

**SPECIFICATIONS
FOR
EROSION CONTROL PADS AND
INFIELD GRADING REPAIRS
IA1301**

**WASHINGTON DULLES INTERNATIONAL AIRPORT
METROPOLITAN WASHINGTON AIRPORTS AUTHORITY**

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PROCUREMENT AND CONTRACTING REQUIREMENTS

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Table of Contents

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 01 10 Table of Contents
- 00 73 00 Supplementary Conditions

DIVISION 01 – GENERAL REQUIREMENTS

- 01 10 00 Summary
- 01 22 00 Unit Prices
- 01 22 10 Measurement and Payment
- 01 29 00 Application for Payment
- 01 31 00 Project Management and Coordination
- 01 32 00 Construction Progress Documentation
- 01 33 00 Submittals
- 01 40 00 Quality Requirements
- 01 71 13 Mobilization/Demobilization
- 01 71 14 Maintenance and Protection of Traffic During Construction
- 01 77 00 Project Closeout
- 01 78 39 Project Record Documents

TECHNICAL SPECIFICATIONS

FEDERAL AVIATION ADMINISTRATION SPECIFICATIONS

- Item P-152 Excavation and Embankment

VIRGINIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS

- Item VA-203 Ponding Area Base Drainage Layer
- Item VA-245 Filter Fabric
- Item VA-309 Aggregate Base Course
- Item VA-315 Asphalt Concrete Pavement
- Item VA-501 French Drains

DIVISION 32 – EXTERIOR IMPROVEMENTS

- 32 92 00 Turf and Grasses

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SECTION 007300 SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The articles and paragraphs of this Section represent supplements or additions to the Contract Provisions or the Special Provisions.

1.3 WORK UNDER OTHER CONTRACTS

- A. During the period of this Project, the Authority anticipates that other construction contracts may be underway at or near the site of work of this Contract. Coordination with other contractors would be required to minimize any impacts on airport operations.

1.4 MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC

Does not apply.

1.5 AIRFIELD AND TERMINAL BUILDING OPERATIONAL REQUIREMENTS

- A. The Work, or a portion thereof, will be performed in proximity to the Air Operations Area (AOA), including, active runways, taxiways, and aprons. Normal airport operations will continue adjacent to the Work during all phases of the Project. These activities include:
 - 1. Aircraft movement on runways, taxiways, aprons; aircraft landing and takeoff operations.
 - 2. Aircraft parking, refueling and other aircraft servicing.
 - 3. Baggage handling.
 - 4. Routine aircraft maintenance.
 - 5. Apron maintenance, snow removal and ice control.
- B. Phase construction activities as necessary to accommodate all airport operations without disruption. Adhere to all current Airport Orders and Instructions (O & Is), Airport Bulletins, and Airport Advisories. The Authority will provide relevant Orders and Instructions to Offerors in the Solicitation Package. Bulletins and Advisories will be provided to the offeror by the Authority as they are issued.

1.6 ENVIRONMENTAL PROTECTION

- A. Comply with all Federal, state and local laws and regulations controlling pollution of the environment. Take necessary precautions to prevent pollution of streams, rivers, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.
- B. Notify COTR immediately in the event that abnormalities, discolorations, odors, oil, or other signs of potential contamination by hazardous materials are encountered during excavation or other construction activities. Follow with written notice within 24 hours, indicating date, time, and location of potential contaminants encountered. The COTR will provide further direction to Contractor regarding disposition of materials encountered.

1.7 ARCHAEOLOGICAL AND HISTORICAL FINDINGS

- A. Notify immediately, through the COTR, the PMC Archaeology/Historic Preservation Coordinator if subsurface structural features, concentrations of artifacts, rubble, bone/shell, or burnt material are uncovered or otherwise discovered. Prompt reporting will avoid potentially severe problems resulting from the destruction of significant resources and may limit the impact on construction operations and schedules.

1.8 DAMAGES AND PRE-EXISTING CONDITIONS

- A. Be responsible for all damages caused by Contractor's construction activities. Provide all labor, materials, etc. to return any damaged areas, systems or equipment to their original condition at no additional cost to the Authority.
- B. Perform a survey of pre-existing conditions in the vicinity of Contractor's construction activities, utilizing photographs and other means as necessary to document existing damage or conditions. Submit two copies of this survey to the Contracting Officer within 21 calendar days after Notice-to-Proceed. This survey will assist in resolving any damage claims against the Contractor during and after construction.

1.9 SECURITY DURING CONSTRUCTION

- A. Maintain the integrity of the Airport Security fence. Maintain the integrity of doors and walls between public areas and Air Operations Area (AOA) at all times. Comply with Title 49 Code of Federal Regulations, Parts 1500, 1540, 1542 and 1544.
- B. Possession of and display of a proper and current Airport Identification Badge, issued by Airport Operations is required for all Contractor personnel passing into the AOA. Refer to "Airport Orders and Instructions" attached as part of the Contract for specific requirements. Security requirements have increased significantly at Washington Dulles International Airport and Contractor can expect possible short delays clearing construction vehicles into the AOA. Offerors shall become intimately familiar with all TSA and Authority security requirements. No increase in contract price will be provided to the Contractor should the contractor not be aware of any security procedure in place at time of submitting their offer that leads to increased time and inconvenience to accomplish the work.

- C. Pay all fines levied by the appropriate authorities for penalties resulting from security infractions perpetrated by or caused by Contractor's personnel or work forces of Contractor's subcontractors or suppliers.
- D. Establish and maintain the security of Contractor's staging areas, equipment and materials.
- E. Provide escort for delivery vehicles transporting materials and supplies to or from the Contractor's staging or work areas into the AOA, in accordance with requirements stated in "Airport Orders and Instructions" attached as part of the Contract.
- F. Do not park within 300 feet of a terminal building unless specifically authorized by Airport Operations.
- G. No firearms or weapons of any type are allowed on the airport.
- H. No cartridge style nail guns, nor any tools that use a cartridge or any explosive charge, are allowed without prior written notification of COTR. Obtain written approval from the COTR before bringing such tools on the project.
- I. Conform to all Orders and Instructions pertaining to vehicle inspection.

1.10 MATERIAL HAULING

- A. Access and egress to and from the Airport for hauling operations shall be through the entrances indicated. Conduct hauling operations during working hours and as indicated on the drawings.
- B. Contractor shall use the haul routes for this project as indicated on the drawings and as designated by the COTR.
- C. Submit a detailed Work Plan for Contractor's entire operations to the COTR for approval prior to commencing work. Obtain written approval from the COTR of the Work Plan. Identify clearly on Work Plan each operation requiring coordination with Airport Operations.
 - 1. For taxiway closures of short duration, provide flagmen, with radio contact with the FAA Airport Traffic Control Tower and the Authority Ramp Control Tower, at taxiway crossing intersections. COTR will determine the number of flagmen required.
 - 2. For long-term taxiway closures, clearly mark, light, and barricade the taxiway closures and haul routes in accordance with FAA and Airport Operations requirements.
- D. Provide advance notice to the COTR, as required in the drawings, of any scheduled taxiway, or taxi lane closures. Obtain the written approval of the Authority prior to closing or crossing a taxiway or taxi lane.
- E. Use load covers on all dump trucks. Load dump trucks so that no spillage occurs during transit on the State, municipal, or Airport roadways, taxiways, and aprons. Clean wheels of trucks leaving the Project construction site of all soil and rocks.

- F. Be responsible for the cost of the immediate cleaning of earth tracking and spills on paved surfaces resulting from the Contractor's operations. Because of the potential for extreme damage to aircraft engines due to the ingestion of foreign objects, maintain on the project mechanical sweeper/vacuum (wet/dry) equipment with nylon brushes complete with operators. Maintain a water truck on site at all times in order to effectively control dust rising from construction activities. Requirement for the sweeper/vacuum truck and water truck will apply during any earthwork/grading operations.
- G. Provide sweeper/vacuum equipment with a usable hopper capacity of 6 cubic yards and with a regenerative air capacity of 15,000 CFM. Provide equipment with gutter brooms of poly brush material so as not to damage airfield pavement markings; a dust control system that includes an external spray system with front mounted spray bar, nozzles located at each gutter broom; and an internal spray system with nozzles in the internal air stream. Maintain the equipment in good working order throughout the project and replace the brooms and or spray systems, as necessary, to ensure proper sweeping and vacuuming of paved surfaces.

1.11 PORTABLE LIGHTING

- A. Contractor shall be responsible for portable lighting for all night-work. Portable lighting shall be in accordance with the Authority design manual and must be approved by the COTR.
- B. Portable lighting: If used for Contractor operations, aim and shield portable lighting at all times to eliminate glare that could impair runway, taxiway, apron, ground operations, and Airport Traffic Control Tower operations. Equip portable lighting with reflectors and glare shields to prevent spillover of light into operational areas.

1.12 RADIO COMMUNICATIONS

- A. If Contractor's personnel use two-way radio communication on the job site, submit proposed frequencies to COTR for approval in writing by the COTR. Frequencies shall not conflict with or overlay any of the Airports radio frequencies.
- B. Provide, at a minimum, the following with radio equipment: The Project Superintendent, Foreman of all work groups physically separated from the general vicinity of the Project Superintendent, gate guards, and others who may be working in a separate and remote area.
- C. Provide two-way radios capable of operating on both the "Ground" and "Ramp" frequencies for work adjacent to or affecting taxiways, Mobile Lounge roads, or Mobile Lounge docking areas. Such radios shall be either a handheld programmable type capable of operating off of vehicle power and antenna or a vehicle-mounted type, which operates solely off of the vehicle's power, and antenna. Provide radios that provide a minimum of 3 watts transmitting power. Provide radios of sufficient power to communicate with the appropriate controller.

