditions. The program shall be submitted as part of the Site Safety and Health Plan and must be approved by the Government.

Information gathered during the air monitoring shall be logged and recorded, and shall be used to determine appropriate safety and personnel protective measures to be implemented during the work operations, to document employee exposures, and to assess offsite migration of contaminants potentially released during intrusive work activities so that appropriate control measures and/or contingency plans can be implemented.

The Contractor shall be responsible for establishing air monitoring strategies and protocols using direct-reading instruments for methane, total volatile organics, and dust. These strategies and protocols must be included in the Site Safety and Health Plan. Total volatile organics and methane monitoring must be conducted initially and periodically during any excavations or drilling operations. Dust monitoring must be conducted periodically during excavation, backfilling, and other intrusive or dust generating activities into the waste fill areas.

All air monitoring equipment shall be provided and maintained by the Contractor according to manufacturers' recommendations and shall be operated by personnel trained in their specific use.

The Contractor shall be responsible for establishing and documenting baseline (background) air quality conditions using direct-reading instruments prior to commencement of, during, and after completion of work operations.

The Contractor shall establish action levels for oxygen, methane, volatile organics, and dust in order to direct determination of upgrading and PPE adequacy and to determine appropriate implementation of offsite response procedures for contingency planning. These action levels shall be based upon OSHA permissible exposure limits.

1.9 LOGS, REPORTS, AND RECORDKEEPING

The Contractor shall maintain logs and reports covering the implementation of the Site Safety and Health Plan according to these specifications and including daily training logs, employee/visitor logs, security logs, air monitoring logs, daily safety logs, and medical certification records.

1.10 ONSITE MEDICAL MONITORING

The Site Safety and Health Plan must include procedures for monitoring personnel for heat and cold stress, including heart rate, body temperature, and body water loss. Monitoring shall be performed by a person with a current first aid/CPR certification who is trained to recognize the symptoms of heat and cold stress and will comply with the requirements of NIOSH/OSHA/USCG/EPA "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" for heat stress and the American Conference of Government Industrial Hygienists publication on cold stress/frostbite prevention protocol.

1.11 ACCIDENT PREVENTION PLAN

The Contractor shall include in the Site Safety and Health Plan and Accident Prevention Plan. The plans must address the safety hazards expected, personnel responsibilities, task-specific safety procedures, subcontractor supervision, safety meetings, fire prevention and protection, site housekeeping, mechanical equipment inspection, first aid and medical concerns, sanitation, accident reporting, and daily safety inspections conducted by Contractor personnel.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

1. GENERAL

1.1 SITE PLAN

Not used.

1.2 IDENTIFICATION OF EMPLOYEES

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.3 EMPLOYEE PARKING

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.4 AVAILABILITY AND USE OF UTILITY SERVICES

1.4.1 Payment for Utility Services

The Government will make available to the Contractor and assume the cost of all reasonably required utilities from available existing outlets and supplies. The Contractor shall carefully conserve any utilities furnished without charge.

1.4.2 Temporary Utility Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections, distribution lines. The Government will provide the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.

1.4.3 Advance Deposit

Not Used

1.4.4 Final Meter Reading

Not Used

1.4.5 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.4.6 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired. No phone service is available in the Motor Pool Landfill area.

1.5 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

Not used.

1.6 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.6.1 Haul Roads

Not used.

1.6.2 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 hazard during both day and night.

1.7 CONTRACTOR'S TEMPORARY FACILITIES

1.7.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.7.2 Storage Area

The Contractor shall construct a temporary 6-ft high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts shall be held in concrete bases. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.7.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.7.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.7.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.7.6 New Building

Not used.

1.7.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.8 GOVERNMENT FIELD OFFICE

1.8.1 Resident Engineer's Office

Not used.

1.8.2 Trailer-Type Mobile Office

Not used.

1.9 PLANT COMMUNICATION

Not used.

1.10 TEMPORARY PROJECT SAFETY FENCING

The Contractor shall furnish and erect temporary project safety fencing at the work site as directed by the Contracting Officer. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 in. high, supported and tightly secured to steel posts located on maximum 10-ft centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor until it is no longer required. Upon removal, it shall become the property of the Contractor.

1.11 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.12 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

# SECTION 01561

# ENVIRONMENTAL PROTECTION

## PART 1 GENERAL

### 1.1 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, land, and noise.

### 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. Specifically, the requirements of 40 CFR 204, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 49 CFR 178 shall be met.

### 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. Bituminous coatings shall not be applied during rain events or when rain is forecast. Temporary fuel oil or petroleum storage tanks shall be surrounded by a temporary earth berm to contain the contents of the tank in the event of leakage or spillage.

1.6 EROSION AND SEDIMENTATION CONTROL

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

1.7 BURNING

No burning will 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.

1.9.2 Protection of Trees Retained

1.9.2.1 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. Install protection as shown in Details A&B at the end of this specification. If the Contracting Officer finds that the protective devices are insufficient, additional protection devices shall be installed.

1.9.2.2 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 No toxic materials shall be stored within 100 feet from the drip line of trees to be retained.

1.9.2.4 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 nearby 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 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. Details C&D at the end of this specification indicate typical restoration procedures. All scars made on trees, designated on the plans to remain, and all cuts for the removal of limbs larger than 1-inch (25.4 mm) 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" (50.8 mm) in diameter at 6 inches (152.4 mm) above the ground level.

1.9.4 Location of Storage and Service Facilities

The location on Government property of the Contractor's storage and service facilities, required temporarily in the performance of the work, shall be as directed by the Contracting Officer.

1.9.5 Temporary Excavation and Embankments

Not used.

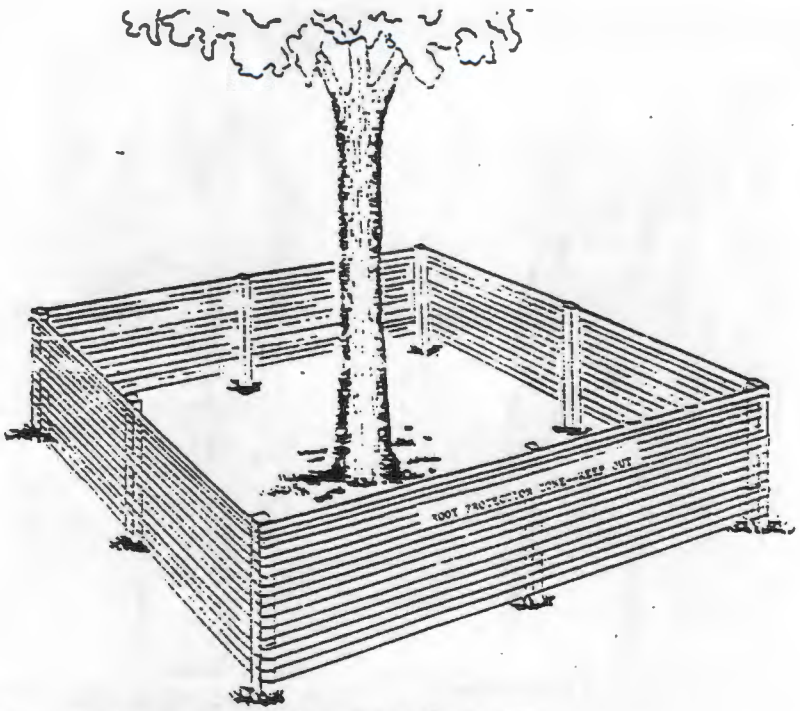
PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --




DETAIL A Pre-Construction Barricade Fencing
four (4) foot high, orange polyethylene barricade fence supported on posts with attachments to these posts on six (6) foot centers.

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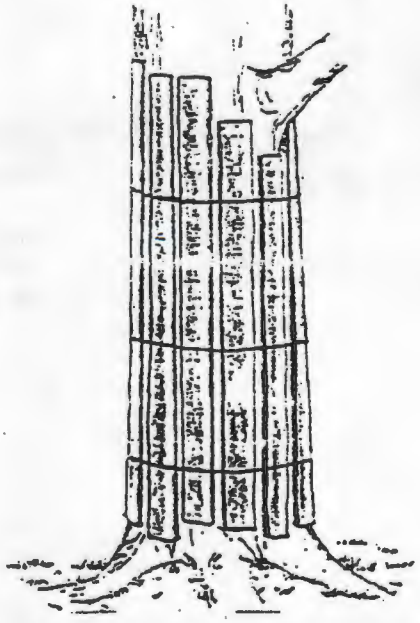
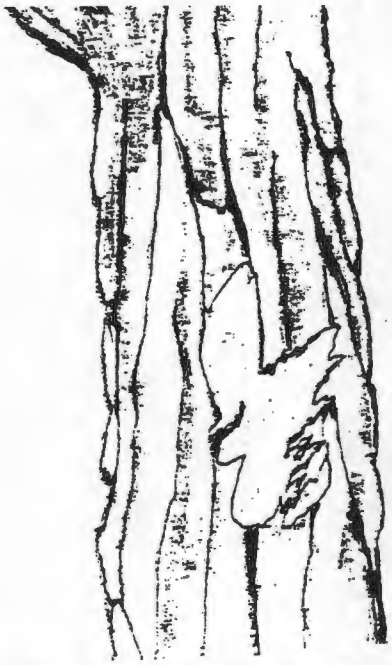
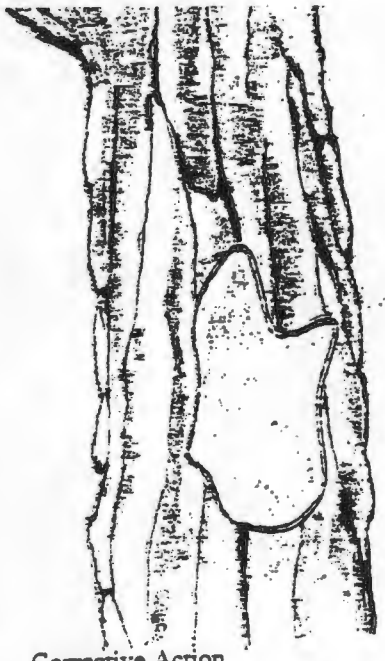


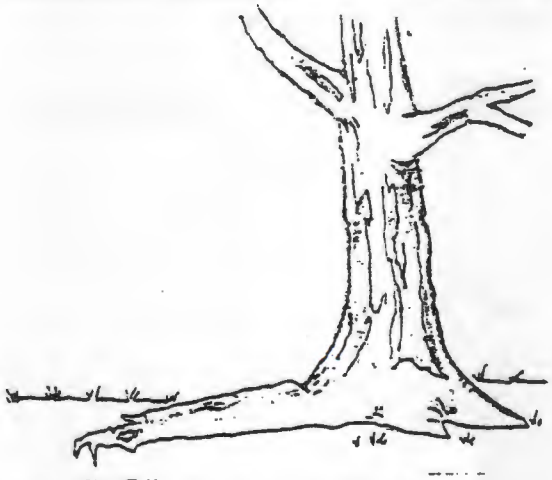
DETAIL B Boards or poles lashed with rope or wire in an upright position against the tree trunk.



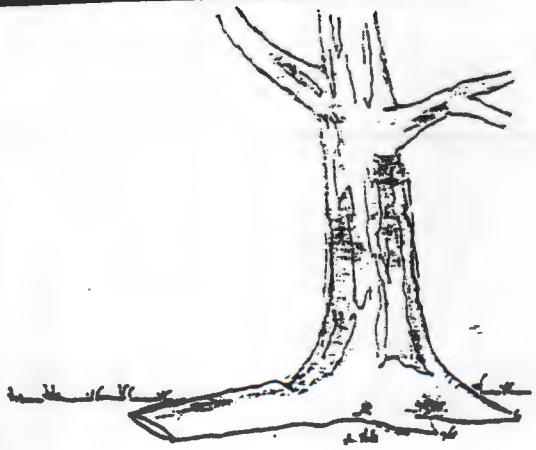
DETAIL C Damaged tree trunk with loose bark.



