SPECIFICATIONS

RIVER RESCUE BOAT HOUSE
NORTH FACILITY

PROJECT DF1001

RONALD REAGAN WASHINGTON NATIONAL AIRPORT
METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

Prepared for

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

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METROPOLITAN WASHINGTON AIRPORTS AUTHORITY
RONALD REAGAN WASHINGTON NATIONAL AIRPORT
SPECIFICATIONS

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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. A list of adjacent construction activities follows:

1. Runway 1-19 Overlay and Taxiways Rehabilitation
2. Runway 1-19 Safety Area Improvements and Runway 1 Hold Apron Modification – Early Utility Relocation Package
3. Runway 1-19 Safety Area Improvements and Runway 1 Hold Apron Modification – General Construction Package

1.4 PERMITTING

A. Comply with all requirements set forth in the Authority's "Building Codes Manual". This manual describes Building Codes organization, Building Code inspection process and Certificate of Occupancy requirements. The Authority will file for and provide the construction permit.

1.5 MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC

A. Maintain adequate vehicular traffic flow and safety along the service roads, parking lots and other roadways on Airport property. In addition, this requirement applies to crossroads, approaches, and entrances affected by or made necessary by the Work. Coordinate activities throughout the project in a manner that allows emergency access, without delays to emergency response vehicles, to all areas of the Project that are occupied by employees.

B. Prior to starting construction operations affecting vehicular, or aircraft traffic movement, submit and obtain the COTR's written approval of a Traffic Maintenance Plan. Develop plan in accordance with the safety requirements of the FAA, Airport Operations, and the Commonwealth of Virginia Department of Transportation's *"Manual of Uniform Traffic*

Control Devices". Utilize the form indicated in the latest edition of the Virginia Department of Transportation's *"Virginia Work Area Protection Manual – Standards and Guidelines*".

C. Provide and maintain temporary signage, "Jersey barriers," and such other traffic control devices or personnel as required complying with approved Traffic Maintenance Plan.

D. Maintain the construction operations affecting vehicular, or aircraft traffic movement from the beginning of construction operations until final acceptance of the project. The maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end of project to ensure that roadways and structures are maintained in satisfactory condition at all times, including barricades and warning signs as necessary for performance of the work.

E. Keep the portions of the project being used by vehicular traffic in such condition that traffic will be adequately accommodated. Remove snow and control all ice within the project boundaries. Bear all cost of maintenance work during construction and before the project receives a Certificate of Occupancy.

F. Keep the portions of the road pavement surfaces free from irregularities, obstructions, mud, dirt, snow, ice, and any characteristic that might present a hazard or annoyance to traffic in such condition that traffic will be adequately accommodated.

1.6 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. Apron maintenance, snow removal and ice control.

B. The Work, or a portion thereof, will be performed nearby the public Terminal or Concourse buildings. Normal airport operations and public activities will continue adjacent to the Work during all phases of the Project.

C. 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.

1.7 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.

C. All painted surfaces are assumed to contain lead-based paint. The Contractor shall maintain the necessary health and safety requirements for all personnel in accordance with OSHA lead construction standard regulations to work in these conditions. The removal and disposal of lead-based paint is part of this contract. All metal coated with lead paint shall be recycled.

D. Aircraft deicing fluids will be encountered in the water (including utility manholes) and in the soils. Concentrations of aircraft deicing fluids in water and soils will range from non-detect to saturation. Aircraft deicing fluids are propylene based Type I and Type IV fluids. The fluids emit an unpleasant odor when the breakdown (biodegradation) is occurring. Follow OSHA requirements while working in aircraft deicing impacted areas. Coordinate with the COTR for obtaining Material Safety Data Sheet (MSDS) for aircraft deicing fluids.

E. Petroleum contaminated soils and water may be encountered during the construction of this project. Petroleum impacted soils range from saturated to 1.0 ppm. Petroleum impacted water ranges from free product to "non - detect." Maintain the necessary health and safety requirements for all personnel in accordance with OSHA regulations.

1. Do not use petroleum-contaminated soils as backfill around new piping or utilities. Transport petroleum contaminated soils to a location identified by the COTR. Place the contaminated soils on two layers of reinforced 6 mil plastic sheeting, install and maintain sediment and erosion controls, and adequately cover the stockpile to prevent water infiltration.

F. Only "clean" fill will be permitted to be used as fill for the site. The Contractor shall identify the borrow site for approval by the COTR. The Contractor shall provide an estimate for the proposed amount of borrow material needed for the project. The Contractor shall allow 3 weeks for the approval and sampling of a borrow site(s). The Authority will sample the borrow site(s) to determine if the borrow material is "clean". The Contractor is responsible for identifying "clean" borrow site(s). No fill material shall be brought onsite until it has been sampled and approved by the Authority.

G. Existing pier decking, handrails, piers and boat house are assumed to be coated with a heavy duty wood preservatives (chromate arsenicals, creosote, etc.) and the Contractor is responsible for the proper characterization and disposal of all materials associated with the demolition of the existing pier, pilings, decking and structure of the north boat house.

1.8 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.

1.9 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.

C. Preserve all roadways signage. Deliver all signs removed and not required for reinstallation to the Authority as directed by the COTR.

D. Replace or repair lost or damaged signs at no cost to the Authority.

1.10 SECURITY DURING CONSTRUCTION

A. Maintain the integrity of the Airport Security fence. 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 Ronald Reagan Washington National Airport. 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 Transportation Security Administration 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.

1.11 MATERIAL HAULING

A. Restrict deliveries and removal of bulk materials, supplies, waste soils and equipment to and from the Project site to the Authority-designated roads and haul routes indicated on the Drawings.

B. Access and egress to and from the Airport for hauling operations shall be through Gate A only.

C. The designated haul routes for hauling operations will not require vehicles crossing and/or utilizing existing taxi lanes or taxiways. Under no conditions shall the Contractor plan use of taxiways and taxi lanes for hauling equipment. Haul routes for this project are as indicated.

D. 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.

E. Notify the COTR at least 72 hours in advance of his requirement for scheduled roadway closures. Obtain the written approval of the Authority prior to closing a roadway.

F. Bear all costs associated with establishing, maintaining, signing, lighting and marking haul routes. These costs are considered incidental to the pay items of this Contract.

G. Use load covers on all dump trucks. Load dump trucks so that no spillage occurs during transit on the State, municipal, or Airport roadways. Clean wheels of trucks leaving the Project construction site of all soil and rocks. Provide a truck washing rack on the Project site to minimize the tracking of soil onto paved surfaces.

H. Be responsible for the cost of the immediate cleaning of earth tracking and spills on paved surfaces resulting from the Contractor's operations. Maintain a water truck on site when the roadway work is underway in order to effectively control dust rising from construction activities.

I. When required, 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.

1.12 PORTABLE LIGHTING

A. 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.

1.13 RADIO COMMUNICATIONS

A. Provide two-way radio communication between certain of the Contractor's personnel on the job site. Provide radios with a minimum of 5 watts transmitting power. Select the frequency utilized for these transmissions. 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. Provide two additional radios with the same frequencies to PMC for use by the COTR and the Lead Inspector.

C. Provide two-way radios capable of operating on both the "Ground" and "Ramp" frequencies. 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.

D. Cellular telephones are an acceptable alternative at Ronald Reagan Washington National Airport.

1.14 NOT USED.

1.15 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".

G. 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".

H. Prior to start of construction activities in the Air Operations Area (AOA), the Contractor's Safety Engineer(s) shall tour the AOA with the Authority Safety Program Manager.

I. 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.

J. 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. 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.

K. 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.

L. 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.

M. All motorized equipment and vehicles working on or entering MWAA construction project work areas shall be equipped with functional audible backup alarms.

N. Crane Operators. On Airports Authority projects, Crane Operators shall be certified to operate the equipment by an approved independent certifying agency.

O. 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. Possible safety problems (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 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. NOTAM issuance.
16. Vehicle identification.
17. Vehicle parking.
18. Use of temporary visual aids.
19. Obstacle-free zones (OFZ).
20. Approach clearance to runways.

21. Runway and taxiway safety areas.
22. Required compliance of contractor personnel.
23. Procedures for notification of aircraft rescue firefighting (ARFF) if emergency access routes are rerouted or blocked.
24. Emergency notification for fire, medical, and police response.
25. Coordination of plan with an FAA airport certification safety inspector.

1.16 HEIGHT LIMITATION

A. For all demolition and construction within the Airport, limit the height of Contractor's equipment to a maximum of :

1. Landslide – 30’
2. River – Walkway – 50’
3. River – Boathouse – 60’
4. River – Debris Breakwater – 50’

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. Submit FAA Form 7460-1, provided by COTR, for all variations on approved crane heights.

1.17 NOISE CONTROL

A. The Authority recognizes and can tolerate a normal level of noise created by a majority of construction activity. However, in the interest of the Authority's neighbors, the maximum acceptable noise level between the hours of 5:00 pm and 7:00 am the following morning is limited to 55 decibels. During daytime hours of 7:00 am through 5:00 pm, the maximum acceptable noise level for sustained or repetitive noises is 72 decibels. Measure the noise level using an "A" scale at a point 4'-0" above ground at property line nearest noise source.

B. Secure advance written approval from the COTR prior to scheduling any activity that is anticipated to produce a sustained or repetitive noise level higher than the decibel limits indicated above.

1.18 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.

1.19 AIRPORT SECURITY/VEHICLE INSPECTION PROCEDURE

A. The number of vehicular access points into secure areas at Ronald Reagan Washington National Airport has been reduced to an operational minimum. There is only one gate available for all vehicular traffic, Gate A.

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 Gate A 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007300

SECTION 007319 - HEALTH AND SAFETY REQUIREMENTS

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.

B. Requirements included in this Section are the minimum acceptable and are in addition to the Authority's Construction Safety Manual, as well as all Local, State, and Federal requirements. Where conflicts or discrepancies exist between requirements, the more stringent requirement shall govern.

C. Related Work Described Elsewhere:

1. Section V, "Solicitation Provisions."
2. Section VII, "Contract Provisions."
3. Section X, "Construction Safety Manual."

1.2 SUMMARY

A. Provide safe and healthful working conditions on each operation at all times. 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 amended, and 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.

B. Stop work whenever a work procedure or a condition at a work site is deemed unsafe by the Contracting Officer's Technical Representative (COTR), the Program Safety Manager (PSM), the Contractor's Safety Engineer(s), or the Contractor's Industrial Hygienist (IH).

C. Prior to the start of construction activities in the Airport Operations Area (AOA), the Contractor's Safety Engineers and Industrial Hygienist shall tour airside with the Program Safety Manager.

D. Implement and conduct safety meetings, as indicated in the Authority's Construction Safety Manual, with all subcontractors on the job site and all subcontractors anticipated to be on the job site from the previous safety meeting to the next safety meeting. The purpose of the safety meeting shall be safety coordination, review of safety procedures, and promoting safety awareness.

E. Fire Safety: Conform to the following requirements:

1. Ensure adequate access to all construction areas for emergency response.
2. Complete application and 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.
3. Perform all utility outages in accordance with the requirements of Division 01 Section "Summary."

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CONTRACTOR'S SAFETY AND HEALTH PROGRAM - GENERAL REQUIREMENTS

A. This Section serves to outline the key elements for the Contractor's Safety and Health Program. This Section also includes a number of additional project specific requirements for the Contractor's Safety and Health Program. In addition, reference is made to the minimum requirements set forth in the "Construction Safety Manual."