1.13 Not used.

1.14 SAFETY

- A. Comply with all requirements set forth in the most current edition of the Authority *Construction Safety Manual*". Offerors are provided with the most recent addition when obtaining contract documents prior to proposal. Requirements included in this Section are in addition to the Authority's *Construction Safety Manual*. Comply with all local, State and Federal requirements. Where conflicts or discrepancies exist between requirements, the more stringent requirement shall govern. For additional information see Division 01 Section "Quality Requirements".
- B. Contractor Safety Organization:
1. Safety Engineer.
 - a. Duties: Outlined in The Authority Construction Safety Manual.
 - b. Qualifications: Outlined in The Authority *Construction Safety Manual*.
- C. Submit the résumés of individuals proposed to serve in the role of Contractor's Safety Engineer to the COTR for approval in writing. If qualified, Contractor's Superintendent or Foreman will be allowed to serve the role of Safety Engineer. In addition to indicating the qualifications in the Authority *Construction Safety Manual* résumés shall include but not be limited to such items as: work experience, education, safety and health training completed, memberships in professional associations, professional certifications, professional registrations and professional references confirming the qualifications and personal references of contacts for verification shall also be required.
- D. Provide safe and healthful working conditions on each operation at all times during execution the work of this Contract. Conduct the various operations connected with the Work so that they will not be injurious to safety or health. Comply with all provisions, regulations and recommendations issued pursuant to the Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as well as amendments to these laws. Comply with laws, rules and regulations of other authorities having jurisdiction, with regard to all matters relating to the safety and health of workers and the general public. Compliance with government requirements is mandated by law and considered only a minimum level of safety performance. Perform all work in accordance with best safe work practices recognized by the construction industry. Stop work whenever a work procedure or a condition at a work site is deemed unsafe by the either of the following individuals: COTR, Program Safety Manager (PSM), the Contractor's Project Manager, the Contractor's Foreman or the Contractor's Safety Engineer(s).
- E. Provide the services of responsible safety personnel per construction work shift for the duration of this Contract. The Safety personnel shall be responsible for all safety and health requirements as included herein and as required by the Authority's Construction Safety Manual.
- F. Comply with all requirements set forth in the Authority's "Construction Safety Manual." Provide during the Work the services of Safety Engineer(s) as outlined in the Authority's "Construction Safety Manual" and in Division 01 Section "Quality Requirements". The

Safety Engineer shall undertake the duties and responsibilities as stated in the Authority's "Construction Safety Manual".

- G. Prior to start of construction activities in the Air Operations Area (AOA), the Contractor's Safety Engineers shall tour the AOA with the Authority Safety Program Manager.
- H. Flagmen Training: The Authority will sponsor Flagman training sessions. Contractor's personnel who will be assigned flagmen duties on the Airport for this project shall attend training sessions.
- I. Fire Safety: Conform to the following requirements:
 - 1. Obtain a permit to perform any welding, cutting, or hot work from the Office of the Authority Fire Marshal.
 - 2. Ensure adequate access to all construction areas for emergency response.
 - 3. Obtain a permit from the Office of the Authority Fire Marshal to store, handle, or use any hazardous material, including but not limited to fuels for equipment. Complete an application prior to issuance.
 - 4. Remove combustible debris from the site daily.
 - 5. Provide at least seven (7) days notice for any request for inspections, tests, permits, etc., required of personnel from the Office of the Authority Fire Marshal.
 - 6. Obtain a permit from the Office of the Authority Fire Marshal for the use, storage or handling of any explosives.
 - 7. Provide to the Office of the Authority Fire Marshal a list of emergency contact numbers for the COTR and the Contractor prior to the commencement of Work.
- J. Submit Site-Specific Safety and Health Plans to COTR within 15 calendar days of Notice to Proceed and prior to the start of any construction activities. Prepare this plan using the Authority's Guidelines as defined in the Authority's "*Construction Safety Manual*" and as supplemented by these specifications for each and every work zone as shown on the drawings or as anticipated by the Contractor. COTR must approve the Site-Specific Safety Plan prior to the start of any work.
- K. Be responsible for the safe operation of all job site motor vehicles. Provide a "spotter" or flagman for all backing operations of construction vehicles with restricted rear vision.
- L. All motorized equipment and vehicles working on or entering MWAA construction project work areas shall be equipped with functional audible backup alarms.
- M. Crane Operators. Crane use not anticipated.
- N. For all airside projects attach a Safety Plan to the Safety Program. Include in the Safety Plan, to the extent applicable, provisions for the following:
 - 1. Scope of work performed by Contractor, including proposed duration of work.
 - 2. Job Hazard Analysis Program.
 - 3. Work control measures.
 - 4. Limitations on equipment height.
 - 5. Location of airport operational areas.
 - 6. Location of and access to stockpiled construction materials and equipment.
 - 7. Inspection requirements.

8. Trenches and excavations, and cover requirements.
9. Vehicle operation and pedestrian access in airport movement areas.
10. Construction site access and haul roads, includes maintenance of and keeping open ARFF access routes.
11. Limitations on construction.
12. Radio communications.
13. Foreign object debris (FOD) control provisions.
14. Hazardous materials (HAZMAT) management.
15. Wildlife abatement.
16. NOTAM issuance.
17. Vehicle identification.
18. Vehicle parking.
19. Use of temporary visual aids.
20. Obstacle-free zones (OFZ).
21. Approach clearance to runways.
22. Runway and taxiway safety areas.
23. Required compliance of contractor personnel.
24. Emergency notification for fire, medical, and police response.

1.15 HEIGHT LIMITATION

- A. For all construction within the Airport, limit the height of Contractor's equipment to a maximum of 15 feet. For any work that requires equipment higher than 15 feet, Contractor must request in writing COTR's approval.
- B. Prior to beginning any work coordinate with the COTR the height of all cranes, boom trucks, scaffolds or similar vehicles of construction. Properly mark all construction equipment with safety flags and warning lights in accordance with current FAA and Airport Operations requirements.

1.16 NOISE CONTROL

Not applicable.

1.17 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF WORK

- A. The offeror is expected to examine carefully the site of the proposed work, the proposal, plans, specifications, solicitation provisions, contract provisions, special provisions and contract forms before submitting a proposal. The submission of a proposal will be considered conclusive evidence that the offeror has made such examination and is satisfied as to the conditions to be encountered in performing the work as to the requirements of the Contract.

1.18 AIRPORT SECURITY/VEHICLE INSPECTION PROCEDURE

- A. Contractor access to the project site shall be as shown on the drawings.
- B. The following procedures will be utilized for all escorted vehicles and AOA approved vehicles with non-badged passengers seeking entry to the AOA:

1. All vehicles are searched.
 2. Coordinate all vehicle deliveries with the COTR in advance. Provide the vehicle license plate number and expected delivery time for all vehicle deliveries. Contractor may compile the expected daily delivery schedule on one sheet for submission to the COTR.
 3. The vehicle operator shall have in his or her possession a commercial manifest, which identifies the contents of the vehicle and/or trailer.
 4. An escort from the company for whom the shipment is intended shall respond to the vehicle access gate and remain with the vehicle until the vehicle exits the secured area.
 5. A vehicle search will be conducted and once cleared; vehicles will be permitted escorted access to their delivery point.
 6. Contractors should expect minor delays up at AOA gate as a result of these security provisions.
 7. Priority consideration may be offered to concrete trucks with resulting delays estimated to be 20 minutes. To receive priority consideration, schedule concrete deliveries with Airport Operations and COTR at time of batching.
- C. Prior approval from the Manager of Airport Operations or his/her designated representative is required for any exceptions to the above procedures.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007300

GENERAL REQUIREMENTS

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SECTION 011000 SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of the Contract.
 - 3. Work phases.
 - 4. Work under other contracts.
 - 5. Use of premises.
 - 6. Work restrictions.
 - 7. Specification formats and conventions.

- B. Related Sections include the following:
 - 1. None.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: IA1301 – Project consists of paving erosion control pads around existing airfield guidance signs and repairing/re-grading infield ponding areas at Washington Dulles International Airport.
 - 1. Erosion Control Pads: Runways 1C-19C (Base Bid) and 12-30 (Add Alternate).
 - 2. Ponding Areas: Infield areas of Runways 1C-19C (Base Bid) and 12-30 (Add Alternate).
- B. Architect/Engineer Identification: The Contract Documents, dated January 7, 2013 were prepared for the Project by ADCI, 6031 University Boulevard, Suite 330, Ellicott City, MD 21043.
- C. The Work consists of the following items:
 - 1. Paving erosion control pads around airfield guidance signs.
 - 2. Repair and grading of ponding areas and installation of French drains.
 - 3. For additional requirements for the examination of plans, specifications, and Project site see Section "Supplementary Conditions."

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a general construction contract.

1.5 WORK PHASES

- A. Conduct the Work in accordance with the phases and restrictions shown on the plans.
- B. Schedule the execution of the Work according to the phasing sequence indicated and to avoid interference with normal functions of the Airport.
- C. Before commencing Work of each phase, submit a schedule to COTR showing the sequence, the commencement and completion dates, and the move-out and move-in dates of personnel for the various phases of the Work.

1.6 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.7 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to the project site shown on the plans.
 - 2. Authority Occupancy: Allow for Authority occupancy of site and day-to-day use by tenants, and air carriers.
 - 3. Contractor shall have full use of premises for construction operations within the Contract Limit Lines indicated during construction period, during the hours indicated, and as directed by COTR. Contractor's use of premises is limited only by the Authority's right to perform work or to retain other contractors on portions of Project.
 - 4. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to the Authority, the Authority's employees, tenants, air carriers, and emergency vehicles at all times. Do not use driveways and entrances for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Utilize areas designated for Contractor staging, storage, and parking, as indicated. For additional requirements, see Section "Supplementary Conditions."

1.8 CONTRACTOR HOURS OF OPERATION

- A. Contractor Working Hours: Portions of the work as outlined in the plans are required to be completed during nighttime work hours only (11PM – 6AM) under airfield closures. Work outside of the runway and taxiway safety areas may be done during daylight hours (7AM – 5PM) under active airfield conditions. See project drawings for specific requirements.

1.9 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: With the exception of Federal Aviation Administration (FAA) standard specifications and Virginia Department of Transportation standard specifications the Specifications are organized into Divisions and Sections using the 33-Division format using the CSI/CSC's "MasterFormat '04" numbering system.

- 1. Section Identification: The Specifications use Section titles to help with cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete as all available Sections and Section numbers are not used and the CSI numbering system is not sequentially complete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

- 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Interpret words and meanings as appropriate. Infer words implied, but not stated, as the sense requires. Interpret singular words as plural, and plural words as singular where applicable as the context of the Contract Documents indicates.
- 2. Imperative mood and streamlined language are used in these Specifications. This imperative language is directed to the Contractor, unless specifically noted otherwise. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.10 MARKING UTILITY SERVICES

- A. Employ underground utilities location subcontractor to locate and mark the horizontal location of all utility lines, that might be impacted by construction activities, including but not limited to the following:
 - 1. Electric power lines.
 - 2. Storm Sewers.
 - 3. FAA communications, signal, and security lines.