Corrective Action
Streamlined wound edges with loose bark removed.



DETAIL D Mutilated root resulting from mechanical excavation.



Corrective Action
Oblique cut facing away from soil surface.

# SECTION 01570

# MAINTENANCE AND PROTECTION OF TRAFFIC

## PART 1 GENERAL

### 1.1 DESCRIPTION

The work specified in this Section consists of furnishing, installing, maintaining and subsequently removing temporary traffic control devices; furnishing flag persons; controlling, warning, guiding, and protecting vehicular and pedestrian traffic on streets and sidewalks affected by construction of the project, and that adjacent to worksite; as specified, directed by the Contracting Officer and shown on the Drawings.

### 1.2 CONTRACTOR'S RESPONSIBILITY

1.2.1 The Contractor shall not close or cause to be closed, work areas, roadways or parking lots without approval of the Contracting Officer.

1.2.2 Access for emergency and local traffic shall be maintained at all times. The Contractor shall furnish sufficient flag persons to facilitate the safe movement of vehicular and pedestrian traffic.

1.2.3 In addition to the provision herein specified, the Contractor shall implement additional measure necessary to provide for and maintain the safety of vehicular and pedestrian traffic during construction. The provisions and use of materials such as signs, traffic cones, high visibility ribbons, flags, lighted barricades, steel plates, temporary asphalt pavements and temporary fencing where necessary and as directed by the Contracting Officer will be considered minimal items necessary for maintenance and protection of traffic.

### 1.3 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. Publications shall be the latest issue in effect at time of Invitation to Bid.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION (FHA)

FHA D6.1 Manual on Uniform Traffic Control Devices for Streets and Highways

NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT)

Manual of Uniform Traffic Control Devices (MUTCD)

Standards and Specifications, January 2, 1995

### 1.4 SUBMITTALS

1.4.1 The Contractor shall submit certification that the products and materials used conform to the requirements specified herein.

1.4.2 The Contractor's proposed plan shall include as a minimum the following:

a. Materials to be used.
b. Method of routing two-way traffic to facilitated construction.
c. Method of routing one-way traffic to facilitated construction.
d. Method for protecting and routing pedestrians.
e. Placement of flag persons.
f. For the purpose of preparation of a plan assume one- and two-way streets include sidewalks on both sides.
g. Method for approved detours (will be used for site-specific requirements only when approved by the Contracting Officer).

1.5 TRAFFIC REGULATIONS

1.5.1 Vehicular traffic within the United States Military Academy Reservation is subject to traffic regulations of the Post.

1.5.2 The Contractor shall adhere to traffic methods and procedures stated in the Post Regulations and prescribed by the local Provost Marshall or his authorized representative.

1.5.3 During the Work of the Contract, parades, ceremonies and other events will be held on Post. These activities may affect the Contractor's operations. Increased congestion may be anticipated during events. Known events are listed in the Special Conditions. Schedules of other events may be obtained periodically from the Contracting Officer.

PART 2 PRODUCTS

2.1 TEMPORARY TRAFFIC CONTROL DEVICES

2.1.1 Products and materials used shall conform to the requirements of the FHA MUTCD and the NYSDOT MUTCD.

2.1.2 The exact size, wording and details of the signs, panels and mountings shall be approved by the Contracting Officer.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 The Contractor shall not begin site work until his maintenance and protection of traffic plan has been approved.

3.1.2 Except as modified herein, construction methods, including maintenance for traffic control items, shall conform to the requirements of the FHA MUTCD, NYSDOT Standard Specifications and the NYSDOT MUTCD.

3.2 INSTALLATION

3.2.1 The Contractor shall install traffic control items at the location and in the manner shown on the approved plan.

3.2.2 The Contractor shall notify the Provost Marshall and the Contracting Officer at least ten (10) days in advance of starting work on each Delivery Order.

3.2.3 Placement of traffic control devices shall not be placed in locations which hinder pedestrian or vehicular sight lines.

3.2.4 The Contractor shall maintain a clear and safe travelway for vehicles and pedestrians. Storage of materials, equipment and debris outside the work area will not be permitted.

3.2.5 The Contractor shall maintain and control single lane, staggered, two way, traffic through the work area at all times. During non-working hours and weekends, traffic lanes shall be passable. By the completion of work on Fridays, road cuts, holes and excavations shall be covered with two (2) inches of temporary asphalt concrete, Type 3. Steel plating of open excavations will not be permitted on weekends unless approved by the Contracting Officer.

3.2.6 Lights shall operate from dusk to dawn 7 days a week. The Contractor shall provide a minimum of two (2) flag persons when maintaining single lane staggered traffic.

3.2.7 The Contractor shall assume responsibility for damage to persons and property which may occur due to negligence by himself, his agents or his employees in failing to comply with the requirements of the Specifications.

3.3 CONTROLLING VEHICULAR AND PEDESTRIAN FLOW ADJACENT TO WORKSITE

3.3.1 The Contractor shall insure that construction operations do not impede vehicular and pedestrian traffic to the extent that public safety will be threatened, and passage of emergency vehicles will be restricted.

3.3.2 Pavement surfaces shall be maintained in a smooth riding plane where vehicular and pedestrian traffic is routed.

3.3.3 The Contractor shall restore obstructed streets, sidewalks, and access to properties for full use when obstruction thereto is no longer necessary for prosecution of the Work.

3.4 VEHICULAR AND PEDESTRIAN ACCESS TO BUILDINGS

3.4.1 Vehicular and pedestrian access to buildings adjacent to the worksite shall be unimpeded by construction operations to the extent that public safety will not be threatened and that public convenience will not be unduly impaired as determined by the Contracting Officer.

3.4.2 The Contractor shall construct temporary walkways where access to buildings and parking areas is impeded. Temporary walkways shall be constructed with plywood walks, with no slip tape, including steps and handrails on both sides in excavation areas. Excavation for construction of sidewalks and cubs is considered an excavation area.

3.4.3 The Contractor shall stage excavation and construction operations to minimize the number of temporary walkways required. Where more than one entrance to a building exists adjacent to construction, excavation to the second entrance shall not begin until work on the first entrance is completed, accepted and put back in service. Where more than two entrances exist, the staging will be specified in the Delivery Order or as directed by the Contracting Officer.

3.5 DETOURS

3.5.1 Traffic detours in general will not be permitted. However, where the Contracting Officer determines that detouring of traffic would be beneficial to the Government, it will be so stated in the individual Delivery Order. In such cases the Contractor shall submit detailed plans for designated

detours in accordance with the requirements specified in paragraph "SUBMITTALS" above.

3.6 MAINTENANCE

3.6.1 The Contractor shall repair or clean traffic control devices damaged, defaced or otherwise rendered unfit or replace them with new devices.

3.7 REMOVAL

3.7.1 The Contractor shall remove traffic control devices as soon as construction activities have been completed and accepted by the Contracting Officer.

-- End of Section --

SECTION 01720

AS-BUILT DRAWINGS

PART 1 GENERAL

1.1 GENERAL

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 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 Not used.

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

1.2.4 Correct elevations if changes were made in site grading.

1.2.5 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.

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

1.2.7 All changes or modifications which result from the final inspection.

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

1.3 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.

1.4 DRAWING PREPARATION

1.4.1 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 electronic media as specified by the Using Agency/Sponsor. 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.

1.4.2 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 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.

1.4.3 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" (5 mm) 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.

1.5 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,

make the final as-built submittal. This submittal 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 mylars; two blue line prints of these drawings and 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.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 02225

EARTHWORK

PART 1 GENERAL

1.1 DESCRIPTION

This section includes requirements for excavation, subgrade, and embankment preparation, backfilling, and related items associated with swale excavation, structural fill construction and preparation, etc., as directed by the Engineer, and in accordance with the contract documents.

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 136 | (1995a) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM D 422 | (1963; R 1990) Particle-Size Analysis of Soils |
| ASTM D 1140 | (1992) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve |
| ASTM D 1556 | (1990) Density and Unit Weight of Soil in Place by the Sand-Cone Method |
| ASTM D 1557 | (1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.)) |
| ASTM D 2167 | (1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method |
| ASTM D 2487 | (1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| ASTM D 2922 | (1991) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 2937 | (1994) Density of Soil in Place by the Drive-Cylinder Method |
| ASTM D 2992 | (1991) Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings |
| ASTM D 3017 | (1988; R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 4318 | (1993) Liquid Limit, Plastic Limit, and Plasticity Index of Soils |

1.3 MEASUREMENT

Not used.

1.4 PAYMENT

Not used.

1.5 DEFINITIONS

1.5.1 Satisfactory Materials

Satisfactory materials shall comprise materials classified by, ASTM D 2487 as GC, SC, GW, GP, GM, SW, SP, and SM. Satisfactory materials for grading shall be free from roots and other organic matter, trash, debris, and frozen materials and stones larger than 6 inches in any dimension.

1.5.2 Unsatisfactory Materials

Materials that do not comply with the requirements for satisfactory materials are unsatisfactory. Materials classified in ASTM D 2487 as ML, CL, MH, CH, Pt, OH, and OL are unsatisfactory. Unsatisfactory materials also include man-made fills, refuse, or backfills from previous construction.

1.5.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic. Testing required for classifying materials shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

1.5.4 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum density.

1.5.5 Overhaul

Not used.

1.5.6 Topsoil

Material suitable for topsoils obtained from offsite areas is defined as referenced in the NYSDOT Standard Specifications Section 713-01.

1.6 SUBMITTALS

Indicated submittal classification in the blank space using "GA" when the submittal requires Government approval or "FIO" when the submittal is for information only.

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:

SD-09 Reports

Testing;FIO.

Within 24 hours of conclusion of physical tests, 4 copies of test results, including calibration curves and results of calibration tests.

SD-13 Certificates

Testing;GA.

Qualifications of the commercial testing laboratory or Contractor's testing facilities.

SD-18 Records

Earthwork;GA.

Notification of encountering rock in the project. Advance notice on the opening of excavation. Advance notice on shoulder construction for rigid pavements.

1.7 SUBSURFACE DATA

Not used.

1.8 CLASSIFICATION OF EXCAVATION

Excavation specified shall be done on a classified basis, in accordance with the following designations and classifications.

1.8.1 Rock Excavation

Rock excavation shall include excavating, grading, and disposing of material classified as rock and shall include the satisfactory removal and disposal of boulders 1/2 cubic yard or more in volume; solid rock; rock material that is in ledges, bedded deposits, and unstratified masses; and firmly cemented conglomerate deposits possessing the characteristics of solid rock. The removal of any concrete or masonry structures, except pavements, exceeding 1/2 cubic yard in volume that may be encountered in the work shall be included in this classification. If at any time during excavation, the Contractor encounters material that may be classified as rock excavation, such material shall be uncovered and the Contracting Officer notified by the Contractor. The Contractor shall not proceed with the excavation of this material until the Contracting Officer has classified the materials as common excavation or rock excavation and has taken cross sections as required. Failure on the part of the Contractor to uncover such material, notify the Contracting Officer, and allow ample time for classification and cross sectioning of the undisturbed surface of such material will cause the forfeiture of the Contractor's right of claim to any classification or volume of material to be paid for other than that allowed by the Contracting Officer for the areas of work in which such deposits occur.

1.8.2 Measurement

1.8.2.1 Excavation

The unit of measurement for excavation will be the cubic yard, computed by the average end area method from cross sections taken before and after the excavation and borrow operations. The volume to be paid for will be the number of cubic yards of material measured in its original position and removed from the excavation, including the excavation for ditches and gutters, when the material is acceptably utilized or disposed of as herein specified. The measurements will include authorized excavation of rock and the volume of loose boulders collected within the limits of the work. The measurement will not include the volume of subgrade material or other material that is scarified or plowed and reused in-place, and will not include the volume excavated without authorization or the volume of any material used for purposes other than directed. The measurement will not include the volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade.

