

**SAVANNAH/HILTON HEAD
INTERNATIONAL AIRPORT**



CONSTRUCTION SAFETY AND PHASING PLAN

FOR

**SOUTHEAST QUADRANT STORMWATER DRAINAGE
IMPROVEMENTS**

**FAA AIP No. 3-13-0100-TBD-2020
AECOM Project No. 60611019**

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TABLE OF CONTENTS

For

SOUTHEAST QUADRANT STORMWATER DRAINAGE IMPROVEMENTS

	<u>Page</u>
A. Introduction	1
B. Project Description	1
C. Construction Safety and Phasing Plan.....	1
1. Coordination	
2. Phasing	
3. Areas and Operations Affected by the Construction Activity	
4. Protection of Navigation Aids (NAVAIDs)	
5. Contractor Access	
6. Wildlife Management	
7. Foreign Object Debris (FOD) Management	
8. Hazardous Materials (HAZMAT) Management	
9. Notification of Construction Activities	
10. Inspection Requirements	
11. Underground Utilities	
12. Penalties	
13. Special Conditions	
14. Runway and Taxiway Visual Aids	
15. Marking and Signs for Access Routes	
16. Hazard Marking and Lighting	
17. Protection of Runway and Taxiway Safety Areas	
18. Other Limitations on Construction	

APPENDICES

Appendix A – Supplementary General Provisions

Appendix B – AC 150/5370-2G Operational Safety on Airports During Construction

Appendix C – Contractor’s Safety Plan Compliance Documentation

Appendix D – Construction Safety and Phasing Drawings

A. Introduction

The Savannah International Airport is located in the northeast coastal region of Georgia, approximately eight miles northwest of downtown Savannah in Chatham County. The Savannah River is 2 ½ miles east of the airport, the State of South Carolina is four miles north and the Atlantic Ocean is 18 miles east. Interstate 95 borders the airport's west property line.

B. Project Description

The project consists of the following development items:

- The Southeast Quadrant Stormwater Drainage Improvement project supports the master planned build-out of the southeast quadrant of the airfield by developing a community stormwater pond, conveyance area and treatment system. The project will include clearing and grubbing of the pond site, installation of temporary erosion control measures, pond excavation, security fencing, pipe and drainage structure installation, utility relocation, sodding and associated ancillary construction.

C. Construction Safety and Phasing Plan

1. Coordination

A preconstruction conference will be scheduled prior to any construction activities. The Construction Safety and Phasing Plan as well as other safety and phasing issues will be discussed at this time. The contractor, engineer, inspection personnel, airport staff, as well as operations staff (airlines and tower) will all participate in this meeting. All parties will be alerted of the potential safety concerns and operational impacts during construction.

- a). Contractor Program Meetings: Weekly construction progress meetings will be held during the project. Any upcoming impacts to operations as well as any changes from what was discussed at the preconstruction conference will be addressed during these meetings.
- b). Scope or Schedule Changes: Scope or schedule changes will be a subject of the weekly progress meetings. If changes in scope or schedule are required at the request of the Airport or by unforeseen conditions, they shall be addressed accordingly per contract requirements and the CSPP will be updated to reflect the changes. Changes must be approved by the Airport. Changes will be coordinated with FAA and affected tenants.
- c). FAA ATO Coordination: FAA will be copied on all correspondence and FAA ATCT will be invited to attend weekly progress meetings.

2. Phasing

The sequence of construction and phasing, for this project, was developed in order to maintain the maximum efficiency of aircraft operations while maintaining safety and allowing for the required construction activities for this project. For each phase of the project the CSPP identifies the requirements outlined in Chapter 2 of FAA AC 150/5370-2G, "Operational Safety on Airports During Construction".

- Areas Closed to Operations – Reference Appendix D and Contract Drawings.
- Duration of Closures – Reference Appendix D and Contract Drawings.
- Taxi Routes – Taxi routes will not be impacted with project construction.
- ARFF Access routes - Emergency ARFF access in and around the site will be maintained by the Contractor, as required, for the duration of this project. Contractor must prominently mark open trenches and excavations within the construction site, with approval from Airport Operations, and light them with low profile barricades with red steady burn lights during hours of restricted visibility or darkness.
- Construction Staging Areas – Reference Appendix D for staging area locations and general safety and security notes concerning use of the staging areas. Construction staging areas and contractor employee parking areas are to remain outside of the Airport Operations Area (AOA).
- Construction Access and Haul Routes - Reference Appendix D, for routing layouts, per phase. Haul routes will be confirmed by Airport Operations prior to the start of each phase. Applicable control along contractor haul routes for both safety and security must be maintained at all times. This is especially considered at those locations that require the contractor to cross or move through active airfield surfaces. Reference Section 5.b, *Vehicle and pedestrian operations*, Section 15, *Marking and signs for access routes*, and Section 17, *Protection of Safety Areas, Object Free Areas, Obstacle Free Zones, and Approach/Departure Surfaces* of this document for additional information.

The Contractor shall establish and maintain a list of Contractor and subcontractor vehicles authorized to operate on the site. Contractor employee vehicles shall be restricted to the Contractor's staging area and are not allowed in the Airport Operations Area (AOA) at any time. To be authorized to operate on the airport, each Contractor or subcontractor's vehicle shall:

- a. be marked/flagged for high daytime visibility and lighted for nighttime operations. Vehicles that are not marked and/or lighted shall be escorted by a vehicle appropriately marked and/or lighted. Vehicles requiring escort shall be identified on the list.
- b. be identified with the name and/or logo of the Contractor and be of sufficient size to be identified at a distance. Vehicles needing intermittent identification could be marked with tape or with commercially available magnetically attached

markers. Vehicles that are not appropriately identified shall be escorted by a vehicle that conforms to this requirement. Vehicles requiring escort shall be identified on the list.

c. be operated in a manner that does not compromise the safety of either landside or airside airport operations. If, in the opinion of the Construction Manager, any vehicle is operated in a manner not fully consistent with this requirement, the Construction Manager has the right to restrict operation of the vehicle or prohibit its use on the airport.

- Impacts to NAVAIDS – No impacts to NAVAIDS are expected anytime during this project. In addition, reference Section 4, Protection of Navigation Aids (NAVAIDS) for additional information.
- Lighting and Marking Changes – None are required in this project.
- Required Hazard Marking and Lighting - Low profile barricades with steady burn red lights, closed taxiway markings, signs, lighting and/or safety flag details and usage requirements. In addition, reference Section 15, *Marking and signs for access routes*, Section 16, *Hazard marking and lighting*, and Section 17, *Protection of Runway and Taxiway Safety Areas* of this document for additional information.

Proper marking and lighting of areas on the airfield associated with the construction shall be the responsibility of the Contractor and shall be described in the Contractor's SPCD. This will include properly marking and lighting closed runways, taxiways, taxilanes, and aprons, the limits of construction, material storage areas, equipment storage areas, haul routes, parking areas and other areas defined as required for the Contractor's exclusive use. The Contractor shall erect and maintain around the perimeter of these areas suitable marking and warning devices visible for day and night use. Temporary barricades, flagging, and flashing warning lights shall be required at critical access points. The type and location of marking and warning devices will be approved by the Construction Manager.

Special emphasis shall be given to open trenches, excavations, heavy equipment marshalling areas, and stockpiled material located in the airport operations area, which shall be predominantly marked by the Contractor with flags and lighted by approved light units during hours of restricted visibility and darkness.

- Cranes – should cranes be used to set precast drainage structures, the contractor will be required to calculate heights so as not to penetrate the Runway 28 approach surface.
- Lead times for required notifications – The contractor is required to coordinate this with the Construction Manager and Airport Operations. Lead times for required notifications shall be established at the pre-construction meeting.

a) Project Elements

Work on this project shall progress in multiple phases as defined below. All Phases shall be carried out in accordance with the defined restrictions and shall be scheduled in advance with Airport Operations.

Mobilization – 30 Calendar Days

Mobilization shall consist of site mobilization, establishment of haul routes, installation of sediment and erosion control systems, submittal of shop drawings, stock piling of materials, etc..