4. Runway lighting lines

- B. Contact the Airport Communications System (ACS) Help Desk at (703) 417-8300 a minimum of 72 hours prior to starting activities that include but are not limited to location and marking of horizontal locations of telephone and telecommunications lines belonging to the Authority as part of the Airport Communication System. Contact the Airport Communications System (ACS) Help Desk a minimum of 72 hours prior to beginning operations. Note the ACS does not locate utilities. Location is the responsibility of the Contractor's underground utilities location subcontractor. The Airport Communications System (ACS) is merely notified as indicated previously.
- C. The information in the Contract Documents concerning the type and location of underground utilities is neither guaranteed nor inclusive. The Contractor is responsible for determining the type and location of underground utilities, regardless of whether such utilities are indicated or not, so as to avoid damage thereto.
- D. Check and verify the horizontal and vertical location (coordinates and elevation) of all drainage lines that are within the limits of proposed work, regardless of whether such utilities are indicated or not.

1.11 UTILITY OUTAGES

None anticipated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012200 UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Division 01 Section "Measurement and Payment" for procedures for measurement and payment for unit-price items.

1.3 DEFINITIONS

- A. A unit price is an amount proposed by offerors and stated on the Schedule as a price per unit of measurement for materials or services. An estimate of the quantities of work to be done and materials to be furnished under these specifications is given in Section III, "Schedule." It is given only as a basis for comparison of proposals and the award of the Contract. The Authority does not expressly or by implication agree that the actual quantities involved will correspond exactly therewith; nor shall Contractor plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to Contractor will be made only for the actual quantities of work performed or materials furnished according to the plans and specifications.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit. The sum of all extended unit prices in the Section III, "Schedule," shall be deemed to include all work described in the Contract Documents including Drawings and Specifications.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections and in Division 01 Section "Measurement and Payment."
- C. The Authority reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at the Authority's expense, by an independent surveyor acceptable to Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

SECTION 012210 MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing methods of measurement and computations to be used in determination of quantities of material furnished and unit amount of Work performed under the Contract in order for Contractor to receive payment according to pre-established unit prices.
- B. At the discretion of the COTR, payment may be reduced for any Work which is not in full compliance with the Contract Documents or which has been damaged or repaired by Contractor. Such action may be used when the end product may have a reduced service life or less than desirable aesthetic characteristics.

1.3 MEASUREMENT OF QUANTITIES

Measurement of quantities on this contract is as specified in the Technical Specifications.

1.4 SCALES

Not used.

1.5 PAYMENT FOR MATERIALS ON HAND

Not used.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012210

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SECTION 012900 – APPLICATION FOR PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
 - 1. Coordinate the Schedule of Values and Applications for Payment with List of Subcontracts, and Submittal Log.
- B. Related Sections include the following:
 - 1. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
 - 2. Division 01 Section "Measurement and Payment" for administrative requirements governing methods of measurement and determination of quantities of materials for use with unit prices.
 - 3. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.
 - 4. Division 01 Section "Project Closeout" for submittal of items required before final payment.
 - 5. Division 01 Section "Project Record Documents" for procedural requirements governing the submission of Project Record Documents.

1.3 DEFINITIONS

Not used.

1.4 SCHEDULE OF VALUES

Not used.

1.5 APPLICATION FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Contracting Officer and paid for by the Authority.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

- B. Payment Application Times: Application for Payment shall coincide with the schedule monthly update, or as otherwise indicated in the Agreement between the Authority and Contractor. The period covered by each Application for Payment starts on the day following the end of the preceding period and shall not exceed one calendar month, unless otherwise approved by COTR.

- C. Payment Application Forms: Use forms provided by the Contracting Officer, but supplied by COTR, for Application for Payment.

- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. The Authority will return incomplete applications without action.
 1. Include amounts of Contract Modifications issued before last day of construction period covered by application.

- E. Transmittal: Submit one original and four copies of Application for Payment to the address provided by the Contracting Officer, each one signed and notarized. Include waivers of lien and similar attachments if required.
 1. Transmit Applications for Payment with a transmittal form listing attachments and recording appropriate information about application in a manner acceptable to Contracting Officer.

- F. Waivers of Mechanic's Lien: With Final Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers.
 1. The Authority reserves the right to designate which entities involved in the Work must submit waivers.
 2. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to the Authority.

- G. Initial Application for Payment: Administrative actions and submittals that shall precede or coincide with submittal of first Application for Payment include the following:
 1. List of subcontractors.
 2. Contractor's Construction Schedule (preliminary if not final).
 3. Products list.
 4. Submittals Schedule (preliminary if not final).
 5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 6. Performance and payment bonds.
 7. Subcontractor Payment Form

- H. Monthly Application for Payment: Administrative actions and submittals that shall accompany the submittal of Contractor's monthly Application for Payment include the following:

1. Subcontractor Payment Form.
 2. Monthly Progress Report, prepared according to requirements specified in Division 01 Section "Construction Progress Documentation."
 3. Updated Inspection Control Log. Highlight changes from previous month.
 4. Update of Contract Record Documents.
- I. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Price.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Authority occupancy of designated portions of the Work, if applicable.
 3. Advise COTR of change-over in security provisions.
- J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Price.
 4. Evidence that claims have been settled.
 5. Final, liquidated damages settlement statement.
 6. Return of all Airport identification badges and keys.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on the Project including, but not limited to the following:
 - 1. General project coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - a. Pre-construction conference.
 - b. Progress meetings.
- B. Related Sections include the following:
 - 1. Division 01 Section: "Execution" for the coordination of general installation and field-engineering services.
 - 2. Division 01 Section "Project Closeout" for coordinating Contract closeout.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper execution of work.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work and completion within the specified Contract duration. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Delivery and processing of submittals.
 - 3. Progress meetings.

4. Project closeout activities.

1.4 SUBMITTALS

- A. Key Personnel Names: At the pre-construction meeting, submit a list of Contractor's key personnel assignments. Key personnel shall include but not necessarily be limited to Project Manager, Project Superintendent, Safety Manager, Quality Control Manager, Project Scheduler, and other personnel in attendance at Project site along with alternates. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1.5 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Contract Name
 2. Contract Number
 3. Date.
 4. Name of Contractor.
 5. Name of Resident Engineer
 6. Name of Task Manager
 7. RFI number, numbered sequentially.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include drawings, descriptions, measurements, color photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.

2. RFI must be signed and scanned for electronic transmission.
 3. Hard-Copy RFI shall follow Software-Generated RFI for the record.
- D. COTR's Action: COTR will review each RFI, determine action required, and return it. Allow seven (7) working days for COTR's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. COTR's action may include a request for additional information, in which case COTR's time for response will start again.
 3. COTR's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify COTR in writing within three (3) days of receipt of the RFI response.
- E. On receipt of COTR's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify COTR within three (3) days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly prior to progress meeting for inclusion in progress meeting minutes. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name of COTR.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date COTR's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- 1.6 SUPERVISORY PERSONNEL
- A. General: In addition to Project Superintendent, provide other supervisory personnel as required for proper performance of the Work.
- 1.7 PROJECT MEETINGS
- A. Pre-construction Conference:

1. General: COTR will schedule pre-construction conference and organizational meeting with Contractor after the Contracting Officer issues a notice of intent to award, or actually awards the Contract. The meeting will review the parties' responsibilities and personnel assignments.
 - a. Minutes: COTR will record and distribute meeting minutes to all attendees and relevant parties.
2. Attendees: Contracting Officer, COTR, Engineer; Contractor and its superintendent; major subcontractors; and other concerned parties. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Airport security.
 - b. LBDE/MBE/WBE/DBE participation and certifications.
 - c. Authority-controlled wrap-up insurance program.
 - d. Airport Operations coordination.
 - e. Preliminary construction schedule.
 - f. Phasing.
 - g. Critical work sequencing.
 - h. Designation of key personnel.
 - i. Procedures for processing field decisions and Contract Modifications.
 - j. Procedures for processing Applications for Payment.
 - k. Distribution of the Contract Documents.
 - l. Authority Construction guidelines.
 - m. Submittal procedures.
 - n. Preparation of Record Documents.
 - o. Use of the premises.
 - p. Responsibility for temporary facilities and controls.
 - q. Parking availability.
 - r. Office, work, and storage areas.
 - s. Equipment deliveries and priorities.
 - t. Safety procedures.
 - u. Quality-control requirements.
 - v. First aid.
 - w. Progress cleaning.
 - x. Working hours.
 - y. Authority Building Code requirements/permits.
4. Refer to Contract Provision "Pre-construction Requirements" for required submittals due at the pre-construction conference.

B. Weekly Progress Meetings

1. General: COTR will conduct progress meetings weekly at regularly scheduled times convenient for all parties involved. Additionally, discussions will address administrative

and technical issues of concern, determining resolutions, and development of deadlines for resolution within allowable time frames.

- a. Minutes: COTR will record and distribute meeting minutes.
2. Attendees: As may be required by COTR, in addition to representatives of the Authority and Contractor, each subcontractor, and other entities concerned with current progress or involved in planning, coordination, or performance of future activities. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Safety and Security.
 - 2) Time.
 - 3) Sequence of operations.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Storage Areas
 - 7) Access.
 - 8) Requests for information.
 - 9) Submittals.
 - 10) Noncompliance notices.
 - 11) Temporary facilities and controls.
 - 12) Work hours.
 - 13) Hazards and risks.
 - 14) Progress cleaning.
 - 15) Quality and work standards.
 - 16) Contract Modifications.
 - 17) Documentation of information for payment requests.
 - 18) Preparation of Record Documents.
 4. Submit at the weekly progress meeting, a two-week look-ahead schedule. This schedule shall include a three-week period, one week showing actual progress from the previous week and two weeks showing planned work for the two weeks after the meeting date. Include in the schedule all activities in sufficient detail as approved by COTR. A two-week look-ahead schedule form will be distributed at the pre-construction conference. Submit a list of subcontractors identifying dates of when subcontractors will be on-site or off-site. A form for this information will be provided by COTR.

5. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for schedules and reports required for proper performance of the Work.
- B. All costs incurred by Contractor to correctly implement and update the schedule shall be borne by Contractor and are part of this Contract.
- C. Schedules required include the following:
 - 1. Contract Construction Progress Schedule
 - 2. Submittals Schedule.
 - 3. Schedule of Tests and Inspections.
 - 4. Record, As-Built Schedule.
- D. Reports required include the following:
 - 1. Daily Construction Reports.
 - 2. Material Location Reports.
 - 3. Field Correction Reports.
 - 4. Special Reports.
 - 5. Monthly Progress Reports.
 - 6. Contractor Quality Control Reports.
- E. Related Sections include the following:
 - 1. Division 01 Section "Project Management and Coordination" for Project meeting minutes.
 - 2. Division 01 Section "Quality Requirements" for test and inspection reports.
 - 3. Division 01 Section "Product Requirements" for Product List.

1.3 DEFINITIONS

- A. Activity: The fundamental unit of work in a Project plan and schedule. Each activity has defined geographical boundaries and a detailed estimate of resources required to construct the

task. Each activity is assigned a unique description, activity number, activity codes, and dollar value.

- B. Contract Duration/Time: The total time, in calendar days identified in Section III, "Schedule," representing the duration necessary for completion of all physical and administrative requirements under this Contract and any authorized extension thereof.
- C. Critical Path: The critical path is the longest connected chain of interdependent activities that impacts the completion of the Project.
- D. Excusable Delay: An unforeseeable delay, beyond the control of Contractor, experienced due to no fault or negligence by Contractor, its subcontractors, or suppliers.
- E. Predecessor Activity: An activity that precedes another activity in the network.
- F. Successor Activity: An activity that follows another activity in the network.

1.4 PLANNING

- A. The total Contract Duration and intermediate milestones if applicable, as indicated in Section III, "Schedule," are the Contract requirements.
- B. Contractor shall prepare a practical work plan to complete the Work within the Contract Duration, and complete those portions of work relating to each intermediate milestone date and other Contract requirements.
- C. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of COTR approval of the Schedule.
- D. Failure of Contractor to comply with requirements of this Section may be considered cause for withholding progress payments or termination for default.

1.5 SUBMITTALS

- A. General: Contractor shall provide all schedule submittals on computer disk media.
- B. Daily Progress Report: Submit duplicate copies to COTR by noon on the day following the date of actual progress.
- C. Monthly Progress Report: All components of the Monthly Progress Report described in this Section shall be submitted as attachments to Contractor's monthly Application for Payment.
- D. Record As-Built Schedule: A Record Schedule accurately reflecting actual progress of Work shall be submitted, as part of this Contract's Record Documents. All activities shall have actual dates that are true and accurate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site, coordinate with requirements in Division 01 Section "Quality Requirements," and submit duplicate copies to COTR by noon of the day following day of actual progress:
1. List of subcontractors (by trade group) at the site.
 2. List of separate contractors at the site.
 3. Approximate count of personnel (by trade group) at the site.
 4. Equipment (by trade group) at the site.
 5. High and low temperatures, general weather conditions.
 6. Accidents (refer to accident reports).
 7. Meetings and significant decisions.
 8. Unusual events (refer to special reports).
 9. Stoppages, delays, shortages, losses.
 10. Emergency procedures.
 11. Orders and requests of governing authorities.
 12. Change Notices/Directives and Contract Modifications received, implemented.
 13. Services connected, disconnected.
 14. Equipment or system tests and startups.
 15. Partial Completions, occupancies.
 16. Substantial Completions authorized.
 17. Material deliveries.

3.2 MATERIAL LOCATION REPORTS

- A. At weekly intervals, prepare a comprehensive list of materials delivered to and stored at the site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for all materials or items of equipment being fabricated or stored away from the building site. Submit copies of list to COTR at weekly intervals.

3.3 FIELD CORRECTION REPORT

- A. When the need to take corrective action that requires a departure from the Contract Documents arises, prepare a detailed report including a statement describing the problem and recommended changes. Indicate reasons the Contract Documents cannot be followed. Submit a copy to COTR immediately.

3.4 SPECIAL REPORTS

- A. When an event of unusual or significant nature occurs at the site, prepare and submit a special report. List the chain of events, persons participating, response by Contractor's personnel, an evaluation of the results or effects, and similar pertinent information. Advise COTR in advance when such events are known or predictable.
- B. Submit special reports directly to COTR within seven calendar days of an occurrence. Submit a copy to other parties affected by the occurrence.

3.5 DELAYS AND REQUESTS FOR EXTENSION OF TIME

- A. The determination for an extension of the Contract Time will be made by the Contracting Officer according to the Contract Provision "Default."
- B. Contractor acknowledges and agrees that delays in activities, irrespective of the party causing the delay, shall not become the basis for an extension of the Contract Time. The only basis for any extension of time will be the demonstrated impact of an excusable delay on the critical path. In demonstrating such impact, Contractor shall provide adequate detail as required by the Contract, and Contractor shall prove that:
 - 1. An event occurred.
 - 2. Contractor was not responsible for the event in that the event was beyond the control of Contractor, and was without fault or negligence of Contractor, subcontractor, or supplier, and the event was unforeseeable.
 - 3. The event was the type for which an excuse is granted according to the "Default" provision of this Contract.
 - 4. Activities on the critical path of the Work were delayed.
 - 5. The event in fact caused the delay of the Work.
 - 6. The requested additional time is an appropriate and reasonable extension of the Contract Time, given the actual delay encountered.
- C. Time Extensions for Unusually Severe Weather:
 - 1. If unusually severe weather conditions are the basis for a request for an extension of the Contract Time, such request shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the critical activities of the scheduled construction.
 - 2. The schedule of anticipated adverse weather below will constitute the base line for monthly (or a prorated portion thereof) weather/time evaluation by the Contracting Officer. On issuance of the Notice to Proceed and continuing throughout the Contract on a monthly basis, actual adverse weather days will be recorded by Contractor on a calendar day basis (include weekends and holidays) and compared to the monthly anticipated adverse weather days set forth below.
 - a. For purposes of this clause, the term "actual adverse weather days" shall include days that can be demonstrated to have been impacted by adverse weather.

b. Monthly Anticipated Adverse Weather Calendar Days:

- 1) January - 7.
- 2) February - 5.
- 3) March - 6.
- 4) April - 6.
- 5) May - 8.
- 6) June - 6.
- 7) July - 6.
- 8) August - 7.
- 9) September - 5.
- 10) October - 5.
- 11) November - 5.
- 12) December - 6.

c. The number of actual adverse weather days shall be calculated chronologically from the first to the last day in each month. Contractor shall not be entitled to any claim for time extension based on adverse weather unless the number of actual adverse weather days exceeds the number of anticipated adverse weather days, and unless such adverse weather days prevent work for 50 percent or more of Contractor's workday. In preparing the Contract Schedule, Contractor shall reflect the above anticipated adverse weather days on all weather-dependent activities. Weather-caused delays shall not result in any additional compensation to Contractor.

3. On days where adverse weather is encountered, Contractor shall list all critical activities under progress and shall indicate the impact adverse weather had, if any, on the progress of such activities. This information shall be presented at the end of the adverse weather day to COTR or its authorized representative for its review and approval.
4. If Contractor is found eligible for an extension of the Contract Time, the Contracting Officer will issue a modification extending the time for Contract completion. The extension of time will be made on a calendar day basis.
5. Expiration of time periods without submittal shall constitute forfeiture of rights for these specific impacts.

3.6 RECORD SCHEDULE

- A. After all Contract work items are complete, and as a condition of final payment, Contractor shall submit three copies of a Record, As-Built Schedule showing actual start and finish dates for all work activities and milestones, based on the accepted monthly updates.

END OF SECTION 013200

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SECTION 013300 SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
 - 1. Division 01 Section "Project Closeout" for submitting warranties.
 - 2. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. Technical Specifications for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires COTR's responsive action.

1.4 SUBMITTAL PROCEDURES

- A. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- B. Contractor's Responsibilities: Contractor is responsible for the scheduling and submission of all submittals. Submit to COTR all required Submittals. The COTR will forward submittals to the appropriate parties for review.
- C. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on COTR's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
 - 1. Initial Review: Allow 7 calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. COTR will advise Contractor when a submittal processed must be delayed for coordination.
 - 2. Re-submittal Review: Allow 5 calendar days for review of each re-submittal.
 - 3. No extension of the Contract Time will be authorized because of failure to transmit submittals to COTR enough in advance of the Work to permit processing. Processing of

- incomplete or unacceptable submissions by COTR shall not reduce the number of calendar days specified above for COTR's review.
4. Notations on submittals that increase the Contract cost or time of completion shall be brought to COTR's attention before proceeding with the Work.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by COTR and Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Contract name and number.
 - b. Date.
 - c. Name and address of Architect/Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor, if applicable.
 - f. Name and address of supplier, if applicable.
 - g. Name of manufacturer, if applicable.
 - h. Submittal number or other unique identifier, including revision identifier.
 - i. Alphanumeric project Identifier. Identifier is shown on the Project Drawings cover sheet.
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Transmittal number.
- E. Resubmissions: Re-submittal procedure shall follow the same procedures and same number as the initial submittal with the following exceptions:
1. Transmittal shall contain the same information as the first transmittal and the submission number shall indicate second, third, etc., submission. The drawing number/description shall be identical to the initial submission and the date shall be the revised date for that submission.
 2. No new material shall be included on the same transmittal for a resubmission.
 3. COTR rejection shall not warrant a claim by Contractor for additional time or cost.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals. Where significant deviations from the Contract requirements exist, follow the guidelines set forth in Division 01 Section "Product Requirements" for substitutions.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal from Contractor to COTR using the approved transmittal form provided by COTR. COTR will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Use transmittal forms and follow other submittal procedures according to information provided to Contractor at the preconstruction meeting.
- H. Distribution: Provide 5 copies of each submittal.

- I. Use for Construction: Use only final submittals with mark indicating "approved" by COTR in connection with construction.

