

METROPOLITAN WASHINGTON
AIRPORTS AUTHORITY



Construction Safety Manual



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CONSTRUCTION SAFETY POLICY


METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

It is the policy of the Metropolitan Washington Airports Authority (Airports Authority) to foster a safe environment where accident-free construction activities are achievable.

The contractor is responsible for all aspects of safety and accident prevention while under contract to the Airports Authority.

This Construction Safety Manual has been established by the Airports Authority to assist the contractor to promote safety and to limit, reduce and control hazards and risks associated with construction, repair, maintenance, and related services required by the Airports Authority. It provides safety and loss control requirements and procedures for all construction and construction-related activities.

The contractor is charged with the responsibility for conducting safe operations in order to protect anyone exposed to Airports Authority construction activities. Nothing contained in this manual relieves a contractor of its obligations assumed under contract with the Airports Authority or required by law.



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Date

Construction Safety Manual

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CHAPTER 1: DEFINITIONS

1.0 AIR OPERATIONS AREA (AOA)

Areas of the airport used or intended for landing, taking off, surface maneuvering, loading, unloading, or servicing of aircraft, operational vehicular traffic and cargo operations. This is a high security area requiring badging and compliance with security regulations.

1.1 AIRPORT OPERATIONS DUTY MANAGER

A representative from the airport's Operations Department with the authority to intervene if the Contractor's actions on the airport are detrimental to the airport's operational safety or security.

1.2 AIRCRAFT RESCUE and FIRE FIGHTING (ARFF)

Airports Authority designation for Aircraft Rescue and Fire Fighting stations and equipment.

1.3 CAPITAL CONSTRUCTION PROGRAM (CCP)

A major portion of the Airports Authority's construction program to upgrade the facilities of Ronald Reagan Washington National Airport (National) and to expand the facilities at Washington Dulles International Airport (Dulles).

1.4 CAPITAL OPERATIONS MAINTENANCE INVESTMENT PROGRAM (COMIP)

The Airports Authority program, which is coordinated with the CCP, to provide major restoration or replacement of utilities or facilities at Ronald Reagan Washington National and Washington Dulles International Airports.

1.5 COMPETENT PERSON

One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions.

1.6 CONFINED SPACE

Any space not intended for continuous employee occupancy, having a limited means of egress, which is subject to a potentially hazardous atmosphere. These spaces include, but are not limited to, manholes, vaults, sewers, storage tanks, boilers, and other new construction.

1.7 CONSTRUCTION SAFETY PROGRAM

The safety and loss prevention program established by the Airports Authority to monitor the hazards and risks associated with construction projects.

1.8 CONSULTANTS

Any individual, partnership, corporation or other business entity utilized by the Airports Authority as an independent contractor to provide engineering, design, construction management, technical support, testing, or other related services.

1.9 CONTRACT

The written agreement by and between the Airports Authority and a Contractor.

1.10 CONTRACTING OFFICER (CO)

An individual with formally delegated written authorization to commit the Airports Authority by entering into contracts and other contractual instruments such as modifications, task orders, delivery orders, purchase orders, and blanket purchase orders.

1.11 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

An individual, usually an Airports Authority employee, possessing technical expertise with respect to the contractual work being performed who has been delegated limited responsibility for monitoring technical performance and compliance with contract requirements. The COTR also provides administrative support for the contracting officer. Resident Engineers may also be designated as COTRs for assigned construction contracts.

1.12 CONTRACTOR

An individual, firm, partnership, or corporation undertaking a project through one or more contracts with the Airports Authority, program manager or a tenant, performing work at a job site located on either airport.

1.13 CONTRACTOR'S PROJECT MANAGER

The Contractor's senior management employee for a given project or task who has the overall responsibility to see that the work or job is satisfactorily completed.

1.14 CONTRACTOR'S SAFETY ENGINEER

A full time on-site safety professional with a minimum five years of experience hired by the Contractor to manage only the safety efforts. This person must be familiar with the type of work to be performed under the contract and have no other duties. The requirements contained herein are in addition to any other requirements contained in the contract documents.

1.15 CONTRACTOR'S SAFETY MANAGER

A full time on-site safety professional with a minimum ten years of experience in managing safety programs on large construction projects comparable to this Contract in scope and complexity (a CSP or CSM preferred). This person will monitor efforts of Safety Engineers assigned to the project and perform administrative duties assigned in the *Construction Safety Manual* and the applicable *OCIP Insurance Manual*. The requirements contained herein are in addition to any other requirements contained in the contract documents.

1.16 CONTRACTOR'S SUPERINTENDENT

The contractor's superintendent is responsible for the day to day operation on the construction site and control of the short term schedule.

1.17 CONSTRUCTION MANAGER

The Airports Authority employee or contractor responsible for the overall management of the construction phase of the Capital Construction Program and other designated projects.

1.18 DE-ENERGIZING REQUESTOR

Requestors for system de-energizing may include Competent Persons from Airports Authority and airport Contractors, airport tenants and concessionaires, airport tenant and concessionaire Contractors, and airport Engineering and Maintenance Departments.

1.19 DULLES CORRIDOR CAPITAL IMPROVEMENT PROGRAM (DCCIP)

Funds Dulles Corridor Capital Improvements related to the Toll Road, its ancillary ramps and interchanges, the Metrorail Project, and other corridor improvements. The Capital Improvement Program is funded from bond proceeds, Federal Transit Administration grants, and contributions from Fairfax County and the Commonwealth of Virginia.

1.20 DULLES CORRIDOR RENEWAL AND REPLACEMENT PROGRAM (DCRRP)

Addresses major maintenance requirements including overlays, sound wall repairs, bridge deck replacements, erosion and drainage control, and other maintenance projects. The Renewal and Replacement program is funded from Toll Road revenue.

1.21 ENGINEERING AND MAINTENANCE DEPARTMENT

A department reporting to the manager of an airport responsible for the construction and safety programs related to COMIP (major) and O&M (minor) facility projects.

1.22 FIRE MARSHAL

The Airports Authority official within the Office of Public Safety who is responsible for fire safety at both airports and enforcement of the Virginia Statewide Fire Prevention Code.

1.23 IMMINENT DANGER

Any conditions or practices on the Job Site in which an immediate **danger exists which could reasonably** be expected to cause death or serious physical harm to any persons, property damage, or before the imminence of such danger can be eliminated. It may be a safety hazard such as an unstable trench or exposed electrical wire that could cause a serious or fatal accident immediately under present conditions or activities that could damage aircraft or other structures. It also may be a health hazard such as toxic substances or dangerous fumes, dusts, or gases that could cause death or irreversible physical harm, shorten life, or reduce physical or mental performance.

1.24 INCURSION

An incursion occurs when any area, under air traffic control, authorized for use by aircraft is compromised by an unauthorized aircraft, vehicle or person.

1.25 INSURANCE BROKERS

Representatives from insurance brokerage firms responsible for assisting in the administration of the Airports Authority's OCIP programs.

1.26 INSURED

The Airports Authority, Program Management Consultant, Contractors, consultants, architects, engineers, subcontractors, and any other party listed as an insured on the certificates of insurance signed by a duly authorized representative of the insurance carriers.

1.27 INSURERS

The companies providing insurance coverage for the OCIPs.

1.28 JOB SITE

The site of contract work to include storage and laydown facilities on Airports Authority property at Ronald Reagan Washington National Airport, Washington Dulles International Airport, or the Dulles Toll Road. For the Dulles Corridor Metrorail Phase 2, job site is referred to as On-Site which means the location of the permanent Work, including the Project Right-of-Way and those areas that the Airports Authority has designated or may, from time to time, designate for Contractor's use in performance of the Work. For purposes of this document, On-Site is synonymous with Job Site.

1.29 JOB HAZARD ANALYSIS (JHA)

A plan outlining all associated hazards and corrective measures for a specific task.

1.30 LIVE LOAD

Any load of material (i.e., steel, building materials) attached to a crane by means of a cable or sling shall be referred to as a "live load" until the materials have been disconnected.

1.31 LOCKING

Locking is a method of controlling hazardous energy by preventing a switch or other electrical circuit opening device, or energy restraining device from becoming accidentally altered.

1.32 METROPOLITAN WASHINGTON AIRPORTS AUTHORITY (Airports Authority)

The Metropolitan Washington Airports Authority (Airports Authority) operates Washington Dulles International and Ronald Reagan Washington National airports. It operates the Dulles Toll Road and is the financial manager and builder of the Metrorail extension through the Dulles Corridor, known as the Silver Line.

1.33 OBJECT FREE ZONE

An area clear of vehicles and fixed objects that is in proximity to a runway or taxiway.

1.34 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

The Federal agency responsible for providing the rules and regulations on safety and health requirements in the work place.

1.35 OFFICE OF ENGINEERING

The Airports Authority office responsible for the implementation of the planning, design, overall program construction, and safety programs related to the Capital Construction Program and Dulles Corridor Capital Investment Program. Also, responsible for budgeting for Capital Operations Maintenance Investment Programs, Dulles Corridor Renewal and Replacement Program, and also for planning and design of individual COMIP projects, and construction of certain COMIP projects where assigned.

1.36 OFFICE OF PUBLIC SAFETY

The Airports Authority's office responsible for Fire and Police Department activities, and the overall public safety at both National and Dulles.

1.37 OPERATION AND MAINTENANCE PROGRAM (O&M)

The Airports Authority program which provides for the daily operation of both airports and those functions performed centrally, including minor facility projects.

1.38 OWNER CONTROLLED INSURANCE PROGRAM (OCIP)

A coordinated insurance program providing certain coverages for the Airports Authority, Eligible and Enrolled Construction Managers, Contractors, and subcontractors performing Work at the Job Site. Refer to the applicable OCIP Insurance Manual for coverage details.

1.39 OCIP SAFETY CONSULTANT (OSC)

A consultant to the Airports Authority's Risk Management Department responsible for OCIP-related claims, safety, and other risk management activities. May be the PSM for designated projects. Advises job site personnel of safety training and compliance issues to control losses.

1.40 PROGRAM MANAGEMENT SUPPORT SERVICES CONSULTANT (PMSS)

The consultant employed by the Airports Authority under contractual agreement to provide program management support services for the CCP and selected COMIP projects, including planning, design, construction and related services.

1.41 PROGRAM SAFETY MANAGER (PSM)

An employee of the Airports Authority, PMSS, or designated consultant who is responsible for the day-to-day management of a Construction Safety Program.

1.42 PROGRAM SAFETY PROFESSIONAL

A designated Safety Professional who is responsible for day-to-day management of the Construction Safety Manual answers directly to the PSM.

1.43 PROJECT

The term used to describe the specific construction work packages under the CCP, COMIP, DCCIP, DCRRP, and programs defined by contracts at both National and Dulles.

1.44 GENERAL PUBLIC

All persons not employed by the Contractor or Subcontractor, PMSS or other Consultants, tenants, other Airports Authority contractors, or Airports Authority involved in the project. This will include Airports Authority employees not directly involved with the project, facilities or other construction-related contracts.

1.45 PUBLIC AREA

Any area of the airport accessible to the general public without requiring the issuance of a badge or escorting.

1.46 RESIDENT ENGINEER/SITE REPRESENTATIVE

The person responsible for the supervision and coordination of individual construction contracts usually provided by the PMSS Consultant.

1.47 RISK MANAGER

Airports Authority employee responsible for design and administration of Airports Authority's insurance and self-insurance programs for property and casualty exposures. Manages claims, safety, insurance and business continuity matters. Oversees the Airports Authority's Risk Management Department (RMD).

1.48 RUNWAY/TAXIWAY SAFETY AREA

The surface adjacent to a runway or taxiway that is free of holes, trenches, bumps or other surface variations which is capable of supporting an aircraft under normal dry conditions.

1.49 SECURITY IDENTIFICATION DISPLAY AREA (SIDA)

A restricted area defined by the Airport Security Program. This area requires a background check, a badge, and or be escorted at all times by a badged individual.

1.50 STERILE AREA

An area accessible to the public only after processing through a security checkpoint.

1.51 TAGGING

Tagging is the placement of a red "Danger-Hold" tag (See Appendix D Sample Lockout/Tagout "Danger Hold Tag") directly on a circuit opening and/or locking device.

1.52 TENANT

An airline, concessionaire, or an entity that has a lease agreement with the Airports Authority and undertakes renovations or new construction on airport premises.

1.53 VIRGINIA OCCUPATIONAL SAFETY AND HEALTH (VOSH)

The Department of Labor and Industry shall be responsible for administering and enforcing occupational safety and occupational health activities as required by the Federal Occupational and Health act of 1970 in accordance with the State plan for enforcement of that act. (See VA Code Title 40.1, including but not limited to Section 40.1-22(5).) VOSH is a division of the Department of Labor and Industry of the Commonwealth of Virginia.

CHAPTER 2: CONSTRUCTION SAFETY PROGRAM OBJECTIVES

The Construction Safety Program has been established by the Metropolitan Washington Airports Authority (Airports Authority) to assist the contractor to promote safety and to limit, reduce, and control hazards and risks associated with the CCP, COMIP, DCCIP, DCRRP, and other programs and other construction, repair, maintenance, and related services required by the Airports Authority. The specific Construction Safety Program goals are to foster a safety conscious environment to encourage contractors to actively manage safety in order to limit losses from personal injuries and property damage. The ultimate objective is to achieve greater efficiency and reduce direct and indirect costs associated with losses and loss control.