Phase 1

Phase 1 work shall be completed in 150 calendar days. Phase 1 work shall consist of the clearing and grubbing of the pond area, pond excavation, security fence installation, installation of outfall control structures and sodding.

Phase Element	Phase 1
Areas Closed to Aircraft Operations	None
Duration of Closures	None
Taxi Routes	No impacts
ARFF Access Routes	Contractor shall maintain access through the entire project
Construction Staging Areas	Outside AOA
Construction Access and Haul Routes	See sheet G1.04
Impacts to NAVAIDs	N/A
Lighting and Marking Changes	None
Available Runway Length	RW 10-28 (9351 ft); RW 1-19 (7,002 ft.)
Declared Distances	N/A
Required Hazard Marking and Lighting	None
Lead Times for Required Notifications	Coordinate with operations

Phase 2

Phase 2 work shall be completed within 60 calendar days. Phase 2 work shall be completed weekdays between 7 am and 5 pm and shall include installation of the stormwater conveyance system from Bill Bland Blvd across the Runway 28 approach and through the Air Guard area. Phase 2 work may not begin until Phase 1 work is complete and accepted.

Phase Element	Phase 2
Areas Closed to Aircraft Operations	None
Duration of Closures	None
Taxi Routes	No impacts

ARFF Access Routes	Contractor shall maintain access through the entire project
Construction Staging Areas	Outside AOA
Construction Access and Haul Routes	See sheet G1.04
Impacts to NAVAIDs	N/A
Lighting and Marking Changes	None
Available Runway Length	RW 10-28 (9351 ft); RW 1-19 (7,002 ft.)
Declared Distances	N/A
Required Hazard Marking and Lighting	None
Lead Times for Required Notifications	Coordinate with operations

Phase 3

Phase 3 work shall be completed in 150 calendar days. Phase 3 work shall begin at the completion of Phase 1 and will proceed in parallel with Phase 2. Phase 3 work shall consist of the installation of the stormwater conveyance system in the remainder of the southeast quadrant, including MOT for roadway crossing, utility conflict resolution, etc..

Phase Element	Phase 3
Areas Closed to Aircraft Operations	None
Duration of Closures	None
Taxi Routes	No impacts
ARFF Access Routes	Contractor shall maintain access through the entire project
Construction Staging Areas	Outside AOA
Construction Access and Haul Routes	See sheet G1.04
Impacts to NAVAIDs	N/A
Lighting and Marking Changes	None
Available Runway Length	RW 10-28 (9351 ft); RW 1-19 (7,002 ft.)
Declared Distances	N/A
Required Hazard Marking and Lighting	None
Lead Times for Required Notifications	Coordinate with operations

Substantial Completion and Final Cleanup

The contractor has 14-calendar days to complete deficient punch list items noted in the final inspection and to demobilize from the job site. Total contract time for the project is 344-calendar days.

- b). Construction Safety Drawings: Drawings are attached under Appendix D.

3. Areas and Operations Affected by the Construction Activity

Reference Section C.2 Phasing and Appendix D.

- a) Identification of Affected Areas: No portion of the airfield will be impacted in any project work phase.
- The only work within the airport operations area is the installation of the stormwater pipe from Bill Bland Blvd. to the Air National Guard. A NOTAM will be issued by the Airport during this construction phase.
 - Construction Areas - these areas include the project work area, storage/stockpile areas, staging areas, and contractor haul routes near active airfield surfaces. These areas are identified graphically in Appendix D.

Runways should not be impacted by construction. Should there be a change in the project, the following areas must be protected along the edges of an active Runway:

Runway	Aircraft Approach Category (ACC)	Airplane Design Group (ADG)	RSA Width (ft.)	ROFA Width (ft.)	Approach Visibility minimum
1	C	IV	500	800	3/4 mile
19	C	IV	500	800	1 mile
10	C	IV	500	800	1/2 mile
28	C	IV	500	800	1 mile

- a) Mitigation of Effects: This CSPP has established specific requirements and operational procedures necessary to maintain the safety and efficiency of airport operations during the construction of this project. All coordination pertaining to airport operations during construction will go through the Construction Manager and Airport Operations. Any required NOTAM's to be issued will be sent through the Construction Manager and issued by the Airport.
- Changes to runway and/or taxi operations. None anticipated.
 - Detours for ARFF and other airport vehicles - The project work site shall remain open to all ARFF vehicles in emergency situations. The contractor is required to maintain access in and around the project work area for all ARFF vehicles. Proper routing of this traffic will be effectively communicated to all supervisory personnel involved in the construction project.
 - Maintenance of essential utilities - The contractor shall locate and/or arrange for the location of all the underground utilities. When an underground cable or utility is damaged due to the Contractor's negligence the Contractor shall immediately repair the affected cable or utility at his/her

own expense. Full coordination between airport staff, field inspectors, and construction personnel will be exercised to ensure that all airport power and control cables are fully protected prior to any excavation. Locations of cabling and other underground utilities will be marked prior to beginning excavation.

- There shouldn't be any changes to air traffic control procedures required by project construction.

4. Protection of Navigation Aids (NAVAIDs)

No NAVAIDs will be modified or installed in the project. The locations of all NAVAIDs have been identified on the safety and phasing plans. The contractor will make sure to stay clear of these areas whenever possible and notify the airport should he have to enter the navigation aid critical areas.

5. Contractor Access

Contractor parking and equipment staging areas have been identified as the Contractor Staging Area and are graphically identified in the drawing set and in the Phasing Plans provided in Appendix D. No other access points shall be allowed unless approved by the Construction Manager. All Contractor traffic authorized to enter the site shall be experienced in the route or guided by Contractor personnel. The Contractor shall be responsible for traffic control to and from the various construction areas on the site, and for the operation and security of the access gate to the site. A Contractor's flagman or traffic control person shall monitor and coordinate all Contractor traffic at the access gate with Airport Security. The Contractor shall not permit any unauthorized construction personnel or traffic on the site. Access gates to the site shall be locked and secured at all times when not attended by the Contractor. If the Contractor chooses to leave any access gate open, it shall be attended by Contractor personnel who are familiar with the requirements of the Airport Security Program. The Contractor is responsible for the immediate cleanup of any debris deposited along the access route as a result of his construction traffic. Directional signing from the access gate along the delivery route to the storage area, plant site or work site shall be as directed by the Construction Manager. In addition, the following requirements are applicable:

- All Contractor traffic authorized to travel on the airport shall have been briefed as part of the Contractor's construction safety and security orientation program, be thoroughly familiar with the access procedures and route for travel or be escorted by personnel authorized by the Contractor's CSSO.
- The Contractor shall install work site identification signs at the authorized access point(s). If, in the opinion of the Construction Manager, directional signs are needed for clarity, they shall be installed along the route authorized for access to each construction site.
- Under no circumstance will Contractor personnel be permitted to drive their individually owned vehicles to any construction site on the airport. All vehicles

must be parked in the area designated for employee parking and out of secured airport property.