1.8.3 Payment

Payment will constitute full compensation for all labor, equipment, tools, supplies, and incidentals necessary to complete the work.

1.8.3.1 Classified Excavation

Classified excavation will be paid for at the contract unit prices per cubic yard for rock excavation.

1.8.4 Common Excavation

Common excavation shall include the satisfactory removal and disposal of all materials not classified as rock excavation.

1.9 BLASTING

Blasting will not be permitted.

1.10 UTILIZATION OF EXCAVATED MATERIALS

Unsatisfactory materials removed from excavations shall be disposed of offsite at the Contractor's expense. No satisfactory excavated material shall be wasted without specific written authorization. Satisfactory material authorized to be wasted shall be disposed of offsite the Contractor's expense. Coarse rock from excavations shall be stockpiled and used for constructing slopes or embankments adjacent to streams, or sides and bottoms of channels and for protecting against erosion. No excavated material shall be disposed of to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL

Where indicated or directed, topsoil shall be stripped to the depth it exists or to the required grades. Topsoil shall be spread on areas already graded and prepared for topsoil, or transported and deposited in stockpiles convenient to areas that are to receive application of the topsoil later, or at locations indicated or specified. Topsoil shall be kept separate from other excavated materials, brush, litter, objectionable weeds, roots, stones larger than 2 inches in diameter, and other materials that would interfere with planting and maintenance operations. Any surplus of topsoil from excavations and grading shall be stockpiled in locations indicated by the Contracting Officer.

3.2 EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING. Satisfactory excavated materials shall be transported to and placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials as directed. Such excavated material and the satisfactory material ordered as replacement shall be included in excavation. Surplus satisfactory excavated material not required for fill or embankment shall be disposed of in designated offsite areas. Unsatisfactory excavated material shall also be disposed of in designated offsite areas. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

3.2.1 Swales

Excavation of swales shall be accomplished by cutting accurately to the cross sections, grades, and elevations shown. Swales shall not be excavated below grades shown. Excessive swale excavation shall be backfilled with satisfactory, thoroughly compacted, material to grades shown. Material excavated shall be disposed of as shown or as directed, except that in no case shall material be deposited less than 4 ft from the edge of a swale. The Contractor shall maintain excavations free from detrimental quantities of leaves, brush, sticks, trash, and other debris until final acceptance of the work.

3.3 SELECTION OF BORROW MATERIAL

Not used.

3.4 OPENING AND DRAINAGE OF EXCAVATION

Not used.

3.5 GRADING AREAS

Not used.

## 3.6 BACKFILL

Backfill placed to reach subgrade of the parking areas shall be placed and compacted to at least 95 percent laboratory maximum density. Ground surface on which backfill is to be placed shall be prepared as specified in paragraph SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

## 3.7 PREPARATION OF GROUND SURFACE FOR EMBANKMENTS

Ground surface on which fill is to be placed shall be stripped of live, dead, or decayed vegetation, rubbish, debris, and other unsatisfactory material. In all areas to receive the complete asphalt pavement section, the subgrade shall be proof-rolled with loaded dump trucks and compacted to 95 percent laboratory maximum density. These Areas shall be proof-rolled to the satisfaction of the Contracting Officer prior to the construction of asphalt pavement or placement of new subbase course. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. The prepared ground surface shall be scarified and moistened or aerated as required just prior to placement of embankment materials to assure adequate bond between embankment material and the prepared ground surface.

## 3.8 EMBANKMENTS

### 3.8.1 Earth Embankments

Earth embankments shall be constructed from satisfactory materials free of organic or frozen material and rocks with any dimension greater than 3 inches. The material shall be placed in successive horizontal layers of loose material not more than 12 inches in depth. Each layer shall be spread uniformly on a soil surface that has been moistened or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 90 percent laboratory maximum density for cohesive materials or 95 percent laboratory maximum density for cohesionless materials. Compaction requirements for the upper portion of earth embankments forming subgrade for pavements shall be identical with those requirements specified in paragraph SUBGRADE PREPARATION. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

### 3.8.2 Rock Embankments

Not used.

## 3.9 SUBGRADE PREPARATION

### 3.9.1 Construction

Subgrade shall be scarified to a minimum depth of 4 inches. The existing asphalt surface shall be milled and incorporated into the underlying scarified subgrade. Subgrade shall be shaped to line, grade, and cross

section, and compacted as specified. This operation shall include plowing, disking, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed by the Contracting Officer. In the event that landfill material is encountered in the subgrade, it shall not be removed and the Contracting Officer shall be notified. Rock encountered in the cut section shall be excavated to finished grade. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and the entire subgrade shall be shaped to line, grade, and cross section and compacted as specified. The elevation of the finish subgrade shall not vary more than 0.1 foot from the established grade and cross section.

3.9.2 Compaction

Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Except for bituminous paving, each layer of the embankment shall be compacted to at least 95 percent of laboratory maximum density at a moisture content ±2% of optimum.

3.9.2.1 Subgrade for Railroads

Not used.

3.9.2.2 Subgrade for Pavements

Subgrade for pavements shall be compacted to at least 95 percentage laboratory maximum density for a depth of 6 inches below the surface of the existing pavement shown.

3.9.2.3 Subgrade for Shoulders

Not used.

3.10 SHOULDER CONSTRUCTION

Not used.

3.11 FINISHING

The surface of excavations, embankments, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades shall be specified in paragraph SUBGRADE PREPARATION. Swales shall be finished in a manner that will result in effective drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing materials.

3.12 PLACING TOPSOIL

On areas to receive topsoil, the compacted subgrade soil shall be scarified to a 2-inch depth for bonding of topsoil with subsoil. Topsoil then shall be spread evenly to a thickness of 4 inches and graded to the

elevations and slopes shown. Topsoil shall not be spread when frozen or excessively wet or dry. Material required for topsoil in excess of that produced by excavation within the grading limits shall be obtained from offsite areas.

## 3.13 TESTING

Testing shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. The first inspection shall be at the expense of the Government. Cost incurred for any subsequent inspections required because of failure of the first inspection will be charged to the Contractor. Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556. ASTM D 2992 results in a wet unit weight of soil and when using this method ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017; the calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Contracting Officer. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced, and recompacted to meet specification requirements. Tests on recompacted areas shall be performed to determine conformance with specification requirements. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

### 3.13.1 Fill and Backfill Material Gradation

One test per 3,000 cubic yard stockpiled or in-place source material. Gradation of fill and backfill material shall be determined in accordance with ASTM C 136 and ASTM D 422.

### 3.13.2 In-Place Densities

a. One test per 5,000 square feet, or fraction thereof, of each lift of fill or backfill areas compacted.

### 3.13.3 Check Tests on In-Place Densities

If ASTM D 2992 is used, in-place densities shall be checked by ASTM D 1556 as follows:

a. One check test per lift for each lift of fill or backfill compacted.

3.13.4 Moisture Contents

In the stockpile or excavation areas, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer.

3.13.5 Optimum Moisture and Laboratory Maximum Density

Tests shall be made for each type material or source of material to determine the optimum moisture and laboratory maximum density values. One representative test per 5,000 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

3.13.6 Tolerance Tests for Subgrades

Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

3.14 SUBGRADE AND EMBANKMENT PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until ballast, subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No subbase, base course, ballast, or pavement shall be laid until the subgrade has been checked and approved, and in no case shall subbase, base, surfacing, pavement, or ballast be placed on a muddy, spongy, or frozen subgrade.

-- End of Section --

SECTION 02230

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 DESCRIPTION

This section includes requirements for the clearing and grubbing of all areas within the contract limit of work and other areas indicated, including work designated in permits and other agreements, in accordance with the Contract Documents.

1.2 DEFINITIONS

1.2.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared.

1.2.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

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:

SD-18 Records

Disposal of Materials; GA.

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

1.4 MEASUREMENT

Not used.

1.5 PAYMENT

Not used.

PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and salvage or disposal of structures that obtrude, encroach upon, or otherwise obstruct the work, including the storm drain and chain-link fence.

### 3.2 GRUBBING

Material to be grubbed shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be graded and paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

### 3.3 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

### 3.4 DISPOSAL OF MATERIALS

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be disposed of outside the limits of Government-controlled land at the Contractor's responsibility, except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

-- End of Section --

# SECTION 02232

# SUBBASE

## PART 1 GENERAL

### 1.1 DESCRIPTION

The work of this Section consists of furnishing, placing and compacting subbase in conformity with the lines, grades, and thickness shown on the Drawings or as determined by field conditions and directed by the Contracting Officer. Existing pavement surface shall be milled and incorporated into the underlying scarified subgrade. If soft spots in the subbase are identified and excavated, offsite material meeting this Subbase specification shall be imported as subbase to conform to the lines and grades shown on the 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. Publications shall be the latest issue in effect at time of Invitation to Bid.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT)

Standard Specifications, January 2, 1995.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| D 1556 | Test Method for Density and Unit Weight of Soil in Place by the Sand Cone Method |
| D 1557 | Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft lbf/ft3) (2,700 KN-n/n3) |

### 1.3 SUBMITTALS

1.3.1 The Contractor shall submit certification indicating that the subbase material conforms to the requirements specified.

1.3.2 The Contractor shall submit for review complete data on his proposed methods of processing, handling and transporting the material.

1.3.3 The Contractor shall submit for approval the following:

Gradation Analysis
Soundness Test Results
Wear Test Results
Density test, laboratory and field.

1.3.4 The Contractor shall submit delivery tickets for subbase delivered to the site. Tickets shall indicate the number of cubic yards per ticket.

1.4 PRODUCT HANDLING

1.4.1 The subbase material shall be processed, blended and transported to the site in a manner that will prevent degradation or segregation of the material.

PART 2 PRODUCTS

2.1 SUBBASE

2.1.1 Except as modified herein, subbase material shall conform to the requirements of the NYSDOT Standard Specifications for Item 304.03, Subbase Course, Type 2.

2.1.2 Aggregates shall consist of clean, sound, durable particles of crushed stone and screenings. Shale shall not be used.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 Subbase material shall be placed and compacted to the lines, grades, and thicknesses shown on the Drawings and specified.

3.1.2 Surface material shall not be placed until utility work under the subbase area is completed.

3.2 WEATHER LIMITATIONS

3.2.1 Subbase material shall be placed when the atmospheric temperature is above 35 degrees F. Areas of completed subbase course damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

3.3 PLACING

3.3.1 Prior to placement of subbase material, the subgrade shall be fine graded to provide a surface true to grade and free from foreign material.

3.3.2 The material shall be placed in maximum 6 inch lifts on the approved subgrade in a manner minimizing segregation and machine work of the layer, using equipment and procedures acceptable to the Contracting Officer. Uncontrolled spreading from stockpiles dumped on grade resulting in segregation will not be acceptable.

3.3.3 Material placed on grade that does not meet the gradation requirements shall be removed by the Contractor. Reworking of material placed on grade shall not be used to meet the gradation requirements.

3.4 COMPACTION

3.4.1 After each course has been placed, its entire area shall be compacted with equipment specifically manufactured for that purpose and acceptable to the Contracting Officer.

3.4.2 Compaction shall be continued until a dry density of not less than 100 percent of maximum density, when tested in accordance with ASTM D 1557, Method C, is obtained. Subbased shall be compacted at optimum moisture.

3.4.3 Where subbase has been disturbed by frost action, the subbase shall be recompacted to meet specified requirements.

3.4.4 Where construction equipment is to be allowed to cross over an existing or new pipe installation before placement of suitable cover, a ramp shall be provided to allow a minimum of 2 feet of cover over the affected pipe. Provision of this ramping shall not relieve the Contractor of liability for damage to the pipe.