The effectiveness of the Construction Safety Program depends upon the active participation and cooperation of the Contractor's project managers, supervisors, and employees and the coordination of their efforts with the Airports Authority in carrying out the following basic procedures:

2.0 PROCEDURES

- 2.0.1 Detection.** Maintain a system of prompt detection and correction of unsafe practices and conditions.
- 2.0.2 Education.** Establish and conduct an educational program to stimulate and maintain interest and cooperation of all employees. Education will be conducted through safety meetings, safety training programs, and the use of personal protective equipment and mechanical guards.
- 2.0.3 Investigation.** All accidents, incidents and claims will be investigated to determine their causes and reasonable corrective action will be taken.
- 2.0.4 Planning.** Plan all work to minimize the potential for personal injury, property damage, and loss of productivity.
- 2.0.5 Regulations.** Comply with Federal, State and local laws, ordinances, regulations, industry standards, and Airports Authority regulations and requirements. Refer to Appendix B for a list of applicable agencies.

2.1 ACCIDENT PREVENTION

- 2.1.1 Reporting Unsafe Conditions.** Employees shall immediately report any condition suspected to be unsafe or unhealthy to their job Foreman, Contractor's Safety Manager, or Contractor's Safety Engineer. If there is no resolution of the concern at that level, the employee shall report the concern to the PSM.
- 2.1.2 Prevent Job Site Accidents.** All Contractors have the responsibility to correct hazardous conditions and practices. When more than one Contractor is working within a given job site, any job Foreman shall have the authority to take action to prevent physical harm or significant property damage. If it is determined there is imminent danger, the job Foreman or Contractor's Safety Engineer shall:
 - 2.1.2.1** Take immediate action to remove workers from the hazard and stabilize or stop work until corrective actions can be implemented to eliminate the hazard.
 - 2.1.2.2** Immediately notify the COTR, PSM, Contractor's Safety Engineer/Manager, and others as identified in the Contractor's Safety Plan of the condition.

- 2.1.2.3 Identify and implement corrective action to eliminate the hazard. Notify the proper emergency service personnel if the danger cannot be promptly corrected and could develop into an emergency condition. *When the job Foreman or Safety Engineer is made aware of an unsafe condition or act that cannot be corrected, he/she shall develop and submit an abatement plan to the COTR for transmission to the PSM and the Airports Authority's RMD.*
- 2.1.2.4 Stop work until any condition that has been determined to constitute a safety hazard is corrected, guarded, or removed from the job site.
- 2.1.3 Protection of the Public and Property.** The Contractor shall take all necessary action to eliminate hazards which might reasonably be expected to cause injury to the general public or property damage.
- 2.1.4 Preparation for Work.** Before commencing work, Contractors shall take the following steps:
- 2.1.4.1 **OCIP Enrollment.** Refer to the applicable OCIP Insurance Manual for instructions. All Contractors and their subcontractors of all tiers working on designated projects must enter their company information and Certificates of Insurance into the applicable OCIP web portal and receive acknowledgement from the OCIP Administrator before entering the Job Site. General Contractors are responsible for monitoring their enrolled and excluded subcontractor's certificates of insurance and to ensure their subcontractors of any tier have submitted their information onto the applicable OCIP web portal.
- 2.1.4.2 **OSHA Construction Certifications.** Ensure all supervisory personnel are 30-hour OSHA Trained and that all other trades workers are 10-hour OSHA Trained. These Certifications must be obtained within six months of contract notice to proceed. At least one 30-hour OSHA Trained employee must be on-site during all work times.
- 2.1.4.3 **Safety Equipment.** Provide personal protective equipment and other safety items which have been identified as required by the Construction Safety Program, Airports Authority contracts, Office of Public Safety, and all applicable laws, regulations, and orders. The Contractor shall not receive additional payment or reimbursement for safety items.
- 2.1.4.4 **Safety Plan.** Meet with the PSM and representatives of the Airports Authority's Office of Engineering, the CO, and the COTR to discuss and develop a written safety plan. See Appendix C for a sample plan. Safety plans must be site specific and submitted and approved prior to the start of any work.
- 2.1.4.5 **Safety Professionals.** Submit resumes for the proposed Safety Managers / Safety Engineers as required in the Construction Safety Manual indicating their work experience and qualifications. Resumes for the Contractor's Safety Engineers will be reviewed for approval by the PSM and OSC. On-site work may not be performed until the specified Safety Professional(s) is/are approved and present on-site.
- 2.1.4.6 **Fire Protection Standby.** Meet with the Deputy Fire Chief at the appropriate airport during the work planning phase regarding any foam unit standby that may be required during the project.

2.2 NONCOMPLIANCE

- 2.2.1 Cooperation and Involvement.** It is the Airports Authority's intention to maintain a healthy and safe workplace. To succeed, all parties must be actively involved and maintain cooperation between all Contractors, Subcontractors, and their employees. Contractors and Subcontractors are responsible for orienting employees on the specific safety rules that must be followed by all persons working on the project.
- 2.2.2 Noncompliance.** If the CO is aware of any noncompliance or unsafe practices the following may occur:
- 2.2.2.1 **Claim.** The Airports Authority will deny claim, or requests from the Contractor for equitable adjustment for additional time or money on any suspend work order issued under these circumstances.
- 2.2.2.2 **Removal.** The Contractor shall be required to remove any employee or piece of equipment deemed to be unsafe from airport property. Given the concurrence from the CO, the PSM will direct the replacement of the Contractor's Safety Engineer or other contract personnel for nonperformance of his or her safety/security duties at no additional cost to the Airports Authority. Violations impacting the safe environment of the airport will be treated as a safety violation.
- 2.2.2.3 **Work Suspension.** If the Contractor fails or refuses to take corrective action within the specified time, the CO will exercise the right to suspend work, stopping all or part of the work. The order will remain in effect until satisfactorily corrected.
- 2.2.2.4 **Individual Suspension.** Any employee that commits a serious act shall be suspended from any airport project for a minimum of three (3) working days. Whether or not an act is serious will be determined by the PSM and Risk Management Department.
- 2.2.3 Grounds for Removal.** Any employee of the Contractor or Subcontractor found to be violating the following safety rules, or other Airports Authority policies or procedures as defined in this Construction Safety Manual, is subject to immediate removal from the job site. Disciplinary policies must be included in the Contractor's Safety Plan to address violations.
- 2.2.3.1 **Continued Violations.** Any employee, who has been documented as having repeatedly violated the Federal, State or Airports Authority safety regulations on any Airports Authority project, can be removed for cause.
- 2.2.3.2 **Drugs and Alcohol.** The possession, use, or being under the influence of drugs or alcohol while on the project is strictly prohibited.
- 2.2.3.3 **Unprofessional Behavior.** Unprofessional behavior, such as fighting, gambling, or horseplay is strictly prohibited.
- 2.2.3.4 **Weapons.** Possession of firearms, knives not necessary for the performance of work, clubs, or other weapons is strictly prohibited.
- 2.2.4 Rehire.** Any employee removed from an Airports Authority construction project for safety violations or unsafe work practices cannot be hired to work on any other Airports

Authority project for a minimum of one year from the date of removal without the approval of the CO. The contractor shall provide the names of individuals removed from their projects for safety reasons to the COTR, PSM, and OSC.

2.3 CONSTRUCTION SAFETY RESPONSIBILITIES

2.3.1 Contracting Officer's Technical Representative (COTR). The COTR and any delegated/designated representative will observe the Contractor's safety and accident prevention procedures for all activities and personnel working at the construction sites, including the Airports Authority, consultant, subcontractors, visitors, and materials or equipment suppliers. For O&M projects, the functions of the Program Safety Manager are performed by the COTR designated by the Airport's Engineering Division. The COTR on the project has the responsibility to:

2.3.1.1 **Report Unsafe Conditions.** Report directly, or assign another person to report, any unsafe working condition to the Contractor and the PSM.

2.3.1.2 **Fire Safety.** Report directly to the Airports Authority's Fire Code Enforcement Division, or assign another person to report, any fire safety issues and fire protection system impairments.

2.3.1.3 **Corrective Actions.** Initiate measures to promptly notify the entities in control of construction activities to address unsafe working conditions, including taking corrective action when unsafe working conditions are detected (i.e. lack of good housekeeping practices, use of equipment in obviously poor condition, failure to adhere to any of the regulations and standards listed in Appendix B, or issued by any of the agencies listed in Appendix B which pertain to safety).

Unsafe conditions must be corrected by prompt referral to the Contractor's Safety Engineer, Safety Manager, or the Contractor's Project Manager.

2.3.1.4 **Documentation.** Maintain written documentation of communications concerning accident prevention to preclude any misunderstandings and ensure documentation.

2.3.1.5 **Imminent Danger.** If in the COTR's judgment, construction activity constitutes a threat of imminent danger, the COTR will stop such work and notify the Contractor and the OSC.

2.3.1.6 **Monitor Contractor Enforcement.** The COTR will monitor to ensure that Contractors provide effective safety enforcement on the project.

2.3.1.7 **Noncompliance.** Promptly notify the Contractor, the PSM, and the OSC in writing of noncompliance with any of the safety requirements contained in the contract documents including this *Construction Safety Manual*. The Airports Authority's *Construction Safety/Security Inspection Report* will be used. (See Appendix B).

2.3.1.8 **Safety Compliance.** Receive and review copies of the Contractor's Daily Reports, Equipment Maintenance Log, Accident Report forms, and other forms as they apply. These reports are to be continually monitored to ensure that the Contractor takes prompt action to correct safety deficiencies. Any CO designated representative has the authority to direct the contractor in matters of safety or imminent danger.

For all CCP Task Order Contracts, DCCIP Task Order Contracts, COMIP, DCRRP and selected O&M projects, the COTR or project engineer is responsible to ensure the Contractor's Safety Engineer requirements listed under Section 2.3.3. are performed by a specifically dedicated person on the project. A full-time Contractor's Safety Engineer will be required for the following:

- Contracts exceeding \$250,000 depending on the scope of work
- Exposure to aircraft operations
- Certain task orders/projects

2.3.2 Contractor's Project Manager. The Contractor, specifically the Contractor's Project Manager, is responsible for accident prevention and job site safety. This responsibility cannot be delegated to Subcontractors, suppliers, the Airports Authority, PMSS Consultant, or other persons. The Contractor's Project Manager is responsible for ensuring the COTR is informed in advance if the Contractor's safety personnel will not be on duty when work will be undertaken.

The Contractor's Project Manager shall ensure compliance with all provisions of the contract, including the Airports Authority's *Construction Safety Manual*, OSHA, VOSH, and other agency and industry safety requirements and standards. Additional duties shall include the following:

- 2.3.2.1 **Contractor's Safety Plan.** Upon notification of contract award, submit in writing a Contractor's Safety Plan (see Appendix C for sample plan) to the COTR, who will forward the documents to the PSM and the OSC for review and recommendations. The Contractor's Safety Plan must comply with Airports Authority's Construction Safety Manual before the COTR will approve the document. Delay in submitting a written safety plan shall not constitute grounds for a contract schedule extension or delay claim. Copies of the site layout and safety plan noting emergency response, access points, etc. shall be submitted to the Fire and Rescue Department Battalion Chief-Special Operations, prior to the start of work.
- 2.3.2.2 **Cooperation.** Cooperate with the Airports Authority, consultants, and safety representatives of the insurance brokers or the insurers.
- 2.3.2.3 **Corrective Action.** Review and direct immediate action to correct all recognized, unsafe conditions. This shall also apply to the work performed by all Subcontractors on the project.
- 2.3.2.4 **Emergency Contact Lists.** Updated phone numbers for Contractor personnel, Police Department, Fire Department, COTR, and other Airports Authority departments listed in the *OCIP Emergency Phone Number List* must be posted on the project at all times in a conspicuous location.
- 2.3.2.5 **Enforcement.** Be responsible for providing the PSM with support in carrying out the duties and responsibilities of that position. Take an active part in supervisory safety meetings, including the discussion of observed unsafe work practices or conditions, a review of incidents and corrective actions, and encouragement of safety suggestions from employees.

- 2.3.2.6 **Federal/State Citations.** Provide the COTR copies of any citations immediately upon receipt.
- 2.3.2.7 **Qualifications.** Ensure that all heavy equipment operators (i.e., cranes, loaders, forklifts) are properly qualified and trained on the specific piece of equipment in use.
- 2.3.2.8 **Regulations.** Plan and execute all work to comply with the Stated objectives and safety requirements contained in the Airports Authority's *Construction Safety Manual*, contract provisions, Federal, State, local laws and regulations, and industry standards, as listed in Appendix A.
- 2.3.2.9 **Resumes for Safety Professionals.** Submit a resume of the experience and qualifications for the proposed Safety Engineer or Safety Manager to the COTR. The resume will be reviewed for approval by the PSM and OSC, and a personal interview will be required. Only qualified personnel will be approved.
- 2.3.2.10 **Safety Awareness.** Ensure that all of its Subcontractors are provided with a copy of this *Construction Safety Manual* and are informed of their obligations regarding safety. Suppliers and visitors must be informed of their obligations regarding safety.
- 2.3.2.11 **Safety Inspections & Training.** Select either a Safety Engineer, Safety Manager, or both, as required in the contract provisions, to perform safety inspections and training services under the direction of the Project Manager.
- 2.3.2.12 **Safety Meetings.** Hold weekly safety meetings. These must be bilingual if dictated by the work force. Documentation of topics discussed and attendees shall be maintained with copies of record submitted to COTR.
- 2.3.2.13 **Safety Orientation.** Maintain an orientation program for new employees that includes at a minimum a review of (a) potential hazards in the work areas and (b) required personal protective equipment and apparel as specified under OSHA, VOSH, or the site-specific safety manual (c) applicable contents and potential consequences of violating safety rules and Airports Authority property. The Contractor's Project Manager shall also ensure that all new hires are accompanied by an experienced employee to evaluate his/her knowledge and skills.
- 2.3.2.14 **Safety Performance Goals.** Safety performance goals are identified by the Airports Authority, PMSS Consultant and the prime Contractor to evaluate Contractor performance. The Contractor's Project Manager is responsible for developing and monitoring performance measures to meet or exceed these performance goals.
- 2.3.2.15 **Job Hazard Analysis (JHA).**
- (a) Submit for review a jobsite specific JHA for each definable feature and task associated with the work to be undertaken. This shall include the task, its hazard(s) and corrective measure(s). These must be submitted 15 working days prior to the preparatory meeting for that definable feature.
 - (b) Prior to starting any task, ensure that the JHA is reviewed with all personnel involved in the task. Attendance will be documented and submitted to COTR.