- In addition to the inspection and cleanup required at the end of each shift, the Contractor is responsible for the immediate cleanup of any debris generated along the construction site access route(s) as a result of construction related traffic or operations whether or not created by Contractor personnel.
- a). Location of stockpiled construction materials -. Stockpiled material shall be secured against displacement by aircraft engine and propeller blast and ambient winds. Stockpiled materials and equipment storage shall not be permitted within the Object Free Area (OFA) of an active runway. Stockpiled materials or equipment shall not be stored within the OFA of active taxiways and taxilanes. Maximum height of stockpiled material shall not exceed 25 feet mean sea level (MSL).
- b). Vehicle and pedestrian operations
- Contractor site parking – No employee’s vehicles shall be parked in the staging areas shown in the plans. Employees shall park personal vehicles off airport property and shall be transported to and from the work areas via contractor’s vehicles having permitted access to the AOA.
 - Construction equipment parking - Contractor employees must park and service all construction vehicles in an area designated by the Airport outside the OFA and never in the safety area of an active runway, taxiway or taxilane. Unless a complex setup procedure make movement of specialized equipment impossible, inactive equipment must not park on a closed taxiway or runway. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees must also park construction vehicles outside of the OFA when not in use (i.e. overnight, on weekends, or during other periods when construction is not active). Parked equipment shall not obstruct the visibility of visual aids, signs, or navigational aids serving active runways and taxiways.
 - Access and haul roads - The approved access and haul roads are the only routes that are permitted to be used. The routes must be clearly marked to prevent inadvertent entry to areas open to airport operations. The construction traffic on the haul route must not interfere with NAVAIDS or the approach surfaces of any operational runway.
 - Marking and Lighting of vehicles - Marking and lighting of vehicles shall be in accordance with AC 150/5210-5, Painting, Marking and Lighting of Vehicles Used on an Airport. All Contractor vehicles and mobile equipment operating in the AOA shall be identified by three foot (3') square orange and white flags whenever such vehicle and equipment is operating on or about the AOA. Checkered orange and white squares shall be a minimum of 1-ft square. The Contractor’s name shall be clearly affixed on each side of such vehicles and equipment, all in accordance with current Airport requirements. During the hours between 30 minutes before sunset and 30 minutes after sunrise and at all times when visibility is impaired, vehicles and mobile equipment shall also

be equipped with a revolving yellow beacon light mounted on the top of the vehicle or equipment. Beacon lights shall provide three hundred and sixty degree azimuth coverage, an effective intensity in the horizontal plane not less than 40 or more than 400 candelas, and beam spread measured to 1/10 peak intensity extending from 10 degrees to 15 degrees above the horizontal. The beacon shall operate at sixty to ninety flashes per minute.

The Contractor shall establish and maintain a list of Contractor and subcontractor vehicles authorized to operate on the site. Contractor employee vehicles shall be restricted to landside parking and are not allowed in the Airport Operations Area (AOA) at any time. To be authorized to operate on the airport, each Contractor or subcontractor's vehicle shall:

- Be marked/flagged for high daytime visibility and lighted for nighttime operations. Vehicles that are not marked and/or lighted shall be escorted by a vehicle appropriately marked and/or lighted. Vehicles requiring escort shall be identified on the list.
- Be identified with the name and/or logo of the Contractor and be of sufficient size to be identified at a distance. Vehicles needing intermittent identification could be marked with tape or with commercially available magnetically attached markers. Vehicles that are not appropriately identified shall be escorted by a vehicle that conforms to this requirement. Vehicles requiring escort shall be identified on the list.
- Be operated in a manner that does not compromise the safety of either landside or airside airport operations. If, in the opinion of the Construction Manager, any vehicle is operated in a manner not fully consistent with this requirement, the Construction Manager has the right to restrict operation of the vehicle or prohibit its use on the airport.

c). Vehicle Operations

All Contractor vehicles and mobile equipment not individually authorized by the Airport for independent operation in the AOA shall be operated under escort while in the AOA. The escort vehicle and its driver must be authorized by the Airport for escort duty and for operation within the AOA. Employees authorized for escort will follow Part 139 escort operations procedures. If access to the construction, staging or storage sites requires the crossing of an active runway or taxiway, all vehicles shall be escorted across said runway or taxiway by an Airport escort vehicle.

No crane shall be allowed on the work site until the equipment and its intended operation are approved by Airport Operations. The Contractor shall provide the Construction Manager and Airport Operations, with not less than 48-hour advance written notice requesting crane access to the AOA.

When access is approved by the Airport, the tip of the crane boom shall be identified by the checkered orange and white flag described above and, if requested by the Airport or required by AC 150/5370-2G, by steady burn red obstruction lights. Cranes shall not be left unattended while erect and shall be lowered when not in operation.

- Required Escorts - Contractor employees requiring access onto the AOA shall be required to obtain photo-type Contractor Security Identification Display Area (SIDA) identification badges from the Airport. Non badged Contractor employees must be accompanied onto the AOA by an employee wearing a Contractor badge approved as an escort with ramp driving privileges. Badges must be displayed on the outer garment at all times when on the AOA.

The Contractor shall be responsible for the actions of employees and subcontractors. Personnel who do not abide by Airport rules and regulations are subject to prosecution.

All unbadged Contractor employees shall be within voice and visual range of a badged escort at all times when in the AOA.

d). Training

Authorization for unescorted access within the AOA requires employees to successfully complete the SIDA training through the Airport.

Authorization to operate a vehicle unescorted within the AOA requires the employee to successfully complete the movement area driver training through the Airport.

e). Radio Communication

Radio contact is required at all times while the Contractor has personnel and equipment in the active AOA. Radios shall be furnished by the Contractor and shall be capable of receiving Savannah Ground Control Frequency – 121.9. This frequency shall be utilized when crossing active runways and taxiways including entering and exiting the designated construction area. Contractor may not cross active airfield pavement without escort from Airport Operations. Sufficient radios shall be on site and operating at all times so that instructions or communications may be dispatched to all crews and/or supervisors working in the active AOA.

Vehicle drivers must confirm by personal observations that no aircraft is approaching their position (either in the air or on the ground) prior to crossing a runway, taxiway, or any other area open to aircraft operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time.

f). Airport Security

Contractor shall be responsible for the security of his equipment and materials. He shall be responsible for the security of all gates utilized by him. As directed by the Airport, locks shall be placed on each gate used by the Contractor. The locks must be marked in a manner showing company ownership and a key or combination provided to the Airport. The gates shall be locked at all times or guards posted at the gates. For joint use gates, if a lock is found unsecured, the company owning the lock is in violation of Airport Rules and Regulations. In addition, unauthorized entry to the Air Operations Area through the gates may result in the responsible party being cited for violating Airport Regulations.

The Federal Aviation Act of 1958, Section 901, 49 USC 1371, gives the FAA authority to place a fine on any airport found to be in breach of a security requirement.

The Contractor shall reimburse the Airport for the full amount of any fines placed on them due to negligence on the part of the Contractor or their Subcontractors. Fines may be placed on the airport for such things as security gates being unlocked, fences torn down, and AOA not being properly secured. These are only examples of items causing fines and not limitations. There could be other related items.

It is the Contractor's responsibility to prevent any breach of security within his area of construction or any route of entry to area of construction.

All personnel having unescorted access to any security restricted area shall wear valid airport and contractor identification badges on their outer garments in such areas at all times to permit ready recognition by Airport Security. The Contractor's employees, whether issued airport security badges or not, must have a valid governmental identification on their person at all times.

Failure to comply with these requirements will result in the employee being escorted off the AOA and fines may be imposed at the Contractor's expense. Contractor's employees are issued white badges.

Identification badges must be controlled at all times. When personnel are terminated, upon completion of the construction project, and/or when badges expire, the Contractor is responsible for returning identification badges to Airport Security. Before a new badge is issued to any person, their expired or invalid badge must be returned to Airport Security.

The Contractor shall certify to the Airport that such checks were conducted and are on file in the Contractor's office for inspection by the Federal Aviation Administration.

The Contractor will provide to the Airport a list of employees having access to the AOA. The Contractor is responsible for the direct supervision of their employees at all times while in such restricted areas.

Any person found within any security restricted area without proper identification shall be in violation of Federal law and the Airport Rules and Regulations. All such persons shall be escorted off the AOA and may be cited by the Airport. In addition, the person may have their identification badge revoked.

6. Wildlife Management

While no disturbances to existing wildlife are anticipated, the Savannah Airport has a Wildlife Hazard Management Plan in place which shall be referred to should wildlife be encountered during construction. The contractor shall contact the airport immediately upon discovering any wildlife which may need attention or cause a disturbance to the project.

- a). Trash: Contractor shall maintain a clean site free from all food scraps and trash. Daily inspections are required to ensure compliance prior to leaving the jobsite. Trash will be policed continuously.
- b). Standing Water: NA
- c). Tall Grass and Seeds: NA
- d). Poorly Maintained Fencing and Gates: SAV operations will maintain and control access to the AOA.
- e). Disruption of existing wildlife habitat: NA

7. Foreign Object Debris (FOD) Management

All construction vehicles shall be checked for FOD prior to entering the airfield. The contractor's staging area shall be properly protected to ensure that no loose debris or stored material can be blown onto the airfield.