3.4.5 Field Testing Frequency

The following area shall be tested by the Contractor in accordance with ASTM D 2922, at the specified frequencies:

a. Roadways and Parking Areas: One test for every 150 linear feet per 12-foot lane.

ASTM D 1556 shall be performed for every 10 tests conducted by ASTM D 2922 to verify the results.

3.5 TRAFFIC

3.5.1 The movement of construction traffic or equipment over the compacted subbase may be allowed by the Contracting Officer at designated locations.

3.5.2 Where movement over the finished course has been permitted, the surface shall be reprepared and compacted as deemed necessary by the Contracting Officer.

3.5.3 Should the subbase become mixed with the subgrade or other material, the Contractor shall remove the mixture and replace it with appropriate material and compact to specified requirements.

3.6 TOLERANCE

3.6.1 After compaction, the top surface shall not extend more than 0.1 foot above or below true grade at any location.

-- END OF SECTION --

SECTION 02272

SEPARATION/FILTRATION GEOTEXTILE

PART 1 GENERAL

1.1 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-Diaphram Bursting Strength Tester Method |
| ASTM D 4354 | (1989; R 1994) 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 | (1992) Water Permeability of Geotextiles by Permittivity |
| ASTM D 4533 | (1991) Trapezoid Tearing Strength of Geotextiles |
| ASTM D 4632 | (1991) Grab Breaking Load and Elongation of Geotextiles |
| ASTM D 4751 | (1993) Determining Apparent Opening Size of a Geotextile |
| ASTM D 4759 | (1988; R 1992) Determining the Specification Conformance of Geosynthetics |
| ASTM D 4833 | (1988) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products |
| ASTM D 4873 | (1995) Identification, Storage, and Handling of Geotextiles |

1.2 MEASUREMENT

Not used.

1.3 PAYMENT

Not used.

1.4 QUALIFICATIONS

The Contractor shall hire a testing laboratory which is independent from the Contractor, manufacturer, or installer and is responsible for site verification testing. The laboratory shall have performed quality control and/or quality assurance testing on geotextiles for at least 3 projects of comparable size.

1.5 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 01300:

SD-01 Data

Thread; FIO.

A minimum of 14 days prior to scheduled use, proposed thread type for sewn seams along with data sheets showing the physical properties of the thread.

SD-04 Drawings

Engineered Penetrations; GA.

Geotextile penetration details.

SD-06 Instructions

Manufacturing, Sampling, and Testing; FIO.

A minimum of 14 days prior to scheduled use, Manufacturer's quality control manual including instructions for storage, handling, installation, seaming, and repair.

SD-08 Statements

Qualifications; GA.

Independent laboratory's qualification statement including resumes of key personnel involved in testing.

SD-09 Reports

Site Verification Sampling and Testing; FIO.

Certified site verification test results.

Seaming; FIO.

Certified seam strength test results.

SD-13 Certificates

Geotextile; FIO.

A minimum of 14 days prior to scheduled use, Manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. This submittal shall include copies of manufacturer's quality control test results. For needle punched geotextiles, the manufacturer shall also certify that the geotextile has been continuously inspected using permanent on-line full-width metal detectors and does not contain any needles which could damage other geosynthetic layers. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturing company.

SD-14 Samples

Geotextile; FIO.

A minimum of 14 days prior to scheduled use, one sample shall be provided for testing. The sample shall be the full manufactured width of the geotextile and a minimum of 5 feet in length, folded over and the edges stitched with the same thread type, stitch density, and machine that will be used during construction. A smaller sample will be approved when no testing of the samples will be performed by the Government.

## 1.6 DELIVERY, STORAGE AND HANDLING

### 1.6.1 General

Geotextiles shall be labeled, handled, and stored 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 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). Geotextile or plastic wrapping damaged as a result of storage or handling shall be repaired or replaced, as directed. Geotextile shall not be exposed to temperatures in excess of 140 degrees F or less if recommended by the manufacturer.

### 1.6.2 Handling

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

PART 2 PRODUCTS

2.1 RAW MATERIALS

2.1.1 Geotextile

The geotextile shall be a woven pervious sheet of polymeric material and shall consist of long-chain synthetic polymers composed of at least 85 percent 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 ultraviolet light, oxidation, and heat exposure. Regrind material which consists of edge trimming and other scraps that have never reached the consumer may be used to produce the geotextile. Post-consumer recycled material shall not be used. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the selvages. 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 principal direction.

TABLE 1. GEOTEXTILE PHYSICAL PROPERTIES

| PROPERTY | TEST METHOD | MINIMUM AVERAGE ROLL VALUE |
|---|---|---|
| Apparent Opening Size (U.S. Sieve) | ASTM D 4751 | 20 |
| Permittivity, sec-1 | ASTM D 4491 | 0.55 |
| Puncture, lbs. | ASTM D 4833 | 135 |
| Grab Tensile, lbs. | ASTM D 4632 | 255 |
| Trapezoidal Tear, lbs. | ASTM D 4533 | 40 |
| Burst Strength, psi | ASTM D 3786 | 420 |
| Ultraviolet Degradation (percent strength retained at 500 hours) | ASTM D 4355 | 70 |

2.1.2 Thread

Not used.

2.2 TESTS, INSPECTIONS, AND VERIFICATIONS

2.2.1 Manufacturing, Sampling, and Testing

Geotextiles shall meet the requirements specified in Table 1. Manufacturing quality control testing shall be performed in accordance with the manufacturer's approved quality control manual. As a minimum, geotextiles shall be randomly sampled for testing in accordance with ASTM D 4354 (Procedure A).

2.2.2 Site Verification Sampling and Testing

Not used.

## PART 3 EXECUTION

### 3.1 SURFACE PREPARATION

The surface underlying the geotextile shall be smooth and free of ruts or protrusions which could damage the geotextile.

### 3.2 INSTALLATION

The Contracting Officer shall be present during handling and installation. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid with the machine direction of the fabricvertical on the sides of the trench.

### 3.3 PROTECTION

The geotextile shall be protected during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Adequate ballast (e.g. sand bags) shall be used to prevent uplift by wind. Staples or pins shall not be used to hold the geotextile in place. The geotextile shall not be left uncovered for more than 14 days during installation. The initial loose gravel lift height over the geotextile shall be between 8 inches and 12 inches. Overlying materials shall be deployed such that the geotextile is not shifted, damaged, or placed in tension. Gravel placed from a bucket shall be dropped from a height no greater than 1 foot.

### 3.4 SEAMING

#### 3.4.1 Overlap Seams

Geotextile panels shall be continuously overlapped a minimum of 12 inches. Where it is required that seams be oriented across the slope, the upper sheet shall be lapped over the lower sheet.

#### 3.4.2 Sewn Seams

Not used.

### 3.5 REPAIRS

Geotextile damaged during installation shall be repaired by placing a patch of the same type of geotextile which extends a minimum of 12 inches beyond the edge of the damage or defect. Patches shall be continuously fastened using a sewn seam or other approved method. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Geotextile which cannot be repaired shall be replaced.

### 3.6 ENGINEERED PENETRATIONS

Engineered penetrations of the geotextile shall be constructed by approved methods recommended by the geotextile manufacturer.

-- End of Section --

# SECTION 02513

# BITUMINOUS CONCRETE PAVEMENT

## PART 1 GENERAL

### 1.1 DESCRIPTION

The work of this Section covers the requirements for materials, mixtures, construction of bituminous concrete paving restoration and related work.

### 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. Publications shall be the latest issue in effect at time of Invitation to Bid.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT)

Standard Specification, January 2, 1995.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| D 242 | Specification for Mineral Filler for Bituminous Paving Mixtures |
| D 946 | Specification for Penetration Graded Asphalt Cement for Use in Pavement Construction |

### 1.3 SUBMITTALS

1.3.1 The Contractor shall submit certification indicating that the asphalt plant to be used is currently approved by the New York State Department of Transportation and that all materials and application methods used are in conformance with the NYSDOT Standard Specifications.

1.3.2 The Contractor shall submit the following:

| | |
|---|---|
| Job Mix Formulas | For each mix specified, for approval |
| Prime Coat | NYSDOT Conformance Certification |
| Tack Coat | NYSDOT Conformance Certification |
| Testing Laboratory | Name of proposed laboratory, for approval |
| Delivery Tickets | Daily as work progresses |
| Density Test Results | Daily as work progresses |
| Licensed Surveyor | Name and proof of registration |
| Proposed placement & compacting equipment | Manufacturer and model numbers |

### 1.4 TESTING LABORATORY

1.4.1 The Contractor shall engage the services of an independent commercial testing laboratory to perform sampling and testing specified herein.

1.4.2 Sampling and testing shall be performed at the frequencies specified as a minimum, and additionally as may be required to assure conformance with the specifications.

1.5 GRADE CONTROL

1.5.1 The Contractor shall retain a licensed surveyor to establish, record and transfer existing horizontal and vertical geometry prior to the start of removal work. Lines and grades shall be established and maintained by means of stakes, permanent ties, or other Contracting Officer approved methods.

1.5.2 Locations of existing bench marks for use by the Contractor will be provided by the Government. The location of existing bench marks may not be in the immediate vicinity of each work site. It shall be the responsibility of the Contractor to transfer said elevations to the work site. Finished pavement elevations and horizontal and vertical control shall be established and controlled by the Contractor.

1.6 DELIVERY TICKETS

1.6.1 Copies of asphaltic concrete automated delivery tickets shall be turned over to the Contracting Officer's Representative at the conclusion of each day's placement.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Materials shall comply with the following Sections of the NYSDOT Standard Specifications:

a. Prime Coat: Cutback asphalt conforming to Section 702, 702-4001, 4401.

b. Tack Coat: Emulsified asphalt conforming to Section 702, 702-3001, 3401, 3601.

c. Asphaltic Cement: Asphaltic cement conforming to Section 702 for material designation 702-0500, viscosity grade AC-20, and it shall also be in compliance with ASTM D 946, penetration grade 60-70.

d. Mineral Filler: Mineral filler conforming to Section 703-08, and it shall also be in compliance with ASTM D 242.

e. Aggregate: Conforming to Section 401-2.03.

f. Sand: Conforming to the requirements for fine aggregate, Section 703-01.

2.2 PAVING MIXTURES

2.2.1 Asphaltic paving mixtures shall consist of mineral aggregate thoroughly coated with asphaltic cement.

2.2.2 Asphaltic paving mixtures shall comply with the requirements of Section 401 of the NYSDOT Standard Specifications for the following types:

a. Type 3 Intermediate Course
b. Type 5 Shim
c. Type 6F Final Course
d. Type 7 Top (Truing and Leveling)

PART 3 EXECUTION

3.1 GENERAL

Unless otherwise modified herein or on the Drawings, work shall be in accordance with the NYSDOT Standard Specifications.

3.2 SURFACE PREPARATION

3.2.1 Before bituminous pavement is placed on subbase, the subbase surface shall conform to provisions of Section 02232 and shall have not standing water. Prime coat shall then be applied to the Contracting Officer approved subbase at the rate of 0.20 to 0.50 gal. per sq. yd. Prime coat shall be allowed to cure for a minimum of 24 hours or as directed by the Contracting Officer.

3.2.2 Before asphaltic mixtures are laid on existing pavement, the surface shall be thoroughly swept and cleaned of dirt, loose and foreign matter, and be free of standing water. Mixtures shall not be deposited unless the surface on which it is to be laid is in a condition approved by the Contracting Officer.