2.3.2.16 **Safety Compliance.** For all CCP Task Order Contracts, DCCIP Task Order Contracts, COMIP, DCRRP and selected O&M projects, the Project Manager is responsible to assign and monitor that the requirements listed under Section 2.3.3 are performed by a designated person whose sole duties relate to safety on the project. The Safety Representative may not be removed from the job by the Contractor without written approval from the Program Safety Manager (PSM) and with concurrence with the Contracting Officer (CO).

2.3.3 Contractor's Safety Engineer. All CCP Contracts, DCCIP Contracts, COMIP, DCRRP and selected O&M projects require a Contractor's Safety Engineer. The Contractor's Safety Engineer shall perform daily safety inspections of the Contractor's and Subcontractor's job sites to eliminate unsafe acts or conditions. The Safety Engineer must be a full-time position on all CCP contracts with no other duties assigned. For contracts with exposure to the Air Operations Area (AOA) the Safety Manager or Safety Engineer must have at least one-year experience in an airport or other aviation environment unless approved by the CO with a recommendation from the PSM taking into consideration the proximity of the project to aircraft.

A Safety Engineer is required to be on the project during every shift including projects scheduled to work 24-hours a day or on weekends.

In the absence of a Safety Engineer on the project, the Contractor's Safety Manager will perform the functions of the Safety Engineer.

The Contractor's Safety Engineer has the responsibility to:

2.3.3.1 **Accident/Incidence Response.** Ensure that all employees are made aware of steps to take in case of an accident and the location of first-aid facilities.

2.3.3.2 **Accident Investigation/Written Violations.** Investigate all accidents and implement immediate corrective action. Prepare, or assist in the preparation of, all accident investigation reports. Submit copies of these written reports to COTR, PSM, and OSC within 24 hours of the incident. This includes all "near misses."

Provide written reports within 24 hours to COTR citing any observed unsafe conditions or practices, or violations of job security regarding safety issues, and take immediate corrective action. This includes all "near misses."

2.3.3.3 **Contractor Safety Meetings.** Provide the job foremen with appropriate training materials to conduct weekly "tool box" safety meetings. Whenever the attendees are non-English speaking, training materials must be provided in their language. The Safety Engineer shall attend the weekly "tool box" safety meeting to ensure that the meetings are held and are meaningful. The Safety Engineer shall also review the Foreman's safety meeting reports.

2.3.3.4 **Cooperation.** Coordinate safety activities with the Airports Authority, PMSS Consultant, and OSC. Take the necessary steps to implement safety recommendations promptly. Coordinate the public relations aspects of the Contractor's safety plan with Airports Authority personnel.

- 2.3.3.5 **Entry Points.** Drawings of all project entry points must be provided to the Airports Authority's Fire Department within 30 days of project commencement. When project conditions change, updated drawings must be re-submitted.
- 2.3.3.6 **First Aid.** Ensure adequate first aid supplies are available at the work site and personnel are qualified to administer first aid as required in the contract. Post an updated list of current availability of first aid and emergency treatment for injured employees.
- 2.3.3.7 **Injury Reports.** Report all injuries and accidents within 24 hours according to Federal and State laws and Airports Authority orders or regulations.
- 2.3.3.8 **Man-hour Report.** Submit a completed *Monthly Project Man-hour/Injury Report Log* by the 10th of each month to the COTR.
- 2.3.3.9 **Organizational Safety Meetings.** Attend special safety meetings held or sponsored by the Airports Authority, Program Management Consultant, or Contractor. The Contractor's Safety Engineer or Safety Manager is expected to participate in these meetings.
- 2.3.3.10 **Safety Equipment.** Be responsible for the control, availability and use of safety equipment, including personal protective equipment and apparel.
- 2.3.3.11 **Safety Training.** Implement safety training programs for supervisors and employees applicable to their specific responsibilities and use of equipment.
- 2.3.4 **Contractor's Safety Manager.** For large complex construction projects, or when multiple Safety Engineers are required, the contractor shall employ a full-time Safety Manager on the project. This individual has the responsibility to monitor efforts of Safety Engineers assigned to the project. Additionally, this individual shall perform the administrative tasks required by the contractor, the *Construction Safety Manual*, and the *OCIP Manual*. In the absence of a Safety Engineer on the project, the Contractor's Safety Manager shall perform the daily safety inspections and other responsibilities as outlined in Section 2.3.3.
- 2.3.5 **Superintendent.** The Contractor's job Superintendents are an integral part of an effective safety program. The effort put into accident prevention while performing the job Superintendent's daily assignments determine a good accident record. The job Superintendent's responsibilities shall include:
 - 2.3.5.1 **Accident Investigation.** Performing a complete investigation of all accidents and taking corrective actions to prevent a recurrence.
 - 2.3.5.2 **Enforcement.** Ensuring that unsafe practices or conditions are not allowed to exist on the job sites through continuous monitoring. Correct, or report immediately to the job Project Manager, any unsafe conditions, practices or violations of job security.
 - 2.3.5.3 **First Aid.** Providing that prompt first aid is administered to an injured employee.
 - 2.3.5.4 **Instruction.** Instructing personnel under his or her supervision in safe work methods and practices when assigning work.

- 2.3.5.5 **Personal Protective Equipment.** Protecting employees by having and using the proper protective equipment and tools for the job.
 - 2.3.5.6 **Safety Attitude.** Setting a good example for personnel.
 - 2.3.5.7 **Safety Meetings.** Holding weekly "tool box" safety meetings with work crews to discuss any observed unsafe work practices or conditions; review the accident experience of the crew; discuss corrective action to prevent future accidents; and encourage safety suggestions from the employees. Recommendations from the meeting shall be given to the Safety Engineer.
 - 2.3.5.8 **Daily Pre-Shift Safety Meeting.** Taking five minutes to advise employees on conditions and work to be performed prior to each day's shift.
- 2.3.6 Program Safety Manager (PSM).** The PSM is the Airports Authority's designated employee or consultant who is responsible for the day-to-day management of the CCP Construction Safety Program. The PSM will:
- 2.3.6.1 **Audits and Inspections.** Conduct safety audits and inspections of all projects with the assistance of the insurance carrier as necessary. A copy of any written audit or inspection documentation must be forwarded to the OSC.
 - 2.3.6.2 **Contractor's Safety Plans.** Review Contractors' safety plans and programs, descriptions of hazards peculiar to their work, and nominees for the Contractors' Safety Engineer positions as required by the contract. The PSM will recommend the approval/disapproval of the Contractor's nominees.
 - 2.3.6.3 **Cooperation.** Assist the Airports Authority, Site Managers, Consultants, COTRs, and field personnel on safety matters. Organize and conduct safety training as necessary. Act as a technical advisor for safety issues. Perform necessary actions to promote successful safety programs.
 - 2.3.6.4 **Document Review.** Review pertinent contract documents for safety-related problems.
 - 2.3.6.5 **Emergency Incident.** Work with the Airports Authority's Fire Department on construction sites when major incidents have occurred. Act as a resource to the Incident Commander and/or Airports Authority's Public Safety designated officer.
 - 2.3.6.6 **Enforcement.** Work with the Airports Authority and Consultant field personnel in assisting the COTRs, and inspectors toward strict enforcement of the contract safety provisions. This includes compliance with OSHA (Part 1910 and 1926 of the Code of Federal Regulations), VOSH, FAA, any other laws and applicable safety standards, as well as Airports Authority regulations set forth in the *Construction Safety Manual*. (See Appendix A)

The PSM has the right to enforce, through the contract designated on-site representative, stricter safety procedures than those that might have been issued by OSHA, VOSH, or any other related agency when, in his/her judgment, potential hazards could otherwise exist.

In case of conflict or ambiguity between various statutes, contract documents, or safety provisions, the PSM will recommend to the CO an interpretation as to which provision applies or what is implied in a given provision. The CO decision will be based on the PSM recommendation and will be considered the final decision.

- 2.3.6.7 **Imminent Danger.** Stop any construction activity or task which, in the PSM judgment, constitutes an immediate or evolving situation of imminent danger.
- 2.3.6.8 **Meetings.** Participate in meetings with offerors and Contractors (such as pre-proposal, pre-award, and pre-construction conferences) to outline and explain the Construction Safety Program and other safety-related aspects of the program.
- 2.3.6.9 **Safety Report.** Provide and distribute the CCP/COMIP Monthly Safety Report as directed by the Airports Authority.
- 2.3.7 **Risk Manager.** Airports Authority employee responsible for design and administration of Airports Authority's insurance and self-insurance programs for property and casualty exposures. Manages claims, safety, insurance and business continuity matters. Oversees the Risk Management Department, which has the responsibility to perform the following:
 - 2.3.7.1 **Communication.** Coordinate and maintain regular communication with all parties involved in the safety and loss control efforts provided by the Airports Authority, PMSS, OSC, insurers, and insurance brokers involved in construction.
 - 2.3.7.2 **Industry Awareness.** Obtain and exchange current information on Federal, State, and local safety and environmental regulations.
 - 2.3.7.3 **Insurance.** Provide the insurance coverage required under the applicable OCIPs or other coverage necessary to protect the Airports Authority's interests.
 - 2.3.7.4 **Loss Analysis.** Analyze loss trends; prepare safety and loss control reports, including an analysis of accident frequency, severity, and causes. Provide recommendations to increase the effectiveness of the Airports Authority's *Construction Safety Manual*.
 - 2.3.7.5 **Program Evaluation.** Monitor the Airports Authority's Construction Safety Program and make recommendations as required.
 - 2.3.7.6 **Risk Evaluation.** Evaluate potential loss exposures and monitor the safety performance and enforcement of safety standards. Areas of evaluation include, but are not limited to; personnel safety, liability exposure, public safety, property preservation, emergency planning, and fire protection.
 - 2.3.7.7 **Claims.** Manage the claims process for all property and casualty claims arising out of construction activities.
 - 2.3.7.8 **OCIP Safety Consultant.** The OSC is a consultant to the Airports Authority's Risk Management Department and is responsible for OCIP-related claims, safety, and other risk management activities. All incidents, injuries, occupational-related illnesses, or property damage are to be reported within 24 hours to the OSC. The OSC advises and provides safety related recommendations to the Airports Authority

and enrolled Contractors performing work under the OCIP. Advises Job Site personnel of safety training and compliance issues to control losses and assists in the processing of OCIP claims.

2.3.8 Subcontractor's On-Site Project Manager. The on-site project manager, or other designated person, for all sub-contractors shall be required by the Contractor to perform or complete the following:

- 2.3.8.1 **Accident Investigation.** Complete supervisory investigation reports on all accidents.
- 2.3.8.2 **Cooperation.** Cooperate with the Airports Authority, PMSS Consultant, and the insurers' safety representatives. Assignment of these responsibilities by Contractors to Subcontractors shall not relieve Contractors of their obligations.
- 2.3.8.3 **Enforcement.** Take immediate action to correct unsafe practices or conditions. Immediately report any unsafe conditions, hazardous practices or violations of job security to the Contractor's Safety Engineer/Safety Supervisor or Project Manager.
- 2.3.8.4 **Man-Hour Report.** Submit a completed *Monthly Project Man-Hour/Injury Report Log* by the 10th of each month to the General Contractor.
- 2.3.8.5 **Personal Protective Equipment.** Provide and enforce the use of required personal protective equipment.
- 2.3.8.6 **Safety Compliance.** Plan and execute all work according to the Airports Authority's Construction Safety Program and incorporate the *Construction Safety Manual* in all subcontracts.
- 2.3.8.7 **Safety Meetings.** Participate in supervisory personnel safety meetings scheduled by the Contractor. Schedule and participate in weekly "tool box" safety meetings held by job foremen.

2.4 SAFETY AWARD PROGRAMS

The Airports Authority appreciates Contractors who meet or exceed established safety goals. Awards may be given for overall loss performance and to recognize exceptional safety programs.