8. Hazardous Materials (HAZMAT) Management

No hazardous materials shall be used or anticipated to be encountered during construction. Fueling of all construction vehicles shall be restricted to a designated area within the contractor's staging area. This area shall be clear of any operating equipment and away from all airport equipment. Extreme caution shall be used whenever fueling construction vehicles to follow all standard fuel safety protocol and keep fuel off of airport ground.

9. Notification of Construction Activities

- a). Maintenance of a List of Responsible Representatives/Point of Contacts: Contractor shall provide and maintain a list of names and phone numbers for all parties affected by the project. Include emergency notification procedures. List on-duty and off-duty contact information for each individual including those responsible for emergency maintenance of airport construction hazard lighting and barricades. List will be reviewed and updated at the weekly progress meetings.
- b). Notice to Airmen: Construction NOTAMs will be issued and updated by SAV operations. Construction causing runway or taxiway closures shall be kept to a minimum. Scheduled closures shall be discussed with the Airport representatives as far in advance as possible, but not less than Seventy Two (72) hours in advance.
- c). Emergency Notification Procedures: All accidents causing personal injury or property damage shall be reported to the Airport immediately. The Contractor shall provide, at the site, such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the performance of the work, whether on/or adjacent to the site, which causes death, personal injury, or property damage, giving full details and statements of

witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone to the Airport Operations Center and/or the Police.

- d) Notification to the FAA: If construction operations require a shutdown of a NAVAID owned by the airport, but maintained by the FAA, for more than 24 hours, Operations shall provide a 45-day minimum notice to FAA/ATO Technical Operations prior to facility shutdown. Notification to FAA will be by SAV Engineering or Operations.

10. Inspection Requirements

- a) Daily (or more frequent) Inspections: Daily inspections shall be conducted by the Contractor with the Resident Project Manager.
- b) Final Inspection: SAV, FAA, and AECOM will perform final inspections.

11. Underground Utilities

The contractor shall be responsible for locating and/or verifying the location of all underground utilities in the project work areas that may be impacted with his work.

12. Penalties

The contractor is subject to penalties for noncompliance with airport rules, regulations, and safety plans. Driving privileges may be revoked as well as the loss of an airport badge and work privileges.

13. Special Conditions

No special conditions have been identified at this time.

14. Runway and Taxiway Visual Aids

- a) General: All runway and taxiway visual aids must remain operational and clearly visible during the duration of the project.
- b) Markings: Taxiway centerline and edge marking impacted by construction will be remarked in the project.
- c) Lighting and Visual NAVAID: The power to these systems will be locked and tagged out during construction.
- d) Signs: Existing signage will not be impacted with project construction.

15. Marking and Signs for Access Routes

Signs shall be placed by contractor identifying all delivery routes and the contractor staging area. These shall be clearly identified so that deliveries to the staging area are clear and direct. The staging area shall be clearly identified and all contractor personnel shall be familiar with the best routes from the staging area to the various areas of work. These routes will be identified with proper construction signs. Any contractor employee's driving on or around the airfield will be badged and have attended the airport's driver training course.

16. Hazard Marking and Lighting

- a). Purpose: The construction area will be safeguarded during construction as noted below.
- b). Equipment: Lighted low profile barricades shall be used to separate construction areas from active taxiways, runways, and aprons. Signs shall be placed on these barricades as necessary where specific instructions are required. A detail of barricades has been included in the construction phasing drawings. A minimum of 2 solar powered LED lights will be provided on each barricade so that they are visible from a minimum distance of 200 ft. Barricades shall be spaced per AC 150/5370-2G so that vehicles can be kept from making an inadvertent pass into construction areas (4 ft typical). The airport or engineer shall verify the spacing of barricades prior to construction.

17. Protection of Runway and Taxiway Safety Areas

- a). Runway Safety Area (RSA): A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. Project construction does not impact the RSA
- b). Runway Object Free Area (ROFA): Project construction is not within the ROFA.
- c). Taxiway Safety Area (TSA): A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. No construction may occur within the TSA while the taxiway is open for aircraft operations. Project construction is not within a TSA.
- d). Obstacle Free Zone (OFZ): In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. Work areas will be well defined, minimizing impacts within the OFZ.
- e). Runway Approach/Departure Surfaces: These are not impacted with project construction.

18. Other Limitation on Construction

- a). Prohibition: None noted
- b). Restrictions: None noted

Appendix A
Supplemental General Conditions

SAVANNAH AIRPORT COMMISSION

SUPPLEMENTARY GENERAL CONDITIONS

1. PRECONSTRUCTION CONFERENCE

A Preconstruction Conference will be scheduled immediately after the award of a construction contract. The successful Contractor shall be required to have key personnel from his staff attend this meeting.

2. SEQUENCE OF WORK

If so stated in this Section, the Contractor will follow the sequence of work as outlined. If there is no sequence of work outlined, the Contractor shall submit to the Engineer a sequence of construction prior to commencing work.

3. CONSTRUCTION SCHEDULE AND MONEY FLOW CHART

The Contractor will submit to the Owner a construction schedule, either CPM or bar chart, showing dates of commencing construction and each activity as they will be performed, including duration of each activity and completion date. This schedule must be completed and delivered to the Owner prior to issuance of the Notice to Proceed.

4. COORDINATION OF WORK BY CONTRACTOR

Contractor will notify the Owner's representative, Project Engineer, Inspector, and Project Manager 24 hours in advance of any material being placed or work being performed that requires testing. If such notification is not made, any material placed or work done will be the responsibility of the Contractor and shall not be accepted by the Owner, unless satisfactory proof can be given to the Owner that such work met the required standard of testing for that item.

The Contractor shall notify the Owner's representative, Project Engineer, Inspector, and Project Manager 48 hours prior to making any change to his predetermined work schedule. Any change that would affect the operation of the airport or require rescheduling of the project must be approved by the Owner; otherwise, the project may be stopped, and any down time would be absorbed by the Contractor and, if applicable, could be charged as liquidated damages if the project exceeds the work days or calendar days stipulated in the contract.

5. WARRANTIES AND GUARANTEES

The Contractor will furnish to the Owner written warranties on all equipment and material furnished on this contract. The Contractor will guarantee to the Owner that he will replace, repair, and make good any and all failures of his work, including all labor and material required to repair or replace all failed work for a period of 12 months beginning at the date of written acceptance of the project. If an item fails or has to be replaced within that 12-month period, he will, upon replacement or repair, guarantee that item for an amount of time that will equal 12 months from the date of repair or replacement.

6. AS BUILT PLANS

The Contractor will note on a set of plans any and all changes made to the plans, to include dimensions and reference points of the changes made. Any authorized changes made to the plans will be noted on the plans. All uncharted utilities or structures encountered during construction will be noted and located on the plans. This set of marked up as built plans will be submitted to the Owner prior to final payment being made on the project.

7. ENGINEER'S FIELD OFFICE

NOT USED.

8. INSURANCE REQUIREMENTS

The Contractor shall obtain and maintain with a company or companies authorized to do business in the State of Georgia, and approved by the Savannah Airport Commission, such insurance as will protect the Commission, and Contractor, from claims set forth below which may arise out of or result from Contractor's operations under the contract and for which the Contractor is legally liable, which includes operations by subcontractors, subcontractor's/subcontractors, or by any persons directly or indirectly employed by Contractor or Subcontractor.

- a. Claims under workers' compensation, disability benefit, and other similar employee benefit acts. Further, Contractor shall relieve the Commission from any costs due to accidents or other liabilities mentioned in workers' compensation act. Contractor or subcontractors with either an insufficient number of employees or in certain excluded occupational classifications are required to maintain WORKERS' compensation coverage on a voluntary basis regardless of the statutory regulations. If the Contractor is from a state other than Georgia, before work begins he shall take whatever measures are necessary to eliminate conflicts regarding which state is responsible for WORKERS' compensation claims.
- b. Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees.
- c. Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees.
- d. Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by another person.
- e. Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom.
- f. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.
- g. The insurance required by paragraph 8 above, shall be written for not less than the following amounts, or greater if required by law:

Workers' Compensation:

Georgia Statutory

Employer's Liability, including all states
\$1,000,000 - each accident
\$1,000,000 - disease - policy limit
\$1,000,000 - disease - each employee

Comprehensive General Liability: shall include all major divisions of coverage and be on a comprehensive basis including, but not limited to:

Premises, operations, including explosion, collapse and underground; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage including completed operations; Contractual Liability; Personal Injury Liability with employment exclusion deleted. Must include projects at airports.