B. The Contractor's Safety and Health Program shall include as a framework for safety and health programming the following minimum basic elements:

1. A statement of the Contractor's commitment to providing a safe and healthful project.
2. A statement of the Contractor's responsibility for implementing its Safety and Health Program.
3. Detailed procedures for:

    a. Training of site supervision.
    b. Safety and Health Project Orientation for workers.
    c. Ongoing Safety and Health training for workers.
    d. Providing safety and health information to the general public.

4. Specific assignments of safety and health-related roles and responsibilities.
5. Safety and health inspections on the project.
6. Procedures for accident-related record keeping, investigation and surveillance.
7. A disciplinary action procedure.
8. Schedule of safety related meetings and training.
9. A set of general work rules addressing hazards common to all types of construction and a site-specific set of work rules addressing the hazards of the work at hand.
10. A list of required permits for specific construction operations.
11. An emergency action plan addressing all types of emergencies with which the Contractor may reasonably and predictably be confronted.
12. A procedure for identifying how and under what circumstances job hazard analyses shall be conducted.

13. Reporting formats for required reports and submissions.
14. Detailed site-specific procedures for conducting safe working conditions associated with:

    a. Drilling.
    b. Compressed air and gases.
    c. Crane operations and maintenance.
    d. Rigging operations, equipment inspection and testing.
    e. Electrical hazards.
    f. Excavation and excavation support.
    g. Fall protection.
    h. Fire protection and prevention.
    i. First aid, CPR and blood borne pathogens.
    j. Hand and power tools.
    k. Hazard communication.
    l. Housekeeping.
    m. Scaffolding, ladders, and walking and working surfaces.
    n. Lockout/Control of Energy Sources.
    o. Materials handling and storage.
    p. Mechanized equipment.
    q. Construction health hazard monitoring.
    r. Personal protective equipment and clothing.
    s. Respiratory protection.
    t. Sanitation.
    u. Welding and cutting.

15. Detailed site-specific procedures shall, as a minimum, comply with the guidelines identified in the Section X "Construction Safety Manual." All detailed site-specific procedures shall include requirements for mandatory eye and head protection and adherence to the 6-foot fall protection requirements. Site-specific procedures shall require all chainsaws used on-site to be equipped with kickback guards/breaks and require all other power tools to be equipped with all protective features as provided by the manufacturer.
16. Hazardous material handling.
17. All equipment, shall be inspected on a regular basis (monthly if not more often as approved by the COTR) with copies of the inspection report being submitted to the COTR. The purpose of these inspections is to identify and document possible safety problems and repair these problems before someone is injured.

C. For all airside projects, a Safety Plan shall be attached to the Safety Program. The Safety Plan should include, to the extent applicable, provisions for the following:

1. Scope of work to be performed, including proposed duration of work.
2. Possible safety problems.
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 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. NOTAM issuance.
16. Vehicle identification.
17. Vehicle parking.
18. Use of temporary visual aids.
19. Obstacle-free zones (OFZ).
20. Approach clearance to runways.
21. Runway and taxiway safety areas.
22. Required compliance of Contractor personnel.
23. Procedures for notification of aircraft rescue fire fighting (ARFF) if emergency access routes are rerouted or blocked.
24. Emergency notification for fire, medical, and police response.
25. The Safety Plans will be coordinated with the COTR and shall address all COTR concerns and review comments.

3.2 SPECIFIC CONTRACTOR'S PROJECT SAFETY AND HEALTH PROGRAM REQUIREMENTS

A. The Contractor's Project Safety and Health Program shall incorporate all basic elements of the construction project safety and health program set forth in Article 3.01 above, Section X "Construction Safety Manual", and the following project-specific program elements:

1. A written, project-specific Safety and Health Plan (Plan), incorporating job hazard analysis for underwater construction operations, encountering contaminated soil and water, detailed emergency action procedures and fire risk assessment shall be developed by the Contractor, for review by the COTR and PSM to point out deficiencies before the start of any construction. The Plan shall specifically address rescue operations, conditions affecting rescue operations, smoke venting procedures, back-up power supply and pumping systems, means of ingress and egress, communications, hotwork permitting procedures, and training, orientation and refresher training for workers, emergency responders and visitors.
2. A written fire risk assessment portion of the Plan shall detail potential fire hazards, means of dealing with those hazards, fire prevention, fire suppression and emergency evacuation measures that will be employed by the Contractor during the course of the Project.
3. The Plan shall be updated as substantive changes in the underwater work environment occur. The Authority's and local fire departments shall be provided with a copy of the most current Plan and advised of changes in the Plan as they are implemented. The fire departments will be requested to review and comment on the Plan and any changes that occur to the Plan.
4. The Contractor is required to send all project supervisory personnel to attend an Authority provided Orientation prior to the start of any work.

5. The Contractor's Safety Engineer shall train all underground workers and the COTR and his staff members in the details of the Plan.
6. In accordance with local and state regulations a permit system shall be used for all hotwork performed on the project. The Contractor's Safety and Health Plan shall detail the permit system's procedures. The permits shall be made available for inspection by the Authority, the COTR and the local fire department(s). Open flames and fire shall be prohibited in all underground construction operations, except as permitted for welding, cutting and other hotwork operations pursuant to the Contractor's Hotwork Permit System. Smoking shall be allowed only in areas free of fire and explosion hazards. Readily visible signs prohibiting smoking and open flames shall be posted in areas having fire or explosion hazards.
7. Emergency medical services and ambulance service provided in connection with serious injuries or illnesses on the job site are included in the OCWIP.
8. The Contractor in all cases shall request responses by the fire department(s) to Project-related emergencies. The Contractor shall fully coordinate and cooperate with the Authority Fire and Rescue in its response to such emergencies.
9. The Contractor shall fully coordinate and cooperate with the Authority's Risk Management and Authority Fire and Rescue in its response to such emergencies.
10. The Contractor is required to obtain all permits required for the Contractor's use of chemicals, and is responsible to meet all Federal, State and Local requirements. The Contractor shall develop a written chemical safety plan to address all chemicals used during construction. This safety plan shall include detailed procedures to prevent chemical accidents to the maximum extent possible during chemical transport, transfer, storage, use and disposal. The chemical safety plan shall include emergency response procedures, which identify all potential chemical emergencies and the recommended emergency response action to be taken for each incident. These procedures shall consider all potential chemical emergencies including chemical spills, incompatible reactions, fires and human exposures. Procedures shall describe methods to contain and isolate the accident, including the required protective clothing, equipment, first aid and response methods. Conduct, using Contractor's staff emergency response training and drills to the extent necessary to control the specific chemicals used by the Contractor. The Contractor's emergency response procedures shall be coordinated with support action from the Authority's and local fire departments and hazardous material response teams, to provide for a comprehensive emergency response plan. This coordinated response shall be adequate to manage all chemical emergencies and provide for the health, safety and evacuation of all site personnel as well the community. The Authority's and local fire departments shall be provided with a copy of the most current plan and be requested to review and comment on the plan. At all times when chemicals are on site, the Contractor shall maintain a trained emergency response staff, equipment, protective clothing and supplies as needed to implement the chemical safety plan.
11. The Contractor shall have at least one (1) employee on site at all times who is trained and qualified to administer first aid and cardiopulmonary resuscitation (CPR) for every 25 employees on site.
12. The Contractor shall comply with all requirements identified in OSHA regulation § 1926.50 relating to medical services and first aid.
13. The Contractor shall provide the on-site safety staff an appropriate location on the job site(s) to maintain safety records, up-to-date copies of all pertinent safety rules, regulations and governing legislation, material safety data sheets, and the site safety and health plan including information concerning foreseeable emergency conditions, location

of emergency and telephone contacts for supportive action and for all required notifications.

14. Oncoming shifts shall be informed of any hazardous occurrences or conditions that have affected or might affect employee safety, including but not limited to: liberation of gas; the encountering of petroleum/glycol impacted soils or water; equipment failures; fires; or explosions.
15. In situations where unassisted voice communication is inadequate, power-assisted means shall be used to provide communication among workers and support personnel.
16. Emergency equipment specified in the emergency plan shall be provided within 15 minutes. Inspections and workability tests of the equipment shall be made and documented monthly.

3.3 ACCIDENT REPORTING, INVESTIGATION AND SURVEILLANCE

A. Accident Reporting

1. Accidents are defined for purposes of this Specification as: "Any unplanned event which results, or could have resulted, in an injury or illness to workers or the general public, property loss or damage to the environment." The Contractor shall, as promptly as conditions permit, notify the COTR, the Authority's Risk Management Department and the designated local Public Safety official of the nature and circumstances of the emergency. Provide such notice no later than 24 hours after the event. Report all accident events in accordance with the following:

    a. The COTR will establish and disseminate to the Contractor all required accident reporting formats.
    b. Ensure that all accidents involving scope of work on the project, including Subcontractors are reported in the established format to the COTR within twenty-four (24) hours of the event.
    c. Develop a monthly summary of accident information and submit to COTR no later than the tenth calendar day of the following month. B. Accident Investigation

1. Investigate all accident events, as defined above and that occur on those portions of the Project under the Contractor's control, in accordance with the contract documents and specifications.

    a. Conduct a detailed investigation of any and all accidents.
    b. Provide the COTR and the Authority's Risk Management Department with a detailed investigative report for any and all accidents.
    c. Fully cooperate with the Authority's Risk Management Department, COTR and/or public authority having jurisdiction in the investigation of accidents.
    d. Report accident investigations in a complete manner on the accident reporting format(s) designated by the COTR.

C. Accident Surveillance

1. The Authority's OCWIP Safety Consultant and COTR seek to collect accident information for purposes of identifying patterns, trends, performance and establishing appropriate policies and procedures related to protection of safety and health. To that end prepare and submit reports of accidents as detailed above.

END OF SECTION 007319

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. Authority-furnished products.
6. Use of premises.
7. The Authority's occupancy requirements.
8. Work restrictions.
9. Specification formats and conventions.
10. Marking Utility Services and Utility Outages

B. Related Sections include the following:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of the Authority's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project consists of the demolition of the existing boat house facility.

1. Project Location: Ronald Reagan Washington National Airport.

B. Architect/Engineer Identification: The Contract Documents, dated December 5, 2011 were prepared for Project by Johnson, Mirmiran & Thompson.

C. The Work consists of the demolition of the existing boat house, decking, dolphins and their supporting timber piles down to the mud line of the river bed.

1. 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 one phase. Contractor to maintain at least one lane of Levee Road at all times during construction.

1. Work shall be substantially complete within 90 calandar days of the Notice to Proceed.
2. Schedule the execution of the Work to avoid interference with normal functions of the Airport. Before commencing Work, submit a schedule to COTR showing the sequence, the commencement and completion dates 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.

B. Concurrent and Future Work: Authority will award separate contract)s) for the following construction projects at Project Site. Those operations will be conducted simultaneously with work under this contract, and will depend on successful completion of preparatory work under this Contract.

1. Runway 1-19 Overlay and taxiways rehabilitation
2. Runway 1-19 Safety Area Improvements and Runway 1 Hold Apron Modification – Early Utility Relocation package
3. Runway 1-19 Safety Area Improvements and Runway 1 Hold Apron Modification – General Construction Package

1.7 NOT USED

1.8 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 constructions operations to the areas as shown on the contract drawings.
2. 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.

B. Utilize areas designated for Contractor staging, storage, and parking, as indicated. For additional requirements, see Section "Supplementary Conditions."