CHAPTER 3: SAFETY REQUIREMENTS

3.0 BASIC SAFETY PROVISIONS

- 3.0.1 Airport Procedures.** The Contractor shall protect the health and safety of employees, the public and any other persons, take all necessary and reasonable actions to prevent damage to property, materials, supplies, and equipment, and avoid interrupting normal airport operation. Nothing contained herein alters the requirements to comply with the safety procedures in the contract or otherwise mandated by law or regulation. Examples of items requiring specific Contractor attention include:
- 3.0.1.1 **AOA Operation.** Prevent employees, Subcontractors, suppliers, or equipment from intruding upon the AOA, without the knowledge and concurrence of the Airport Operations Officer.
 - 3.0.1.2 **Barricades.** Provide adequate and proper fencing, barricading, marking, and lighting of construction, maintenance, or other areas that are temporarily closed to normal airport use. The use of tape of any type is not acceptable.
 - 3.0.1.3 **Communication.** A fully operational telephone or other means of two-way communication shall be available at the site before construction begins and at all times when construction is in progress. Maintain radio communication between the construction and maintenance vehicles and air traffic control tower or other on field communications facility as required in the AOA.
 - 3.0.1.4 **Compressors.** Provide ANSI or OSHA approved valve on all air compressors with hoses exceeding ½ inch inside diameter at the source of supply or branch line. Jack-Hammer operators must be rotated at least every two (2) hours to prevent acute injury, i.e. 2 hours on and 2 hours off.
 - 3.0.1.5 **Confined Space.** Ensure all confined space entries are made only under the supervision of a qualified person. Each entry must have a permit signed by the contractor's designated qualified person and be kept in visual sight at the entry points. Confined space entries shall be made according to the VOSH Confined Space Program.
 - 3.0.1.6 **Cylinders.** Secure compressed gas cylinders in upright position at all times. Valve caps shall be in place when not in use. They shall be transported and stored according to Federal and State standards. Moving compressed gas cylinders by crane is prohibited, unless cylinders are capped and secured in an approved carrying device.
 - 3.0.1.7 **Demolition.** Ensure that material is not dropped outside the exterior wall of the building where the drop distance is more than 20 feet high, unless contained in a chute enclosed on all sides. If the drop distance is less than 20 feet high, the landing area must be barricaded. When material is dropped through openings in the building, the openings must be barricaded at least 42 inches high and 6 feet or more back from the edge of the open area at the landing.

- 3.0.1.8 **Electronic Interference.** The Contractor shall not use any vehicles, equipment, excavations, stockpiles, or other materials that could degrade or otherwise interfere with the electronic signals from radios or electronic navigational aids.
- 3.0.1.9 **Fire/Rescue Department Emergency Access.** Prevent construction/maintenance activities or materials from hampering access by any airport rescue and firefighting (ARFF) vehicle to all parts of the airport. Contractors must provide and post signage to indicate where emergency access is located (see example below). Letters must be a minimum of 12 inches high and made of red reflective material on white background.

<p><i>FD - _____EMERGENCY ACCESS</i></p> <p><i>Project: _____</i></p> <p><i>Contractor: _____</i></p>

Access for Fire/Rescue Department apparatus shall be maintained as directed by the Airports Authority Fire Code Enforcement Division.

- 3.0.1.10 **Equipment Perimeter Protection.** Heavy equipment with rotating superstructure, such as backhoes and power shovels, shall be guarded in such a manner that rotation and use shall not present a danger to individuals or infringe into any traffic lane.
- 3.0.1.11 **Flagging.** Provide properly trained and equipped flaggers at designated locations on all Airports Authority roadways including the AOA and for such *periods as necessary* for the control and protection of vehicular and pedestrian traffic in accordance with the *Manual of Uniform Traffic Control Devices (MUTCD)* and *Virginia Work Area Protection Manual*. Reflective vests must be worn during ALL flagging operations.
- 3.0.1.12 **Foreign Object Damage.** Foreign Object Debris (FOD) and other materials can cause serious damage to aircraft. Material or equipment shall not be permitted to obscure pavement markings, pavement edges, or detract from visibility of runway/taxiway markings or lighting. Prevent trash, water, snow, dirt, debris, or other transient materials with foreign object damage potential from entering into or remaining in construction or maintenance areas, whether on runways, taxiways, aprons, or in related safety areas.

Remove all bird attractions, such as edibles (food scraps, etc.) or other miscellaneous garbage, trash, or pooled water while on or near the airports. All materials and equipment, such as lightweight construction materials, must be secured to prevent displacement from wind or jet blast. Dust must be controlled at all times by using water trucks, vacuum trucks, sweeping and other acceptable

means as determined by the COTR and at no additional cost to the Airports Authority.

- 3.0.1.13 **Fork Lift Operations.** Operators must be trained and certified as instructed under OSHA regulation 29 CFR 1910.66, 67 & 68, entitled, *“Powered Platforms/Manlifts”*. Fork lift operators are required to have a “Fork Lift Trained” decal on their hard hat indicating the person is certified. Forklifts are to be used for stacking or moving of materials and not to set steel or as a lifting device, unless equipped with the manufacturers approved attachment. Additionally, an AOA driver’s license must be annotated to include forklift qualifications (Class B).
- 3.0.1.14 **Ground Fault Circuit Interrupters (GFCI).** All construction related electrical services must be equipped with ground fault circuit interrupters. All power tools must be GFCI protected regardless of power source.
- 3.0.1.15 **Imminent Danger.** Any employee can stop work if construction activity constitutes a threat of imminent danger. They must notify their supervisor if this action is taken and must not return to the dangerous situation until it has been resolved by the contractor’s designated Competent Person.
- 3.0.1.16 **Ladders.** Inspect all ladders before use. Defective ladders must be removed from service immediately. All ladders must have firm footing, be secured at the top, and extend 36 inches above the landing level. Provide adequate training for employees and ensure ladders are being used properly. For example, frame ladders may not be used as extension ladders; the upper section of extension ladders may not be dismantled and used as a separate ladder. Aluminum ladders are prohibited.
- 3.0.1.17 **Loss Control.** Implement any additional safety measures the CO determines to be necessary to ensure project safety pursuant to a recommendation by the PSM, OSC, Contractor’s Safety Engineer, or COTR.
- 3.0.1.18 **Manlifts.** Manlift operators shall follow the procedures provided by the manufacturer and OSHA, as well as guidelines specified by either airport, for equipment provided by the Contractor or owned by the Airports Authority.
- 3.0.1.19 **Safety Data Sheets.** Current Safety Data Sheets (SDS) must be kept on-site and available to all personnel. Copies may be requested by the Airports Authority’s Fire Department in connection with their responses for fire, injury, or spill incidents.
- 3.0.1.20 **Personal Electronic Devices.** The use of personal electronic devices is prohibited while operating any motorized equipment or motor vehicle on the Air Operation Area (AOA). Prohibited devices include but are not limited to; personal cell phone, radio, iPod, portable cd player and any other device that restricts hearing and distracts the operator.
- 3.0.1.21 **Piles.** Prevent cut-off piles from free falling if the top of the pile sticks out of the ground *above knee high*. *Holes shall be kept free of cut-off piles.*
- 3.0.1.22 **Scaffolding.** Hollow concrete blocks, in any fashion, shall not be used under scaffold legs to support the scaffold. Appropriate base plates must be utilized at all times. Prior to utilizing any scaffold or fall-protection systems, written documentation

must be provided upon request to PSM substantiating its compliance with current OSHA regulations.

Scaffolding shall be inspected when erected and daily thereafter by the Contractor's Competent Person as described in the OSHA regulations. All scaffolds 4 to 10 feet in height, having a minimum platform dimension of less than 45 inches horizontally in any direction, shall be equipped with a guardrail or a fall protection system. This includes a Baker Scaffold.

- 3.0.1.23 **Temporary Lighting.** All outdoor temporary electrical wiring within the construction area must be flexible cord listed for hard usage suitable for wet locations, Type UF cable (direct burial type), or installed in rigid conduit. If installed outside the limits of the construction area, wiring shall meet the requirements of the *Airports Authority Design Manual*. All indoor temporary electrical lighting shall be a three-wire type system in compliance with OSHA regulations and NEC codes.
- 3.0.1.24 **Tools.** Tools in public areas could be a security hazard, and must be closely guarded or locked-up when not in use.
- 3.0.1.25 **Stilts.** Stilts are not allowed on Airports Authority contracts.
- 3.0.1.26 **Buddy System.** No employee shall be allowed to do any activity on the jobsite, unless accompanied by a fellow worker.

3.1 TRAFFIC CONTROL

- 3.1.1 **Barriers/Barricades.** All barriers used on the project must comply with Virginia Department of Transportation and other applicable regulations (see Appendix A). The Contractor shall provide adequate visibility and protection when public use of work areas must be maintained on sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways, and vehicular roadways. Appropriate barriers (i.e., guardrails, barricades, temporary fences or partitions, overhead protection, shields) shall be secured against accidental displacement and maintained in place except where temporary removal is necessary to perform the work. When a barricade is temporarily removed, a guard shall be placed at all openings.

Barricades must be used where sidewalk sheds, fences, or guardrails are not required. Such barricades must guard against harmful radioactive rays or particles, open excavations, flying materials, falling or moving materials and equipment, hot or poisonous materials, explosives and explosive atmospheres, flammable or toxic liquids and gases, open flame, energized electric circuits, or other harmful exposures.

- 3.1.2 **Caution Tape.** The use of tape for marking unsafe conditions or open hazards is prohibited. Only plastic orange safety fences or other devices of similar construction shall be used.
- 3.1.3 **Egress.** Sidewalks, building entrances, lobbies, corridors, aisles, doors, or exits in use by the public shall be clear of obstructions to permit safe ingress and egress of the public at all times.

- 3.1.4 Guardrails.** Guardrails shall be provided on both sides of vehicular and pedestrian bridges, ramps, runways, and platforms. Their height shall be approximately 42 inches.

Guardrails shall be made of rigid materials able to withstand a force of at least 200 pounds applied in any direction at any point in their structure. Pedestrian walkways elevated above adjoining surfaces, or walkways within 6 feet of the top of excavated slopes or vertical banks shall be protected with guardrails, except where sidewalk sheds or fences are required in 3.1.5. Top rails and posts shall be 2 inches by 4 inches dressed wood or equal material. Posts shall not be more than 8 feet apart.

- 3.1.5 Overhead Protection.** Sidewalk sheds, canopies, catch platforms, and appropriate fencing shall be provided when it is necessary to safely maintain public pedestrian traffic adjacent to the erection, demolition, or structural alteration of outside walls on any structure.

- 3.1.6 Perimeter Fencing.** Temporary fencing shall be provided around the perimeter of aboveground operations adjacent to public areas except where a sidewalk shed or fencing is provided by the contract or as required by subparagraphs (3) and (5). Perimeter fencing shall be at least 6 feet high. Fencing shall be constructed of wood or metal frame and sheathing, wire mesh or a combination of both, as provided in contract documents and shall be adequately anchored.

When fencing is adjacent to a sidewalk and near a street intersection, the upper fence section shall be composed of open wire mesh from a point not more than four feet above the sidewalk. The fencing must extend at least 25 feet in both directions from the corner of the fence.

- 3.1.7 Public Areas.** Work shall not be performed in any area occupied or in public use unless specifically permitted by the contract or in writing from the Airports Authority, PMSS Consultant, or other designated party.

All workers in the sterile area of the airport may utilize tools in their work area provided: 1) The tools are essential and necessary to their work. 2) Tools must be kept controlled at all times, and may not be left unattended. 3) Tool boxes must be guarded and locked when not in use.

No cartridge style nail guns, nor any tool that uses a cartridge or any explosive charge, shall be permitted in public areas, unless authorized by Airport Operations / Security.

- 3.1.8 Signage.** Appropriate warnings, signs and instructional safety signs shall be conspicuously posted where necessary. In addition, a properly certified flagger shall control the movement of motorized equipment in areas where the public might be endangered.

- 3.1.9 Temporary Sidewalks.** Temporary sidewalks with guardrails shall be provided when a permanent sidewalk is obstructed by the Contractor's operations. These sidewalks shall be built according to the local ordinances/codes.

- 3.1.10 Warning Lights.** Signs and lighting shall be placed at both ends of any public protection or obstructions and not over 20 feet apart alongside such protection or obstructions. Warning signs and lights, including lanterns, torches, flares, and electric

lights, meeting Airports Authority and FAA requirements, shall be maintained from dusk to sunrise along the guardrails, barricades, temporary sidewalks, and at every obstruction to the public.

3.2 AIR OPERATIONS AREA (AOA) CONSTRUCTION

3.2.1 Airport Procedures. The Airport Operations Department has established procedures to be followed during AOA construction operations. All construction work on the AOA is under the jurisdiction of the Airport Operations Department. The Airport Operations Department must be notified in advance and give approval prior to the start of any work on the AOA. Activities on or within the vicinity of an active runway, approach or departure must not be distracting, confusing or alarming to pilots during aircraft operations. The Contractor must comply with current FAA Advisory Circulars and/or Airport Orders and Instructions. The Contractor shall follow these instructions that include but are not limited to:

- 3.2.1.1 **Barricades.** Barricades must be properly highlighted for easy visibility by flight crews and airport support personnel. Tape of any type is prohibited.
- 3.2.1.2 **Clearance.** The Contractor must provide adequate clearances for takeoffs and landing and all other aircraft movements over obstructions or work or storage areas.
- 3.2.1.3 **Drop-offs.** Pavement drop-offs or pavement turf lips, either permanent or temporary, cannot exceed 3 inches in height.
- 3.2.1.4 **Hazardous Conditions.** In the event of a hazardous condition, the Contractor or Subcontractor shall immediately coordinate the corrective action with an Airport Operations Officer, who will issue proper notices to airport users.
- 3.2.1.5 **Inspections.** Daily inspections of temporary AOA fencing will be conducted. Replacement or repairs shall be given top priority to deter human and animal intrusion into the AOA.
- 3.2.1.6 **Lighting.** Obstruction lights may not be misleading or malfunctioning in the approach to any open runway, approach or departure surface. Night work lighting should be directed in such a manner that it does not interfere with airport operations.
- 3.2.1.7 **Lunch/Break Location.** Lunch and break locations will be approved by the COTR for employees working on the AOA. Adequate trash receptacles shall be provided and emptied on a daily basis.
- 3.2.1.8 **Marking/Lighting.** Temporary runway and taxiway threshold marking and lighting will be provided as required. Elongated or unmarked objects, especially tall cranes, pile drivers or drill rigs, must be properly lit or flagged.
- 3.2.1.9 **Objects.** Mounds or piles of earth, construction materials, temporary structures, or other objects in the vicinity of any operational runway, taxiway, taxi lane, or in a related safety approach or departure area are prohibited. All trench spoil shall be trucked from airside when excavated unless storage is approved by the COTR.