Bodily Injury and Property Damage Limits: \$1,000,000 combined single limit, each occurrence

Products and Completed Operations:

Insurance to be maintained for three (3) years after issuance of the final certificate for payment.

Mobile Equip/Comprehensive Vehicle Liability:

(Owned, non-owned, and hired.)

Bodily Injury/Property Damage Combined:
\$1,000,000 combined single limit, each occurrence

Umbrella/Excess Liability:

Umbrella/Excess Liability insurance covering all liability lines excess of the primary limits. The total limits of liability for each coverage including primary and umbrella coverages shall be no less than \$5,000,000 combined single limit – each occurrence.

Builders Risk (Property Insurance):

(IF APPLICABLE TO THE TYPE OF CONSTRUCTION)

Shall be purchased and maintained by the Contractor covering the entire Work at the site to the full insurable value thereof, including stockpiled material at the construction site intended for incorporation into the project.

Also, such insurance shall be in a company or companies against which Commission has no reasonable objection, and shall include the interest of the Commission, the Contractor, and Subcontractors in the Work. Such insurance shall insure against the perils of Fire, Extended Coverage, Theft, Vandalism and Malicious Mischief, and all other risks. If the Commission is damaged by the failure of the Contractor to maintain such insurance and to so notify the Commission, then the Contractor shall bear all reasonable costs properly attributable thereto. If not covered under such insurance or otherwise provided in the contract documents applicable to constructions, the Contractor shall effect and maintain similar Property Insurance on the Work stored off the site or in transit when such portions of the work are to be included in an application for payment under the contract.

The insurance required above should include contractual liability insurance applicable to the Contractor's obligations.

h. Detailed Information Relating to Insurance:

The Savannah Airport Commission requires that ALL LIABILITY POLICIES must be **ENDORSED** to include **the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission, its officers, directors, agents and employees as ADDITIONAL INSURED**. This must be reflected on the Certificate of Insurance which shall be furnished to the Commission. The Certificate of Insurance shall evidence proper limits of coverage as set forth herein and that the policy or policies will not be cancelled or modified without thirty (30) days prior written notice thereof is given to the Savannah Airport Commission. The Certificate shall also reflect that all policies have been endorsed to include waivers of any and all subrogation. The Contractor shall also require its subcontractors and subcontractors/subcontractors to endorse their policies to include **the Mayor and Aldermen of the City of Savannah and the Savannah Airport Commission, its officers, directors, agents and employees as ADDITIONAL INSURED**.

The extent of coverage or limits of liability provided under the policies procured by the Contractor and/or Subcontractors shall not be construed to be a limitation on the nature or extent of the Contractor's obligations or to relieve the Contractor of any such obligations or representation by the Savannah Airport Commission as to the adequacy of the insurance to protect the Contractor against the obligations imposed on him by law or by this or any other contract. All policies shall be primary and non-contributory.

Immediate notification must be given to the Savannah Airport Commission and/or its agent upon receiving any knowledge or notification of claim or litigation on which the Savannah Airport Commission may be named.

The Contractor shall indemnify, protect, defend, and hold completely harmless the Commission, and its officers, agents and employees from and against any and all liabilities, losses, suits, claims, judgments, fines, or demands arising by reason of injury or death of any person or damage to any property, including all reasonable costs for investigation and defense thereof (including but not limited to attorney fees, court costs, and expert fees), of any nature whatsoever arising out of or incident to this contract and/or the use of occupancy of the leased premises or the acts or omissions of Contractor's officers, agents, employees, contractors, subcontractors, licensees, or invitees, regardless of where the injury, death, or damage may occur, unless such injury, death or damage is caused by the sole negligence of the Commission. The Commission shall give to Contractor reasonable notice of any such claims or actions. The Contractor shall also use counsel reasonably acceptable to Commission in carrying out its obligations hereunder.

All policies shall be endorsed to include waivers of any and all subrogation.

9. AFFIDAVIT/FINAL PAYMENT

Before the final payment under this contract is made, the Contractor shall submit to the Owner a Contractor's Affidavit of Payment of Debts, Claims and Release of Liens. Forms will be furnished by the Owner.

10. PREVAILING WAGE RATES

The Construction wage rates have been furnished and compiled by the City of Savannah as those prevailing for construction of projects in the Chatham County area. In accordance with the terms of the Proposal, the Contractor agrees to pay to each employee of the corresponding craft at least the wage rate listed.

In addition to the basic hourly rates shown, certain crafts, trades, or industries indicate health, welfare, pension and other fringe benefits which are given employees pursuant to a bona fide Collective Bargaining Agreement for the respective craft, trade, or industry. In the absence of any such Agreement, the basic hourly rates plus the monetary equivalent for the fringe benefit payments indicated, less any legal deductions, shall be paid directly to the employees.

If the wage rate determination of the U. S. Department of Labor incorporated in the following page does not include rates for requested classifications, the Bidder is responsible for ascertaining the rates payable for such classifications and whether area practice requires their use in accomplishing the work. No inference concerning area practice is to be drawn from this omission. Further, the omission will not, per se, establish any liability for increased labor cost resulting from the use of such classifications.

The Contractor and Subcontractors at any tier shall make and submit a copy of, to the Savannah Airport Commission, within seven (7) days, a record of all payments for labor with an affidavit that the weekly wages paid are not less than the applicable wage rates contained in the wage determination incorporated into the contract and that the classifications set forth therein for each laborer and mechanic conforms with the work he/she performed. Such records shall contain the name of the individual, his/her classification, the hourly rate, the number of hours worked, and the total amount paid including any and all deductions/withholdings for all individuals who provided and were paid via any means for labor on this project. Records shall be made, and copies provided to the Owner with each pay request, of all payments of any kind (including cash, check, voucher, or any other type of remuneration) to any individual (including employees, subcontractors, independent contractors, day laborers, or anybody else) who performed labor on this project for any kind of compensation whatsoever. Every pay request shall also include a copy of a record of Workers' compensation paid for any and all persons paid in any manner for labor of any type on this project.

The Contractor shall post and maintain a copy of the wage determination at the Contractor's field office or any other location as directed by the Savannah Airport Commission.

The Contractor and all Subcontractors, at any tier, shall maintain for a period of not less than three (3) years from the date of final payment all books, records, documents, and papers pertaining to the contract.

The Contractor and all Subcontractors, at any tier, shall provide to the City of Savannah, the Savannah Airport Commission, the FAA or any other Federal or State agency, the Comptroller General of the United States, or any of their duly authorized representatives access to all such books, documents, papers and records, pertaining to the contract for the purpose of examining, auditing and copying them.

11. SAFETY

- a. Airport safety is an extremely important element of managing and operating today's airport. Specific rules, regulations, advisory circulars and guidelines are placed upon the airport owner/operator to improve safety on airports and to protect its users, tenants, and neighbors.

- (1) Entry into the Air Operations Area - Entry shall be by gate(s) designated by the Executive Director or his representative. The Contractor shall be responsible for gate security. No

personal vehicles owned by Contractor's employees or subcontractors shall be allowed on the airfield at any time.

- (2) Communications - Radio contact with the control tower must be maintained by all Contractor vehicles on the airfield. Vehicles must contact the control tower upon entering active runway, taxiway, or apron area where aircraft are moving or are subject to move; and if working within five hundred (500) feet of the centerline of any active runway or two hundred (200) feet of the centerline of any (active) taxiway, the Contractor shall maintain radio contact with the control tower at all times. If the Contractor has vehicles with no radio, then such vehicles shall form a convoy and follow a vehicle having two-way radio contact with the control tower. Contractors working in runway clear zones shall maintain constant radio contact with the control tower. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THEIR OWN RADIOS.