1.5 SUBMITTAL LOG

- A. Prepare a log that contains a complete listing of all submittals required by Contract. Submit the log at the preconstruction meeting along with Contractor's **construction** schedule specified in Division 01 Section "Construction Progress Documentation." Organize the submittal log by Section number. Assign each submittal a sequential number for identification and tracking purposes.
 1. Coordinate the submittal log with Division 01 Section "Construction Progress Documentation." The submittal log shall be submitted for COTR's review. Include the following information:
 - a. Title of submittal/description.
 - b. Submittal number (sequential).
 - c. Scheduled date for the first submittal.
 - d. Drawing number, if applicable.
 - e. Applicable Section number.
 - f. Name of subcontractor/vendor.
 - g. Scheduled date of COTR's final release or approval.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Mill reports.
 - e. Compliance with recognized trade association standards.
 - f. Compliance with recognized testing agency standards.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

- D. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation."
- E. Application for Payment: Comply with requirements in Division 01 Section "Application for Payment."
- F. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- G. Contractor Warranty Letter: Comply with requirements in Contract Provision "Warranty of Construction." Provide the dates of warranty coverage and provide point of contact information for warranty service.
- H. Special Warranty Letters: Provide dates of warranty coverage and provide point of contact information for warranty service for special warranties required in the Technical Specifications.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to COTR.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents, which shall include dimensions, clearances, compatibility, and coordination with Shop Drawings and Product Data submitted for other work.
- C. If Contractor has not checked the submittals carefully, even though stamped as checked and approved, submittals shall be returned to Contractor for proper checking before further processing or review by COTR regardless of any urgency claimed by Contractor. In such a situation, Contractor will be responsible for any resulting delays to the scheduled Contract completion. Furthermore, Contracting Officer may hold Contractor responsible for increased Authority costs resulting from Contractor's failure to comply with the requirements set forth herein.

3.2 COTR'S ACTION

- A. General: COTR will not review submittals that do not bear Contractor's approval stamp and will return them without action.

- B. COTR Responsibilities: The review of Shop Drawings and other submittals by COTR will be for general conformance with the Contract only, and the review shall not be interpreted as a checking of detailed dimensions, quantities, or approval of deviations from the Contract Documents. COTR review shall not relieve Contractor of its responsibility for accuracy of Shop Drawings nor for the furnishing and installation of materials or equipment according to the Contract requirements.
1. Approval of Shop Drawings or other submittals is not to be interpreted as approval of a substitute material. Approval of substitutions will be accomplished according to requirements set forth in Division 01 Section "Product Requirements."
- C. Action Submittals: COTR will review each submittal, make marks to indicate corrections or modifications required, and return it. COTR will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows. Do not permit submittals marked "Revise and Resubmit" or "Rejected" to be used at Project site, or elsewhere where Work is in progress.
1. Approved: Means fabrication/installation may be undertaken. Approval does not authorize changes to the Contract Price or the Contract Time.
 2. Approved as Corrected: Same as "Approved," providing Contractor complies with corrections noted on submittal. Resubmission required only if Contractor is unable to comply with noted corrections.
 3. Revise and Resubmit: Fabrication and/or installation may not be undertaken. Make appropriate revisions and resubmit, limiting corrections to items marked.
 4. Rejected: Submittal does not comply with requirements. Fabrication and/or installation may not be undertaken. Prepare a new submittal according to requirements and submit without delay.
- D. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.
- E. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 013300

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SECTION 014000 QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.
- B. Related Sections:
 - 1. Division 01 Section "Submittals" for process required to submit the Contractor's Quality Control Plan.
 - 2. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
 - 3. Division 01 Section "Project Closeout"
 - 4. Technical Specifications for specific test and inspection requirements.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Administrative and procedural requirements for Contractor to provide and maintain an effective Quality-Control Program that complies with this Section.
 - 2. Establish a QC Program that consists of the following:
 - a. QC Organization
 - b. QC Plan
 - c. Submittal review and approval
 - d. Testing, completion inspections, and QC certifications and documentation necessary to provide materials, equipment, workmanship, construction and operations that comply with the requirements of this Contract.
 - 3. Specific quality-control requirements for individual construction activities are specified in the Sections that require those activities. Requirements in those Sections may also cover production of standard products.
 - 4. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of its responsibilities for compliance with the Contract Document requirements.
 - 5. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 6. The provisions of this Section shall not limit requirements for Contractor to provide quality-control services required by the Authority or other agencies having jurisdiction.

1.3 REFERENCES

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

1. METROPOLITAN WASHINGTON AIRPORT AUTHORITY

- a. *Construction Safety Manual*, most current edition

1.4 DEFINITIONS

- A. Quality: Conformance to the requirements established by the contract specifications and drawings.
- B. Control: To guide and have influence over.
- C. Contractor Quality Control (CQC): The construction contractor's system to manage, control, and document their own, their supplier's, and their subcontractor's activities to comply with the contract requirements.
- D. Contracting Officers Technical Representative (COTR). Primary on-site representative of the Contracting Officer for technical matters. Duties and responsibilities of the COTR will be transmitted to the contractor via letter from the Contracting Officer.
- E. Quality-Assurance Services: Activities, actions, and procedures performed by the Authority before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirement. Additionally, the Authority fulfills its responsibility to be certain that the CQC is functioning and the specified end product is achieved.

1.5 CONFLICTING REQUIREMENTS

- A. General: If compliance with two standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to the COTR for a decision before proceeding. This paragraph refers to industry and government standards. In case of a difference between drawings and the specifications, the specifications shall govern.

1.6 SUBMITTALS

- A. Submit the following in accordance with Division 01 Section, "Submittals."

1. Action Submittals.

- a. Quality Control (QC) Plan.

- B. NOTE: Coordinate the submittal requirement dates with the submittal dates in Division 01 Section "Construction Progress Documentation".
- C. QC Plan shall be submitted along with the Schedule submittal.
- D. Any approval by the COTR of the QC Plan shall be treated as "accepted, predicated upon successful implementation." Stop work if the QC Plan becomes disapproved. The exception is the work authorized in the paragraph entitled "Preliminary Work Authorized Prior to Approval," shall stop.

1.7 INFORMATION FOR THE CONTRACTING OFFICER

- A. Provide a sample copy set of report forms to the Contracting Officer during the Pre-Construction Conference. The report forms shall consist of the Quality Control Daily Report.
- B. Deliver the following listed items to the COTR at the times specified:
 - 1. Quality Control Daily Report: Original and 6 copies, by 12:00 noon the next working day after each day that work is performed.
 - 2. Superintendent's Daily Report: Original and 6, by 12:00 noon the next working day after each day that work is performed, attached to the Quality Control Daily Report.

1.8 NOTIFICATION ON NON-COMPLIANCE

- A. The COTR will notify the Contractor of any detected non-compliance 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:
 - 1. Issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall make no part of the time lost due to such stop orders the subject of a claim for extension of time for excess costs or damages.
 - 2. Repair, replace or otherwise remedy the defective work at the Contractor's expense. Cost incurred by the Authority to correct defective work shall be deducted from the total amount due the Contractor.
 - 3. Withhold an amount from the payment due the Contractor as may be deemed necessary at the discretion of the Contracting Officer.
 - 4. Terminate the Contractor's right to proceed for Default after providing required notice.
- B. In cases where implementation of the Quality Control Program does not comply with the Contractor's Quality Control Plan or the contract provisions. Or Contractor fails to properly operate and maintain an effective Quality Control Program, the Contracting Officer may:
 - 1. Order the Contractor to replace ineffective or unqualified Quality Control Personnel or subcontractors.
 - 2. Issue an order stopping all or part of the work until acceptable personnel are on site and a new Quality Control Plan is approved by the COTR. The Contractor shall make no part of the time lost due to such stop orders the subject of claim for extension of time for excess costs or damages.

3. Take a credit from the contract for Quality Control Activities not performed.
 4. Terminate the Contractors right to proceed for Default after providing required notice.
- C. The Contractor shall maintain a detailed record of every non-compliance and corrective action taken.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014000

SECTION 017113 MOBILIZATION/DEMobilIZATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This work shall consist of the performance of construction preparatory operations, including the movement of personnel, equipment, and materials to the project site, and for establishment and maintenance of the contractor's facilities necessary to begin and sustain work on the Contract. In addition, mobilization and demobilization shall include but not limited to the following items:
 - 1. Obtaining personnel identification and other items as necessary to facilitate work.
 - 2. Deliver necessary equipment as needed to complete the project.
 - 3. Prepare various plans and other items as necessary to facilitate work as outlined in the contract documents.
 - 4. Recurring costs for record documentation for the duration of the project.
 - 5. Other work items necessary to begin construction, as shown in the plans.
 - 6. Utility sweeps and markouts.
 - 7. Survey/stakeout.
 - 8. Demobilization efforts (including cleanup and restoration of the contractor staging and parking areas) at completion of the Project.
 - 9. Project closeout.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- 4.1 Payment for mobilization/Demobilization will be made on a lump sum basis. The bid amount shall include the furnishing and maintaining of services and facilities noted under this specification section, to the extent and at the time the Contractor deems them necessary for his operations consistent with the requirements of this work and the respective contract.

- A. 017113-1 Mobilization/Demobilization – per lump sum

END OF SECTION 017113

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SECTION 017114 MAINTENANCE AND PROTECTION OF TRAFFIC DURING
CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall be required to carry out his operations in a manner that will cause a minimum of interference with air traffic as indicated in the phasing plans, and shall be required to cooperate with the FAA, the Authority, the airlines, and Contractors involved in work on other projects. All work shall be completed in accordance with FAA Advisory Circular 150/5370-2E.
- B. The Contractor shall be required to furnish for each area of operations his own two-way radio equipment ground control and designate a foreman trained in the use of the equipment to be available at all times to receive instructions from FAA Control Tower personnel. Vehicles with two-way radios shall have amber non-flashing lights.

PART 2 - PRODUCTS

2.1 CONTROL AND WARNING DEVICES

- A. During construction operations within distance indicated on the drawings to the centerline of aircraft aprons, taxilanes, or taxiways, the Contractor shall furnish and maintain barricades along the edges of the construction area to warn the air and ground traffic to stay clear of the construction work. These barricades shall be placed as detailed in the plans or as designated by the COTR. The Contractor shall maintain warning flags around all equipment, stockpiles or other areas as directed by the COTR.
- B. Red warning flags to mark equipment stockpiles, staging areas, or trenches shall be 20" by 20" square, tacked along a staff having a length of five (5) feet and having a minimum thickness of one (1) inch. The staff shall be securely driven into the ground or attached to the pavement so that the top of the flag shall be four (4) feet above ground.