- 3.2.1.10 **Contractor's On-Call Personnel.** An employee, and a back-up individual, must be on 24 hour call when work is not being performed on the job site. They must have the capability to maintain construction barricades and lighting on the AOA.
- 3.2.1.11 **Vehicle/Equipment Operations.** Vehicles or equipment, whether operating or idle, may not be used on any open runway, taxiway, taxi lane, or in any related approach, departure, or safety area, except when coordinated with Operations (See Chapter 4, Motor Vehicle Operations).
- 3.2.1.12 **Work Completion.** Upon completion of work within the AOA, the Contractor shall return all areas to the conditions required by the contract and notify the COTR who will notify Airport Operations to issue the proper notice indicating completion of the construction.

3.3 BLASTING/EXPLOSIVES PERMIT

Contractors must obtain an explosives/blasting permit from the Airports Authority Fire Code Enforcement Division. Information about Explosives/Blasting Permits can be obtained at www.mwaa.com/firecode.

3.4 CRANES

3.4.1 Basic Procedures. The Contractor shall follow the general requirements listed below:

- 3.4.1.1 **FAA Regulations.** Lighting, flagging, raising, and lowering of crane booms shall be done in accordance with FAA rules and airport policies and procedures. See the Airport Bulletins for more information.
- 3.4.1.2 **Inspection.** Provide the COTR and Safety Engineer with a copy of the Crane Safety Inspection Certification for each crane brought on the job site. All cranes must be certified by a master mechanic or certified manufacturer's representative. Daily check lists must be completed and kept on the job site as long as the crane is operating on the project.
- 3.4.1.3 **Multi-Member Lifting.** "Christmas treeing" or multi-member lifting of crane loads is prohibited.
- 3.4.1.4 **Notifications.** Airport Operations must be notified prior to crane operations and FAA Form 7460 must be completed and submitted. All operations must be in compliance with FAR Part 77.
- 3.4.1.5 **Reporting.** Operating times and crane boom heights shall be reported to the Airport Operations Department.
- 3.4.1.6 **Slings and Hooks.** Specialty slings and hooks shall not be used to set steel or move materials over workers. All sling and crane load line hooks shall have safety latches installed or shall be moused, except for specialty slings and hooks (i.e., sorting or shake out slings or self-adjusting pipe slings.)
- 3.4.1.7 **Certified.** All crane operators, riggers and signal man must be certified by an accredited agency. The General Contractor must provide the COTR with a copy of the certification.

3.4.2 Outrigger Cranes. Outrigger cranes in use shall be blocked to the following requirements:

3.4.2.1 **Board Size.** All blocking boards shall be 6 inch x 6 inch minimum for cranes over 30 tons capacity, and 4 inch x 4 inch boards shall be used for cranes 30 tons or less.

3.4.2.2 **Critical Lifts.** Critical Lifts are any dual lifts or cranes exceeding 80 percent of the load chart capacity. A plan must be submitted for all dual lifts, as well as critical lifts. The PSM will determine if the lift is critical and grant approval. All critical lift plans must have a "PE" stamped on the plan with an approved signature.

3.4.2.3 **Float Pad.** Float pads are mandatory irrespective of the terrain, conditions, or surfaces located beneath the pads. Size of the float pad blocking shall be determined by the following formula:

<p><i>Size of blocking in square feet = crane capacity tons ÷ 5</i></p> <p><i>For example:</i></p> <p><i><u>50 ton crane</u> = 10 square feet</i></p> <p><i>5</i></p> <p><i><u>Note:</u> All cranes less than 50 tons shall have a Float Pad blocking size of no less than 9 sq. feet.</i></p>
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3.4.2.4 **Fully Extended.** All outrigger cranes and other vehicles equipped with outriggers shall be operated only with outriggers fully extended and must have appropriate blocking, except for a pick and move lift. All pick and move lifts must be approved by the PSM.

3.4.2.5 **Suspended Platform.** No crane suspended work platform will be used without the involvement and agreement of the COTR, PSM, Contractor's safety representative, and general superintendent.

3.4.2.6 **Weight.** The weight of all lifts must be determined prior to lifting the load. A lift plan must be submitted for review by PSM for all lifts.

3.5 ELECTRICAL SAFE CLEARANCE PROCEDURES

3.5.1 Guidelines and Purpose. The purpose of this requirement is to establish safe electrical clearance procedures to protect life and property while requiring opening and closing of switches and pull out breakers for electrical transmission or distribution lines. This procedure, which must be followed by all Contractors, provides for the blocking, tagging, and grounding of electrical switching and controlling devices to clear lines and equipment for the safe accomplishment of work in the de-energized condition.

3.5.2 Responsibilities. Each airport has identified certain individuals with defined responsibilities as described below:

- 3.5.2.1 **De-energizing Requestors.** De-energizing requestors are responsible for the implementation of all safe clearance procedures as defined in the *Construction Safety Manual* and the training of their representatives assigned to work at or near equipment requiring clearance procedures. The requestor's representatives shall be a Competent Person with the knowledge to implement these safety procedures.
- 3.5.2.2 **Electrical Outage Approval Authority.** The Airport Engineering and Maintenance Department Manager or designated representative, has the approval authority for all scheduled electrical outage requests which impact airport facilities and services.
- 3.5.2.3 **Lockout/Tagout Procedure.** Contractors must create an Electrical Safe Procedure, which will include their own Lockout/Tagout Procedure and submit it to the PSM through the COTR. Contractors must use the Airports Authority's Lockout/Tagout Procedure when indicated in the contract. Contractors shall not work on any energized circuits without an approved Electrical Safe Procedure approved by the PSM. The general procedure is as follows:
1. After obtaining approval for an approved outage, the Contractor and Authority Electrician meet at the disconnecting device;
 2. The Authority Electrician de-energizes the circuit/device on outage request;
 3. The Authority Electrician provides an Authority red "Lockout/Tagout Tag" (TAG) to the contractor;
 4. The Contractor fills out the entire TAG;
 5. The Contractor places the TAG on the disconnecting device;
 6. The Contractor checks the circuit/device for the presence of energy (electrical and otherwise);
 7. The Contractor locks and grounds the circuit/device being worked on (as needed);
 8. The Contractor removes the STUB (bottom half of the TAG) and proceeds to work on the circuit / device;
 9. Once the work is complete;
 10. The Contractor and Authority Electrician meet at the disconnecting device;
 11. The Contractor States they are ready to remove their grounds;
 12. Discussion between Authority Electrician and Contractor agreeing to proceed with energizing the circuit/device;
 13. The Contractor removes the electrical grounds from circuit/device;
 14. The Contractor signs the STUB authorizing the circuit/device to be energized AND assuring that all personnel and grounds are clear from the system he was working on and hands it over to the Authority Electrician; If the STUB is lost, the

Contractor is to provide names of all employees working on the circuit/device and physical verification such employees are no longer working on the circuit/device.

15. The Authority Electrician energizes the circuit/device;
16. The Authority Electrician and the Contractor ensure all equipment downstream is operating properly;
17. Based on the circumstances, the STUB should be kept on file for a period of time ranging from 1 day to 1 week, possibly more;
18. Outage terminated;
19. Contractor may leave site;

3.5.3 Approval Procedure. The following steps are required under the Electrical Safe Clearance Procedure:

3.5.3.1 **MWAA Form EM-27.** De-energizing requestors will complete MWAA Form EM-27 entitled, *Utility Outage Request* (see Appendix D). This form will be used to identify the area(s) required to have electrical circuits and equipment de-energized, the type of work to be performed, the desired start time, and the time required for the outage.

3.5.3.2 **Electrical Outage Approval Authority.** Requestors will submit to COTR, Form EM-27 to the Electrical Outage Approval Authority and provide a copy to the COTR. De-energizing requestors will submit blocking and tagging procedure for each type of device being disconnected. Approved outage requests will be forwarded to the Electrical Safe Clearance Approval Authority for further action. Disapproved requests will be returned to de-energizing requestors with reasons for disapproval annotated.

3.5.3.3 **Timeliness.** All activities set forth in the procedure section shall be completed in the scheduled work period so that the initiation and maintenance of regular airport service will not be adversely impacted.

3.5.4 Locking. Locking out will be accomplished by the use of padlocks, or other approved means, which will be controlled by the person receiving the safe clearance. The de-energizing requestor will use his lock and retain the key in his possession. Red tags will be tied to the requestor's lock by the Requestor, and the clearance stubs given to the de-energizing requestor. In addition, the requestor will attach his own tag with the name of the person working on the equipment. When possible, a visible line break must be provided at all points of possible feed.

3.5.5 Re-energizing. The de-energizing requestor is responsible to ensure switching operations are performed in reverse order. Beginning with the last detail of switching, blocking and tagging, perform the opposite sequence of events. For example, if the detail of switching, blocking and tagging reads, "open switch no. 27 install lock and attach danger tag," then the opposite operation should be "remove danger tag, remove lock, and close switch No. 27."

The reverse operation is to be done only after red tag stubs are matched to the upper body of the red tag by the Airports Authority's representative and both copies are signed

by the requestor. The requestor will return all Danger Tags to the Safe Clearance Approval Authority.

3.6 PERSONAL PROTECTIVE EQUIPMENT

3.6.1 Basic Protective Equipment. The Contractor is responsible for providing and requiring the use of appropriate personal protective equipment for all employees. The following is a list of the minimum personal protective equipment required:

3.6.1.1 **Clothing.** Full length trousers without excessive length or flared bottoms are required. Shirts must cover the entire mid-section and the sleeves must cover the entire shoulder. Sleeveless shirts, tank tops, net/mesh shirts, halter tops, flannel sweat pants and any clothing with derogatory language or offensive photographs shall not be worn on the construction site.

3.6.1.2 **Fall Protection.** Guardrail systems, safety nets, or a personal fall arrest system must be used during any activity where a worker is exposed to a fall hazard greater than 6 feet. One-hundred percent (100%) fall protection applies in all cases, unless the PSM grants permission otherwise.

Full body safety harnesses with seat support are the only acceptable fall protection outside of safety rails and nets.

3.6.1.3 **Hair.** Long hair shall be contained under a hard hat or net when the individual is working where hair may become entangled.

3.6.1.4 **Hard Hats.** ANSI Certified hard hats shall be worn at all times while on the construction site. Hard hats shall be worn properly with the bill forward unless the eye protection prevents this, as with welders. No western style hard hats permitted. Bump caps and/or soft caps are strictly prohibited on construction and maintenance work sites.

3.6.1.5 **Work Shoes.** A serviceable pair of work shoes or boots made of leather or similar material shall be worn. Metatarsal covers are required when operating jackhammers, earth compacting equipment, and performing other activities or areas when designated. Tennis shoes, sandals and other similar shoes are not permitted.

3.6.1.6 **Gloves.** Glove protection is required at all times. Contractor must establish a "Glove Protection" policy appropriate to the hazards identified by specific task(s). Kevlar gloves will be required with any use of any knife.

3.6.1.7 **Eye Protection.** Eye protection is required at all times. Eye protection shall be maintained to ensure clear vision. Contractor must establish an "Eye Protection" policy appropriate to the hazards identified by specific task(s).

3.6.1.8 **Hi-Visibility Clothing.** ANSI Class 3 high-visibility clothing is required on all Airports Authority construction projects and roadway maintenance operations and must comply with current VDOT policies and procedures on clothing.

Care should be taken to ensure high-visibility garments are in contrast with traffic devices and equipment. The Appointing Work Zone Specialist and/or Safety Manager shall have final approval authority over the 'High-Visibility' T-shirt itself and

its use by Airports Authority employees. Workers on foot in areas exposed to aircraft or vehicular traffic must wear the following:

- (a) Daytime Operations. Non-flagger workers shall wear an ANSI Class 3 high-visibility garment. Flaggers shall wear an ANSI Class 3 high-visibility vest or jacket. A white or yellow hard hat marked with at least 12 square inches of retro-reflective material applied to provide 360 degrees of visibility must also be worn.
- (b) Nighttime, Inclement Weather, and Limited Visibility Operations. During nighttime and other low-visibility conditions flaggers shall wear an ANSI Class 3 ensemble, consisting of an ANSI Class 3 upper garment and an ANSI Class E lower garment. A white or yellow hard hat marked with at least 12 square inches of retro-reflective material applied to provide 360 degrees of visibility must also be worn.

During nighttime operations non-flagger workers shall wear either an ANSI Class 3 garment with either white coveralls or ANSI Class E garment. When rain gear is worn it shall be ANSI Class 3 or have required high-visibility garment worn as outermost layer.

- (c) Garment Maintenance. Retro-reflective vests, hard hats, white coveralls, rain gear, and other high-visibility apparel shall be maintained in a neat, clean, and presentable condition. High-visibility garments must be replaced periodically because of increased fading of the high-visibility colors. The Work Zone Specialist or Safety Manager has final authority for replacement of high-visibility garments.

3.7 STEEL ERECTION PROCEDURES

- 3.7.1** The Airports Authority requires stricter standards than the procedures outlined in OSHA's Steel Erection Standard. All work performed above 6 feet in height requires 100 percent fall protection. Walking on any live loads is prohibited. The use of chains is prohibited.

3.8 AEROTRAIN TRACK ACCESS APPROVAL

- 3.8.1** All contractors requiring access into the AeroTrain Track System must obtain track access approval through the COTR from the AeroTrain manager's representative. Access forms are available from the IAD Work Order Desk. No access is allowed without the AeroTrain Manager's written approval and a designated escort.