1.9 CONTRACTOR HOURS OF OPERATION

A. Contractor Working Hours: The Authority anticipates that the Contractor may be required to work multiple shifts to accomplish the work of this Contract within the established schedule. Contractor will be allowed and may be required by the nature of the Project to work 24 hours a day, seven days a week in the performance of the Work. Work is subject to restrictions of the Airport operational requirements. Notify the COTR 24-hours in advance of any change to the work schedule.

B. Existing Boat House Demolition: Contractor is limited to working between the hours of 1:00AM to 5:30AM (0100 to 0530) or after the last arrival to perform any work associated with the demolition of the existing Boat House that utilizes equipment that is taller than the roof of the existing boat house. This is due to the proximity of R/W 19.

1.10 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 2004" 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.

1.11 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
5. Telephone lines.
6. Data 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, that include but are not limited to excavating, boring, pile-driving, digging or planting. 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 utility lines that may exist within the limits of new work, regardless of whether such utilities are indicated or not, by use of a Subsurface Utility Engineering company. Reconfirm such locations and verification of utilities discovered, regardless of whether such utilities are indicated or not, and submit to the COTR a dimensional survey with such notations.

E. Dig test pits by hand shovel in the vicinity of the discovered utilities. Excavate test holes utilizing a vacuum excavator.

F. Repair any damage to discovered utility lines due to construction operations at no expense to the Authority. The Authority will assist the Contractor by making available any known information.

G. Submit to the COTR, for written approval, the name of the independent subsurface utility engineering company to be used.

H. The individual who performs the utility detection and location work shall have as a minimum five (5) years of similar experience in the area of subsurface utility detection and location engineering.

I. Submit to COTR the following:

1. Within 60 calendar days of Notice to Proceed, a survey of all subsurface utility engineering results indicating the horizontal and vertical location, coordinates and elevation of all utilities.

1.12 UTILITY OUTAGES

A. Prior to any utility outage/interruption, prepare a schedule of such outage. Include in outage schedule duration, identification of the service affected, temporary utility service to be provided, identification of available service alternative, and the action to be taken in any emergency. Apply for all outages of utility systems in writing. Fully coordinate outage requests with COTR. Obtain approval in writing by COTR. Schedule all outages at least three (3) weeks in advance with a 96-hour notification provided by the Contractor confirming date,

time, and duration. Outages will normally be scheduled to occur between the hours of 11:00 pm and 5:30 am, Tuesday through Thursday.

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.

B. The Price Proposal Form can be found in Section III, "Schedule".

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. Unit price is an amount proposed by offerors, stated on the Schedule as a price per unit of measurement for materials or services added to or deducted from the Contract Price by appropriate modification according to the Contract Provision Payments. -Construction Contracts, Paragraph H, "Variation in Estimated Quantities," if estimated quantities of work required by the Contract Documents are increased or decreased.

B. 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. Refer to "Contract Provisions", Section VII, Payments - Construction Contracts, Paragraph H, "Variation in Estimated Quantities."

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.

D. List of Unit Prices: A list of unit prices is included in Section III “Schedule” of the Contract Provisions**.** Specification Sections referenced in the Schedule contain requirements for materials described under each unit price.

1. The Price Proposal Form can be found in Section III, "Schedule," of the Contract Provisions. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.

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.

C. Descriptions of unit-price items are specified in Section III, “Schedule,” of the Contract Provisions.

1.3 MEASUREMENT OF QUANTITIES

A. All volumes or quantities used to determine unit-price payment will be measured by COTR, or by COTR’s authorized representatives, using methods generally recognized as conforming to good engineering practice. Unless otherwise indicated, measurement shall be in U.S. Customary Units of Measurement.

B. Unless otherwise indicated, measurements for length computations will be made along the length of the pile. Unless otherwise indicated, measurements for length computations will be the neat dimensions shown on Drawings.

1. Piles will be measured according to neat lines shown on the plans or as altered to fit field conditions.
2. Measure all Contract items measured by the linear foot, such as piles on which such items are placed, unless otherwise indicated. Measurements should be to the nearest foot.

C. The term "each" when used as an item of payment shall mean complete payment for the work described in the Contract.

1. When a complete structure or structural unit is to be provided, and "each" is specified, as the unit of measurement, the unit will be construed to include all necessary fitting, accessories, and work incidental to the work item.

D. Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the Work. Special equipment ordered by COTR in connection with "force account work" will be measured as agreed in Contract Modification authorizing such force account work as provided in the Contract Documents.

E. When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

F. When estimated quantities for a specific portion of the Work are designated as the pay quantities in the Contract, they shall be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portions of the Work shown on Drawings are revised by Contract Modification signed by the Contracting Officer.

1. If revised dimensions result in an increase or decrease in quantities of such Work, final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

1.4 SCALES

A. Scales for weighing materials, which are required to be proportioned or measured and paid for by weight, shall be furnished, erected, and maintained by Contractor or be certified permanently installed commercial scales.

B. Scales shall be accurate within one-half percent of the current weight throughout the range of use. Contractor shall have scales checked under the observation of the inspector before beginning Work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 lb. The use of spring balances will not be permitted.

1. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.
2. Scale installations shall have available 10 standard 50-lb weights for testing the weighing equipment or suitable weights and devices for other approved equipment.
3. Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.
4. Scales "overweighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.
5. In the event inspection reveals the scales have been "under-weighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to Contractor will be allowed for materials previously weighted and recorded.

C. All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this Section for the weighing of materials for proportioning or payment shall be included in the unit Contract prices for the various items of Project.

1.5 PAYMENT FOR MATERIALS ON HAND

A. Partial payments may be made to the extent of the delivered cost of materials to be incorporated into the Work, provided that such materials meet the requirements of the Contract, Drawings, and Specifications and are delivered to acceptable sites on the Airport property or at other sites in the vicinity that are acceptable to COTR. Such delivered costs of stored or stockpiled materials may be included in the next partial payment application after the following conditions are met:

1. COTR accepts the manner in which the material has been stored at or on an approved site.
2. Contractor provides COTR with acceptable evidence of quantity and quality of the materials.
3. Contractor provides COTR with acceptable evidence that the material and transportation costs have been paid.
4. Contractor provides the Authority legal title, free of liens or encumbrances of any kind, to the material so stored and stockpiled.
5. Contractor provides the Authority evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at anytime before use in the Work.
6. Contractor provides the Authority with manufacturer’s installation and maintenance information.

B. It is understood and agreed that the transfer of title and the Authority's payment for such stored or stockpiled materials shall in no way relieve Contractor of responsibilities for furnishing and placing such materials according to the requirements of the Contract Documents.

C. In no case will the amount of partial payments of materials on hand exceed the Contract price for the materials or the Contract price for the Contract item in which the material is intended to be used.

D. No partial payment will be made for living or perishable plant materials.

E. Contractor bears all costs associated with the partial payment of stored or stockpiled materials according to the provisions of this Section.

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 Contract CPM Schedule, List of Subcontracts, and Submittal Log.

B. Related Sections include the following:

1. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.
2. Division 01 Section “Project Closeout” for submittal of items required before final payment.
3. Division 01 Section “Project Record Documents” for procedural requirements governing the submission of Project Record Documents.
4. Division 01 Section “Operation and Maintenance Data” for submittal of items required before final payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Price to various portions of the Work and once accepted, to be used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with Continuation Sheets.
b. Submittals Schedule.
c. Contract CPM Schedule.

d. List of products.
e. List of principal suppliers and fabricators.

2. Submit the Schedule of Values to Contracting Officer at earliest possible date, but no later than 21 calendar days after the date of the Notice to Proceed.

a. On projects requiring cost-loaded CPM Schedules, the accepted cost loading will satisfy the requirements for the Schedule of Values.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

a. Project name and location.
b. Name of COTR.
c. Name of Architect/Engineer.
d. The Authority's Project number.
e. Contractor's name and address.
f. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of the Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Contract Modifications (numbers) that affect value.
g. Dollar value.

1) Percentage of the Contract Price to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Price in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for the following items. The value assigned to the total of these line items shall be 5 percent of the Contract Price:

a. Testing and commissioning activities.
b. Operation and Maintenance manuals.
c. Punch list activities.
d. Project Record Documents.
e. Bonds and warranties.
f. Demonstration and training.

4. Round amounts to nearest whole dollar. Total shall equal the Contract Price.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Application for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between potential items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Application for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. At COTR's option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense.

9. Schedule Updating: Update and resubmit the Schedule of Values with the next Applications for Payment when Contract Modifications result in a change in the Contract Price.

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 CPM 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. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
    2. 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 indicated in the Section VII - Contract Provision, paragraph 04.B, 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. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Schedule of unit prices.
5. Submittals Schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. List of Contractor's principal consultants.
8. Copies of building permits.
9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
10. Initial progress report.
11. Report of pre-construction conference.
12. Performance and payment bonds.
13. Initial settlement survey and damage report if required.
14. Submittal and approval of Contractor Safety Plan.
15. Subcontractor Payment Form: (Form J, "Contract Conditions," Section IX, "LDBE").

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. Evidence of payment for material on-site if reimbursement for such material is being requested.
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 meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when the Authority took possession of and assumed responsibility for corresponding elements of the Work.
6. Final, liquidated damages settlement statement.
7. 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 Project including, but not limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination drawings.
4. Administrative and supervisory personnel.
5. Project meetings.

    a. Pre-award conference.
    b. Pre-construction conference.
    c. Pre-installation conference.
    d. Progress meetings.

B. Related Sections include the following:

1. Division 01 Section: "Execution" for the coordination of general installation and field-engineering services, including establishment of benchmarks and control points.
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 installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, mechanical, electrical, and otherwise. Contractor is cautioned that, where specific dimensions are not indicated or where Drawings are schematic in

nature, as with most Electrical and Mechanical Drawings, Contractor shall have sole responsibility to coordinate the work to meet this requirement. Prepare and submit Coordination Drawings to COTR for review and approval as provided in "Coordination Drawings" Paragraph in "Submittals" Article of this Section.

4. Make adequate provisions to accommodate items scheduled for later installation.

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.

1. Prepare similar memoranda for COTR and separate contractors if coordination of their Work is required.

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. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Start-up, check-out, and final acceptance of systems.
8. Project closeout activities.
9. Protection of existing and new work.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other sections for disposition of salvaged materials that are designated as the Authority's property.

E. Temporary Utility Outages: Comply with requirements in Division 01 Section "Summary."

1.4 SUBMITTALS

A. Coordination Drawings: Before start of the Work, prepare Coordination Drawings for areas with limited space availability that necessitate maximum utilization of space for efficient installation of different components, and areas requiring coordination for installation of products and materials fabricated by separate entities.

1. Indicate relationship of components shown on separate Shop Drawings.
2. Indicate all dimensions provided on Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment, minimum clearance requirements, amounts of equipment and material to be installed, or other requirements. Provide alternate sketches for resolution of such conflicts to COTR for review. Minor

dimension changes and difficult installations shall not be considered changes to the Contract.

3. Indicate required installation sequences.
4. Comply with requirements contained in Division 01 Section "Submittals."
5. Prepare coordination drawings of involved trades in a scale of not less than 1/4 inch = 1 foot or larger for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space. Any Work installed prior to review of coordination drawings will be at the Contractor's risk and subsequent relocation require to avoid interference shall be made at no additional cost to the Authority.

B. 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, Safety Engineer, Quality Control Manager, Project Scheduler, Soil Excavation Engineers, 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. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep the list current at all times.

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. Hard-Copy RFIs:
1. Identify each page of attachments with the RFI number and sequential page number.