The Contractor shall reimburse the Airport Commission for the full amount of any fines placed on the Airport Commission due to an unauthorized crossing of an active runway or taxiway by the Contractor or any of his subcontractors.

- (3) Flags - All vehicles, upon entering the Air Operations Area shall display an orange and white checkered flag, staff mounted, of not less than three (3) feet square displayed on the vehicle. Cranes, backhoes, and similar equipment working within five hundred (500) feet of the centerline or runways and two hundred (200) feet of taxiways and in clear zones, shall display the same size and type of flag specified for vehicles attached to the boom. Crane booms shall be lowered when not in use.

- (4) Airport Rules and Regulations - Contractor(s) shall be responsible for informing all employees concerning pertinent airport and Federal Aviation Administration rules and regulations. Contractor(s) shall conform with all rules and regulations and directives issued either orally or in writing by the Executive Director or his representative. All pertinent local, state and federal safety requirements shall be observed by the Contractor(s) and Contractor(s)' personnel.

(5) Storage Area

- (a) Material or personal vehicular storage area shall be assigned by the Executive Director or his representative.
- (b) Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free unobstructed movement of aircraft.
- (c) Loose materials capable of causing damage to aircraft landing gears, propellers, or being ingested in jet engines, shall not be stored on or around active aircraft movement areas.
- (d) Stockpiled material will be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions in excess of 10 knots. Stockpiled material shall be prominently marked with orange flags and lighted with flashing yellow lights during hours of restricted visibility.

(6) Open Trenches

- (a) All open trenches, excavations within the Air Operations Area, shall be marked by lighted and weighted barricades. Barricades shall be alternate orange and white markings with flashing yellow lights and a maximum of 18 inches in height. Barricades adjacent to runways or taxiway pavement areas shall be required to be secured in such manner to prevent tipping over. Flags shall be orange and white, staff mounted, and not less than 20" x 20". All barricades shall be subject to approval by the Executive Director. The Contractor shall provide the name and phone number of three individuals to be on call 24 hours per day for emergency

maintenance of barricade lighting. The Contractor is responsible for maintaining the flags and lights on the barricades.

- (b) All construction work closer than one hundred twenty-five (125) feet of the edge of a runway or eighty-five (85) feet from the edge of a taxiway will require temporary closing of the runway or taxiway. Temporarily closed taxiways shall be marked by lighted and flagged barricades as stated in Paragraph (6)a. Temporarily closed runways shall be marked with a cross placed on the runway numbers. Minimum dimensions of the areas of the cross shall be a length of sixty (60) feet and a width of eight (8) feet. Crosses are to be painted yellow and secured in such a manner to prevent damage from high winds. Frames may be constructed of fabric or plywood. Material used for the construction is subject to approval by the Executive Director.
- (c) Prior to beginning any excavation within two hundred (200) feet of the centerline of any runway or taxiway, the Contractor shall notify the Executive Director or his representative. All trench excavation within the Air Operations Area shall be backfilled and compacted at the end of each work day.
- (d) Construction equipment or material shall not be stored within the Air Operations Area during hours of restricted visibility or darkness without the approval of the Executive Director or his representative.
- (e) Open flame welding or torch cutting operations are prohibited unless fire and safety precautions are provided in accordance with NFPA codes and approved by the Owner.

(7) Motorized Vehicles

- (a) Vehicular traffic crossing active aircraft movement areas (runways, taxiways or aircraft parking aprons) shall be controlled either by two-way radio contact with the control tower, by escort, flagman, signal lights, or other appropriate means as approved by the FAA Control Tower Chief. After receiving clearance from the Control Tower, the driver's personal observation that no aircraft is approaching his position will be made before he makes any crossing of active taxiway or runway. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING HIS OWN RADIOS.**
- (b) Contractor(s) shall post two (2) crossing guards, one (1) on each side of all active aircraft movement areas (runways, taxiways and aircraft movement areas (runways, taxiways and aircraft parking aprons). Each crossing guard shall be equipped with a portable two-way radio (121.90 MHz) and maintain constant radio contact with the control tower. All vehicular traffic shall come to a complete stop at all active aircraft movement areas and shall not proceed into active aircraft movement areas without authorization from the control tower. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING HIS OWN RADIOS.**
- (c) If it is desirable to clearly identify the vehicles for control purposes by either assigned initials or numbers, then the identifying symbol shall be of eight- (8) inch minimum, block-style character of a color easily read. Symbols may be applied by use of tape or water-soluble paint.
- (d) Motorized vehicles and equipment operating in the AOA shall not exceed fifteen (15) miles per hour.
- (e) Aircraft shall have priority over all motorized vehicles and equipment.

(8) Debris

- (a) Waste and loose material capable of causing damage to aircraft shall not be placed on active aircraft movement areas. Material tracked on these areas shall be removed continuously during the work project. (A/C 150/5370-2C)
- (b) Debris shall be disposed of in the manner designated by the Executive Director or his representative.

- (9) NOTAMS - Construction NOTAMS shall be issued by the Executive Director or his representative. Construction causing runway or taxiway closures shall be kept to a minimum and scheduled closures shall be discussed with the Executive Director or his representative as far in advance as possible, but not less than forty-eight (48) hours in advance. Landing and taking off of scheduled airlines shall have priority.
- (10) Burning - Burning is permitted on airport property by obtaining a permit from local governmental agencies and Airport Fire Department.
- (11) Erosion - Contractor(s) shall consider permanent means of control or prevention of soil erosion not only to preserve and protect the slopes, pavement and other facilities, but also to reduce potential sources of water pollution.
- (12) Accidents - All accidents causing personal injury or property damage shall be reported to the Executive Director or his representative immediately. The contractor(s) shall provide, at the site, such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the performance of the work, whether on or adjacent to the site, which causes death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone to the Executive Director or his representative and the Project Engineer.
- (13) All electrical and Control cables shall be buried a minimum of thirty-six (36) inches below the surface of the ground.

12. SECURITY

Contractor shall be responsible for the security of his equipment and materials. He shall be responsible for the security of all perimeter security gates, terminal doors and hatches leading to secure areas utilized by him. As directed by the Executive Director, locks shall be placed on each gate used by the Contractor. The locks must be marked in a manner showing company ownership and a key or combination provided to the Airport Public Safety Department. The gates shall be locked at all times or guards posted at the gates to control access through them. Gate guards shall have a radio or cellular phone which will enable them to call the Police to report security problems or the contractor to verify identities, etc. For joint use gates, if a lock is found unsecured, the company owning the lock is in violation of Airport Rules and Regulations. In addition, unauthorized entry to the Air Operations Area through the gates may result in the responsible party being cited for violating Airport Regulations.

- a. The Transportation Security Administration Act 2002, 49 USC, 67FR8355, gives the Transportation Security Administration (TSA) authority to place a fine on any airport found to be in breach of a security requirement.
- b. The Contractor shall reimburse the Airport Commission for the full amount of any fines placed on the Airport Commission due to negligence on the part of the Contractor. Fines may be placed on the Airport Commission for such things as security gates being unlocked, terminal doors not secure, fences torn down, and Air Operations Area not being properly secured. These are only examples of items causing fines and not limitations. There could be other related items.
- c. It is the Contractor's responsibility to prevent any breach of security within his area of construction or any route of entry to area of construction.
- d. Security Clearances - All personnel having unescorted access to any security area shall wear valid Savannah International Airport identification badges so they are visible on their outer garments in such areas at all times to permit ready recognition by Airport Public Safety Officers. Contractors' employees may be issued any one of the below listed Security Identification, etc. badges.