3.9 TOUR AND VISITOR GUIDELINES

- 3.9.1** It is imperative that the highest degree of protection is afforded to all individuals touring any Airports Authority construction site. Visitors must adhere to the Contractor's rules while on the construction site. All tours and visits must be coordinated through the Construction Department of the Office of Engineering and the Contractor. The following guidelines have been prepared as general instructions for the organization, direction and safe conduct of tours and visits:

- 3.9.2 Escorted Visitors.** While on the job site, non-construction personnel or groups shall be accompanied at all times by an authorized representative from the PMSS Consultant, the Airports Authority, the Contractor, or other designee familiar with the job site.
- 3.9.3 Notification and Tours.** Personnel tours that do not involve technical inspections need to be cleared through the Construction Department of the Office of Engineering to allow reasonable advance notice. The COTR shall be consulted to coordinate the tour plan, identify specific rules, and to ensure necessary safety precautions are taken.
- 3.9.4 Safety Enforcement.** Before entering a job site, all visitors must be informed of the need for careful, orderly conduct and be notified of any special hazards that may be encountered. All visitors and tour groups must comply with the safety precautions required under the contract for that site, including provision and use of personal protective equipment. The number of escorted persons on tours should be proportionate to the degree of hazard and operating space involved, but may not exceed ten visitors per authorized representative.

3.10 TRENCHES, EXCAVATIONS AND STOCKPILES

- 3.10.1** An open trench or excavation exceeding 3 inches deep and 3 inches wide will not be permitted within the limits of restricted areas of operational runways, taxiways, or ramps. The following guidelines are required for all trenches, unmarked or unlit holes, and excavations:
- 3.10.2 Barricades.** Barricades around open holes, trenches, drop-offs, or other identified hazards shall be weighted or secured to the ground to prevent displacement by wind or jet blast.
- 3.10.3 Marking.** Open trenches, excavations, and stockpiled material at the job site must be prominently marked as directed by the COTR with red flags and lighted during hours of restricted visibility or darkness.
- 3.10.4 Soil Stability.** In the event of concern by any safety employee including the COTR, on soil stability, the Contractor shall supply specific calculations on the stability of the materials including support calculations (i.e., trench data, angle of repose, and support materials).
- 3.10.5 Stored Materials and Equipment.** Materials and equipment shall be stored in approved areas when not in use and shall not become a hazard to operations. The Contractor shall inspect all construction and storage areas as often as necessary to prevent hazardous conditions.
- 3.10.6 Trenches.** All trenches more than 4 feet high shall be sloped to a proper angle. If the angle cannot be achieved, the trench shall be shored unless the trench is in solid rock. Approved shoring systems shall consist of sheathing, tight planking, a trench box or be designed by a professional engineer.
- 3.10.7 Trench Coverings.** Coverings for open trenches or excavations shall be sufficient to support the weight of the heaviest aircraft or vehicle operating on the runway, taxiway, apron, or roadway.

3.11 TUNNELING AND UNDERGROUND CONSTRUCTION

3.11.1 General Requirements. All tunneling and underground construction shall be performed in accordance with OSHA Regulation 29 CFR 1926, Subpart S-800-804 entitled, “*Underground Construction, Caissons, Cofferdams, and Compressed Air.*” Additionally, Contractors will adhere to the following Airports Authority requirements:

- 3.11.1.1 **Diesel Powered Equipment.** Any diesel powered equipment used underground will require scrubbers and must be in good operating condition (i.e., no exhaust leaks, no excessive noise or smoking).
- 3.11.1.2 **Lighting.** Underground lighting must be free of defects and kept clean at all times. This includes the equipment lights and all temporary tunnel lighting.
- 3.11.1.3 **Monitoring.** Contractor shall provide air quality data to the COTR. Air quality shall be constantly monitored while any personnel are occupying the shafts, tunnels, or headings that are under construction. The monitoring equipment must be capable of detecting four gasses simultaneously and equipment must be calibrated and tested per the manufacturer’s specifications.
- 3.11.1.4 **Permits.** Utility vaults require OSHA confined space entry permits. Completed walk back, baggage, tug, and train tunnels do not require confined space entry permits.
- 3.11.1.5 **Prohibited Items.** The use of the following items is prohibited in all underground or subsurface construction to include, but not limited to tunnels, cut and cover or other openings underground: gasoline or use of gasoline powered equipment; liquid propane gas; natural gas; PVC piping; and smoking materials.
- 3.11.1.6 **Record Keeping.** All daily air quality results shall be recorded and submitted to the COTR within 24 hours.
- 3.11.1.7 **Safety Plan.** Special safety requirements must be identified in the Contractor’s Safety Plan to cover all tunnel operations, including a comprehensive evacuation and rescue plan coordinated with the Airports Authority. This plan shall be updated concurrently as tunneling advances.
- 3.11.1.8 **Ventilation.** Fan line ventilation must be maintained within 10 feet of the tunnel heading. A hard line (steel) system is required.
- 3.11.1.9 **Electric.** Handling live electrical line and equipment shall be in compliance with MSHA regulations.

3.11.2 Tunnel and Underground Safety.

- 3.11.2.1 **Job Hazard Analysis.** The contractor shall submit for a review a job hazard analysis for each task to be undertaken. This includes the task, its hazards, and corrective measures. These must be submitted fifteen (15) working days prior to initiating the task.
- 3.11.2.2 **Training.** The contractor shall submit for approval by the PSM:
 - (a) Orientation program

- (b) Frequency of training
 - (c) Types of training
 - (d) Accommodation of non-English speaking language groups
 - (e) List of qualified Competent Persons
- 3.11.2.3 **First-Aid and CPR.** A First-Aid and CPR trained individual shall be required on each crew.
- 3.11.2.4 **Safety Manager.** The Safety Manager must be a full time on-site position with one of the following qualifications:
- (a) Minimum of ten years underground construction safety management experience.
 - (b) A Certified Safety Professional (CSP) or a Licensed Professional Engineer (PE) with a minimum of five years of experience in underground construction safety supervision.
- 3.11.2.5 **Safety Engineer.** The Safety Engineer must have a minimum of five years in underground construction safety supervision or equivalent Tunneling/Underground experience to be determined by PSM.
- A Safety Engineer shall be required on all shifts regardless of the number of employees working.***
- 3.11.2.6 **Whip Checks.** Whip checks are required on all air lines at all connections.
- 3.11.2.7 **Moving Energized Cables.** Pulling or moving energized electrical cable shall be done with electrical gloves or electrical stick.
- 3.11.2.8 **Walkway.** The contractor must provide a separate designated walkway for access and egress within the tunnel. They shall be separated and clearly marked.
- 3.11.2.9 **Conveyors.**
- (a) In addition to the audible warning requirements for conveyors in 29 CFR 1926.555, both a visual warning system and a minimum of a 30 second delay for conveyor start-up shall be incorporated into the system.
 - (b) No one shall walk on the same side of the tunnel that a conveyor is installed while it is in operation.
- 3.11.2.10 **Mine Phones.** All phone systems shall be installed in accordance with 29 CFR 1926.800. Additionally, spacing between operating units shall not exceed 200 feet. Each phone location shall be provided with a 20 lb. ABC fire extinguisher. The mine phone and fire extinguisher locations shall be identified by a “red light.”
- 3.11.2.11 **Compressed Air.** The use of compressed air is not allowed as a method to clean or empty any concrete, shotcrete, or grout delivery lines. All delivery lines must have

adequate restraining devices which are certified in writing by a registered Professional Engineer (PE).

3.11.2.12 **Receiver Tanks.** All air receiver tanks shall comply with 29 CFR 1910.169. Written certification must be provided prior to their use on site.

3.11.2.13 **Personnel Underground.** No individual is allowed to be underground alone. Additionally, under no circumstances, is any individual allowed to be forward of any excavation in progress.

3.11.3 Emergency Preparedness.

3.11.3.1 **Work Platform.** If a shaft or work area accessible by stair tower or ladder is the means of access/egress, the contractor must provide a work platform at each shaft location. The platform must be capable of supporting a full rescue team and equipment. It must be designed by a licensed structural engineer and be appropriately tested and conspicuously posted in accordance with OSHA 29 CFR 1926.550.

3.11.3.2 **Second Means of Retrieval.** A second means of personnel retrieval must be available within fifteen minutes travel time to the shaft.

3.11.3.3 **Vertical Conveyors.** If a vertical conveyor system is utilized, it must be equipped with a fire suppression / sprinkler system the full length of the belt.

3.11.3.4 **Training Sessions.** Contractors must make arrangements with the Airports Authority's Fire Department "Tunnel Rescue Team" to explain rescue procedures at the sites. This must include quarterly, on-site training sessions. This shall be coordinated with the COTR.

3.11.3.5 **Water Service.** For fire protection, a water service shall be installed and maintained throughout the tunnel. This water service shall require a "T" placed every 200 feet horizontally, starting at the portal, to be equipped with an operational shut off valve and a 1 ½" National Standard thread male end with a protective cap.

3.11.3.6 **Self-Rescuers.** Self-Rescuers shall be of the oxygen generating type with a minimum one hour supply.

3.12 FIRE PREVENTION/SAFETY

3.12.1 **Fire Safety Codes.** Contractors shall be responsible for compliance with all fire prevention and safety requirements established in the Virginia Statewide Fire Prevention Code (VSFPC) and other applicable regulatory requirements.

3.12.2 **Fire Prevention/Safety Plan.** The Contractor shall establish a Fire Prevention/Safety Plan referencing OSHA, VOSH, The Virginia Statewide Fire Prevention Code, and NFPA Standards. The Contractor shall meet with the Airports Authority Fire Marshal to determine what needs to be included in the plan. Guidelines for plan content can be obtained at www.mwaa.com/firecode.

The Contractor's Fire Prevention/Safety Plan shall be submitted to the COTR for the Airports Authority Fire Marshal's approval. The Fire Prevention/Safety Plan must be updated as job conditions change.

3.12.3 Permits. Contractors shall be required to obtain a permit from the Fire Code Enforcement Division for the following (this list is not all inclusive):

- (a) Welding/Cutting/Hot Work
- (b) Hazardous Materials Storage, Use, Handling (including flammable/combustible liquids, compressed gases)
- (c) Organic Coating Application
- (d) Explosives/Blasting
- (e) Portable Tank Installation
- (f) Temporary Heating Device Use

Permits can be obtained at www.mwaa.com/firecode.

3.12.4 Fuel Line Hot Work.

3.12.4.1 Possible Scenarios. The following are possible scenarios for welding on fuel lines at the airports.

- (a) Welding with fuel in the line
- (b) Welding with no fuel in the line and line has not been purged
- (c) Welding with a purged fuel line
- (d) Welding on a new fuel line

3.12.4.2 Notification. The contractor shall notify the Airports Authority's Fire & Rescue Department (FRD) of any welding on any fuel line and:

- (a) Should the contractor weld on a fuel line containing fuel, the contractor shall be required to request a foam unit for standby. This request shall be submitted through the COTR and forwarded to the Deputy Fire Chief or FRD Shift Commander 72 hours prior to welding. If any foam unit standby will exceed eight (8) hours or be required for two (2) or more continuous days.
- (b) Should the contractor weld on a fuel line that does not contain fuel but has not been purged, the contractor shall be required to request a foam unit for standby. This request shall be submitted through the COTR and forwarded to the Deputy Fire Chief or FRD Shift Commander 72 hours prior to welding.
- (c) Should the contractor weld on a fuel line that does not contain fuel and has been purged, the COTR shall ensure a courtesy phone call is made to the Airports Authority Public Safety Communications Center at the beginning and end of the welding operation.

- (d) In all cases, the contractor shall contact the Airports Authority Fire Code Enforcement Division for the applicable permits in the prescribed timetables.

3.12.5 Safety Data Sheets. Safety Data Sheets for all hazardous materials on the jobsite shall be submitted to the Fire Code Enforcement Division prior to the start of construction.

3.12.6 Pre-Shift Safety Meeting. Take five minutes to advise employees on conditions and work to be performed.

3.13 HIGHWAY WORK ZONE SAFETY

3.13.1 Objective. The objective of this section is to provide coordinated work zone safety systems for the Airports Authority, contractor employees, and the traveling public by facilitating construction, maintenance, and related activities on the highway transportation system without injury or fatality. Work zone safety planning and procedures apply to all Airports Authority and contractor workers on Airports Authority projects working in roadway work zones.

3.13.2 General. Prior to performing construction, maintenance, or other work activities along the Dulles Toll Road (DTR), Dulles International Airport Access Highway (DIAAH) and/or other connecting arterial roadways supporting vehicle conveyance at DCA or IAD a Traffic Control Plan shall be developed in accordance with the most current versions of the following guidelines, manuals, regulations, and standards listed below:

- (a) FHWA *Manual on Uniform Traffic Control Devices* (MUTCD) is referenced as the legal standard for traffic control.
- (b) VDOT *Virginia Work Area Protection Manual* and the *Work Zone Safety Pocket Guide* provide work zone traffic control information for providing a safer work zone for workers and the traveling public.
- (c) VDOT *Work Zone Safety Guidelines for Temporary Traffic Control* provides basic guidelines for work zone traffic control with emphasis on short term work sites on roads and highways.
- (d) VDOT *Work Zone Traffic Control Training Procedures* establishes the training requirements for personnel involved in the planning, designing, supervising, implementation, inspection and maintenance of work zone traffic control.

A Traffic Control Plan (TCP) shall be developed prior to the start of work activities and approved by the Engineering Division of DCA, IAD, or by the Manager of Operations and Maintenance for the DTR. Pre-job planning and site visits shall be conducted no less than 7 days in advance of work activities to identify the work location, posted speed limit, traffic volume and pattern, the type of work to be performed, identify hazards and exposures to mitigate potential impacts to workers, travelers, and public throughout the duration of work.