D. 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.

E. COTR's Action: COTR will review each RFI, determine action required, and return it. Allow five 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 10 days of receipt of the RFI response.

F. 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 seven days if Contractor disagrees with response.

G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log 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.
9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project Superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1.7 PROJECT MEETINGS

A. Pre-award Conference:

1. General: At the request of the Contracting Officer, a pre-award conference with Contractor may be held before actual award of the Contract. The meeting will review Contractor's understanding of the Contract Documents, cost and pricing data, contractual requirements, and Contractor's capabilities, financial standing, and past experience prior to award.

    a. Minutes: COTR will record and distribute meeting minutes to all attendees and all relevant parties.

2. Attendees: Contracting Officer, COTR, Authority Design Project Manager, Architect/Engineer, Contractor and its key personnel nominated for assignment to the Contract, and major subcontractors if so requested by the Contracting Officer. Concerned parties shall each be represented by persons thoroughly familiar with and authorized to conclude matters relating to the work described in the Contract Documents. The Contracting Officer will chair the pre-award meeting.
3. Agenda: Significant discussion items that could affect award include, but are not limited to, the following:

    a. Provision and acceptability of payment and performance bonds.
    b. LDBE/MBE/WBE/DBE participation.
    c. Qualifications of key individuals.
    d. Quality-control experience.
    e. Percentage of work performed by own forces.
    f. Contractor's experience with similar work, including previous Authority contracts.
    g. Scheduling capabilities of Contractor.
    h. Financial standing of Contractor.
    i. Mobilization plan.
    j. Understanding of work described in the Contract Documents and the physical constraints associated with work at the Airport.
    k. Equipment and manpower availability.
    l. Cost and pricing data.

4. Representations and commitments made by Contractor or its subcontractors shall be construed as binding to the Contract.

B. 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, Architect/Engineer, and their sub-consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; 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.

C. Pre-installation Conferences:

1. General: COTR will conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

a. Minutes: COTR will record and distribute meeting minutes.

2. Attendees: Contractor, Installer, and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have proceeded, or will follow.
3. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related Contract Modifications.
d. Purchases.
e. Deliveries.
f. Submittals.
g. Review of mockups.
h. Possible conflicts.
i. Compatibility problems.
j. Time schedules.
k. Weather limitations.
l. Manufacturer's written recommendations.
m. Warranty requirements.
n. Compatibility of materials.
o. Acceptability of substrates.
p. Temporary facilities and controls.
q. Space and access limitations.
r. Governing regulations and permits.
s. Safety.
t. Testing and inspecting requirements.
u. Required performance results.
v. Recording requirements.
w. Protection of construction and personnel.
x. Review material selection.
y. Fabrication and installation procedures.
z. Coordination of involved trades.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Weekly Progress Meetings:

1. General: COTR will conduct progress meetings weekly at regularly scheduled times convenient for all parties involved. Progress meetings are in addition to specific meetings held for other purposes, such as coordination and special pre-installation meetings. 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, supplier, Contractor's Project Scheduler, 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) Interface requirements.
3) Time.
4) Sequence of operations.
5) Status of submittals.
6) Deliveries.
7) Off-site fabrication.
8) Storage Areas
9) Access.
10) Site utilization.
11) Requests for information.
12) Submittals.
13) Noncompliance notices.
14) Temporary facilities and controls.
15) Work hours.
16) Resource allocation.
17) Hazards and risks.
18) Progress cleaning.
19) Quality and work standards.
20) Contract Modifications.
21) Documentation of information for payment requests.
22) 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.

E. Schedule Update Meetings:

1. Conduct schedule update meetings before submittal of Contractor's Application for Payment. Determine where each activity is, in relation to Contractor's CPM Schedule. Ensure the incorporation of all changes made to the sequence of work and all change notices issued by the Contracting Officer. Submit the narrative and information specified in Division 01 Section "Construction Progress Documentation" if applicable.
2. Attendees: COTR, Contractor's Project manager or superintendent, the Contractor’s Project Scheduler, and the Authority's representative.

3. Submit the updated schedule, as bilaterally agreed on, along with the Application for Payment.
4. Present delay claims for discussion and, when possible, resolution.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013200A - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 – GENERAL (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.8 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, which according to the computer mathematical analysis do not affect any critical activity or milestone dates on the CPM network at the time of 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.

D. Required Submittals:

1. Provide time-impact analysis that illustrates impact during update period in which event occurred, that event has been mitigated to greatest possible extent, and that event still impacts overall completion of Project.
2. Include with request, two copies of submittal of impacted schedule, in electronic format, and photocopies of all relevant documents that support the claim.
3. Submit all required items within the following time periods:

a. 10 calendar days of event occurrence.
b. 10 calendar days of Contractor's knowledge of impact.
c. 14 calendar days of written request by COTR.

4. Expiration of time periods without submittal shall constitute forfeiture of rights for these specific impacts.

3.9 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 CPM Schedule showing actual start and finish

dates for all work activities and milestones, based on the accepted monthly updates. These schedule submittals shall be in tabular and in time-scaled PDM plot formats.

END OF SECTION 013200

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SECTION 013233 - PHOTOGRAPHIC 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 includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final Completion construction photographs.

B. Related Sections include the following:

1. Division 01 Section "Submittals" for submitting construction photographs.
2. Division 01 Section "Project Closeout" for submitting photographic negatives as Project Record Documents at Project closeout.
3. Division 01 Section “Demonstration and Training” for submitting videotapes of demonstration of equipment and training of Authority’s personnel.
4. Division 02 Section “Selective Structure Demolition” for photographic documentation before selective demolition operations commence.

1.3 UNIT PRICES

A. Basis for Proposals: Base number of construction photographs on twenty photographs per month over the duration of Project.

1.4 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Key Plan: Submit key plan of Project site and building including a detailed description of each project area with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include the same label information as the corresponding set of photographs.

C. Construction Photographs: Submit four prints of each photographic view within five days of taking photographs.

1. Format: 8-by-10-inch smooth-surface matte prints on single-weight commercial-grade photographic paper mounted on card stock to allow a 1-inch-wide margin and enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
2. Identification: On back of each print, provide a computer generated applied label with the following information:

   a. Name of Project.
   b. Name and address of photographer.
   c. Name of COTR.
   d. Name of Architect/Engineer.
   e. Name of Contractor.
   f. Date photograph was taken.
   g. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

3. Negatives: Submit a complete set of photographic negatives in protective envelopes with each submittal of prints. Identify date photographs were taken.

D. Videotapes: Submit two copies of an authored DVD containing every second of the images contained on each of the mini DVs seven calendar days after recording.

1. Identification: On each DVD, provide a label printed directly on the DVD, no stick on labels are allowed, with the following information:

   a. Name of Project.
   b. Name and address of photographer.
   c. Name of COTR.
   d. Name of Architect/Engineer.
   e. Name of Contractor.
   f. Date videotape was recorded.
   g. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

2. Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with the same label information as the corresponding DVD. Include name of Project and date of videotape on each page.

1.5 QUALITY ASSURANCE

A. Photographer Qualifications:

1. Photographer: Individual of established reputation who has been regularly engaged as a professional construction photographer for not less than three years.
2. Videographer: Individual of established reputation who has been regularly engaged as a professional construction videographer for not less than three years.

B. Costs: Include photographer's services in the Contract Price.

1.6 COORDINATION

A. Auxiliary Services: Cooperate with photographer. Provide auxiliary services requested, including access to Project site and use of temporary facilities including temporary lighting required to produce clear, well-lighted photographs without obscuring shadows.

1.7 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to the Authority for unlimited reproduction of photographic documentation.

1.8 EXTRA PRINTS

A. Extra Prints: If requested by COTR, photographer shall prepare extra prints of photographs. Contractor will not be responsible for the cost of such additional prints.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. High Resolution digital color photographs (10 mega pixels minimum). Do not use point and shoot cameras. Use lenses with focal length of either 50 mm or 55 mm.

PART 3 - EXECUTION

3.1 PHOTOGRAPHS, GENERAL

A. Photographer: Engage a qualified commercial photographer to take construction photographs.

B. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

C. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs the same as for those submitted to COTR.

3.2 CONSTRUCTION PHOTOGRAPHS

A. Preconstruction Photographs: Before starting construction, take color photographs of Project site and surrounding properties from different vantage points, as directed by COTR.

1. Take four photographs to show existing conditions adjacent to the project before starting the Work.
2. Take four photographs of existing buildings either on or adjoining the project to accurately record the physical conditions at the start of construction.

B. Periodic Construction Photographs: Take a minimum of 10 color photographs monthly, coinciding with the cutoff date associated with each Application for Payment. The COTR will select vantage points to best show status of construction and progress since the last photographs were taken.

C. Time-Lapse-Sequence Construction Photographs: Take five color photographs as indicated, to best show status of construction and progress since the last photographs were taken.

1. Frequency: Take photographs monthly, coinciding with the cutoff date associated with each Application for Payment.
2. Vantage Points: Following suggestions by COTR and Contractor, photographer shall select vantage points. During each of the following construction phases, take not less than two of the required shots from the same vantage point each time to create a time-lapse sequence as follows:

    a. Commencement of the Work, through completion of subgrade construction.
    b. Above-grade structural framing.
    c. Exterior building enclosure.
    d. Interior Work, through date of Substantial Completion.

D. Final Completion Construction Photographs: Take eight color photographs after date of Substantial Completion for submission as Project Record Documents. COTR will direct photographer for desired vantage points.

1. Do not include date stamp.

E. Additional Photographs: COTR may issue requests for additional photographs, in addition to periodic photographs specified. Additional photographs will be paid for by Contract Modification and are not included in the Contract Price.

1. Photographer will be given three days notice, where feasible.
2. In emergency situations, photographer shall take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow-up when on-site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. COTR's request for special publicity photographs.

END OF SECTION 01323

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

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.

1.2 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, security, and protection facilities for Contractor staging area.

B. Temporary utilities include, but are not limited to, the following:

1. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.

C. Support facilities include, but are not limited to, the following:

1. Field offices.
2. Storage and fabrication sheds.
3. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:

1. Environmental protection.
2. Storm water control.
3. Barricades, warning signs, and lights.
4. Fire protection.

E. Related Sections include the following:

1. Division 01 Section "Submittals" for procedures for submitting copies of implementation and termination schedule and utility reports.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by COTR, permanent or temporary roofing is complete, insulated, and weather tight; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Temporary utilities are available from the Authority at no charge unless otherwise noted. Provide necessary labor and materials to connect to the Authority's utilities at points designated by COTR and extend utilities to trailers, offices, sheds, etc.

1. Provide COTR approved meters for water, natural gas, electricity, and each other utility used for Project. Supply utilities to Subcontractors' temporary facilities through Contractor's meters. The requirement to provide meters for utilities does not imply that the Contractor will be charged for these utilities, except under provisions outlined in this and other Sections.
2. Report consumption of each utility to COTR each month. Contractor is expected to consume reasonable amounts of each utility. Should Contractor, in COTR's opinion, use excessive amounts of any utility or waste a utility, Contractor may be required to pay for temporary utilities.

B. Allow other entities to use temporary services and facilities without cost, including, but are not limited to, the following:

1. The Authority’s construction forces.
2. Occupants of Project.
3. COTR.
4. Architect/Engineer.
5. Testing agencies.
6. Personnel of authorities having jurisdiction.

1.5 SUBMITTALS

A. Shop Drawings: Submit to COTR, for the Authority's review and approval, site plans indicating all temporary facilities, support and security; utility connections and traffic flows. Provide detailed drawings of utility connections and special facilities.

B. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities at both staging area and the Project site. Make all structures weather proof when heated and air-conditioned. Should Contractor, in COTR's opinion fail to keep the heated and cooled structures sealed and weather proof, Contractor may be required to pay for temporary utilities.

1.6 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, that include but are not limited to, the following:

1. Building Code requirements.
2. Health and safety regulations.
3. Police and Fire Department regulations.
4. Environmental protection regulations.
5. ADA Compliance: All temporary facilities shall be ADA compliant.

B. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.

1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
2. Electrical Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electrical service. Install service to comply with NFPA 70.

C. Tests and Inspections: Arrange for the Authority's Building Codes/Environmental Department to test and inspect each temporary utility before use. Coordinate with the Authority's Building Codes/Environmental Department for requirements for certifications, permits, and inspections.

1. Obtain permits from the Authority's Building Codes/Environmental Department for temporary construction and temporary utilities.

D. Fire-retardant and Flame Spread Requirements: Unless otherwise noted, fire – retardant treat all wood and wood composition products utilized in the Project and preservative treat all wood utilized on the exterior of any building. Preservative treat all wood utilized on other items indicated or specified with preservative treatment. Provide lumber and plywood with an Underwriters' Laboratory (UL) stamp certifying a value of 25 or less flame spread and a value of 200 or less smoke development. Fire retardant lumber shall not be ripped or milled.

1.7 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to COTR, change over from use of temporary service to use of permanent service.

1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before the Authority's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: The following conditions apply to use of temporary services, permanent services, and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work.
3. Take necessary fire-prevention measures.
4. Do not overload facilities.
5. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

1.8 CONTRACTOR PERSONNEL PARKING

A. Contractor is limited to the construction area as defined in the contract documents the parking and staging of both company-owned and personal vehicles will be limited to the construction area as defined in the contract documents. There is no other area available for contractor parking at Ronald Reagan Washington National Airport. Contractors are allowed to use "Employee Only" shuttle busses. Control and enforce these limitations for all personnel including Subcontractor's personnel.

B. If off-airport parking or storage of materials and equipment is required, Contractor will be responsible for the maintenance, security, safety, and operation of these facilities off-airport parking or storage of materials and equipment is required. . This cost will be considered part of the Contractor's general conditions. Transportation of materials, equipment, and personnel to the Work site is the responsibility of the Contractor.

C. Contractor is responsible for busing his employees from the off airport parking lot to the Contractor's Staging areas or work areas.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Prior to installation of temporary facilities and utilities, submit to the COTR a site layout providing locations and details of the facilities and utilities.

B. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

C. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 CONTRACTOR STAGING AREA - GENERAL

A. Contractor will be allowed to store and stage his materials in a staging area located on Airport property as indicated or as designated by the COTR for such purposes. Space is limited to area indicated. COTR and Contractor will make a joint site visit to document condition of staging area prior to occupancy. Take photos for the record.

B. Upon completion of Construction, remove all temporary staging area facilities and return the areas to their original condition.

C. Park construction equipment in the storage site or storage area identified by the COTR when equipment is not engaged in construction activity.

D. Do not stockpile construction materials, spoils, debris or refuse in any area other than that specifically approved for such purpose by the COTR.

E. Constrain stockpiled material in a manner to prevent its movement by wind, jet blast or propeller wash.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Provide temporary service for each utility required. Comply with requirements of the Authority's Building Codes Manual, the Authority's Construction Safety Manual, and the requirements of all Sections of these specifications.

1. Arrange with COTR for time when service can be interrupted, if necessary, to make connections for temporary services. For additional information on utility outages see Division 01 Section, "Summary."
2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
3. Perform work associated with utilities owned by the Authority as approved by the Authority.
4. See additional information in Contract Provisions entitled "Availability and Use of Utility Service."

B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
2. Toilets: Install self-contained toilet units, located as approved by COTR. Shield toilets to ensure privacy. Provide separate facilities for male and female personnel. Use of the Authority's existing toilet facilities will not be permitted.
3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
4. Locate toilets and drinking-water fixtures so personnel need not walk more than or 200 feet horizontally to facilities.

C. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear. Provide kilowatt-hour meters with demand capability.

1. Install electric power service underground, unless overhead service is authorized by COTR.

2. Connect temporary service to the Authority's existing power source, as directed by COTR.

3. Install power distribution wiring overhead and rise vertically where least exposed to damage

D. Electrical Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
2. Provide warning signs at power outlets other than 110 to 120 V.
3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic

areas.

4. Provide metal conduit enclosures or boxes for wiring devices.
5. Provide 4-gang outlets, spaced so 100-foot extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.

E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.

1. Provide and operate temporary lighting that fulfills security and protection requirements without operating entire system.

2. Provide exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed. Provide exterior yard and site lighting aligned as directed by the COTR. Provide lighting so as not to interfere with ground, air traffic and air traffic control.

F. Telephone Service: Provide temporary telephone service for key personnel engaged in construction activities, throughout the construction period. Install telephones on separate lines for each temporary office and first aid station. Where an office has more that two occupants, install a telephone for each additional occupant or pair of occupants. Provide telephones with exchanges within the Metropolitan Washington service area. The Authority owns and operates an airport-wide Airport Communication System (ACS). This system accommodates all normal telecommunications service requirements, i.e., local, long distance, fax, data, etc. The Contractor may obtain information about and choose to utilize this service by contacting the ACS Help Desk at (703) 417-8300.

1. At each telephone, post a list of emergency telephone numbers approved by COTR.
2. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.
3. At the present time the Authority uses cell phones to communicate.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241 and USBC.

B. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 01 Section "Execution" for progress cleaning requirements.

1. If required by COTR, provide separate containers, clearly labeled, for each type of waste material to be deposited.
2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or, if permitted by COTR, fully enclosed spaces within building or elsewhere on-site subject to approval of COTR.

1. Construct framing, sheathing, and siding using fire-retardant-treated lumber and plywood.

2. Paint exposed lumber and plywood with exterior-grade acrylic-latex emulsion over exterior primer.
3. Submit the design of storage structures of more than 150 sq. ft. to COTR for review and approval by the Authority's Building Codes/Environmental Department.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours of 11:00 p.m. to 5:00 a.m., unless directed otherwise by the COTR, which will minimize complaints from persons or firms near Project site.

B. Storm water Control: Provide earthen embankments and similar barriers in and around excavations and sub grade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights. See the Authority's Construction Safety Manual for additional requirements.

E. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241 and VUSBC.

1. Store combustible materials in containers in fire-safe locations.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
3. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

F. Storage: Where materials and equipment are stored, and are of value or attractive for theft, provide secure lockup. Enforce discipline in connection with installation and release of material to minimize opportunity for theft and vandalism.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Unless Contractor is able to utilize permanent fire protection, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Properly recondition and restore those portions of the site occupied by temporary facilities and controls to condition acceptable to COTR, at least equal to condition at time of start of Work, unless otherwise authorized in writing by COTR.
2. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
3. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace roadway paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
4. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Project Closeout."

END OF SECTION 015000

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SECTION 017300 - EXECUTION

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 general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Authority-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.

1.3 SUBMITTALS

A. Project Record Documents: Submit a record of Work performed (materials tests, inspections, acceptance tests, etc.) and record survey data as required under provisions in Division 01 Sections "Submittals" and "Project Closeout."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work, including all site utility systems.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical and communication services.
2. For additional requirements for locating and marking existing utilities, see Division 01 Section "Summary."

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to COTR that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information (RFI) to COTR. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify COTR promptly.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Remove combustible debris from the site daily.
3. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
4. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

H. Waste Disposal: Burying or burning waste materials on-airport property will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to ensure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

L. Grass Mowing: Mow grass areas contained in Project site, or made inaccessible to the Authority's mowing contractors.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure that installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

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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 "Photographic Documentation" for submitting Final Acceptance construction photographs and negatives.
3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, Record Product Data, and other Record Documents.
4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
5. Divisions 02 through 33 Sections 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 according to Section III of the Contract.
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, a minimum of 60 days 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. Obtain and submit releases permitting the Authority unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
6. Prepare and submit Project Record Documents except Record Contract CPM Schedule; also prepare and submit Operation and Maintenance manuals, Final Completion construction photographs and photographic negatives, damage or settlement surveys, and similar final record information.
7. Prepare and submit proof that specified testing and code inspections have been completed, accepted and certified, including, but not limited to, structural work, sprinkler piping systems, fire alarm and FPS systems, bacteriological testing of domestic lines, back-flow prevention, electrical system testing, and hydrostatic pressure testing of sanitary lines. Submit approvals of Health Department or the FDA as applicable.
8. Deliver tools, spare parts, extra materials, and similar items to location designated by COTR. Label with manufacturer's name and model number where applicable.
9. Make final changeover of permanent locks and deliver keys to COTR. Advise the Authority's personnel of changeover in security provisions.
10. Complete startup testing of systems.
11. Submit test/adjust/balance records.
12. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
13. Advise the Authority of changeover in utilities.
14. Submit changeover information related to the Authority's occupancy, use, operation, and maintenance.
15. Instruct the Authority's personnel in operation, adjustment, and maintenance of products, equipment, and systems, as required by Division 01 Section "Demonstration and Training."
16. Complete final cleaning requirements, including touchup painting.
17. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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 in Section III, "Schedule." 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 from the site including construction equipment and facilities, mockups, and other similar elements. Restore areas to previously existing condition, if applicable.
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 CPM Schedule.
9. Submit warranty book.

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

2.1 MATERIALS

A. Cleaning Agents: For final cleaning, use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

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. General cleaning during construction is included in Division 01 Section "Execution."

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

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.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment, [elevator equipment,] and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
q. Clean ducts, blowers, and coils if units were operated without filters during construction.
r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and high intensity discharge fixtures to comply with requirements for new fixtures.
s. Leave Project clean and ready for occupancy.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare and submit a report to COTR.

D. 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

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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.
7. Computer Aided Design and Drafting (CADD) requirements for Record Drawings.

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. Miscellaneous Record Submittals: Submit miscellaneous Record Submittals as specified.

PART 2 – PRODUCTS

2.1 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Submit to COTR.

1. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:

a. Field records on excavations and foundations.
b. Field records on underground construction and similar Work.
c. Survey showing locations and elevations of underground lines.
d. Invert elevations of drainage piping.
e. Surveys establishing building lines and levels.
f. Authorized measurements utilizing unit prices or allowances.
g. Records of plant treatment.
h. Ambient and substrate condition tests.
i. Certifications received in lieu of labels on bulk products.
j. Batch mixing and bulk delivery records.
k. Testing and qualification of tradesmen.
l. Documented qualification of installation firms.
m. Load and performance testing.
n. Inspections and certifications by governing authorities.
o. Leakage and water-penetration tests.
p. Fire resistance and flame spread test results.
q. Final inspection and correction procedures.
r. Summary letter from Special Inspector indicating structural work was completed in accordance with applicable standards.
s. Report of potable water testing.
t. Backflow prevention certificates.
u. Final inspections of all trades.
v. Certificates for piping for fire protection systems and FPS supervisory systems.
w. Approvals of Health Department or FDA as applicable.

PART 3 – EXECUTION (Not Used)

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.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Repair or reproduce torn or dirty sheets. Provide access to Project Record Documents for COTR's reference during normal working hours.

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SECTION 024116 - STRUCTURAL DEMOLITION (OPTION)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of buildings, pier, and piles.
2. Removing below-grade construction.
3. Disconnecting, capping or sealing, and removing site utilities.