1. The Airport Identification Badges are issued to approved personnel in several colors:
 - (a) Brown or Blue – Issued to personnel requiring unlimited access inside secured the SIDA.
 - (1) Effective December 6, 2002, the TSA requires anyone requesting unescorted access to the secured SIDA shall be fingerprinted, a background check performed, and results returned prior to ID Badge being issued. **No exceptions.** This process takes 3-14 days. Anyone applying for badges shall submit application as soon as possible to ensure fingerprints / criminal history records are returned prior to start date of project.
 - (2) The cost for processing is \$30.00 per person. Everyone receiving a SIDA ID Badge must be fingerprinted.
 - (b) Yellow – Issued to contractors working in the vicinity of the aircraft movement area in order to perform their required duties. Persons with yellow badges may NOT enter the secured SIDA.
 - (c) Red – Issued to contractors working in the 1542.203 area who do not need access in the vicinity of the aircraft movement area or taxiways to perform their required duties. Persons with red badges may NOT enter the secured SIDA.
 - (d) Pink or Grey – Issued to general aviation and tenants who require incidental access to the 1542.203 areas. Persons with **Pink** and/or **Grey** badges may NOT enter the secured SIDA.

2. The color of the badge signifies the area on the airport where the badge holder may operate.

- (a) Identification badges must be controlled at all times. When personnel are terminated, upon completion of the construction project, and when badges expire, the Contractor is responsible for returning identification badges to the Airport Public Safety Department. Before a new badge is issued to any person, their expired or invalid badge must be returned to the Airport Public Safety Department.

Upon completion of a project, it will be the responsibility of the General Contractor to collect all badges issued under his contract. Subcontractors are responsible for collecting their badges. Before final payment is made on the project, a written notification from the Airport Public Safety Department will be given to the Director of Engineering. The written notice will state the number of badges issued and the number of badges returned.

- (b) A fee of \$20.00 (without reader), \$25.00 (with reader), payable in advance, is charged for each badge issued. Each Contractor and subcontractor shall make a cash deposit of \$200 prior to receiving any badges. This deposit is refundable providing all badges have been returned. For each badge not returned by the Contractor or subcontractor, \$200.00 will be deducted from any monies due the Contractor or his surety. All costs, i.e., ID Badge, fingerprint requirements, and deposit(s) shall be paid in advance.
- (c) The Contractor shall be required to comply with the Transportation Security Administration Amendment to Part 1542.209 prior to commencing work. All personnel hired after December 6, 2002, who have unescorted access to any area on the airport controlled for security reasons shall have background checks to the extent allowable by law, including at a minimum, references and prior employment histories to the extent necessary to verify representations made by the employee/applicant relative to employment in the preceding ten (10) years. If there are significant periods of unaccountable time, the background period is extended to ten years if the Contractor is to work in the SIDA. The Contractor shall certify to the Commission by using SAC Form 513 that such checks were conducted and are on file in the Contractor's office for inspection by the Transportation Security Administration (TSA) or Savannah Airport Commission representatives.

- (d) The Contractor shall designate a Signatory Authority and provide the name of the signatory to the Savannah Airport Commission. The Signatory Authority functions as the certification officer for the company and is required to fulfill the following additional requirements associated with Signatory Authority.
 - i. Initial Signatory Training.
 - ii. Annual recurrent signatory training.
 - iii. SIDA Training.
 - iv. Failure to designate a Signatory or failure of this Signatory to complete the training requirement will be cause for the SAC to cease issuing badges for the contractor.
- (e) SAC Form 513 shall be used by the Contractor whenever certifying identification badges. Only the Contractor Signatory Authority, who shall be designated in writing, shall sign SAC Form 513.
- (f) All badge requests and background forms shall be turned in forty-eight (48) hours in advance. Once approved, all badge holders shall attend SIDA Contractor's badge and/or airfield drivers training classes.
- (g) Any person found within any security restricted area without proper identification shall be in violation of Federal law and the Airport Rules and Regulations. All such persons shall be escorted off the Air Operations Area and may be cited by the Airport Public Safety Department. In addition, the person may have their identification badge revoked.
- (h) Any delay in construction of project due to violations of Federal or Airport Regulations shall be absorbed by the Contractor and not the Airport Commission.

13. PROTECTION OF AIRPORT, CABLES, CONTROLS, NAVAIDS, AND WEATHER BUREAU FACILITIES

- a. The Contractor is hereby informed that there are installed on the airport FAA Navaids, including, without limitation, ASR, UHF and VHF receivers and transmitters; U. S. Weather Bureau facilities; airfield lighting systems; electric cables and controls relating to such Navaids and facilities. Such Navaids, Weather Bureau and other facilities, and electric cables must be fully protected during the entire construction time. Work under this contract can be accomplished in the vicinity of these facilities and cables only at approved periods of time.

Approval is subject to withdrawal at any time because of changes in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions, and for any other reason determined by the Engineer acting under the orders and instructions of the airport management and the designated FAA representative. Any instructions to this Contractor to clear any given area, at any time, by the Engineer, the Airport Management, or the FAA Control Tower (by radio or other means) shall be immediately executed. Construction work will be commenced in the cleared areas only when additional instructions are issued by the Engineer.

- b. Power and control cables leading to and from any FAA Navaids, Weather Bureau and other facilities, will be marked in the field by the local FAA Airway Facilities Sector personnel or the Engineer for the information of the Contractor, before any work in their general vicinity is started. Thereafter, through the entire time of this construction, the Contractor shall not allow any construction equipment to cross these cables without first protecting the cable with steel boiler plate, or similar structural devices, on three feet either side of the marked cable route. All excavation within three feet of existing cables shall be accomplished by hand digging only. The Contractor will be penalized an amount of \$1,000 per instance if during his work he cuts a marked cable.
- c. The Contractor shall immediately repair, at this own expense with identical material by skilled

workmen, any underground cables serving FAA Nav aids, Weather Bureau and other airport facilities which are damaged by his workmen, equipment, or work. Prior approval of the Engineer must be obtained for the materials, temporary or permanent repairs the Contractor proposed to make to any other airport facilities and cables damaged by this Contractor. Should the repair require splicing, it shall be spliced at the discretion of the local FAA Airway Facilities Sector Manager as to who shall perform the work. Where the FAA performs the work, it shall be at the Contractor's expense. No work shall be backfilled or covered prior to approval by the Airway Facilities Sector Manager.

14. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

- a. The construction plans describe the scope of work.
- b. All construction shall be completed within the contract time of **344** calendar days.
- c. When given contract is incomplete at the expiration of the number of calendar days allowed, liquidated damages will be applied per calendar day until the day and date the phase is complete. Liquidated damages will be deducted from any money due or to become due to the Contractor or his Surety.

CONSTRUCTION TIME FRAME & LIQUIDATED DAMAGES:

Phase	Calendar Day Allowed Per Phase	Liquidated Damages Per Calendar Day
Mobilization	30	\$1000
Phase 1	150	\$1000
Phase 2	60	\$2000
Phase 3	150	\$1000
Substantial Completion	14	\$1000
Entire Project	344	\$2000

TOTAL CONTRACT TIME IS 344 CALENDAR DAYS.

15. PERMITS

The Contractor shall be responsible for obtaining any and all licenses and permits to conduct the work as may be prescribed by the federal government, State of Georgia, Chatham County or the City of Savannah. Any fee or expenses associated in obtaining any license or permit shall be paid by the Contractor.

16. GOVERNING LAW

This Agreement shall be deemed to be made in and construed in accordance with the laws of the State of Georgia.

17. INDEMNIFICATION

Contractor shall protect, defend, and indemnify Commission and its officers, agents and employees from and against any and all liabilities, losses, suits, claims, judgments, fines or demands arising by reasons of injury or death of any person, or damage to any property, including all reasonable costs for investigation and defense thereof (including but not limited to attorney fees, court costs, and expert fees), of any nature whatsoever arising out of or incident to this Agreement and/or the use or occupancy of the Premises or the acts or omissions of contractor's officers, agents, employees, contractors, subcontractors, licensees, or invitees, regardless of where the injury, death or damage may

occur, unless such injury, death, or damage is caused by the sole negligence of the Commission. The Commission shall give to contractor reasonable notice of any such claims or actions. The Contractor shall also use counsel reasonably acceptable to Commission in carrying out its obligations hereunder. The provisions of this section shall survive the expiration or early termination of this Agreement.

18. NONDISCRIMINATION

(As required by Title VI of the Civil Rights Act of 1964; Department of Transportation 49 CFR Part 21; and Section 520 of the Airport and Airway Improvement Act of 1982).