3.2.3 Before asphaltic mixtures, including truing and leveling courses, are placed on existing asphaltic concrete, potholes and depressions greater than 1/4" in depth when tested with a 10-foot straightedge, shall be cleaned, tack coated, and filled with Type 7 asphaltic concrete. Placement shall be in 2" maximum lifts and rolled with a two drum, steel wheel roller. Plate tampers shall not be used for compaction unless the area is such that small, two drum rollers do not fit between obstructions.

3.2.4 Surfaces to be tack coated shall be swept with a power broom and if necessary blown clean and dry to the satisfaction of the Contracting Officer. Tack coat shall be applied at the rate of 0.05 to 0.10 gallons per square yard to in place asphalt or concrete contact surfaces and structures which will contact pavement. Tack coat overspray and spills shall be removed from exposed surfaces of curbs, sidewalks, and other areas not specified to receive tack coat.

3.2.5 Following the tack coat application, the surface shall be allowed to cure without being disturbed for such time as may be necessary to permit drying out and setting of the tack coat. The surface shall be maintained by the Contractor until the overlaying course has been placed. Precautions shall be taken by the Contractor to protect the surface against damage during this interval, including use of sand which may be necessary to blot up excess tack coat material.

3.3 PAVING TOLERANCES

3.3.1 Paving tolerances shall conform to the following:

3.3.1.1 Intermediate and Final course thickness: Plus or minus 1/4", except that Final courses shall not be less than 1/4" above MH, CB, CI and valve boxes.

3.3.1.2 Final course surface smoothness: Plus or minus 3/16" when tested with a 10-foot straightedge in any direction.

3.3.1.3 Conformance to thickness tolerance will not excuse the Contractor from conformance to surface smoothness.

3.3.1.4 Pavements of less than the specified thickness, including tolerances, shall be satisfactorily corrected or removed and replaced. Pavements of more than the specified thickness, including tolerance, shall be satisfactorily corrected when deemed necessary by the Contracting Officer.

3.4 EQUIPMENT

3.4.1 Asphaltic concrete shall be placed and compacted by means of approved equipment specifically manufactured for such purpose.

3.5 PLACEMENT

Bituminous courses shall be placed only when the existing pavement has no free water on the surface. Bituminous mixtures shall not be placed without ample time to complete spreading and rolling during daylight hours, unless approved satisfactory artificial lighting is provided.

3.5.1 Painting Contact Surfaces

Contact surfaces of cold joints, curbs, gutters, headers, manholes, catch basins, valve boxes and curb inlets shall be well painted with a thin uniform coating of tack coat allowed to cure before the mixtures are laid.

3.5.2 Offsetting Joints

The Final course shall be placed so that longitudinal joints of the Final course will be offset from joints in the Intermediate course by at least 1 foot. Transverse joints in the Final course shall be offset by at least 2 feet from transverse joints in the Intermediate course.

3.5.3 General Requirements for Use of Mechanical Spreader

Range of temperatures of mixtures, when dumped into the mechanical spreader, shall be as determined by the Contracting Officer. Mixtures having temperatures less than 225 degrees F when dumped into the mechanical spreader shall not be used. The mechanical spreader shall be adjusted and the speed regulated so that the surface of the course being laid will be smooth and continuous without tears and pulls, and of such depth that, when compacted, the surface will conform to the cross section indicated. Placing with respect to center line areas with crowned sections or high side of areas with one-way slope shall be as directed. Each lot of material placed shall conform to requirements as specified in

paragraph ACCEPTABILITY OF WORK. Placing of the mixture shall be as nearly continuous as possible, and speed of placing shall be adjusted, as directed, to permit proper rolling. When segregation occurs in the mixture during placing, the spreading operation shall be suspended until the cause is determined and corrected.

3.5.4 Placing Strips Succeeding Initial Strips

In placing each succeeding strip after initial strip has been spread and compacted as specified below, the screed of the mechanical spreader shall overlap the previously placed strip 2 to 3 inches and be sufficiently high so that compaction produces a smooth dense joint. Mixture placed on the edge of a previously placed strip by the mechanical spreader shall be pushed back to the edge of the strip by use of a lute. Excess mixture shall be removed and wasted.

3.5.5 Handspreading in Lieu of Machine Spreading

In areas where the use of machine spreading is impractical, the mixture shall be spread by hand. Spreading shall be in a manner to prevent segregation. The mixture shall be spread uniformly with hot rakes in a loose layer of thickness that, when compacted, will conform to required grade, density, and thickness.

3.6 COMPACTION

3.6.1 Rolling

Immediately after spreading or as soon thereafter as is practicable without causing undue displacement, mixtures shall be thoroughly compacted by approved tamping irons adjacent to curbs and manholes and by rolling with approved rollers continuously from commencement to final completion of compression at a speed not exceeding three (3) miles per hour.

3.6.2 Density

Rolling shall be continued until a mat density of 97.0 to 100.0 percent and a joint density of 95.0 to 100.0 percent of maximum density of laboratory compacted specimens of the same mixture is obtained.

3.6.3 Vibratory Compaction

The Contractor, when permitted by the Contracting Officer, may use vibratory compaction. When this type compaction is permitted, the provisions of Section 401-3.12 "Option B - Vibratory Compaction" of the NYSDOT Standard Specifications shall apply as well as the pertinent portions of Section 401-3.06.

3.7 JOINTS

3.7.1 General

Joints between old and new pavements, between successive work days, or joints that have become cold (175 degrees F), shall be made to ensure continuous bond between the old and new sections of the course. Joints shall have the same texture and smoothness as other sections of the course. Contact surfaces of previously constructed pavements coated by

dust, sand, or other objectionable material shall be cleaned by brushing or shall be cut back as directed. When directed by the Contracting Officer, the surface against which new material is placed shall be sprayed with a thin, uniform coat of tack coat. Material shall be applied far enough in advance of placement of a fresh mixture to ensure adequate curing. Care shall be taken to prevent damage or contamination of the sprayed surface.

3.7.2 Transverse Joints

The roller shall pass over the unprotected end of a strip of freshly placed material only when placing is discontinued or delivery of the mixture is interrupted to the extent that the material in place may become cold. In all cases, prior to continuing placement, the edge of previously placed pavement shall be cut back to expose an even vertical surface for full thickness of the course. In continuing placement of a strip, the mechanical spreader shall be positioned on the transverse joint so that sufficient hot mixture will be spread to obtain a joint after rolling that conforms to the required density and smoothness specified herein.

3.7.3 Longitudinal Joints

Edges of a previously placed strip shall be prepared such that the pavement in and immediately adjacent to the joint between this strip and the succeeding strip meets the requirements for grade, smoothness, and density specified in paragraph ACCEPTABILITY OF WORK.

3.8 LAYING IN DAYLIGHT, WET WEATHER, COLD WEATHER

3.8.1 Mixtures shall be spread and compacted during daylight, unless otherwise permitted by the Contracting Officer and then only when satisfactory artificial light is provided.

3.8.2 Placement of bituminous paving materials shall not be scheduled when the Precipitation Probability, obtained by the Contractor from the U.S. Weather Bureau within three (3) hours prior to the start of such operations, equals or exceeds fifty (50) percent. The Contractor shall notify the Contracting Officer of the exact time at which the above information was obtained.

3.8.3 Except where otherwise permitted by the Contracting Officer, permanent bituminous mixtures shall not be laid when surface temperatures are below the following:

| Compacted Lift Thickness | Minimum Surface Temp. |
|---|---|
| 3 inches or greater | 40 degrees F. |
| Between 1 inch and 3 inches | 45 degrees F. |
| 1 inch or less | 50 degrees F. |

3.8.4 The Contractor shall take surface temperatures at 3 locations in the area being paved. The controlling temperature shall be the average of the 3 readings. Readings and the location of each reading shall be recorded in the Contractor's daily paving and QC reports as submitted to the Contracting Officer.

3.9 TRAFFIC

3.9.1 Vehicular traffic shall not be allowed on the pavement until the specified densities are obtained. Loaded trucks shall not park or idle on new pavement.

3.10 ACCEPTABILITY OF WORK

3.10.1 Optional Sampling and Testing

The Contracting Officer reserves the right to sample and test any area which appears to deviate from the specification requirements. Testing in these areas will be for quality and thickness.

3.10.2 Grade

Grade-conformance tests will be conducted by the Contractor. The finished surface of the pavement will be tested for conformance with plan-grade requirements. Within 5 working days after completion of placement of a particular lot, the Contracting Officer will inform the Contractor in writing of results of grade-conformance tests. The finished grade of each pavement area shall be determined by running lines of levels at intervals of 25 feet or less longitudinally and transversely to determine the elevation of the completed pavement. The Contractor shall remove deficient areas and replace with fresh paving mixture at no additional cost to the Government. Sufficient material shall be removed to allow at least 1 inch of asphalt concrete to be placed. Skin patching for correcting low areas or planing for correcting high areas shall not be permitted.

3.10.3 Surface Smoothness

Any joint or mat area surface deviation which exceeds the tolerance given in paragraph GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS by more than 50 percent shall be corrected to meet the specification requirements. The Contractor shall remove the deficient area and replace with fresh paving mixture at no additional cost to the Government. Sufficient material shall be removed to allow at least 1 inch of asphalt concrete to be placed. Skin patching for correcting low areas or planing for correcting high areas shall not be permitted.

3.10.4 Defective Final Course

Such portions of the completed final course as are defective in finish, compression, composition, density, or do not comply with the requirements of these specifications, shall be taken up, removed and replaced with suitable material properly placed in accordance with these Specifications.

3.11 TRUING AND LEVELING

3.11.1 The Contractor shall provide a truing and leveling asphalt concrete course at locations designated by the Contracting Officer or found to be necessary as a result of the Contractor's survey of existing conditions. Truing and leveling shall be used to fill in low areas of existing pavement and correct deficiencies in geometry. Pot holes and other surface defects shall be tack coated and filled with asphalt prior to machine truing and leveling.

3.11.2 Surface preparation shall be completed prior to truing and leveling operations.

3.11.3 Truing and leveling required due to the Contractor's failure to control placement of new material will not be measured for payment. Truing and levels of the Final course will not be permitted.

3.11.4 Unauthorized placement of truing and leveling course will not be measured for payment.

3.12 FIELD TESTING

3.12.1 Testing Laboratory

Field testing shall be performed by the Contractor's independent testing laboratory.

3.12.1.1 The independent testing laboratory shall monitor the placement of asphalt concrete courses for density, thickness and surface smoothness. Reports for each day's work shall be completed and delivered to the Contracting Officer within 24 hours after completion of the day's work.

3.12.1.2 Density Testing

The Contractor's independent testing laboratory shall monitor compaction of bituminous mixture. A minimum of three density tests shall be taken for each 100 tons placed per mix per day. The average mat densities shall be expressed as a percentage of the laboratory density as determined per MIL-STD-620, Method 100. The average mat density must be greater than 97 percent of laboratory density. Field tests shall be performed using nuclear testing methods.

3.13 RECORD DRAWINGS AND DAILY LOGS

3.13.1 The Contractor shall plot the locations of each course placed, density test locations, and other data which may affect the finished work. These record drawings shall be prepared daily during asphalt placement.

3.13.2 The Contractor shall establish and maintain a daily log containing as a minimum the following information:

1. Delivery Order Number

2. Date and work area

3. Location of material placed, including horizontal dimensions and depth of material being placed

4. Tonnage delivered and tonnage placed in the work

5. Density test locations and identification

6. Density of materials placed

A copy of the log shall be given to the Contracting Officer on a daily basis, the previous day's log turned over by 10:00 a.m. each day.

3.13.3 If the Contractor fails to maintain the record drawings and logs as specified, the Contracting Officer will deem that satisfactory progress has not been made for the period in question, and that the 10% retainage may be withheld until such time as the record drawings and logs are made current.

3.14 RESTORATION

3.14.1 Areas damaged by paving operation shall be restored to an equal or better condition. Turf areas shall be restored as specified in Section 02935. Other areas shall be restored with like materials or as directed by the Contracting Officer.