1.2 SUBMITTALS

A. Proposed Protection Measures: Submit informational report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection. Indicate proposed locations and construction of barriers.

B. Schedule of building demolition with starting and ending dates for each activity.

C. Predemolition photographs

1.3 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

C. Predemolition Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.

B. COTR assumes no responsibility for buildings and structures to be demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Hazardous Materials: It is expected that hazardous materials (lead paint) will be encountered in the Work. All painted surfaces are assumed to contain lead-based paint except for the roof.

1. Hazardous materials will be removed by the Contractor.
   a. See Existing Boat House Demolition Plan for additional information.

b. See Electrical Demolition Plan for General Note information.

D. On-site storage or sale of removed items or materials is not permitted.

E. Arrange demolition schedule so as not to interfere with on-site operations or operations of adjacent occupied buildings.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Contractor to engage a professional engineer, if directed by the COTR, to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

3.2 PREPARATION

A. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.

1. COTR will arrange to shut off indicated utilities when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
4. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
5. Do not start demolition work until utility disconnecting and sealing have been completed.

B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.

3.3 PROTECTION

A. Existing Facilities: Protect adjacent roadways during demolition operations.

B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

3.4 DEMOLITION

A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations.

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and after flame cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, roadways or other adjacent occupied or used facilities without permission from COTR and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.

C. Explosives: Use of explosives is not permitted.

D. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

E. Remove debris from elevated portions of the building hoist, or other device that will convey debris to grade level in a controlled descent.

F. Demolish below-grade construction within footprint of new construction and extending 5 feet (1.5 m) outside footprint indicated for new construction.

1. Remove below-grade construction, including wood piles, to at least 6 inches (150 mm) above river mud line.

G. Existing Utilities: Demolish existing utilities and below-grade utility structures within 5 feet (1.5 m) outside footprint indicated for new construction. Cut utilities flush with grade.

H. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.5 CLEANING

A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction. Do not burn demolished materials.

B. Return adjacent areas to condition existing before building demolition operations began.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Comply with requirements specified in Division 1 Section "Construction Waste Management."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off the Authority's property and legally dispose of them.

D. Notification: Existing pier decking, handrails, piers, and boathouse are assumed to be coated or treated with a heavy duty wood preservatives (chromate arsenicals, creosote, etc.) and the Contractor is responsible for the proper characterization and disposal of all materials associated with the demolition of the pier, pilings, decking and boathouse.

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items to be removed under this contract: Existing piles, pier, boathouse, and other items shown on Existing Boat House Demolition Plan.

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SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing subgrades for pavements.
2. Subbase for asphalt paving.
3. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.

B. Related Sections include the following:
1. Division 01 Section Construction Progress Documentation for recording preexcavation and earthwork progress.
2. Division 01 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities.
3. Divisions 26, Section for installing underground mechanical and electrical utilities and buried mechanical and electrical structures.
4. Division 32 Section "Turf and Grasses" for finish grading, including preparing and placing topsoil and planting soil for lawns.

1.3 NOT USED

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by COTR.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by COTR. Unauthorized excavation, as well as remedial work directed by COTR, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Each type of plastic warning tape.
2. Controlled low-strength material, including design mixture.

B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
2. Laboratory compaction curve according to ASTM D 698 for each on-site and borrow soil material proposed for fill and backfill.

1.6 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

1.7 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Airport or others unless permitted in writing by COTR and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify COTR not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without COTR's written permission.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with COTR to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or a combination of these groups; free of rock or gravel larger than [3 inches (75 mm)] in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.

J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 NOT USED

2.3 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Low-density, self-compacting, flowable concrete material as follows:

1. Portland Cement: ASTM C 150, Type I.
2. Fly Ash: ASTM C 618, Class C or F.
3. Normal-Weight Aggregate: ASTM C 33, 3/8-inch (10-mm) nominal maximum aggregate size.
4. Water: ASTM C 94/C 94M.
5. Air-Entraining Admixture: ASTM C 260.

B. Produce low-density, controlled low-strength material with the following physical properties:

1. As-Cast Unit Weight: 30 to 36 lb/cu. ft. (480 to 576 kg/cu. m) at point of placement, when tested according to ASTM C 138/C 138M.
2. Compressive Strength: 80 psi (550 kPa), when tested according to ASTM C 495.

2.4 NOT USED

2.5 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility; colored as follows:

B. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."

C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing," during earthwork operations.

D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 NOT USED

3.3 NOT USED

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by COTR. Changes in the Contract time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

3.5 NOT USED

3.6 EXCAVATION FOR PAVEMENTS

A. Excavate surfaces under pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: 12 inches (300 mm) each side of pipe or conduit or as indicated.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
3. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.8 SUBGRADE INSPECTION

A. Notify COTR when excavations have reached required subgrade.

B. If COTR determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by COTR, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavations under other construction or utility pipe as directed by COTR.

3.10 STORAGE OF SOIL MATERIALS

A. Stockpiles borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations.

2. The Contractor shall not haul any soil off Airport property until the soil has been characterized by the Authority's Environmental Consultant. The Contractor shall allow

three weeks for the Authority to sample and receive analytical results from the stockpiles. Soil stockpile location(s) shall be coordinated with the COTR.

3.11 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Surveying locations of underground utilities for Record Documents.
   2. Testing and inspecting underground utilities.
   3. Removing trash and debris.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Provide 4-inch- (100-mm-) thick, concrete-base slab support for piping or conduit less than 30 inches (750 mm) below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches (100 mm) of concrete before backfilling or placing roadway subbase.

D. Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the utility pipe or conduit.

   1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

E. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches (300 mm) over the utility pipe or conduit.

F. Backfill voids with satisfactory soil while installing and removing shoring and bracing.

G. Place and compact final backfill of satisfactory soil to final subgrade elevation.

H. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

I. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

3.13 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under pavements, use satisfactory soil material.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 NOT USED

3.15 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.16 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.

B. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under lawn or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percentage percent.
3. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.17 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
2. Pavements: Plus or minus 1/2 inch (13 mm)

3.18 NOT USED

3.19 SUBBASE AND BASE COURSES

A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place base course under pavements as follows:
   1. Place base course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
   2. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to[ASTM D 698.

3.20 NOT USED

3.21 NOT USED

3.22 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

   1. Scarify or remove and replace soil material to depth as directed by COTR; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.23 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Transport surplus satisfactory soil to designated storage areas on Airport’s's property. Stockpile or spread soil as directed by COTR.

   1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Airport's property.

PART 4 - CONTRACTOR'S QUALITY CONTROL

4.1 FIELD QUALITY CONTROL

A. Conform to the requirements specified in Division 01 Section “Quality Requirements”.

B. Testing Agency: Contractor to engage a qualified testing agency to perform tests and inspections.
   1. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
   2. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
      a. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet (46 m) or less of trench length, but no fewer than 2 tests.
   3. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

END OF SECTION 312000

SECTION 312514 - STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, Contract and Special Provisions, Supplementary Conditions, latest version of Virginia Erosion and Sediment Control Handbook and other Division-01 Specifications apply to this Section.

1.2 SUMMARY

A. This Section includes preparation for and submitting for approval for a Storm Water Pollution Prevention Plan (SPPP).

1. Provisions for furnishing, installing and removal of silt fence, filter boxes, storm drain inlet protection, straw bale barriers, construction entrances, sediment traps, diversion berm, dust control and other erosion control measures during construction, and temporary and permanent soil stabilization measures, as noted on the contract plans and in the approved SPPP. All measures and practices shall be in accordance with the latest version of the Virginia Erosion and Sediment Control Handbook and for preventing contamination of storm water from construction activities in accordance with the Commonwealth Of Virginia Regulation 9VAC 25-180 (i.e., temporary fuel storage, fueling operations, equipment maintenance, hazardous material and waste handling, good housekeeping practices, etc.).

B. Related Sections

1. Division 01 Section “Wetlands Restoration” for protection of wetlands.
2. Division 01 Section “Quality Requirements” for quality issues.

1.3 DEFINITIONS

A. CWA- Clean Water Act means the law passed by the Congress of the United States in 1972 controlling the Discharge of Pollutants into the Nation's waterways.

B. BMP- Best Management Practices are defined as any one or group of management practices, activities, policies, equipment, and structures that will: prevent pollutants from entering the environment, minimize pollutants from entering the environment, and mitigate, reduce, and treat prior to the pollutant entering the environment.

C. NPDES- National Pollutant Discharge Elimination System is the national program for issuing, modifying, revoking, reissuing, terminating, monitoring and enforcing permits pursuant to sections 402, 318, and 405 of the CWA.

D. VDEQ- Virginia Department of Environmental Quality is the agency of the Commonwealth of Virginia that manages the Commonwealth of Virginia's environmental regulations.

E. VPDES- Virginia Pollutant Discharge Elimination System is the Commonwealth of Virginia program and regulations that describe the proper management of discharges of pollutants into the waters of the Commonwealth

F. DCR- The Commonwealth of Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, regulates land disturbing activities and erosion and sedimentation compliance.

1.4 Submittals

A. Storm water Pollution Prevention Plan (SPPP) - Prepare and submit for written approval by the Authority in accordance with the information provided below. Do not initiate ground-disturbing activities until the Authority has approved the SPPP. In addition, the SPPP will serve as the Soil Erosion and Sediment Control Plan required as a condition of the Authority's issuance of a Construction Permit by the Authority's Building Codes Department. Issuance of this Construction Permit is required prior to initiation of any project construction.

B. The SPPP may utilize plans, details, notes and other information provided in the construction documents, however, such information shall not, in itself, be construed to meet the requirements of this Section. Provide additional details to ensure that the SPPP accurately reflects means and methods for construction.

C. Prepare the SPPP on regular 8 ½ X 11 inch paper. Include attachments of the plans showing locations of erosion and sediment control devices and BMPs. Submit four bound copies to the COTR for review and approval.

D. Plan Certification with Virginia Pollution Discharge Elimination System Regulation (9VAC 25-180) and DCR (4VAC50-30).

1. Submit with Plan Certification the following certification statement signed by an officer of the company of Contractor and signed by all its subcontractors:
"I certify under penalty of law that I understand the terms and conditions of the General Permit for Discharges from Construction Activities that authorizes the storm water discharges from construction activities associated with the site identified by the permit."

2. The above certification shall be executed on the Contractor's letterhead. Include the name, title, address, and telephone number of contractor and all subcontractors, and the date the certification is made. The Certification shall be attached to the SPPP and submitted to the COTR.

E. Once the SPPP has been approved by the COTR, submit a Virginia Storm Water Management Program (VSMP) permit application to the Virginia Department of Conservation and Recreation (DCR) to obtain the VSMP permit. Submit payment of $500 with the permit application. The Contractor shall include the cost of the VSMP in his proposal

F. Be responsible for submitting the Notice of Project Termination (NPT) shown in Appendix II for all construction activities within this particular construction project. Contractor shall notify the Authority and provide a copy to the COTR upon completion of this construction project.

G. Apply for permit coverage under the Construction General Permit (CGP) prior to starting land disturbing activities. Complete and submit to the appropriate EPA NPDES permitting Authority a Notice of Intent (NOI) Form. To discontinue permit coverage, complete and submit to the appropriate EPA NPDES permitting Authority a Notice of Termination (NOT) Form upon satisfying the appropriate permit conditions described in the CGP.

H. Submit the name, and a copy of the certificate of competence issued by the Department of Conservation and Recreation for the person in charge of and responsible for carrying out the land-disturbing activity prior to conducting any land-disturbing activities.