Inspections shall be performed by a Certified Person:

- (a) At the initial Work Zone set up;
- (b) Daily prior to commencement of work activities;

- (c) During any changes of the Work Zone configuration;
- (d) Periodically (as often as necessary to maintain compliance with safe zone practices).

Inspections shall focus on the effectiveness of the TCP, traffic control devices and equipment, worker PPE, and equipment safety devices and procedures such as: back-up alarms and signaling spotters.

3.13.3 Flagging. When operations are such that signs, signals, and barricades do not provide the necessary protection on or adjacent to highways or streets and direct control of vehicles in a work zone is required to provide direction to stop or proceed in a designated path; flaggers or other appropriate traffic controls shall be provided. Flaggers are to be used only when other reasonable means of control will not adequately control traffic in the work zone. All personnel performing flagging duties must have in their possession a valid Virginia Flagger Certification Card. The card must verify completion of the traffic control flagger training and be carried on the worker. The card must be renewed every two years.

When flaggers are used, a method to ensure that flaggers have adequate warning of objects approaching from behind them must be used. Flaggers should not be assigned other duties while flagging. Flaggers shall not use personal cell phones, pagers, or radio headsets that could distract their vision, hearing, or attention while flagging. Two-way radios used for communications between flaggers to direct traffic or ensure flagger safety are acceptable.

Flagger workstations **must** be illuminated at night to increase their visibility to the public and other work zone vehicles and equipment.

3.13.4 Setting Traffic Control. Riding on the tailgate of a pick-up for any purpose is prohibited. Back-mounted cone cages (pickups and one-ton trucks) will be the accepted standard method allowed for use when setting cones and signs at work sites on all highways. Truck-mounted front platform and single purpose signing vehicles such as a road warrior are also acceptable standard methods for setting cones.

Platforms shall meet safety requirements involving load carrying capacity; and shall have a standard top, midrail, and toe board. While the cage is occupied and the vehicle is moving, the person occupying the cage shall have the closest end rail (bar or chain) closed. Workers standing on moving equipment with no top, midrail, toe board or safety chain must wear a lanyard to keep from being ejected or falling from the vehicle.

CHAPTER 4: MOTOR VEHICLE OPERATIONS

4.0 BASIC VEHICLE PROCEDURES

The Airports Authority created a series of motor vehicle rules, which was adopted by the Board of Directors and became regulations with the full force of law. A complete copy of the regulations is located on the Airports Authority's web site at www.mwaa.com, Airports Authority Publications, Motor Vehicle Rules Part 4, Chapters 1 through 6. In addition, the following rules apply:

4.0.1 General

- 4.0.1.1 **Right of Way.** Drivers must yield the right of way to an aircraft, including aircraft under tow. Drivers must also yield the right of way to Fire, Police, Airport Operations, and other emergency response vehicles that have lights and sirens activated; all mobile lounges or Plane Mates; passengers and employees walking on the ramp to/from aircraft; pushback equipment and wing walkers departing from or returning to the gate; and snow removal equipment.
- 4.0.1.2 **Cleaning.** The Contractor shall provide means for cleaning haul vehicles as needed to prevent mud or other potentially hazardous material from accumulating on ramps, taxiways, runways, and airport roads.
- 4.0.1.3 **Flagging.** The Contractor shall furnish flaggers as necessary to control the work traffic, unless otherwise directed by the CO. Reflective vests must be worn by all personnel.
- 4.0.1.4 **Obstructed View.** All motorized equipment and vehicles shall be equipped with a functioning back-up alarm. In addition, a spotter must be used in ALL construction areas where other personnel are working near motorized vehicles, and any foot traffic.
- 4.0.1.5 **Parking.** Employee parking shall be as designated in the contract documents.
- 4.0.1.6 **Site Access.** Access to the construction sites and haul roads shall be as shown and described in contract documents.
- 4.0.1.7 **Spoil Covers.** Spoil covers shall be used whenever trucks are loaded.
- 4.0.1.8 **Unattended Vehicle/Equipment.** No vehicle or equipment operator shall dismount any equipment without first turning off the engine, removing the key, and securing the equipment from movement.
- 4.0.1.9 **Vehicle Inspection.** Construction equipment and all vehicles shall be inspected at the beginning of each shift. Safety equipment such as windshields, side windows, head, tail, brake, and clearance lights, etc., shall be kept clean, tested and unbroken.
- 4.0.1.10 **Vehicle Weight.** No vehicle may be operated on any road within Airports Authority property in excess of approved highway weight limits.

4.1 SPECIAL REQUIREMENTS FOR AOA

After award of the contract, and before commencing vehicle use, the Contractor shall furnish to the COTR a complete vehicle and operators list, including Subcontractors, who will be operating motor vehicles on the AOA. The list shall contain the name of each employee, their address, valid operator's permit (i.e., State driver's license number), and the vehicle registration number for each vehicle that will be used at the airport. The following requirements apply to motor vehicle operations within the AOA:

- 4.1.1 **AOA Permit.** All Contractor personnel driving unescorted motor vehicles on airside must obtain and maintain an AOA operator's permit from the Airport Operations Department. The airport has specific Orders and Instructions addressing vehicle and driver's license requirements.
- 4.1.2 **AOA Tour.** Prior to beginning construction on the AOA, the Contractor's safety representative shall tour airside with an Air Operations Officer.
- 4.1.3 **Communication.** The contractor shall contact the COTR to arrange Airside Radio Communication training before they are permitted to use radios on the AOA. Contractor's traffic must not be permitted to cross active runways, taxiways, and ramps in the AOA, except as specifically approved and controlled by the COTR. It shall be the Contractor's responsibility to ascertain the status of runways, taxiways, and ramps at all times and maintaining continuous communication while on the airside through means identified by the COTR. The clearance should be confirmed by the driver's personal observation that no aircraft is approaching or departing in that area.
- 4.1.4 **Escort Procedures.** Operators who do not possess a valid airport driver's license must be escorted. Unlicensed operators or unregistered vehicles entering the AOA must be escorted by a licensed operator into, through, and out of the AOA by a vehicle properly identified to operate in the area. All persons operating vehicles on the AOA must have a valid State driver's license with CDL endorsements as necessary.

Escort of vehicles onto the AOA is permitted only when the vehicle has a demonstrated need, i.e. unloading / loading of tools, equipment, supplies, etc. No personal vehicle parking is permitted on the AOA.

- 4.1.5 **Flagging, Airfield Crossing.** Unless specifically approved, flaggers shall be positioned only to control traffic across an active taxiway. Flaggers shall obtain an Airport Identification Badge and use the standard red (18 inch) square flag with weighted baton and lighted wands during nighttime operations. Contractor's must use the standard signals as defined by the Airport Operations Department for flagging operations through all active runway, taxiway and ramp areas, including the following:

Stop = Hands/flags crossed to represent an X.

Proceed = Right hand stretched upward, left hand pointed at the ground.

Wait at Hold Line = Waving both hands in a crossing motion indicates return to hold line and wait for signal to cross.

4.1.6 Vehicle Identification. Only properly identified vehicles shall be allowed in the project work area (Consult Airport Operations: Orders & Instructions at each airport for details of vehicle and drivers program).

CHAPTER 5: REPORTING PROCEDURES

5.0 CONSTRUCTION SAFETY/SECURITY INSPECTION REPORT

5.0.1 Inspection Report. The Airports Authority's *Construction Safety/Security Inspection Report* form is required for recording any unsafe conditions or acts noted (see Appendix B). This form is used by the Contractor's Safety Engineer, the PSM, the COTR, the OSC, Airports Authority staff, inspectors, or insurers' personnel when inspecting the job sites. The following instructions apply to the use of the form:

5.0.1.1 **Classification.** Unsafe conditions or acts having potential to cause bodily injury or property damage should be classified as either "imminent danger" or "serious." In either case, immediate action should be taken to correct the hazard. The unsafe condition or act must be reported as instructed in this Construction Safety Manual, even if it has been corrected.

5.0.1.2 **Corrective Action.** The last item in the "Contractor's Correcting Action" column must indicate abatement action and a deadline date. (For example, "Repair or replace rail, immediately. Clean up accumulated trash, 9/27. Relocated flammable storage, 9/25.")

5.0.1.3 **Detailed Information.** Provide specific information under "Safety Violations." Descriptions such as, "safety rails need repair" are adequate, but a better description would be, "broken top rail in safety rail, 8' long at head of Smith Avenue escalator entrance needs repair." Give exact locations of safety violations.

5.0.1.4 **Distribution.** All forms will be distributed electronically, if available, or in the following manner:

<i>White Original</i>	<i>Project Safety Manager (PSM)</i>
<i>Green Copy</i>	<i>Contractor</i>
<i>Yellow Copy</i>	<i>Contracting Officer's Tech. Rep, (COTR)</i>
<i>Pink Copy</i>	<i>Site Manager</i>
<i>Gold Copy</i>	<i>Contracting Officer (CO)</i>
<i>Xerox Copy</i>	<i>OCIP Safety Consultant (OSC)</i>

5.0.1.5 **Item Numbering.** Number each item, beginning with #1 on each report.

5.0.1.6 **Legible.** Print or write legibly with a ball point pen, so that all copies are readable.

5.0.1.7 **Report Signature.** The person conducting the inspection must sign and date the form in the space marked, "Report Prepared By:" after the inspection is completed.

5.0.1.8 **Review.** The violations or comments marked on the inspection report shall be reviewed with the Project Manager, Contractor's Safety Engineer, COTR, and any other persons authorized by the Project Manager to implement the necessary corrective action. The Project Manager, or the authorized representative, must note in the "Contractor's Corrective Action" column the appropriate action that must be

taken, such as [*Defective regulator must be removed from service this date*]. That individual must sign and date the report.

The PSM or Safety Engineer will review the report with the COTR. The COTR or a designated inspector will follow-up and ensure that the Contractor's corrective action is completed as Stated. If corrective action is not taken, incomplete or is substantially delayed, the COTR will promptly report it to the PSM or Construction Manager.

5.1 REPORTING ACCIDENTS AND INCIDENTS

5.1.1 Reporting Accidents. Accidents and incidents must be reported, verified, investigated, and analyzed as prescribed by this manual and/or the applicable *OCIP Insurance Manual*. All Contractors and other individuals involved in the construction programs shall instruct employees and other personnel to follow these reporting procedures:

5.1.1.1 **Accident Notification.** Employees must report all accidents and incidents, as soon as possible, to their employer or immediate supervisor, who shall report all accidents and incidents to the Contractor's Safety Engineer, or other designated person, COTR, OSC, PSM, the Airports Authority Construction Department, and others in charge at the job site. For incidents involving fire or hazardous materials releases, the Airports Authority Fire Code Enforcement Division shall be contacted immediately to conduct an investigation. In addition, the Contractor must comply with all VOSH notification requirements.

5.1.1.2 **Accident Investigation and Reports.** Following any accident or incident, the Contractor shall conduct an in-depth investigation identifying all causes and recommend hazard control measures. Completed reports shall be sent to the CO, PSM, and OSC within 24 hours of the accident/incident. No supervisor may decline to accept a report of injury from a subordinate.

5.1.1.3 **Monthly Project Man-Hour/ Injury Report Log.** OCIP Contractors shall submit, by the 10th day of each month, a Monthly Project Man-Hour/Injury Report Log indicating the total number of man-hours worked and recordable injuries for the month. This is separate from the OSHA No. 300 form, which is maintained at the job site.

5.1.1.4 **Medical Assistance.** Contact 911 for all emergencies. The injured person's supervisor will ensure that first aid is administered.

5.1.1.5 **Public Information.** Information concerning accidents or incidents shall only be provided to authorized personnel (i.e., the Office of Public Safety, Risk Management Department, Airport Operations Department, and Office of Legal Counsel). Questions from the media are to be referred to the Airports Authority's Public Affairs Manager at 703-417-8370.

5.1.1.6 **Secure the Incident Area.** Except for rescue and emergency procedures, the accident area must be tightly and quickly secured for all major accidents. The accident scene shall not be disturbed until released by the investigating Airports Authority officials.

5.1.2 Occupational Exposures. In the event an employee is exposed to toxic materials or harmful physical agents, the Contractor shall:

5.1.2.1 **Notification.** Notify the COTR, OSC, and the PSM of the incident. Develop procedures under the Airports Authority's guidance to contact the following Airports Authority offices for the events listed below:

<i>Fire Department</i>	<ul style="list-style-type: none">• <i>Hazardous Material Incidents</i>• <i>Fire Related Incidents</i>• <i>Medical Emergencies</i>
------------------------	--

<i>Police Department</i>	<ul style="list-style-type: none">• <i>Bomb Threats</i>• <i>Public Demonstrations</i>
--------------------------	--

<i>Risk Management</i>	<ul style="list-style-type: none">• <i>Insurance/Claim Issues</i>• <i>Property Damage</i>• <i>Injuries to Employees or the Public</i>
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5.1.2.2 **Reports.** Any occupational exposures shall be reported on an accident investigation form along with an explanation of the corrective action taken to eliminate further exposures. The completed form must be submitted to the PSM and OSC within 24 hours.

5.1.2.3 **Review Procedures.** Review the emergency procedures regularly and adjust as necessary to provide maximum effectiveness. All such procedures are to be included in the Contractor's Safety Plan and coordinated with the Contracting Officer and COTR.

5.2 ON-SITE FIRST AID

At least one qualified person shall be available at the work site, at all times, to render first aid. This person must have a valid certificate in first aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent verifiable training program. A minimum ratio of one such qualified person for every 25 employees shall be maintained throughout the project.