-- End of Section --

# SECTION 02514

# ASPHALT OVERLAY FABRIC

## PART 1 GENERAL

### 1.1 DESCRIPTION

This work shall consist of furnishing and placing an asphalt overlay geotextile (paving fabric) beneath a pavement overlay or between pavement layers to provide a water-resistant membrane and crack-retarding layer.

### 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. Publications shall be the latest issue in effect at time of Invitation to Bid.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| D276-87 | 1993)e1 Standard Test Methods for Identification of Fibers in Ttextile |
| D4354-96 | Standard Practice for Sampling of Geosynthetics for Testing |
| D4632-91 | Standard Test Method for Grab Breaking Load and Elongation of Geotextiles |
| D4759-88 | 1992) Standard Practice for Determining the Specification Conformance of Geosynthetics |
| D4873-95 | Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls |

## PART 2 PRODUCTS

### 2.1 PAVING FABRIC

The paving fabric will be a separate fiber, needle-punched, nonwoven material consisting of at least 85 percent by weight polyolefins, polyesters or polyamides. The paving fabric shall be resistant to chemical attack, rot and mildew and shall have no tears or defects that will adversely alter its physical properties. The fabric shall be specifically designed for pavement applications and be heat-set on one side to reduce bleed-through of tack coat and to minimize fabric pick-up by construction equipment during installation. The fabric shall meet the physical requirements specified in Table 1.

TABLE 1 PHYSICAL REQUIREMENTS OF PAVING FABRICS[1,2,3]

| Property | Test Method | Units | Required Values |
|---|---|---|---|
| Tensile Strength | ASTM D 4632-91 | Pounds | 90 |
| Tensile Elongation | ASTM D 4632-91 | % | 50 |
| Asphalt Retention | TX DOT 3099 | Gallons/Square Yard | 0.20 |
| Melting Point | ASTM D 276-87 | °F | 300 |
| Surface Texture | Visual Inspection | --- | Heat-Set On One Side |

NOTES:
[1] Certification of conformance from paving fabric manufacturer may be required.
[2] All numerical values represent minimum average roll values (average of test results from any sampled roll in a lot shall meet or exceed the minimum values) in weaker principal direction. Lot shall be sampled according to ASTM D 4354-89, "Practice for Sampling of Geosynthetics for Testing."
[3] Conformance of paving fabrics to specification property requirements shall be determined in accordance with ASTM D 4759-88, "Practice for Determining the Specification Conformance of Geosynthetics."

2.2 SHIPPING AND STORAGE

The paving fabric shall be kept dry and wrapped such that it is protected from the elements during shipping and storage. If stored outdoors, the fabric shall be elevated and protected with a waterproof cover. The paving fabric shall be labeled in accordance with ASTM D 4873-88, "Standard Guide for Identification, Storage, and Handling of Geotextiles."

2.3 TACK COAT

The tack coat used to impregnate the fabric and bond the fabric to the pavement shall be the same grade asphalt cement as used in the hot mix asphalt. A cationic or anionic emulsion may be used as approved by the Engineer. The Contractor shall follow the recommendations of the paving fabric manufacturer when an asphalt emulsion is used. The use of cutbacks or emulsions that contain solvents shall not be permitted.

PART 3 EXECUTION

3.1 WEATHER LIMITATIONS

The air and pavement temperatures shall be at least 50°F and rising for placement of asphalt cement and shall be at least 60°F and rising for placement of asphalt emulsion. Neither asphalt tack coat nor paving fabric shall be placed when weather conditions are not suitable, in the opinion of the Engineer.

3.2 SURFACE PREPARATION

The pavement surface shall be dry and be thoroughly cleaned of all dirt and oil to the satisfaction of the Engineer. Cracks 1/8" wide or greater shall be cleaned and filled with suitable bituminous material or by a method approved by the Engineer. Crack-filling material shall be allowed to cure prior to placement of paving fabric. Potholes and other pavement distress shall be repaired. Repairs shall be performed as directed by the Engineer.

## 3.3 TACK COAT APPLICATION

The tack coat shall be applied using a calibrated distributor spray bar. Hand spraying, squeegee and brush application may be used in locations where the distributor truck cannot reach. Every effort shall be made to keep hand spraying to a minimum. The tack coat shall be applied uniformly to the prepared, dry pavement surface. The tack coat application rate must be sufficient to saturate the fabric and to bond the fabric to the existing pavement surface. The tack coat application rate shall be 0.22 to 0.30 gallons per square yard as required by the roadway surface and environmental conditions. When using emulsions, the application rate must be increased as directed by the Engineer to offset the water content of the emulsion. Within street intersections, on steep grades or in other zones where vehicle speed changes are common, the normal application rate shall be reduced by about 20 percent as directed by the Engineer, but to not less than 0.20 gallons per square yard.

The temperature of the tack coat shall be sufficiently high to permit a uniform spray pattern. For asphalt cements, the minimum temperature shall be 290°F. The avoid damage to the fabric, distributor tank temperatures shall not exceed 325°F. For asphalt emulsions, the distributor tank temperatures shall be maintained between 130°F and 160°F.

The target width of the tack coat application shall be equal to the paving fabric width plus 6". Tack coat application shall be wide enough to cover the entire width of fabric overlaps. The tack coat shall be applied only as far in advance of paving fabric installation as is appropriate to ensure a tacky surface at the time of paving fabric placement. Traffic shall not be allowed on the tack coat. Excess tack coat shall be cleaned from the pavement.

## 3.4 PAVING FABRIC PLACEMENT

The paving fabric shall be placed onto the tack coat using mechanical or manual laydown equipment capable of providing a smooth installation with a minimum amount of wrinkling or folding. The paving fabric shall be placed before the asphalt cement tack coat cools and loses its tackiness. Paving fabric shall not be installed in areas where the overlay asphalt tapers to a minimum compacted thickness of less than 1.5".

When asphalt emulsions are used, the emulsion shall be allowed to cure properly such that essentially no water moisture remains prior to placing the paving fabric. Fabric wrinkles severe enough to cause folds shall be slit and laid flat. Brooming and/or rubber-tire rolling will be required to maximize paving fabric contact with the pavement surface. Additional hand-placed tack coat may be required at overlaps and repairs as required by the Engineer.

Turning of the paver and other vehicles shall be done gradually and kept to a minimum to avoid movement and damage to the paving fabric. Abrupt starts and stops shall also be avoided. Damaged fabric shall be removed and replaced with the same type of fabric and a tack coat.

3.5 JOINTS AND OVERLAPS

At joints, fabric rolls shall overlap by 1" to 3". End joints and joints from repair of wrinkles should be made to overlap or "shingle" in the direction that the pavement overlay will be placed. Overlaps of adjacent rolls may be as great as 6" to accommodate variations between the width of the roadway and the paving fabric. Excess fabric shall be cut and removed to ensure that overlaps of adjacent rolls do not exceed 6". A uniform application of tack coat shall be applied between all fabric overlaps. Any locations that do not have tack between the overlaps shall be corrected by manual placement of tack coat prior to overlay construction.

All areas with paving fabric will be paved the same day. No traffic except necessary construction traffic will be allowed to drive on the paving fabric.

3.6 OVERLAY PLACEMENT

Asphalt overlay construction shall closely follow fabric placement. All areas in which paving fabric has been placed will be paved during the same day. Excess tack coat that bleeds through the paving fabric shall be removed. Excess tack coat can be removed by broadcasting hot mix or sand on the paving fabric. Excess sand or hot mix should be removed before beginning the paving operation. In the event of rainfall on the paving fabric prior to the placement of the asphalt overlay, the paving fabric must be allowed to dry completely before asphalt is placed. Overlay asphalt thickness shall meet the requirements of the contract drawings and documents. The minimum compacted thickness of overlay asphalt shall not be less than 1.5" in areas of paving fabric installation.

-- End of Section --

# SECTION 02831

# CHAIN-LINK FENCE

## PART 1 GENERAL

### 1.1 DESCRIPTION

This Section includes the requirements for providing all labor, materials, equipment, and incidentals necessary for construction of a chain link fence and gate system, as specified herein and shown on the Contract 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 94 | (1990) Ready-Mixed Concrete |
| ASTM F 883 | (1990) Padlocks |

AMERICAN WELDING SOCIETY (AWS)

| | |
|---|---|
| AWS WZC | (1972) Welding Zinc-Coated Steels |

FEDERAL SPECIFICATIONS (FS)

| | |
|---|---|
| FS RR-F-191/GEN | (Rev K) Fencing, Wire and Post Metal (and Gates, Chain-Link Fence Fabric, and Accessories) |
| FS RR-F-191/1 | (Rev D) Fencing, Wire and Post, (Chain-Link Fence Fabric) |
| FS RR-F-191/2 | (Rev D) Fencing, Wire and Post,(Chain-Link Fence Gates) |
| FS RR-F-191/3 | (Rev D) Fencing, Wire and Post, Metal(Chain-Link Fence Posts, Top Rails and Braces) |
| FS RR-F-191/4 | (Rev D) Fencing, Wire and Post, Metal(Chain-Link Fence Accessories) |

### 1.3 SUBMITTALS

The following shall be submitted in accordance with SECTION 01330, SUBMITTALS:

a. Manufacturer's Catalog Data

## PART 2 PRODUCTS

### 2.1 MATERIALS

Materials shall conform to the following.

#### 2.1.1 Chain Link Fence

FS RR-F-191/GEN.

SECTION 02831

CHAIN-LINK FENCE

PART 1 GENERAL

1.1 DESCRIPTION

This Section includes the requirements for providing all labor, materials, equipment, and incidentals necessary for construction of a chain link fence and gate system, as specified herein and shown on the Contract 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.

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FEDERAL SPECIFICATIONS (FS)

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| FS RR-F-191/2 | (Rev D) Fencing, Wire and Post,(Chain-Link Fence Gates) |
| FS RR-F-191/3 | (Rev D) Fencing, Wire and Post, Metal(Chain-Link Fence Posts, Top Rails and Braces) |
| FS RR-F-191/4 | (Rev D) Fencing, Wire and Post, Metal(Chain-Link Fence Accessories) |

1.3 SUBMITTALS

The following shall be submitted in accordance with SECTION 01330, SUBMITTALS:

a. Manufacturer's Catalog Data

PART 2 PRODUCTS

2.1 MATERIALS

Materials shall conform to the following.

2.1.1 Chain Link Fence

FS RR-F-191/GEN.

2.1.1.1 Fabric

FS RR-F-191/1, Type I, zinc-coated steel wire with minimum coating weight of 1.2 ounces of zinc per square foot of coated surface, or Type II, aluminum-coated steel wire. Fabric shall be fabricated of 9-gauge wire woven in 2-inch mesh. Fabric height shall be as shown. Fabric shall be twisted and barbed on the top selvage and knuckled on the bottom selvage.

2.1.1.2 Gates

FS RR-F-191/2. Gate shall be the type and swing shown. Gate frames shall be constructed of Class 1 Grade A or B, steel pipe, size SP2, as specified in FS RR-F-191/3. Gate fabric shall be as specified for chain-link fabric. Gate leaves more than 8 feet wide shall have either intermediate members and diagonal truss rods or shall have tubular members as necessary to provide rigid construction, free from sag or twist. Two (2) gate leaves shall be provided. The gate leave stops shall be provided with locks so that the leaves are locked in the "open" position. Gate leaves less than 8 feet wide shall have truss rods or intermediate braces. Intermediate braces shall be provided on all gate frames with an electro-mechanical lock. Gate fabric shall be attached to the gate frame by method standard with the manufacturer except that welding will not be permitted. Latches, hinges, stops, keepers, rollers, and other hardware items shall be furnished as required for the operation of the gate. Latches shall be arranged for padlocking so that the padlock will be accessible from both sides of the gate. Stops shall be provided for holding the gates in the open position.