I. Prepare the SPPP narrative and associated drawings in accordance with the following outline:

1. Site Description: A detailed description of the construction activities, physical features of the site, and other pertinent information shall be included in this Section.

    a. A description of the nature of the construction activities;
    b. A description of the intended sequence of major activities which disturb soils for major portions of the site (e.g. grubbing, excavation, grading);
    c. Estimate of the total area of land disturbing activities. Land disturbing areas greater than 2,500 square feet require the implementation and enforcement of a SPPP.
    d. Describe the quality of any discharge water from the site;
    e. A description of the existing vegetative cover at the site, include an estimate of the total buffer area that is covered by the vegetation before construction activities commence.
    f. The name of the receiving water(s), their tributaries, and the ultimate receiving water(s). A description of the aerial extent of wetlands present at the site and other sensitive habitats present on site describe measures that will be used to protect wetlands.
    g. Include in the plan a schedule of the planned start and completion of construction activities, major grading activities, and other activities that may require stabilization measures to be initiated at the site.

2. Potential Pollution Sources:

    a. Describe potential pollution sources. Description should include, but not be limited to, the following:

        1) Vehicle Fueling: A description of the location and number of all above ground storage tanks (ASTs) and any storage containers that will be used for the purpose of fueling vehicles or storing any materials used during construction activities (indicate location on the site map).
        2) Storage Tanks: ASTs storing regulated substances and greater than 660 gallons shall be registered with the Department of Environmental Quality. All ASTs shall be properly equipped and follow the AST requirements. For example, requirements include that ASTs be double walled or have 110% secondary containment devices that will not collect rainwater. Tanks shall have spill containment buckets and be properly labeled, etc. Earthen berms shall not be permitted.
        3) Materials Storage: A description of the storage location and a minimum quantity of all hazardous and non-hazardous materials that might pollute

storm water. Pollutants such as, but not limited to, paints, solvents, hydraulic fluids, engine oil, form oil, etc. that will be used during the course of construction activities. All containers of materials of any size that are used on site and their associated secondary containment shall be covered to prevent rainwater from coming in contact with the containers. Earthen berms shall not be permitted. All drums and containers shall be removed from the site as they become empty.

4) Sanitary Waste Facility: A description of the location and the number of sanitary waste facilities (e.g. portable chemical toilets) and method of disposal for the subject waste during the course of construction activities on site.

5) Equipment Maintenance: A detailed description of how and where equipment will be maintained. This shall include fluid changes, servicing, breakdowns, etc. The plan shall provide a standard operating procedure that shall be used for the protection of the environment while maintaining the equipment.

6) Concrete Batch Plants: Provide a maintenance plan for the concrete washout area. The plan shall include inspection and pumping procedures, as well as water, solid disposal, and recycling procedures. All batch plants shall have a valid VDEQ air permit. Obtain a General Virginia Pollutant Discharge Elimination System Permit (GVPDES) in accordance with 9 VAC 25-193-10 for the batch plant. Submit both the GVPDES and the VDEQ air permits with the Storm Water Pollution Prevention Plan (SPPP).

7) The SPPP shall include a drum and container management plan. The plan shall describe the methods and location for the containment, protection, and storage of all solvents, chemicals, petroleum products, and all toxic material as defined by the EPA brought on site. All drums and containers shall be stored within a secondary containment system and shall be covered to prevent rainwater from entering the secondary containment.

3. Best Management Practices (BMPs) And Control Measures. The purpose of this Section is to identify all appropriate BMPs and control measures that shall be implemented at the construction site. This Section of the plan shall clearly describe the construction activities in sequence and their associated BMPS, control measures, and Erosion and Sediment (E&S) controls that are applicable. This Section shall indicate the timing to achieve the above-referenced sequencing relative to the installation of BMPs, E&S, and the control measures.

a. The components of this Section of the plan shall, at a minimum, include but not be limited to the following:

1) Stabilization Practices: All stabilization practices, including interim and permanent stabilization measures as well as specific scheduling of the Implementation of the practices, shall be included in this Section. Where possible, this portion of the plan shall describe all existing vegetation that is preserved for the purpose of site stabilization. Stabilization measures include, but are not limited to the following:

a) Vegetative buffer strips
b) Sod stabilization
c) Geotextile

d) Mulching
e) Temporary Seeding
f) Permanent Seeding
g) Protection of trees
h) Preservation of mature vegetation
i) Other measures/stabilization practices

2) Structural BMPS: This Section shall adequately describe the structural BMPs and practices that will divert and mitigate storm water runoff from soils, sediments, exposed materials, ASTs, and containers of hazardous/non-hazardous materials. Structural BMPs include, but are not limited to the following list:

a) Silt fences
b) Earth dikes
c) Drainage swales
d) Sediment traps
e) Subsurface drains
f) Secondary containment for ASTs and containers
g) Pipe slope drains
h) Coverage for ASTs and containers
i) Level spreaders
j) Storm drain inlet protection
k) Reinforced soil retaining systems
l) Rock outlet protection/wheel washers
m) Gabions
n) Construction rock entrance
o) Temporary or permanent sediment basins
p) Other BMPs and structural controls.

3) The installation of these structural BMPs may be subject to the CWA Section 404 "Permitting Requirements". Be responsible for determination whether the above-permitting requirements apply to any of the structural BMPs.

4) Provide wheel washers and construction rock entrances for all projects where constructions traffic enters or exits paved surfaces. Be responsible for ensuring that all wheel washers and construction rock entrances are designed and constructed to adequately meet the expected construction traffic demand.

5) Temporary or Permanent Sediment Basins

a) If the project site involves common drainage areas that serve 3 acres or more of disturbed area(s), a temporary or permanent sediment basin is required. Such a basin shall provide 134 cubic feet of storage per acre drained. Where 134 cubic feet of storage per acre drained or equivalent is not attainable due to site constraints, smaller sediment basins and sediment traps shall be used as approved by the COTR on a case-by-case basis.
b) To prevent the movement and erosion of soils, structural measures should be placed on all upland areas.

4. `Operational Practices (Good Housekeeping Practices). This Section shall include measures and BMPs including good housekeeping practices that address the following sources of pollution:

    a. The plan shall contain measures that prevent trash, innocuous solid materials, building materials, garbage, and debris from entering the Authority's storm sewer system or directly into a stream or waterway.
    b. Provide a daily program of vacuum or hand sweeping or other acceptable means of cleaning sediments that are tracked or transported onto the public roads from the construction sites shall be implemented. The roads may be washed only after the sediments have been removed.

5. Inspection And Maintenance of BMPs

    a. Provide a schedule of inspection of all structural BMPs, the necessary maintenance and corrective action to correct all discrepancies found on site. Designate qualified personnel that have adequate knowledge of E&S requirements and storm water management and pollution prevention requirements, to inspect all structural control measures and BMPs at "least every seven calendar days and within 24 hours of the end of a storm event that is .5 inches or greater."
    b. At a minimum develop a checklist for these inspections that conforms to the inspection checklist of Appendix I. Areas where final stabilization has been established need only be inspected once every month. Provide the completed inspection checklist and a report summarizing the corrective actions taken by the contractor to the COTR according to the following schedule of frequencies:
    c. Every seven calendar days: Under the normal circumstances.
    d. Every 24 hours: After a rainfall of 0.5 inches or greater, of intensity.
    e. Every 30 days: for the areas where final stabilization has been accomplished.
    f. Correct any and all discrepancies immediately upon discovery. The SPPP shall be revised as necessary to reflect any modifications to strengthen the BMPs and other structural controls in order to address the discrepancies. The above inspections and findings shall be subject to Authority field verification. Be responsible for responding to all regulatory inquiries from the Virginia Department of Environmental Quality-Water Division (VDEQ-Water), Virginia Department of Conservation and Recreation (DCR), and the Environmental Protection Agency (EPA) Region III. Be responsible for addressing the outcome of all compliance monitoring inspections conducted by the above regulatory agencies. Take all corrective actions as required by VDEQ-Water, DCR or EPA Region III.

6. Non-Storm water Discharge. This SPPP is for the sole purpose of preventing pollution associated with storm water runoff (Act of God: rain, snow, etc.). Plan shall identify all non-storm water components, process waste water discharges, and any other non-storm water influent that may exist in this particular construction site. Plan shall ensure that all of the above non-storm water discharges are appropriately eliminated, permitted or addressed through other acceptable regulatory permitting mechanisms.
7. Detailed Composite SPPP Map. Prepare the following:

    a. Drainage pattern and approximate slopes anticipated after completing major grading activities on site
    b. Soil disturbance areas

c. Location of all Best Management Practices (BMPs), structural controls, non-structural controls, good housekeeping practices (GHP) and other erosion and sediment (E&S) control measures to be used during the course of construction activities
d. Locations where stabilization is expected to be used, including the types of vegetative cover which will be employed on site
e. Location of all receiving waters, including their tributaries and the ultimate receiving waters (including wetlands/sensitive habitats)
f. Location of all points of discharge to existing storm sewers and outfalls
g. Existing and planned paved areas, impervious surfaces, and buildings
h. Location of all post-construction BMPs and Storm water management practices that will address the long-term water quality improvement needs for the site, if applicable.
i. Location of any fuel storage, materials storage and sanitary waste and other potential pollution sources and their associated BMPs. shall be reflected on the site map.
j. Two site maps shall be developed, one indicating pre-construction and during construction site conditions and the second indicating final site conditions. Maps shall be to the same scale.

1.5 Quality Assurance

A. Prepare and submit the SPPP with input from each subcontractor.

PART 2 - PRODUCTS

2.1 General

A. Provide erosion and sediment control devices and products as indicated, in accordance with the SPPP and in accordance with the latest updated version of the Virginia Erosion and Sediment Control Handbook.

PART 3 - EXECUTION

3.1 Implementation

A. Implement and maintain the approved SPPP throughout the life of the contract in accordance with provisions of the Virginia Erosion and Sediment Control Handbook and applicable contract documents.

B. Exercise every reasonable precaution, including temporary and permanent measures, throughout the duration of the project to control erosion and prevent or minimize pollution of rivers, streams, lakes and other receiving waters. Apply siltation and stabilization control measures to material, subject to erosion, exposed by any activity associated with construction including but not limited to local material sources, stockpiles, disposal areas, and haul roads.

C. Initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased but no later than 14 days after the construction activities have temporarily or permanently ceased. Except as provided in the following paragraphs:

1. If snow cover and or severe weather conditions preclude initiation of the stabilization measures by the 14th day after construction activities have ceased, either temporarily or permanently, the stabilization practices shall be initiated as soon as practicable.
2. If construction activities resume on a portion of the site within 21 days from the date that construction activities have temporarily ceased, then stabilization practices need not be initiated on that particular portion of the site by the 14th day after construction activities have temporarily ceased.

D. Be solely responsible for complying with the soil erosion, sedimentation control and good housekeeping requirements of this Contract, and for otherwise preventing contamination of storm water from construction activities. Be solely responsible for any and all fines, penalties or damage that result from the Contractor's failure to comply.

3.2 Erosion and Siltation Control:

A. Control erosion and siltation through the use of the devices and measures specified herein, in the approved SPPP or as is otherwise necessary. The Authority reserves the right to require other temporary measures not specifically described herein to correct an erosion or siltation condition.

B. Maintenance: Maintain erosion and siltation control devices and measures in a functional condition at all times. Inspect temporary and permanent erosion and sedimentation control measures after each rainfall and at least daily during periods of prolonged rainfall. Correct deficiencies immediately. Make a daily review of the location of erosion and sediment control devices to ensure that they are properly located for effectiveness. Where deficiencies exist, make corrections immediately as approved or directed by the COTR.