PART 3 - EXECUTION

- 3.1 CONTROL REQUIREMENTS: The Contractor's responsibility for work areas and marking equipment is as follows:
- A. Nothing shall be placed upon runways, taxiways, taxilanes, or aprons without approval of the COTR.
 - B. No vehicle shall enter a paved surface except at predetermined locations.
 - C. Warning flags and barrier fence shall be provided and erected by the Contractor as shown on the plans or as directed by the COTR.
 - D. No private vehicles shall be allowed on the runways or taxiways at any time unless approved by the COTR.
 - E. Through the duration of the job any practice or situation that the COTR determines to be unsafe or a hindrance to regular Airport traffic shall be immediately rectified.
 - F. The Contractor shall be held responsible for the controlling of his employees, subcontractors and their employees with regard to traffic movement.
 - G. The Contractor shall rebuild, repair, restore and make good at his own expense all injuries or damages to any portion of the work occasioned by his use of these facilities before completion and acceptance of his work.
 - H. The Contractor shall submit to the COTR in writing a plan for controlling construction equipment and vehicular movements in the air operations area. This plan shall be submitted before notice to proceed is given. The Plan shall include material haul roads.
 - I. If required, the Contractor shall provide qualified flagmen whose duty it shall be to direct all traffic on or near active runways, taxiways, haul roads and highways. Paved surfaces shall be kept clear at all times and specifically must be kept free from all small stones which might damage aircraft.
 - L. The Control Tower shall at all times have control of operations on or near active runways, taxiways and approach zones. Before entering upon or crossing any runway or taxiway, the Contractor shall receive proper clearance from the Control Tower. Arrivals and departures of airplanes are under the control of the FAA Control Tower. Emergencies and operating conditions may necessitate sudden changes, both in Airport operations and in the operations of the Contractor. Aircraft operations shall always have priority over any and all of the Contractor's operations. Should runways or taxiways be required for the use of aircraft and should the Control Tower or the COTR deem the Contractor to be too close to Airport areas used by aircraft for safety, the Control Tower or the COTR may, at their

discretion, order the Contractor to suspend his operations, remove his personnel, plant, equipment and materials to a safe distance and stand by until the runways and taxiways are no longer required for use by aircraft.

- M. Where any work is to be done adjacent to any operational taxiway, the Contractor shall notify the COTR one week in advance so that provisions can be made to perform the work.
- N. The Contractor shall contact the COTR each day before he begins work to coordinate the status and nature of work to be done that day. The Contractor shall also report to the COTR at the end of each day to schedule the work he plans to do on the following day.
- O. The Contractor shall remove all equipment and all materials that would constitute a hazard to air traffic to the designated storage area whenever work is not in progress.
- P. Violations of these regulations shall be considered a violation of the Contract itself and shall be sufficient cause for halting the work without extending the time limit of the job.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 Payment for maintenance of traffic will be made on a lump sum basis. The bid amount shall include the furnishing and maintaining of services and facilities noted under this specification section, to the extent and at the time the Contractor deems them necessary for his operations consistent with the requirements of this work and the respective contract.

- A. 017114-1 Maintenance of Traffic – per lump sum

END OF SECTION 017114

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SECTION 017700 PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. Related Sections include the following:
 - 1. Division 01 Section "Quality Requirements" for final requirements of the Warranty Manual.
 - 2. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, Record Product Data, and other Record Documents.
 - 3. Technical Specifications for specific closeout and special cleaning requirements for products of those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Definition: "Substantial Completion" is the stage in the progress of the work when COTR determines that all the Work, or a designated portion thereof, is sufficiently complete and functional according to the Contract Documents so that the Authority can occupy or utilize the Work for its intended use. The only remaining physical work shall be the completion of punch list work prior to Final Acceptance.
- B. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, reasons why the Work is not complete, and a schedule for completing punch list work.
 - 2. Ensure previously outstanding technical submittals and Shop Drawings have been submitted and approved.
 - 3. Advise COTR of pending insurance changeover requirements.

4. Submit warranties required by Contract Documents, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - a. Submit Contractor Warranty Letter, for review and approval, before requesting inspection for determining date of Substantial Completion. After date of Substantial Completion has been determined revise the Contractor's Warranty Letter to include that date as start of Warranty period.
 5. Prepare and submit Project Record Documents except Record Contract Schedule; damage or settlement surveys, and similar final record information.
 6. Prepare and submit proof that specified testing has been completed and accepted.
 7. Terminate and remove temporary facilities from Project site.
- C. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, COTR will either proceed with inspection or notify Contractor of unfulfilled requirements. COTR will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by COTR, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Punch list work must be completed within the duration specified by the COTR. Failure to complete the punch list work within the duration specified may result in the Contracting Officer ordering the work to be completed by others at the cost to Contractor.
 3. Results of completed inspection will form the basis of requirements for Final Acceptance.

1.4 FINAL COMPLETION AND ACCEPTANCE

- A. Definition: "Final Completion" is the stage in the Contract when the Contracting Officer determines that all Work has been 100 percent completed according to the terms and conditions of the Contract Documents, including administrative obligations. The date of Final Acceptance is the date of execution by the Contracting Officer of a Certificate of Final Acceptance.
- B. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Application for Payment."
 2. Submit certified copy of COTR's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by COTR. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit a Contractor/COTR joint statement evidencing that all Record Documents, Operation and Maintenance Manuals, warranties, and similar required submittals have been approved.
 4. Complete demobilization and removal of temporary facilities.
 5. Execute final Contract Modification and submit final Subcontractor Payment Form.
 6. Return all AOA badging and all Authority Ids.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 8. Submit Record Contract Schedule.
 9. Submit warranty documentation.
- C. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, COTR will either proceed with inspection or notify Contractor of unfulfilled requirements. COTR will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit four copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order,
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Contract name and number.
 - b. Date.
 - c. Name of COTR.
 - d. Name of Architect/Engineer.
 - e. Name of Contractor.
 - f. Page number.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with Authority requirements, local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning:
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Authority's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.
1. Where extra materials of value remaining after completion of associated Work have become the Authority's property, arrange for disposition of these materials as directed by COTR.

END OF SECTION 017700

SECTION 017839 PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications
 - 3. Record Product Data.
 - 4. Record Samples.
 - 5. Record Schedule.
 - 6. Miscellaneous Record Submittals.
- B. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for construction schedules as basis for Record Schedule.
 - 2. Division 01 Section "Quality Requirements" for ensuring the record drawings and specifications are kept current on a daily basis and marked to show deviations which have been made from the original Contract documents
 - 3. Division 01 Section "Project Closeout " for general closeout procedures
 - 4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 5. Divisions 02 through 33 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

- A. Record Drawings. Comply with the following:
 - 1. Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit one set of complete, full-sized, marked-up Record Drawings. Contractor shall retain the originals for correction and final reproduction. The drawings are not to be copied and submitted until after substantial completion to insure all changes are shown on the drawings. The COTR will facilitate review of drawings and indicate whether the mark-ups are acceptable. The COTR will return review comments indicating any corrections

that need to be made to the drawings. The corrected record drawings may then be reproduced, and organized into sets, printed, bound, and submitted as final submittal.

- b. Final Submittal: After construction is complete and changes are recorded on the drawings, submit three complete, full-sized, printed sets and four CD ROMs of marked-up Record Drawings. The CD ROM's shall include all of the files necessary to duplicate the printed material. Include each sheet, whether or not changes and additional information were recorded. In addition, submit the original set of marked-up record drawings onto which the mark-ups were made.
- B. Record Specifications: Submit two copies of Project Specifications, including addenda and contract modifications.
 - C. Record Product Data: Submit one copy of each Product Data submittal at the direction of the COTR.
 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.
 - D. Record Samples: Submit Record Samples as specified.
 - E. Record Schedule: Submit three copies of Record Schedule.
 - F. Miscellaneous Record Submittals: Submit miscellaneous Record Submittals as specified.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: During construction, maintain one complete, full sized, set of blue- or black-line prints of the Contract Drawings, applicable shop drawings and coordination drawings for record purposes.
 1. Maintenance of Drawings: Maintain the drawings in a clean, dry, legible condition. Keep drawings available during normal working hours for inspection by the COTR.
 2. Preparation: Routinely mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the mark-ups on the record set.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later especially underground structures.
 - b. Record information in an understandable drawing technique. Ensure mark-ups are legible and reproducible.
 - c. Record data as soon as possible after obtaining it. Record and check markups before enclosing concealed installations.

3. Mark the Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, insert them into drawing set and assign an appropriate sheet number (one that follows the number sequence of the drawings). Show cross-references to the new sheets on the Drawings. Update drawing index as needed to reflect new sheets.
 4. Mark record drawings with red pen that will reproduce clearly. Use different colors to distinguish between changes for different categories of the Work at the same location.
 5. Mark important additional information that was either shown schematically or not indicated on the original Drawings.
 6. Note applicable Construction Change Notices, Requests for Information, Technical Support Requests, and similar identification numbers, where applicable. Copies of change documentation shall be inserted into the set for clarification but are not a substitute for mark-ups. If identification numbers for documentation are marked on the drawing when no change resulted, indicate "No Change".
- B. Newly Prepared Project Record Drawing Sheets: The contractor may add new sheets with supporting sketches and change documentation instead of marking original sheets when neither the original Drawings nor Shop Drawings are suitable to show actual installation or if the new sheets can show the changes more clearly or additional space is required for markup information.
1. Assign a number to each new sheet and cross-reference on the appropriate related sheets.
 2. Consult with COTR for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction.
 3. Integrate newly prepared sheets into Record Drawing sets and update drawing index to reflect new sheets.
- C. Format:
1. Identify and date each Record Drawing. Include the designation "PROJECT RECORD DRAWING" in a prominent location on each sheet.
 2. Cover Sheet shall have the designation "PROJECT RECORD DRAWINGS", Date, Name of Contractor, and signature.
 3. Include the following identification on newly prepared Project Record Drawing Sheets:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWING."
 - d. Name of Architect/Engineer (if applicable).
 - e. Name of Contractor.
 - f. Initials of person incorporating the change.
 - g. Drawing identification number. (Ixx/Dxx)
 4. Organization of Newly Prepared Project Record Drawing Prints: Organize newly prepared Record Drawings into manageable sets. Include any contract required coordination drawings and applicable shop drawings. Bind each set with durable paper cover sheets. Include identification on cover sheets.