2.1.1.3 Posts

FS RR-F-191/3, zinc-coated; Class 1 Grade A or B, steel pipe; Class 3, formed steel sections; or Class 6, steel square sections. Class 4, steel H-section may be used for line posts in lieu of line post shapes specified for the other classes. Sizes shall be as shown on the drawings. Line posts and terminal (corner, gate, and pull) posts selected shall be of the same class throughout the fence. Gate post shall be either round or square, subject to the limitation specified in FS RR-F-191/3.

2.1.1.4 Braces and Rails

FS RR-F-191/3, zinc-coated, Class 1, Grade A or B, steel pipe, size SP1. Class 3, formed steel sections, size FS1, conforming to FS RR-F-191/3, may be used as braces and rails if Class 3 line posts are furnished.

2.1.1.5 Accessories

FS RR-F-191/4. Ferrous accessories shall be zinc or aluminum coated. Truss rods shall be furnished for each terminal post. Truss rods shall be provided with turnbuckles or other equivalent provisions for adjustment. Tie wire for attaching fabric to rails, braces, and posts shall be 9-gauge steel wire.

2.1.2 Concrete

ASTM C 94, using 3/4-inch maximum size aggregate, and having minimum compressive strength of 3,000 psi at 28 days. Grout shall consist of one (1) part portland cement to three (3) parts clean, well-graded sand and the minimum amount of water to produce a workable mix.

2.1.3 Padlocks

ASTM F 883, Type PO1, Grade 2, Size 1-3/4 inch. Padlocks shall be keyed alike and each lock shall be furnished with two (2) keys.

PART 3 EXECUTION

3.1 GENERAL

Fence shall be installed to the lines and grades indicated. The area on either side of the fence line shall be cleared to the extent indicated. Line posts shall be spaced equidistant at intervals not exceeding 10 feet. Terminal (corner, gate, and pull) posts shall be set at abrupt changes in vertical and horizontal alignment. Fabric shall be continuous between terminal posts; however, runs between terminal posts shall not exceed 500 feet. Damage to the galvanized surface due to welding shall be repaired with "repair sticks" of zinc-cadmium alloys or zinc-tin-lead alloys per AWS WZC.

3.2 EXCAVATION

Post holes shall be cleared of loose material. Waste material shall be spread where directed. The ground surface irregularities along the fence line shall be eliminated to the extent necessary to maintain a 2-inch clearance between the bottom of the fabric and finish grade.

3.3 POSTS

Posts shall be set plumb and in alignment. Except where solid rock is encountered, posts shall be set in concrete to the depth indicated on the Contract Drawings. Where solid rock is encountered with no overburden, posts shall be set to a minimum depth of 18 inches in rock. Where solid rock is covered with an overburden of soil or loose rock, posts shall be set to the minimum depth indicated on the drawing unless a penetration of 18 inches in solid rock is achieved before reaching the indicated depth, in which case depth of penetration shall terminate. All portions of posts set in rock shall be grouted. Portions of posts not set in rock shall be set in concrete from the rock to ground level. Posts set in concrete shall be set in holes not less than the diameter shown on the drawings. Diameters of holes in solid rock shall be at least 1 inch greater than the largest cross section of the post. Concrete and grout shall be thoroughly consolidated around each post, shall be free of voids and finished to form a dome. Concrete and grout shall be allowed to cure for 72 hours prior to attachment of any item to the posts. Fence post rigidity shall be tested by applying a 50-pound force on the post, perpendicular to the fabric, at 5 feet above ground. Post movement measured at the point where the force is applied shall be less than or equal to 3/4 inch from the relaxed position. Every tenth post shall be tested for rigidity. When a post fails this test, further tests on the next four (4) posts on either side of the failed post shall be made. All failed posts shall be removed, replaced, and retested at the CONTRACTOR S expense.

3.4 BRACES AND TRUSS RODS

Braces and truss rods shall be installed as indicated and in conformance with the standard practice for the fence furnished. Horizontal (compression) braces and diagonal truss (tension) rods shall be installed on fences over 6 feet in height. A center brace or two (2) diagonal truss rods shall be installed on 12-foot fences. Braces and truss rods shall extend from terminal posts to line posts. Diagonal braces shall form an angle of approximately 40 to 50 degrees with the horizontal. No bracing is required on fences 6 feet high or less if a top rail is installed.

3.5 TENSION WIRES

Tension wires shall be installed along the top and bottom of the fence line and attached to the terminal posts of each stretch of the fence. Top tension wires shall be installed within the top 4 inches of the installed fabric. Bottom tension wire shall be installed within the bottom 6 inches of the installed fabric. Tension wire shall be pulled taut and shall be free of sag.

3.6 CHAIN LINK FABRIC

Chain link fabric shall be installed on the side of the post indicated. Fabric shall be attached to terminal posts with stretcher bars and tension bands. Bands shall be spaced at approximately 15-inch intervals. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Fabric shall be fastened to line posts at approximately 15-inch intervals and fastened to all rails and tension wires at approximately 24-inch intervals. Fabric shall be cut by untwisting and removing pickets. Splicing shall be accomplished by weaving a single picket into the ends of the rolls to be joined. The bottom of the installed fabric shall be 1 inch (plus or minus 1/2 inch) above the ground. After the fabric installation is complete, the fabric shall be exercised by applying a 50-pound push-pull force at the center of the fabric between posts. The use of a 30-pound pull at the center of the panel shall cause fabric deflection of not more than 2.5 inches when pulling fabric from the post side of the fence. Every second fence panel shall meet this requirement. All failed panels shall be resecured and retested at the CONTRACTOR'S expense.

3.7 GROUNDING

Fence shall be grounded at each side of every gate, where the fence alignment changes more than 15 degrees, and at maximum intervals of 650 feet of length. Fences crossed by powerlines of 600 volts or more shall be grounded at or near the point of crossing and at distances not exceeding 150 feet on each side of crossing. Ground conductor shall consist of No. 8 AWG solid copper wire. Grounding electrodes shall be 3/4-inch by 10-foot-long copper-clad steel rod. Electrodes shall be driven into the earth so that the top of the electrode is at least 6 inches below the grade. Where driving is impracticable, electrodes shall be buried a minimum of 12 inches deep and radially from the fence. The top of the electrode shall be not less than 2 feet or more than 8 feet from the fence. Ground conductor shall be clamped to the fence and electrodes with bronze grounding clamps to create electrical continuity between fence posts, fence fabric, and ground rods. After installation the total resistance of fence to ground shall not be greater than 25 ohms. Each gate panel shall be bonded with a flexible bond strap to its gate post.

-- End of Section --

SECTION 02935

TURF

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.

AGRICULTURAL MARKETING SERVICE (AMS)

| | |
|---|---|
| AMS-01 | (Amended thru: Aug 1988) Federal Seed Act Regulations (Part 201-202) |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM D 977 | (1991) Emulsified Asphalt |
| ASTM D 2028 | (1976; R 1992) Cutback Asphalt (Rapid-Curing Type) |
| ASTM D 2607 | (1969) Peats, Mosses, Humus, and Related Products |

COMMERCIAL ITEM DESCRIPTIONS (CID)

| | |
|---|---|
| CID A-A-1909 | (Basic; Notice 1) Fertilizer |

1.2 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

Manufacturer's Literature; FIO.

Manufacturer's literature discussing physical characteristics, application and installation instructions for erosion control material, and for chemical treatment material.

Delivery; GA

Delivery schedule, at least 10 days prior to the intended date of the first delivery.

Maintenance Report; GA.

Written record of maintenance work performed.

Turf Establishment Period; GA.

Written calendar time period for the turf establishment period. When there is more than one turf establishment period, the boundaries of the turfed area covered for each period shall be described.

SD-13 Certificates

Certificates of compliance certifying that materials meet the requirements specified, prior to the delivery of materials. Certified copies of the reports for the following materials shall be included:

Seed; GA.

For mixture, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, date tested and state certification.

Fertilizer; GA.

For chemical analysis, composition percent.

Agricultural Limestone; GA.

For calcium carbonate equivalent and sieve analysis.

Topsoil; GA.

For pH, particle size, chemical analysis and mechanical analysis.

1.3 SOURCE INSPECTIONS

Not used.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

1.4.1.1 Protection

Not used.

1.4.1.2 Topsoil

A soil test shall be provided for topsoil delivered to the site.

1.4.1.3 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.1.4 Pesticide

Not used.

1.4.2 Inspection

Seed shall be inspected upon arrival at the job site by the Contracting Officer for conformity to type and quality in accordance with paragraph MATERIALS. Other materials shall be inspected for meeting specified requirements and unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in areas designated by the Contracting Officer. Seed, lime and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment materials shall not be stored with other landscape materials.

1.4.4 Handling

1.4.4.1 Materials

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.4.4.2 Time Limitation

Not used.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1.1 Seed Classification

State-approved seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

2.1.1.2 Seed Mixtures

Seed mixtures shall be proportioned as shown below:

| Common Name | Mixture Percent |
|---|---|
| Touchdown Kentucky Bluegrass | 25 |
| Adelphi Kentucky Bluegrass | 25 |
| Gnome Kentucky Bluegrass | 25 |
| Chateau Kentucky Bluegrass | 25 |

2.1.1.3 Quality

Weed seed shall not exceed 1 percent by weight of the total mixture. Wet, moldy, or otherwise damaged seed shall be rejected.

2.1.1.4 Overseed for Sprigs

Not used.

2.1.1.5 Seed Mixing

The field mixing of seed shall be performed on site in the presence of the Contracting Officer.

2.1.1.6 Sod

Not used.

2.1.2 Sprigs

Not used.

2.1.3 Soil Amendments

Soil amendments shall consist of lime, fertilizer, organic soil amendments and soil conditioners meeting the following Requirements.

2.1.3.1 Lime

Lime shall be agricultural limestone and shall have a minimum calcium carbonate equivalent of 90 percent and shall be ground to such a fineness that at least 90 percent will pass a 10-mesh sieve and at least 50 percent will pass a 60-mesh sieve.

2.1.3.2 Fertilizer

Fertilizer shall be commercial grade, free flowing, uniform in composition and conforming to CID A-A-1909. Granular Fertilizer: As recommended by the soil test.

2.1.3.3 Organic Soil Amendments

a. Topsoil: The existing surface soil shall be stripped and stockpiled on the site in accordance with Section 02225 EARTHWORK. When required beyond that available from stripping, the topsoil shall be delivered. Delivered topsoil shall conform to topsoil requirements specified in Section 02225 EARTHWORK, and shall be amended as recommended by soil test.

b. Peat: Peat moss derived from a bog, swampland or marsh shall conform to ASTM D 2607.

c. Sand: Clean, free of toxic materials; 95 percent by weight shall pass a No. 10 sieve and 10 percent by weight shall pass a No. 16 sieve.

d. Rotted Manure: Well rotted, horse or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials, free of stones, sticks, soil and containing no chemicals or ingredients harmful to plants.

e. Decomposed Wood Derivatives: Ground bark, sawdust, or other wood waste material free of stones, sticks, soil, and toxic substances harmful to plants, stabilized with nitrogen and having the following properties:

Particle Size: Minimum percent by weight passing:

| Sieve Size | Percent |
|---|---|
| No. 4 | 80 |

Nitrogen Content: Minimum percent based on dry weight:

| Material | Percent |
|---|---|
| Redwood Sawdust | 0.5 |
| Fir Sawdust | 0.7 |
| Fir or Pine Bark | 1.0 |

f. Calcined Clay: Granular particles produced from montmorillonite clay calcined to minimum temperature of 1,200 degrees F to the following gradation: minimum 90 percent passing No. 8, 99 percent retained on No. 60 sieve and maximum 2 percent passing No. 100 sieve. Bulk density: maximum 40 pounds per cubic foot.