PART 4 - CONTRACTOR'S QUALITY CONTROL

4.1 Field Quality Control

A. Conform to all applicable provisions of Division 01 Section "Quality Requirements". Be responsible for periodic inspections for conformance with the approved SPPP. The results of the periodic inspections shall be submitted to the COTR upon completion.

APPENDIX I

SPPP INSPECTION CHECKLIST

BMP	Proper Installation Yes, No. or NA	Proper Operation Yes or No	Housekeeping Practices Good-Poor	Potential Hazard Yes or No	Discharge: Storm water Non-storm water	Effectiveness of BMP	Observations	Comments
1. Drainage Swale								
2. Gabion								
3. Silt Fence								
4. Dry Pond								
5. Cattle Grate								
6. Earth Dike								
7. Sediment Trap								
8. Hay Bale								
9. Subsurface Drains								
10. Pipe Slope Drains								
11. Level Spreaders								
12. Storm Drain Inlet Protection								
13. Reinforced Soil Retaining Basins								

SPPP INSPECTION CHECKLIST

BMP	Proper Installation Yes, No. or NA	Proper Operation Yes or No	Housekeeping Practices Good-Poor	Potential Hazard Yes or No	Discharge: Storm water Non-storm water	Effectiveness of BMP	Observations	Comments
14. Temporary or Permanent Sediment Basins								
15. Construction Rock Entrance								
16. Rock Outlet Protection								
17. Secondary Containment for all ASTs								
18. Evidence of oil, fuel or other material spills or releases on site								
19. Other BMPs								
20. Other BMPs								

Please list any discrepancies or items that are not in compliance in the space provided below.

_____
_____
_____
_____
_____

Please list the corrective actions necessary to abate the above-listed discrepancies.

_____
_____
_____
_____
_____

Note: All corrective actions must take place within 7 days of the discovery of the above discrepancies and non-compliance item(s).

Inspector:

Signature: _____ Date: _____

APPENDIX II

Metropolitan Washington Airports Authority
Notice of Project Termination
For
Storm water Discharges from Construction Activities

Note: This form shall be completed by the construction contractors upon final stabilization of the site, upon elimination of all storm water, or when the construction contractor has changed within the same construction project. The contractor shall submit a completed copy of this form to the Authority, at the address provided below and a copy to PMC's Resident Engineer within 30 days after final stabilization has been achieved or when it is no longer the construction contractor for this project. (An officer of the company shall sign this certification)

Completed form shall be submitted to:
Manager, Building Codes/Environmental Branch
Engineering Division
Ronald Reagan Washington National Airport
Washington, D.C. 20001
Copy to: Parsons Management Consultants

For DCA Projects
Facilities Maintenance and Engineering (MA-121)
Ronald Reagan Washington National Airport
Washington, D.C. 20001
Attn: Project's Resident Engineer

For IAD Projects
Parsons Management Consultants
23835 Wind Sock Drive
Chantilly, VA 20166
Attn: Project's Resident Engineer

Contract Number:

Contractor Information:

Contractor's name and mailing address:

Subcontractor(s) name and mailing address:

Location of Construction Site:

Project Name
Address
City _____State _____Zip Code _____
Latitude _____ Longitude _____
If there is a change in the contractor(s) please provide the new contractor's information here:

Certification:

"I certify under penalty of law that disturbed soils at the identified project have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time and that all storm water discharges associated with construction activities in this project have been eliminated, or that I am no longer the contractor for this construction site."

Print name:
Title:
Signature:
Date:

(This certification shall be signed by an officer of the company)

APPENDIX III

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY
RONALD REAGAN WASHINGTON NATIONAL AIRPORT
HAZARDOUS MATERIALS SPILL NOTIFICATION CHECKLIST

Note: This checklist shall be completed by all tenants of Ronald Reagan Washington National Airport (DCA) in the event of a hazardous material spill (under CERCLA, CWA, CAA, TSCA and/or a release of hazardous waste under RCRA). It is the responsibility of the tenants to notify all pertinent regulatory agencies within the time frame prescribed under the respective statutes and regulations.

1. Tenant Name:
2. Facility location within DCA where spill occurred:
3. Facility Environmental Manager, Foreman, or person in charge:
4. Time and date of release:
5. Amount of release material:
6. Description of how the release occurred and whether material reached a floor drain (if the situation occurred, describe amount of material that entered drain):
7. Type of material released (include common and chemical name; attach MSDS and/or Waste Manifest):

    a. In the event of a release, verbal notification to DCA Fire Department and DCA
    b. Environmental Coordinator must be made immediately as follows:

        Fire Department:
        (703) 417-8250
        DCA Operations:
        (703) 417-8050
        Government Programs Engineer
        (703) 417-8071
        (703) 417-8099 (fax)
        Manager, Resource Support Division
        (703) 417-8072
        (703) 417-8099 (fax)

8. Provide details of immediate actions taken to stop spill/release and subsequent clean-up:
9. The checklist and written copies of all notifications to the regulatory agencies shall be submitted to the following person within six (6) hours of the incident (on weekends, note time of submittal):

    Government Programs Engineer
    Engineering and Maintenance Division
    East Building
    Washington, DC 20001
    Fax: (703) 417-8099

    Submitted
    Not submitted

10. A report describing how the incident occurred, if it entered storm or sanitary drain, emergency response me covered from the clean-up actions, and follow up activities shall be submitted to the person in question assures taken, post-emergency clean up actions, the storage and disposition of any materials re 9 within 48 hours of the emergency.
    Submitted
    Not submitted

Any questions regarding the use, completion, and scope of this checklist should be directed to the Authority's Building Codes/Environmental Department.

FOR DCA USE ONLY

Please explain below the follow-up actions required with respect to this incident.

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY
WASHINGTON DULLES INTERNATIONAL AIRPORT
HAZARDOUS MATERIALS SPILL NOTIFICATION CHECKLIST

Note: This checklist shall be completed by all tenants of Washington Dulles International Airport (IAD) in the event of a hazardous material spill (under CERCLA, CWA, CAA, TSCA and/or a release of hazardous waste under RCRA). It is the responsibility of the tenants to notify all pertinent regulatory agencies within the time frame prescribed under the respective statutes and regulations.

11. Tenant Name:
12. Facility location within IAD where spill occurred:
13. Facility Environmental Manager, Foreman, or person in charge:
14. Time and date of release:
15. Amount of release material:
16. Description of how the release occurred and whether material reached a floor drain (if this situation occurred, describe amount of material that entered drain):
17. Type of material released (include common and chemical name; attach MSDS and/or Waste Manifest):
18. In the event of a release, verbal notification to IAD Fire Department and IAD Environmental Coordinator must be made immediately as follows:
    Fire Department:
    (703) 572-2970
    IAD Government
    Programs Engineer
    (703) 572-0210

END OF SECTION 312514

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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 specifies subsoil scarification, topsoil placement, application of soil amendments, final grading, fertilizing, turf seeding, mulching and initial irrigation for the areas indicated on the Drawings.

B. Related Sections:

1. Division 31 “Earth Moving.”

1.3 SUBMITTALS

A. 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.

B. Topsoil Analysis Report: Report of analysis by a 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 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 NEW TOPSOIL

A. Fertile, friable, naturally loamy, surface soil; free of subsoil, clay lumps, brush, weeds, and other litter; and free of roots, stumps, stones larger than 2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth.

B. When tested in accordance with the methods of testing as recommended by the Association of Official Agricultural Chemists topsoil shall have a pH range of 5.5 to 7.6. Organic content shall not be less than 3 percent or more than 20 percent as determined by the wet-combustion method (chromic acid reduction). Not less than 20 percent or more than 80 percent of the topsoil material shall pass the 200 - mesh (0.075 mm) sieve, as determined by the wash test in accordance with ASTM C 117.

1. Natural topsoil may be amended by the Contractor with approved materials and methods to meet above requirements.

C. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at site of work. Obtain topsoil from naturally well-drained sites where topsoil occurs at least 4 inches deep. Obtaining topsoil from bogs or marshes is prohibited.

2.2 SOIL AMENDMENTS

A. Lime: Natural limestone, conforming to requirements of ASTM C 602, and containing at least 85 percent of total carbonates ground to such fineness that at least 90 percent passes a 10-mesh sieve and at least 50 percent passes a 100-mesh sieve.
1. Provide lime in form of dolomitic limestone.

B. Peat Humus: Finely divided or granular texture and with pH of 6.0 to 7.5 composed of moss peat (other than sphagnum), peat humus, or reed-sedge peat.

2.3 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.

2.4 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 % Kentucky Bluegrass
80 % High-Endophyte
10 % Perennial Rye

2.5 MULCH

A. Anti-Erosion Mulch: Clean, salt hay or threshed straw of wheat, rye, oats or barley. Mulch to be air-dry and free of mold and seeds of noxious grasses or weeds.

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.

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 slopes 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. Provide fertilizer, seed or sod, 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.

D. 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.

E. 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.

F. 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 MAINTENANCE

A. Obtain the services of a professional lawn and landscape firm to provide the required maintenance services of this Article. Do not use Contractor’s own forces to accomplish this maintenance.

B. Begin maintenance of grass areas immediately after each area is planted and continue for the periods required to establish acceptable stand of turf grass, but no less than the following:
   1. Seeded areas, at least 60 days, after date of Substantial Completion.

      a. If seeded in fall after September 1, provide minimum of 30 days maintenance in fall, and provide a minimum of 45 additional days continuing maintenance during following spring until acceptable turf is established.

C. Maintain turf areas by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, re-grading, and replanting as required to establish a smooth, acceptable turf, free of eroded or bare areas.

D. Re-mulch with new mulch in areas where mulch has been disturbed by wind or maintenance operations sufficiently to nullify its purpose. Anchor as required preventing displacement.

E. Replant bare areas with same materials specified for new turf.

F. Watering: Provide and maintain temporary piping, hoses and watering equipment to convey water from Authority's water source(s) location indicated and to keep turf areas uniformly moist as required for proper growth. Design temporary watering system to provide a minimum of 3/4 inch of water per day.

   1. Lay out temporary watering system and arrange watering schedule to prevent puddling, water erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid necessity of walking over muddy or newly seeded areas.
   2. Begin watering immediately. Water on a daily basis for the following 10 days. Apply water uniformly, providing coverage over entire site nominally equivalent to 3/4 inches of rainfall per day. Reduce rate to nominal 1/2 inch of water per day after 5 days.
   3. At end of initial 10-day period, remove temporary irrigation system. Continue watering with conventional sprinkler watering system on an as-needed basis.

G. Mow grass as soon as there is 3 - 4 inches of top growth, cut grass with the mower blades set at 1-1/2" to 2" height. Repeat mowing as required to maintain specified height.

   1. Remove no more than 40 percent of grass leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Time initial and subsequent mowings to maintain following grass heights.
      a. Mow grass from 1-1/2 inches to 2 inches high. Do not mow to less than 1-1/2 inches.
   2. Apply second fertilizer application after first mowing and when grass is dry. Use fertilizer that will provide at least 1.0 lb. of actual nitrogen per 1,000 sq. ft. of turf area.

3.8 ACCEPTANCE

A. When work is substantially completed, including maintenance, COTR will, upon request, make an inspection to determine acceptability.

B. Replant rejected work and continue specified maintenance until re-inspected by COTR and found to be acceptable.

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.

3.9 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.

END OF SECTION 329200

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