D. ADDITIONAL REQUIREMENTS FOR RECORD DRAWINGS

1. When there are multiple copies of the same sheet with different mark-ups on each copy, the General Contractor is responsible for consolidating all mark-ups onto a single copy of each individual sheet.
2. The information from all RFI's, Change Notices, Design Clarifications, field adjustments, or any other changes, must be noted on the appropriate drawing. These mark-ups must include enough information to clearly show the actual constructed conditions resulting from the change. The information may be drawn onto the drawing, copied onto the drawing or copied onto a new full size sheet. Every change in construction must have RFI's, Change Orders or similar supplementary documents; therefore they must be copied in original size and attached to the back of the preceding drawing or at the end of the drawing set, as an appendix, as a full size sheet, same in size as the drawing set. Multiple RFI's, CN's and other supplemental documents may be copied in each single sheet.
3. All changes made on the drawings shall reference the appropriate RFI, Change Notices, Design Clarification, or details from the contractor prepared shop drawings. If the mark-up is due to a field adjustment, it shall be indicated as such.
4. Additional Sheets such as shop drawings and sheets showing copies of applicable change documentation must be inserted into the set as necessary. Such sheets shall have a title block.
5. Notes and sketches printed by hand are acceptable but shall be neat, legible, and reproducible. Hand lettering shall be 3/8" high minimum.
6. All shop drawings showing information not on the construction drawings shall be marked up and included in the record drawing set. They shall be the same size (changes in scale noted) as all other drawings, include a title block, and clearly indicate that they are record shop drawings. When the shop drawings more accurately show locations and conditions, they may be marked in lieu of referenced on the original drawings.
7. Include contract required coordination drawings in the record drawing set.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications. Print marked specifications, addenda, and contract modifications on paper any color but white and ensure that black font is clearly legible on the color chosen. Use the same paper color throughout the project. Use black font for these changes.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the brand name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 RECORD SCHEDULE

- A. Record Schedule Submittal: Immediately prior to date of inspection for Final Acceptance, submit a copy of the As-built Contract Schedule to the COTR.
- B. Mark the Contractor's Construction Schedule to show actual start and finish dates for all work activities and milestones, based on the accepted monthly updates. This Record Schedule shall be in same format as Contractor's Construction Schedule. This Record Schedule shall be in tabular and in time-scaled PDM plot formats.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur.

END OF SECTION 017839

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TECHNICAL SPECIFICATIONS

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ITEM P-152 EXCAVATION AND EMBANKMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required for drainage or other purposes in accordance with these specifications and in conformity to the dimensions and cross sections shown on the plans.

1.2 CLASSIFICATION

- A. All material excavated shall be classified as defined below:
 - 1. Unclassified Excavation. Unclassified excavation shall consist of the excavation/embankment and disposal of all unsuitable material off airport property.

PART 2 - MATERIALS (NOT USED)

PART 3 - CONSTRUCTION METHODS

3.1 GENERAL

- A. The suitability of material shall be subject to approval by the COTR. All excess unclassified excavation shall be disposed of off site.
- B. When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued. At the direction of the COTR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

EXCAVATION

- C. No excavation shall be started until the work has been staked out by the Contractor and the COTR has approved. All suitable excavated material shall be used in the formation of embankment or for other purposes shown on the plans. All unsuitable material shall be disposed of off site.
- D. The grade shall be maintained so that the surface is well drained at all times.
 - 1. Undercutting: Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turfing shall be excavated to a minimum depth as indicated on the drawings, below the subgrade. Muck, peat, matted

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roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of at locations shown on the plans. The excavated area shall be refilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary refilling will constitute a part of the embankment. Where rock cuts are made and refilled with selected material, any pockets created in the rock surface shall be drained.

2. Overbreak: Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the COTR. The COTR shall determine if the displacement of such material was unavoidable and his/her decision shall be final. All overbreak shall be graded or removed by the Contractor and disposed of as directed; however, payment will not be made for the removal and disposal of overbreak which the COTR determines as avoidable. Unavoidable overbreak will be classified as “Unclassified Excavation.”
 3. Compaction Requirements: All areas shall be compacted to a density of not less than 90 percent of the maximum density as determined by ASTM D 1557. The material to be compacted shall be within +/-2 percent of optimum moisture content before rolled to obtain the prescribed compaction (except for expansive soils).
- E. The in-place field density shall be determined in accordance with ASTM D 2992 and D3017 (Nuclear Density Method) to verify the density, degree of compaction, and moisture content. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the regarded area. Contractor will not be responsible for testing. Authority will provide necessary testing services.
- F. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the plans or as directed by the COTR.
- G. Blasting will not be permitted.

3.2 HAUL

- A. All hauling will be considered a necessary and incidental part of the work. Its cost shall be considered by the Contractor and included in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

3.3 TOPSOIL

- A. When topsoil is specified or required as shown on the plans, it shall be salvaged from stripping or other grading operations. If, at the time of excavation or stripping, the topsoil cannot be placed in its proper and final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall not be placed on areas which subsequently will require any excavation or embankment. If, in the judgment of the COTR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further rehandling. See section 32 92 00, Turfs and Grasses, for further requirements regarding topsoil placement.

- B. Upon completion of grading operations, stockpiled topsoil shall be handled and placed as directed.
- C. Payment for topsoil will be made under Turfs and Grasses, Section 32 92 00, no direct payment will be made for topsoil as such under Item P-152.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- 4.1 Unclassified excavation/embankment will be measured on a per cubic yard basis and shall be paid for under the contract unit price. Payment shall be made under:
 - A. P-152-4.1 Unclassified Excavation and embankment – per cubic yard

TESTING REQUIREMENTS

ASTM D 1557	Test for Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	Test Methods for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

END OF ITEM P-152

ITEM VA-203 – PONDING AREA BASE DRAINAGE LAYER

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section shall consist of items required by the Contract Documents for Coarse Aggregate to be used as Ponding Area Base Drainage Layer as specified by Section 203 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

1.2 CLASSIFICATION

- A. All materials used for Ponding Area Base Drainage Layer shall be classified as defined below:
 - 1. Coarse Aggregate. Coarse Aggregate shall consist of VA-DOT No. 8 Stone to be used as drainage layer for ponding area re-grading.

PART 2 – MATERIALS

2.1 PONDING AREA BASE DRAINAGE LAYER MATERIALS

- A. Ponding Area Base Drainage Layer shall consist of Coarse Aggregate material that shall conform to the requirements as specific by sections 203.02, 203.03 and Table II-3 for Size No. 8 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

PART 3 – CONSTRUCTION METHODS

3.1 TESTING

- A. No Testing will be required for this item

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- 4.1 Ponding Area Base Drainage Layer will be measured on a per ton basis and shall be paid for under the contract unit price. Payment shall be made under:

- A. VA-203-4.1 Ponding Area Base Drainage Layer, VA DOT No. 8 Stone – per Ton

END OF ITEM VA-203

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ITEM VA-245 – FILTER FABRIC

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section shall consist of items required by the Contract Documents for Geosynthetics for use as filter fabric as specified by Section 245 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

1.2 CLASSIFICATION

- A. All materials used for filter fabric applications shall be classified as defined below:
 - 1. Filter Fabric. Filter fabric shall consist of the geosynthetic material to be used as subgrade stabilization for erosion control pad construction.

PART 2 – MATERIALS

2.1 FILTER FABRIC MATERIALS

- A. Filter Fabric material shall conform to the requirements as specific by section 245.03(d)(1) of the Virginia Department of Transportation Road and Bridge Specifications, 2007 for Subgrade Stabilization Fabric.

PART 3 – EXECUTION (NOT USED)

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- 4.1 Filter Fabric will be measured on a per square yard basis and shall be paid for under the contract unit price. Payment shall be made under:
 - A. VA-245-4.1 Filter Fabric – per square yard

END OF ITEM VA-245

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ITEM VA-309 – AGGREGATE BASE COURSE

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section shall consist of items required by the Contract Documents for Aggregate Base Course as specified by Section 309 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

1.2 CLASSIFICATION

- A. All materials used for Aggregate Base Course shall be classified as defined below:
 - 1. Aggregate Base Course. Aggregate Base Course shall consist of VA-DOT No. 21A Stone to be used as the aggregate base course for erosion control pad construction.

PART 2 – MATERIALS

2.1 AGGREGATE BASE COURSE MATERIALS

- A. Aggregate Base Course material shall conform to the requirements as specific by section 208.01, Table II-9 for Size No. 21A of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

PART 3 – CONSTRUCTION METHODS

3.1 GENERAL

- A. Aggregate Base Course shall be placed in accordance with the requirements as specified by Section 309 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

3.2 TESTING

- A. Aggregate base course will be accepted for density when the field density is at least 95 percent of the maximum density of laboratory specimens prepared from samples of the base course material delivered to the job site. The specimens shall be compacted and tested in accordance with ASTM D 1557. The in-place field density shall be determined in accordance with ASTM D 1556 or D 2167. Contractor will not be responsible for any testing. Authority will provide necessary testing services.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 Aggregate Base Course will be measured on a per ton basis and shall be paid for under the contract unit price. Payment shall be made under:

A. VA-309-4.1 Aggregate Base Course – per Ton

END OF ITEM VA-309

ITEM VA-315 – ASPHALT CONCRETE PAVEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section shall consist of items required by the Contract Documents for Asphalt Concrete Pavement as specified by Section 315 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

1.2 CLASSIFICATION

- A. All materials used for Asphalt Concrete Pavement shall be classified as defined below:
 - 1. Asphalt Concrete Pavement. Asphalt Concrete Pavement shall consist of two (2), 2-Inch lifts of ½” surface mix to be used as the bituminous surface course for asphalt concrete pavement for erosion control pad construction.