APPENDIX A
APPLICABLE GOVERNMENTAL AGENCIES
AND
INDUSTRY SAFETY STANDARDS



APPENDIX A

APPLICABLE GOVERNMENTAL AGENCIES AND INDUSTRY SAFETY STANDARDS

The Contractor shall comply with the safety requirements and provisions of the following agencies, associations, councils, societies, etc.

- American Concrete Institute
- American National Red Cross
- American National Standards Institute (ANSI)
- American Petroleum Institute (API)
- American Society of Mechanical Engineers (ASME)
- American Society for Testing Materials (ASTM)
- American Welding Society
- Associated General Contractors of America (AGCA)
- Building Officials Conference of America (BOCA)
- Federal Aviation Administration (FAA)
- Federal Fire Council
- Federal Safety Council
- Industrial Hygiene Foundation of America, Inc.
- Institute of Makers of Explosives
- Interstate Commerce Commission (ICC)
- Manual of Uniform Traffic Control Devices (MUTCD)
- National Electrical Code (NEC)
- National Fire Protection Assoc. (NFPA)
- National Institute of Occupational Safety and Health (NIOSH)
- National Institute of Standards & Technology (NIST)
- National Safety Council (NSC)
- Underwriters Laboratories, Inc. (UL)
- U.S. Army Corp of Engineers
- U.S. Atomic Energy Commission
- U.S. Department of Interior, Bureau of Mines
- U.S. Department of Labor (DOL)
- U.S. Environmental Protection Agency (EPA)
- U.S. General Services Administration (GSA)
- U.S. Occupational Safety and Health Administration (OSHA)
- U.S. Standards Institute
- Virginia Occupational Safety and Health Administration (VOSHA)
- Virginia Department of Transportation (VDOT)
- Virginia Division of Motor Vehicles and the Motor Vehicle Safety Responsibility Act
- Virginia Statewide Fire Prevention Code (VSFPC)

APPENDIX B
CONSTRUCTION SAFETY/SECURITY
INSPECTION REPORT FORM



APPENDIX C
CONTRACTOR'S SAFETY PLAN
(Sample)



APPENDIX C

SAFETY PROGRAM CONTRACTOR'S PLAN EXAMPLE – Minimum Requirements Provided

The Contractor is responsible to review the specific requirements of the contract, analyze the planned methods of operation, incorporate any additional specific or unique safety requirements in the written plan, and ensure that all applicable safety regulations are addressed. The Contractor's Safety Plan shall include, but is not limited to, the following guidelines:

General Provisions

1. **Policy Statement.** The contractor will state that they are committed to provide a safe and healthy working environment that is free from recognized hazards for all employees. This policy is to be reinforced by upper management and implemented by all project managers.
2. **Compliance.** Contractor's plan to comply with the specific safety requirements identified in the Authority's *Safety Program Construction Manual*, including the procedures for completing and forwarding to the COTR/RE and Insurance Safety Consultant all on-site accident and incident reports.
3. **Medical Treatment.** Providing medical service in compliance with *OCIP/CCIP Manual*. A copy is to be posted at the work site first aid station. The following numbers shall be included for the given work area:

Emergency:
911

Ronald Reagan Washington National Airport

Non-Emergency:
703-417-8200 Fire
703-417-8210 Police

Washington Dulles International Airport

Non-Emergency:
703-572-2980 Fire
703-572-2951 Police

4. **OSHA Requirements and Personal Protection.** Safety and health provisions for providing adequate lighting, ventilation, noise control, and personal protective equipment, company housekeeping rules, which construction areas shall be designated "Hard Hat Areas," and where warning signs will be posted at all entry points.
5. **Personnel Instruction.** The Contractor must identify the greatest number of employees to be working at any one time during peak construction periods, the company policies for initial safety indoctrination of all employees, and company plans for continued safety education for all employees, including weekly safety meetings. Orientation programs and weekly training meetings should be able to accommodate the various language groups.

6. **Responsibilities.** Acknowledgment that the Contractor is totally responsible for compliance with OSHA and VOSH requirements and relevant FAA, Authority or other applicable rules and orders. Additionally, the plan will require a place of employment that is free of unsanitary or hazardous conditions that would harm an employee's health or safety.
7. **Safety Inspections.** The frequency at which safety inspections will be conducted by the Contractor's Safety Engineer or other assigned safety personnel.
8. **Safety Personnel.** State the name of the Contractor's Safety Engineer and his/her qualifications. Indicate his/her authority to direct work stoppage and expend funds to eliminate imminent hazardous conditions. Submit resume of Contractor's safety staff.
9. **Safety Requirements, Electrical.** Checking and testing of electrical tools, appliances for the required ground, and the installation of electrical circuits in accordance with the National Electric Code.
10. **Safety Requirements, Equipment.** Testing and inspecting of equipment, and the provision for backup alarms for tractors, backhoes, dozers, motor graders, etc.
11. **Safety Requirements, Ladders.** Types of ladders for specific uses and the anchoring to be utilized with each type.
12. **Site Layout.** The following shall be included in all site layout drawings:
 - a. Fire/rescue apparatus access roads and fire lanes
 - b. Fire hydrant locations
 - c. Fixed/portable fire equipment locations
 - d. Building entry/egress routes
 - e. Topographic hazards (excavations, etc.)
 - f. Hazardous materials and wastes storage
 - g. Flammable/combustible liquid storage
 - h. Compressed gas cylinder storage
 - i. Temporary heating equipment and fuel source locations
 - j. Utility system(s) control valve(s)
 - k. Evacuation assembly points
 - l. Material Safety Data Sheet storage location
13. **Storage.** Requirements for storage of flammable and combustible liquids or gases, including paints.
14. **Toilets.** Provision of toilets, including frequency at which toilet will be cleaned with soap and water, and sterilized.
15. **Traffic Control.** How the traffic will be controlled and marked for hazards, such as haul roads, highways, intersections, utilities, pedestrian walkways, and prohibited areas.
16. **Accident Investigation.** There are four types of incidents or accidents that must be investigated, workman's compensation injury, auto accidents, vehicle liability, and general liability. A detailed report shall be provided in a timely manner explaining what happened,

why, who, when, where, etc., and the corrective measures taken to prevent future occurrence.

Special Provisions

Depending on the type of construction, additional items must be incorporated into the Contractor's Safety Plan. When applicable, include the following:

1. **Blasting Plan.** Complete Blasting Plan which includes procedures for blasting, permits, explosives handling, explosive storage, explosive transportation, hole loading, blast signals, and blaster qualifications.
2. **Confined Space Entry.** Procedures for confined space entry and work operations in and around confined spaces, as well as, emergency retrieval measures.
3. **Cranes.** Use of cranes or derricks and the testing and inspection thereof, including hook latches, cables, boom stops, load tables, warning devices, fire extinguishers, and where the illustration of crane operation signals shall be posted on the job site.
4. **Excavations.** Excavation plans must indicate slope angle and protection, shoring, guarding, barricades, excavation access, and excavated material storage.
5. **Fall Protection.** The use of full-body harnesses, life lines, and lanyards when necessary.
6. **Formwork.** Procedure for submitting formwork and falsework drawings for review and approval. This item should also be indicated on the Contractor's progress schedule to prevent submittal delay which could hold up project.
7. **Hazard Communication Program.** Policy for following the hazard communication program, including the location of MSDSs on the job site.
8. **Interruption of Fire/Security Systems.** Plans shall include measures and/or procedures to provide interim fire and security protection to facilities or areas affected by interruptions. These include automatic detection devices and alarms, automatic sprinkler systems, fire pumps, fire hydrants, applicable water supplies and reservoirs.
9. **Lockout/Tagout.** Procedures for lockout/tagout and the control of energy during work operations.
10. **Safety Nets.** Use of safety nets in areas where the use of full-body harnesses and life lines or scaffolds is not practical.
11. **Scaffolding.** Planking size, cleats, guardrails, toeboards, anchor points, putlogs, section pins, fall protection, and access points.
12. **Welding Protection.** How welding protection will be provided, including shields, fire extinguishers, ventilation, hot work permits and fire watches.
13. **Respiratory Program.** How and when respiratory protection will be provided and monitored.

14. **Disciplinary Program.** The Contractor shall provide an outline of disciplinary action regarding safety violations, for example;
 - first offense - written notice
 - second offense - one day off
 - third offense - three days off
 - fourth offense - removal from company
15. **Substance Abuse Policy.** Policy Statement - i.e., pre-employment drug testing, post accident, random testing, etc. (This policy is not required but is preferred.)
16. **Emergency Evacuation and Rescue Plan.** The Contractor's plan for steps to take if a crisis/serious injury or incident occurs. This plan should be developed with assistance from Program Management Consultant, Airport Operations, and the Airports Authority's Fire Department. A drawing of the site should be submitted to Authority's Fire, Police, and Operations departments. If site conditions that may affect this plan change during construction, the contractor shall submit a revised plan for approval. This plan should be made available in English as well as other languages as necessary, so that all employees can understand and react accordingly.
17. **Signage.** At all construction sites, the contractor will install signs that are clearly visible from 50 feet that identify any hazardous or dangerous condition. Signs must be white with red lettering.
18. **Job Hazard Analysis Program.** The Contractor shall submit a program that identifies any upcoming work activities which pose a potential safety hazard. This program should be documented into definable and manageable components whenever the risk of personal injury exists as a result of hazardous tasks or activities. These will be submitted five (5) working days prior to initiating the task.
19. **Return to Work Program.** Contractor shall establish a "Return to Work" policy in compliance with the OCWIP Manual and OSHA standards.
20. **Personal Protective Equipment. Refer to Chapter 3.6**
21. **AOA Projects.** For all AOA projects, an attachment to the safety program is required in accordance with the current FAA Advisory Circular AC 150/5370.

APPENDIX D
UTILITY OUTAGE REQUEST FORM



Metropolitan Washington Airports Authority
WASHINGTON DULLES INTERNATIONAL AIRPORT

UTILITY OUTAGE REQUEST

(Must be submitted to and approved by Manager Utilities Services Division 4 business days before requested outage date)

PROJECT NAME (Print or Type)		CONTRACT NO.	
REQUESTER (Print or Type)		COMPANY	
ADDRESS		PHONE NO.	E-MAIL. (Print or Type)

REQUEST SYSTEM OUTAGE FOR:
 Electrical Gas Water Fire Alarm Sewer Sprinkler

Other (Specify) **NOTE: If Directed by Fire Code Official, Requestor Shall Provide A Fire Watch for Fire Alarm and Sprinkler Outages.**

Person Responsible For Fire Watch (print):

Telephone Number:

START			COMPLETION		
DAY	DATE	TIME (24 HR)	DAY	DATE	TIME (24 HR.)

DESCRIPTION

PURPOSE (Indicate project and describe specific tasks to be performed, attach additional sheets if necessary)

AFFECTED BUILDINGS, TENANTS and SYSTEMS (attach additional sheets if necessary)

CONCURRENCES

(Requestor to obtain the following concurrences before submitting form for final approval sign and print all approval signatures)

AFFECTED: Tenant's / Owner's (If applicable)	DATE	RESIDENT ENGINEER (PMC, MA-224)	DATE
FIRE CODE OFFICIAL (MA-320 If applicable) <input type="checkbox"/> Fire Watch Required.	DATE	INTERIOR ELECTRICAL SUPERVISOR , MA-223 (If applicable)	DATE
EXTERIOR ELECTRICAL SUPERVISOR , MA-223 (If applicable)	DATE	PLUMBING SUPERVISOR , MA-223 (If applicable)	DATE
UTILITY SUPERVISOR , MA-223 (If applicable)	DATE	Comments:	

FINAL APPROVAL / REJECTION, MANAGER UTILITIES SERVICES DIVISION, MA-223

OUTAGE REQUEST APPROVED / REJECTED FOR INDICATED DATE AND TIME	CONTROL NO.	DATE
<input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED		

APPROVAL / REJECTION COMMENTS:

FOR AUTHORITY / PMC USE ONLY

PRINT OR TYPE

PMC Resident Engineer Name:

E-Mail:

MA-224 Engineer Name:

E-Mail:

APPENDIX E
DANGER HOLD TAG
(SAMPLE)



20651

DANGER-HOLD

Worker on Circuit – Do Not Close

LOCATION		
DISCONNECTING DEVICE		
CIRCUIT OR EQUIPMENT		
TAGGED OUT FOR		
TIME & DATE	AM PM	19
CLEARANCE BY:	IN PERSON <input type="checkbox"/>	TELEPHONE <input type="checkbox"/> RADIO <input type="checkbox"/>
REMARKS		
TAG PLACED BY		SWITCH OPERATOR
TAG RELEASED	AM PM	19
RELEASED BY:	IN PERSON <input type="checkbox"/>	TELEPHONE <input type="checkbox"/> RADIO <input type="checkbox"/>
TAG REMOVED BY		SWITCH OPERATOR

CLEARANCE STUB 20651

LOCATION		
DISCONNECTING DEVICE		
CIRCUIT OR EQUIPMENT		
TAGGED OUT FOR		
TIME & DATE	AM PM	19
RELEASED BY		

985-11 Form 8-2-22 Rev. 9/93

Front

Sample Lockout / Tagout

“Danger Hold Tag”

A fellow worker's life depends upon the proper use of this tag

DANGER-HOLD

Completed tag and stub shall be forwarded to the Department Head over the person for whom the tag was placed

Worker on Circuit – Do Not Close

This tag shall be used in accordance with the instructions of the latest safety manual issued.

This stub shall be released in accordance with instructions of the latest safety manual.

BE SURE

Back