2.1.3.4 Soil Conditioner

Not used.

2.1.4 Mulch

Mulch shall be free from weeds, mold, and other deleterious materials.

2.1.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.1.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.1.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate visual metering during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.1.4.4 Wood Chips

Wood chips shall be chips or shredded bark with maximum particle size of 3/16 inch.

2.1.4.5 Paper Fiber Mulch

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

2.1.5 Asphalt Adhesive

Asphalt adhesive shall conform to the following:

2.1.5.1 Emulsified Asphalt

Conforming to ASTM D 977, Grade SS-1.

2.1.5.2 Cutback Asphalt

Conforming to ASTM D 2028, designation RC-70.

2.1.6 Water

Water shall not contain elements toxic to plant life.

2.1.7 Pesticide

Not used.

2.1.8 Erosion Control Material

Soil erosion control shall conform to the following:

2.1.8.1 Soil Erosion Control Blanket

Machine produced mat of wood excelsior formed from a web of interlocking wood fibers, covered on one side with either knitted straw blanket-like mat construction, covered with biodegradable plastic mesh, or interwoven biodegradable thread, plastic netting or twisted kraft paper cord netting.

2.1.8.2 Soil Erosion Control Fabric

Knitted construction of polypropylene yarn with uniform mesh openings 3/4 to 1 inch square with strips of biodegradable paper. Filler paper strips shall last 6 to 8 months.

2.1.8.3 Soil Erosion Control Net

Heavy, twisted jute mesh weighing approximately 1.22 pounds per linear yard and 4 feet wide with mesh openings of approximately 1 inch square.

2.1.8.4 Soil Erosion Control Chemicals

High-polymer synthetic resin or cold-water emulsion of selected petroleum resins.

2.1.8.5 Hydrophilic Colloids

Hydrophilic colloids shall be physiologically harmless to plant and animal life, without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids must resist mold growth.

2.1.8.6 Anchors

Erosion control anchor material shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 SEEDING TIMES AND CONDITIONS

3.1.1 Seeding Time

Seed shall be sown from 1 April to 1 June for spring planting and from 1 August to 15 September for fall planting.

3.1.2 Sodding Time

Not used.

3.1.3 Sprigging Time

Not used.

3.1.4 Turfing Conditions

Turf operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the turf operations, proposed times shall be submitted to and approved by the Contracting Officer.

3.2 SITE PREPARATION

3.2.1 Grading

The Contracting Officer shall verify that finished grades are as indicated on drawings, and the placing of topsoil and the smooth grading has been completed in accordance with Section 02225 EARTHWORK.

3.2.2 Application of Soil Amendments

3.2.2.1 Soil Test

A soil test shall be performed for pH, chemical analysis and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of turf specified.

3.2.2.2 Lime

Lime shall be applied at the rate recommended by the soil test Lime shall be incorporated into the soil to a minimum depth of 4 inches or may be incorporated as part of the tillage operation.

3.2.2.3 Fertilizer

Fertilizer shall be applied at the rate recommended by the soil test Fertilizer shall be incorporated into the soil to a minimum depth of 4 inches and may be incorporated as part of the tillage or hydroseeding operation.

3.2.2.4 Soil Conditioner

Not used.

3.2.3 Tillage

3.2.3.1 Minimum Depth

Soil on slopes gentler than 3-horizontal-to-1-vertical shall be tilled to a minimum depth of 4 inches. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum depth of 2 inches by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required.

3.2.4 Finished Grading

3.2.4.1 Preparation

Turf areas shall be filled as needed or have surplus soil removed to attain the finished grade. Drainage patterns shall be maintained as indicated on drawings. Turf areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of erosion or grade deficiencies shall conform to topsoil requirements specified in Section02225 EARTHWORK. Finished grade shall be 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas.

3.2.4.2 Lawn Area Debris

Not used.

3.2.4.3 Field Area Debris

Field areas shall have debris and stones larger than 3 inches in any dimension removed from the surface.

3.2.4.4 Protection

Finished graded areas shall be protected from damage by vehicular or pedestrian traffic and erosion.

3.3 SEEDING

3.3.1 General

Prior to seeding, any previously prepared seedbed areas compacted or damaged by interim rain, traffic or other cause, shall be reworked to restore the ground condition previously specified. Seeding operations

shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.2 Equipment Calibration

The equipment to be used and the methods of turfing shall be subject to the inspection and approval of the Contracting Officer prior to commencement of turfing operations. Immediately prior to the commencement of turfing operations, the Contractor shall conduct turfing equipment calibration tests in the presence of the Contracting Officer.

3.3.3 Applying Seed

3.3.3.1 Broadcast Seeding

Seed shall be uniformly broadcast at the rate of 85 pounds per acre using broadcast seeders. Half of seed shall be broadcast in one direction, and the remainder at right angles to the first direction. Seed shall be covered to an average depth of 1/4 inch by disk harrow, steel mat drag, cultipacker, or other approved device.

3.3.3.2 Drill Seeding

Seed shall be uniformly drilled to an average depth of 1/2 inch and at the rate of 85 pounds per acre using equipment having drills not more than 6-1/2 inches apart. Row markers shall be used with the drill seeder.

3.3.3.3 Rolling

Immediately after seeding, except for slopes 3-horizontal-to-1 vertical and greater, the entire area shall be firmed with a roller not exceeding 90 pounds for each foot of roller width. Areas seeded with seed drills equipped with rollers shall not be rolled.

3.3.4 Hydroseeding

Seed and fertilizer shall be added to water and thoroughly mixed at the rates specified. Wood cellulose fiber mulch may be added at the rates recommended by the manufacturer after the seed, fertilizer and water have been thoroughly mixed, to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.5 Mulch

3.3.5.1 Straw or Hay Mulch

Straw or hay mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of a steep slope and continued uniformly until the area is covered. The mulch shall not be bunched. All seeded areas shall be mulched on the same day as the seeding.

3.3.5.2 Mechanically Anchoring

Immediately following spreading, the mulch shall be anchored to the soil by a V-type-wheel land packer, a scalloped-disk land packer designed to force mulch into the soil surface, or other suitable equipment.

3.3.5.3 Asphalt Adhesive Tackifier

When asphalt adhesive is applied to the in-place mulch, spraying shall be at the rate of between 10 to 13 gallons per 1000 square feet.

3.3.5.4 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at rate recommended by manufacturer. Apply with hydraulic equipment suitable for mixing and applying uniform mixture of tackifier.

3.3.5.5 Spreading Asphalt Adhesive Coated Mulch

Straw or hay mulch shall be spread simultaneously with asphalt adhesive at the rate of 2 tons per acre by using power mulch equipment which shall be equipped with suitable asphalt pump and nozzle. The adhesive-coated mulch shall be applied evenly over the surface. Sunlight shall not be completely excluded from penetration to the ground surface.

3.3.5.6 Wood Cellulose Fiber

Wood cellulose fiber mulch for use with the hydraulic application of seed and fertilizer shall be applied as part of the hydroseeding operation.

3.3.6 Water

Watering shall be started within 7 days after completing the seeded area. Water shall be applied at a rate sufficient to ensure moist soil conditions to a minimum depth of 1 inch. Run-off and puddling shall be prevented.

3.4 SODDING

Not used.

3.5 SPRIGGING

Not used.

3.6 EROSION CONTROL

3.6.1 Erosion Control Material

Erosion control material, where indicated or required, shall be installed in accordance with manufacturer's instructions. Placement of the erosion control material shall be accomplished without damage to installed material or without deviation to finished grade.

3.6.2 Temporary Turf Cover

3.6.2.1 General

When there are contract delays in the turfing operation or a quick cover is required to prevent erosion, the areas designated for turf shall be seeded with a temporary seed as directed by the Contracting Officer.

3.6.2.2 Application

When no other turfing materials have been applied, the quantity of one half of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. Seed shall be uniformly broadcast and applied at the rate of 40 pounds per 1,000 acre. The area shall be watered as required.

3.7 APPLICATION OF PESTICIDE

When pesticide becomes necessary to remove a pest or disease, a state-certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Hydraulic equipment shall be provided for the liquid application of pesticides with a leak-proof tank, positive agitation methods, controlled application pressure and metering gauges. A pesticide plan shall be provided to the Contracting Officer as stated in paragraph SUBMITTALS.

3.8 RESTORATION AND CLEAN UP

3.8.1 Restoration

Existing turf areas, pavements and facilities that have been damaged from the turfing operation shall be restored to original condition at Contractor's expense.

3.8.2 Clean Up

Excess and waste material shall be removed from the planting operation and shall be disposed of off the site. Adjacent paved areas shall be cleaned.

3.9 PROTECTION OF TURFED AREAS

Immediately after turfing, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed by the Contracting Officer.

3.10 TURF ESTABLISHMENT PERIOD

3.10.1 Commencement

The Turf Establishment Period for establishing a healthy stand of turf shall begin on the first day of work under this contract and shall end three (3) months after the last day of turfing operations required by this contract. Written calendar time period shall be furnished to the Contracting Officer for the Turf Establishment Period. When there is more than one turf establishment period, describe the boundaries of the turfed area covered for each period.

3.10.2 Satisfactory Stand of Turf

3.10.2.1 Seeded Area

a. A satisfactory stand of turf from the seeding operation for a field area is defined as a minimum of 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

3.10.2.2 Sodded Area

Not used.

3.10.2.3 Sprigged Area

Not used.

3.10.3 Maintenance During Establishment Period

3.10.3.1 General

Maintenance of the turfed areas shall include eradicating weeds, eradicating insects and diseases, protecting embankments and ditches from erosion, maintaining erosion control materials and mulch, protecting turfed areas from traffic, mowing, watering, and post-fertilization.

3.10.3.2 Mowing

Not used.

3.10.3.3 Watering

Watering shall be at intervals to obtain a moist soil condition to a minimum depth of 1 inch. Frequency of watering and quantity of water shall be adjusted in accordance with the growth of the turf. Run-off, puddling and wilting shall be prevented.

3.10.3.4 Post-Fertilization

Nitrogen carrier fertilizer shall be applied at the rate indicated by soil tests after the first month and again prior to the final acceptance. The application shall be timed prior to the advent of winter dormancy and shall avoid excessively high nitrogen levels.

3.10.3.5 Pesticide

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

3.10.3.6 Repair

The Contractor shall re-establish as specified herein, eroded, damaged or barren areas. Mulch shall also be repaired or replaced as required.

3.10.3.7 Maintenance Report

A written record shall be furnished to the Contracting Officer of the maintenance work performed.

## 3.11 FINAL ACCEPTANCE

### 3.11.1 Preliminary Inspection

Prior to the completion of the Turf Establishment Period, a preliminary inspection shall be held by the Contracting Officer. Time for the inspection shall be established in writing. The acceptability of the turf in accordance with the Turf Establishment Period shall be determined. An unacceptable stand of turf shall be repaired as soon as turfing conditions permit.

### 3.11.2 Final Inspection

A final inspection shall be held by the Contracting Officer to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing.

-- End of Section --

# BID FORM

## MOTOR POOL EAST LANDFILL CLOSURE
## U. S. MILITARY ACADEMY, WEST POINT, NEW YORK

| ITEM NO. | ITEM DESCRIPTION | QTY | UNIT | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|
| 01 | Accomplish all work as specified in Contract Documents (except for Item Nos. 2 and 3) | 1 | LS | | |
| 02 | Classified rock excavation | 26 | CY | | |
| 03 | Concrete vehicle wheel stops | 30 | EA | | |
| | | | | | |

TOTAL CONTRACT PRICE IN WORDS: _____

_____

Submitted On: _____, 19_____.

By: _____ (SEAL)
(Corporation, Firm, or Individual's Name)

Business Address: _____

_____

Phone Number: _____