PART 2 – MATERIALS

2.1 ASPHALT CONCRETE PAVEMENT MATERIALS

- A. Asphalt material shall be PG 64-22.
- B. Fine/Coarse Aggregate material shall consist of any VDOT approved SM-12.5A mix for fine and coarse aggregate content and gradation. Materials shall conform to the requirements as specified by Sections 202 and 203 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

PART 3 – CONSTRUCTION METHODS

3.1 GENERAL

- C. Asphalt Concrete Pavement shall be placed in accordance with the requirements as specified by Section 315 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

3.2 TESTING

- A. No Testing will be required for this item

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- 4.1 Asphalt Concrete Pavement will be measured on a per ton basis and shall be paid for under the contract unit price. Payment shall be made under:

- A. VA-315-4.1 Asphalt Concrete Pavement – ½” Mix (SM-12.5A) – per Ton

END OF ITEM VA-315

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ITEM VA-501 – FRENCH DRAINS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section shall consist of items required by the Contract Documents for installation of French Drains, using pipe, aggregate and geosynthetics as specified by Section 501 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

1.2 CLASSIFICATION

- A. All materials used for French Drains shall be classified as defined below:
 - 1. Underdrain Pipe. Underdrain Pipe shall consist of 4-Inch diameter perforated pipe
 - 2. Aggregate. Aggregate shall consist of coarse aggregate backfill around underdrain pipe
 - 3. Filter Fabric. Filter Fabric for this application shall consist of geotextile fabric for use in drainage systems.

PART 2 – MATERIALS

2.1 FRENCH DRAIN MATERIALS

- A. Pipe shall conform to the requirements as specified by Section 232.02(j) of the Virginia Department of Transportation Road and Bridge Specifications, 2007.
- B. Aggregate material shall conform to the requirements as specified by Section 203.02, Table II-3 for Size No. 57 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.
- C. Filter Fabric shall conform to the requirements as specified by Section 245.03(c) of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

PART 3 – CONSTRUCTION METHODS

3.1 GENERAL

- D. French Drains shall be installed in accordance with the requirements as specified by Section 501 of the Virginia Department of Transportation Road and Bridge Specifications, 2007.

3.2 TESTING

- A. No Testing will be required for this item

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 French Drains will be measured on a per linear foot basis and shall be paid for under the contract unit price. Payment shall be made under:

A. VA-501-4.1 French Drains, installed complete – per linear foot

4.2 Structure connections shall be measured based on each connection made and accepted. Payment shall be made under:

B. VA-501-4.2 Structure Connection – per each

END OF ITEM VA-501

SECTION 329200 TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract Provisions, Special Provisions, Supplementary Conditions, and other Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes subsoil scarification, topsoil placement, application of soil amendments, final grading, fertilizing, turf seeding, mulching, and initial irrigation for the areas indicated on Drawings.
- B. Topsoil shall be stockpiled for reuse.

1.3 SUBMITTALS

- A. Submit the following to COTR in accordance with requirements of Division 01 Section, "Submittals."
- B. Certification of Grass Seed: Seed vendor's signed statement of turf seed analysis, certifying that each lot of seed has been tested in accordance with requirements of the Commonwealth of Virginia within the previous 6 months by a recognized independent seed testing laboratory. This statement shall include:
 - 1. Name and address of laboratory.
 - 2. Date of analysis.
 - 3. Origin and lot number for each type of seed variety.
 - 4. Results of analysis, including, for each seed variety:
 - a. Botanical and common name (species and variety).
 - b. Percentage by weight of variety in overall mixture.
 - c. Percentage of purity.
 - d. Percentage of germination.
 - e. Percentage by weight of weed content.
 - f. Percentage by weight of inert content.
- C. Topsoil Analysis Report: Report of analysis by an Authority approved soil testing laboratory stating percentages of silt, clay, sand and organic matter, soil pH, and the mineral and plant nutrient content of soil. Report shall indicate suitability of topsoil for healthy, vigorous growth of turf grasses. If not suitable, include recommended quantities for nitrogen, phosphorus, potash, limestone, aluminum sulphate, or other soil amendments that shall be added to make topsoil suitable.

1.4 PROJECT CONDITIONS

- A. Planting time: Sow permanent seed in all areas of project in periods between March 15 to May 15, or between August 15 and October 1 unless otherwise approved in writing by the COTR.
- B. Maintenance period: Correlate planting with specified maintenance periods to provide required maintenance from date of substantial completion.

1.5 SPECIAL PROJECT WARRANTY

- A. Warranty turf areas through specified maintenance period and until final acceptance.

PART 2 - PRODUCTS

2.1 SOIL AMENDMENTS

- A. Not required. Onsite material will be used.

2.2 FERTILIZER

- A. Complete, 10-20-10 commercial fertilizer of neutral character, with some elements derived from organic sources, conforming to requirements of Federal Specification O-F-241d and applicable laws of the Commonwealth of Virginia. Fertilizer to provide nitrogen in a form that will be available during initial period of turf growth.

2.3 GRASS SEED MIXTURE

- A. Grass Seed: Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America for lawn grasses. Seeds included in the mix shall be listed in the most current version of the Virginia Turfgrass Variety Recommendations. Seed mixtures shall be a blend of three standard varieties with no dwarf and shall consist of the following (by weight):

10 %	<u>Kentucky Bluegrass</u>
80 %	<u>Tall Fescue</u>
10 %	<u>Perennial Rye</u>

2.4 MESH AND MULCH

- A. Anti-Erosion Mesh: jute mesh erosion netting or other similar coverings acceptable to COTR.
- B. Seed Mulch: Peat moss in natural, shredded, or granulated form, of fine texture, with a pH of 4.0 to 6.0 and a water absorbing capacity of 1,100 to 2,000 percent.

PART 3 - EXECUTION

3.1 SOIL PREPARATION

- A. Limit preparation to areas that will be planted within 72 hours.
- B. Till sub grade to a minimum depth of 6 inches. Remove stones exceeding 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter including gravel or other inorganic deposits in excess of 4 stones per square foot (average).
 - 1. Immediately after initial tilling, remove existing grass clumps, vegetation, and turf. Dispose of such material outside of Owner's property; do not turn over into soil being prepared for turfs.
 - 2. Maintain grades in a true and even condition where grades to be provided with topsoil have been established by others.
 - 3. Where grades have not yet been established, smooth-grade the areas to the prescribed elevations indicated and leave in a condition that is properly compacted and evenly graded to prevent formation of low areas where water may pond.
- C. Spread topsoil mixture to depth required meeting thickness, grades, and elevations shown, after light rolling and natural settlement.
 - 1. Provide minimum depth of 2 inches (50 mm) after compaction, unless otherwise indicated. Do not spread if either topsoil material or sub grade is frozen.
 - 2. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
 - 3. Allow for sod thickness in areas to be sodded.
- D. Add soil amendments to top surface of topsoil at rates specified and spread initial fertilizers at rate of 1500 lbs. per acre of topsoil.
 - 1. Mix lime with dry soil before mixing in fertilizer.
 - 2. Mix thoroughly into top 4 inches of topsoil prior to fine-grading.
 - 3. Do not mix fertilizer with topsoil more than 72 hours in advance of seeding or sodding operations.
 - 4. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots, and other extraneous matter.
- E. Fine-grade to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. After compaction rolling, leave surfaces at prescribed grades with uniform slope to drain and free from low areas where water might pond. Limit fine-grading to areas that can be planted within 72 hours. Remove trash, debris, stones larger than 2 inches in diameter, and other objects that may interfere with planting or maintenance operations.
- F. Promptly remove topsoil or other materials falling on pavement as result of hauling or spreading of topsoil.

3.2 SEEDING

- A. Restore prepared turf areas to specified condition if eroded or otherwise disturbed after fine-grading and before planting.
- B. Moisten prepared turf areas before planting if soil is dry. Water thoroughly and allow surface to dry off before seeding operations. Do not create muddy soil.
- C. Sow seed with a spreader or a seeding machine. Do not seed when wind velocity exceeds 5 miles per hour. Distribute seed evenly over entire area by sowing equal quantity in 2 directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
 - 2. Sow no less than the quantity of seed specified.
- D. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

3.3 HYDROSEEDING

- A. Mix specified seed, fertilizer, and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
- B. Apply slurry uniformly to all areas to be seeded. Rate of application as required obtaining seed application rate equivalent to 6 pounds per 1000 sq. ft. (260 lbs. per acre).

3.4 MULCHING

- A. Protect seeded areas against erosion with jute mesh erosion netting or other similar coverings acceptable to COTR.
- B. Protect seeded areas against hot, dry weather or drying winds by applying specified mulch within 24 hours after completion of seeding operations. Presoak and scatter evenly to a depth of 1/8 inches to 3/16 inches thick and roll to a smooth surface. Do not mound.

3.5 RECONDITIONING EXISTING TURF AREAS

- A. Recondition turf areas where settlement or washouts occur or where minor re-grading is required.
- B. Recondition existing turf areas damaged by Contractor's operations including storage of materials or equipment and movement of vehicles.
- C. Recondition other existing turf areas as indicated.

- D. Provide fertilizer, seed and soil amendments same as specified for new turf areas and as required to provide healthy stand of grass in reconditioned areas. Provide new topsoil as required to fill low spots and meet required finish grades.
- E. Remove diseased or unsatisfactory grass clumps; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations including oil drippings, stone, gravel, and other construction materials; replace with new topsoil.
- F. Where substantial turf remains (but is thin), mow, rake, aerate if compacted, fill low spots, remove humps, cultivate soil, apply lime, fertilizer, and sow specified seed at rate indicated. Remove weeds before seeding. If weeds are extensive, apply selective chemical weed killers as required. Apply seedbed mulch, if required, to maintain moist condition.
- G. Water newly planted areas and keep moist until new grass is established.

3.6 PROTECTION

- A. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout the maintenance period. Maintain barricades until a substantial and healthy stand of grass is established.
- B. Take necessary precautions as required to avoid damage to existing plants, turf, and structures.

3.7 ACCEPTANCE

- A. When work is substantially completed, including maintenance, COTR will, upon request, make an inspection to determine acceptability.
- B. Turf work may be inspected for acceptance in parts agreeable to the COTR, provided work offered for inspection is complete.
- C. Seeded areas will be acceptable provided requirements, including maintenance, have been met and healthy, uniform close stand of specified grass has been established with an average of one healthy grass plant per square inch, free of weeds, with no bare spots in excess of 5 inches in diameter, and free of surface irregularities.

3.8 CLEANUP

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto surface of paved areas.
- B. Maintain all areas neat and clean during seeding operations. On a daily basis, remove excess materials and debris to site location designated by COTR. At completion of Work, remove all such materials from site and dispose of in a legal manner.
- C. Restore any damage caused by seeding operations to original condition.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 Turf and grasses will be measured on a per square yard basis and shall be paid for under the contract unit price. Payment shall be made under:

- A. 32 92 00-4.1 6-Inch Topsoil and Seed – per square yard

END OF SECTION 329200