Contractor shall comply with and shall ensure that the following Non-Discrimination clause is inserted in all subcontracts, subleases, and other agreements at all tiers:

“The Contractor assures that it will comply with pertinent statutes, Executive Orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance.”

END OF SUPPLEMENTARY GENERAL CONDITIONS

Appendix B
Advisory Circular 150/5370-2G – Operational Safety on
Airports During Construction



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Operational Safety on
Airports During Construction

Date: 12/13/2017
Initiated By: AAS-100

AC No: 150/5370-2G
Change:

1 **Purpose.**

This AC sets forth guidelines for operational safety on airports during construction.

2 **Cancellation.**

This AC cancels AC 150/5370-2F, *Operational Safety on Airports during Construction*, dated September 29, 2011.

3 **Application.**

This AC assists airport operators in complying with Title 14 Code of Federal Regulations (CFR) Part 139, *Certification of Airports*. For those certificated airports, this AC provides one way, but not the only way, of meeting those requirements. The use of this AC is mandatory for those airport construction projects receiving funds under the Airport Improvement Program (AIP). See Grant Assurance No. 34, *Policies, Standards, and Specifications*. While we do not require non-certificated airports without grant agreements or airports using Passenger Facility Charge (PFC) Program funds for construction projects to adhere to these guidelines, we recommend that they do so to help these airports maintain operational safety during construction.

4 **Related Documents.**

ACs and Orders referenced in the text of this AC do not include a revision letter, as they refer to the latest version. [Appendix A](#) contains a list of reading material on airport construction, design, and potential safety hazards during construction, as well as instructions for obtaining these documents.

5 **Principal Changes.**

The AC incorporates the following principal changes:

1. Notification about impacts to both airport owned and FAA-owned NAVAIDs was added. See paragraph [2.13.5.3](#), NAVAIDs.

2. Guidance for the use of orange construction signs was added. See paragraph 2.18.4.2, Temporary Signs.
3. Open trenches or excavations may be permitted in the taxiway safety area while the taxiway is open to aircraft operations, subject to restrictions. See paragraph 2.22.3.4, Excavations.
4. Guidance for temporary shortened runways and displaced thresholds has been enhanced. See Figure 2-1 and Figure 2-2.
5. Figures have been improved and a new Appendix F on the placement of orange construction signs has been added.

Hyperlinks (allowing the reader to access documents located on the internet and to maneuver within this document) are provided throughout this document and are identified with underlined text. When navigating within this document, return to the previously viewed page by pressing the “ALT” and “ ← ” keys simultaneously.

Figures in this document are schematic representations and are not to scale.

6 **Use of Metrics.**

Throughout this AC, U.S. customary units are used followed with “soft” (rounded) conversion to metric units. The U.S. customary units govern.

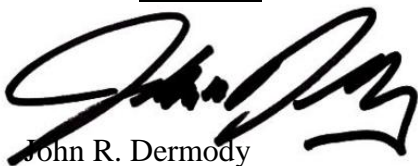
7 **Where to Find this AC.**

You can view a list of all ACs at

http://www.faa.gov/regulations_policies/advisory_circulars/. You can view the Federal Aviation Regulations at http://www.faa.gov/regulations_policies/faa_regulations/.

8 **Feedback on this AC.**

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.



John R. Dermody

Director of Airport Safety and Standards

CONTENTS

Paragraph	Page
Chapter 1. Planning an Airfield Construction Project	1-1
1.1 Overview.....	1-1
1.2 Plan for Safety.....	1-1
1.3 Develop a Construction Safety and Phasing Plan (CSPP).....	1-3
1.4 Who Is Responsible for Safety During Construction?.....	1-4
Chapter 2. Construction Safety and Phasing Plans	2-1
2.1 Overview.....	2-1
2.2 Assume Responsibility.....	2-1
2.3 Submit the CSPP.....	2-1
2.4 Meet CSPP Requirements.....	2-2
2.5 Coordination.	2-6
2.6 Phasing.....	2-7
2.7 Areas and Operations Affected by Construction Activity.	2-7
2.8 Navigation Aid (NAVAID) Protection.....	2-11
2.9 Contractor Access.	2-11
2.10 Wildlife Management.	2-15
2.11 Foreign Object Debris (FOD) Management.	2-16
2.12 Hazardous Materials (HAZMAT) Management.....	2-16
2.13 Notification of Construction Activities.....	2-16
2.14 Inspection Requirements.....	2-18
2.15 Underground Utilities.	2-19
2.16 Penalties.	2-19
2.17 Special Conditions.	2-19
2.18 Runway and Taxiway Visual Aids.	2-19
2.19 Marking and Signs for Access Routes.	2-29
2.20 Hazard Marking, Lighting and Signing.	2-30
2.21 Work Zone Lighting for Nighttime Construction.....	2-32
2.22 Protection of Runway and Taxiway Safety Areas.	2-33
2.23 Other Limitations on Construction.	2-37

Chapter 3. Guidelines for Writing a CSPP	3-1
3.1 General Requirements.....	3-1
3.2 Applicability of Subjects.....	3-1
3.3 Graphical Representations.	3-1
3.4 Reference Documents.	3-2
3.5 Restrictions.	3-2
3.6 Coordination.	3-2
3.7 Phasing.....	3-2
3.8 Areas and Operations Affected by Construction.	3-2
3.9 NAVAID Protection.	3-2
3.10 Contractor Access.	3-3
3.11 Wildlife Management.	3-4
3.12 FOD Management.....	3-4
3.13 HAZMAT Management.....	3-4
3.14 Notification of Construction Activities.....	3-4
3.15 Inspection Requirements.....	3-5
3.16 Underground Utilities.	3-5
3.17 Penalties.	3-5
3.18 Special Conditions.	3-5
3.19 Runway and Taxiway Visual Aids.	3-6
3.20 Marking and Signs for Access Routes.	3-6
3.21 Hazard Marking and Lighting.....	3-6
3.22 Work Zone Lighting for Nighttime Construction.....	3-6
3.23 Protection of Runway and Taxiway Safety Areas.	3-7
3.24 Other Limitations on Construction.	3-7
Appendix A. Related Reading Material	A-1
Appendix B. Terms and Acronyms	B-1
Appendix C. Safety and Phasing Plan Checklist.....	C-1
Appendix D. Construction Project Daily Safety Inspection Checklist.....	D-1
Appendix E. Sample Operational Effects Table.....	E-1
Appendix F. Orange Construction Signs	F-1

FIGURES

Number	Page
Figure 2-1. Temporary Partially Closed Runway	2-9
Figure 2-2. Temporary Displaced Threshold.....	2-10
Figure 2-3. Markings for a Temporarily Closed Runway.....	2-21
Figure 2-4. Temporary Taxiway Closure.....	2-22
Figure 2-5. Temporary Outboard White Threshold Bars and Yellow Arrowheads	2-24
Figure 2-6. Lighted X in Daytime.....	2-26
Figure 2-7. Lighted X at Night.....	2-26
Figure 2-8. Interlocking Barricades	2-31
Figure 2-9. Low Profile Barricades	2-32
Figure E-1. Phase I Example	E-1
Figure E-2. Phase II Example	E-2
Figure E-3. Phase III Example.....	E-3
Figure F-1. Approved Sign Legends.....	F-1
Figure F-2. Orange Construction Sign Example 1.....	F-2
Figure F-3. Orange Construction Sign Example 2.....	F-3

TABLES

Number	Page
Table A-1. FAA Publications	A-1
Table A-2. Code of Federal Regulation.....	A-3
Table B-1. Terms and Acronyms.....	B-1
Table C-1. CSPP Checklist.....	C-1
Table D-1. Potentially Hazardous Conditions	D-1
Table E-1. Operational Effects Table	E-4
Table E-2. Runway and Taxiway Edge Protection.....	E-6
Table E-3. Protection Prior to Runway Threshold.....	E-7

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CHAPTER 1. PLANNING AN AIRFIELD CONSTRUCTION PROJECT

1.1 Overview.

Airports are complex environments, and procedures and conditions associated with construction activities often affect aircraft operations and can jeopardize operational safety. Safety considerations are paramount and may make operational impacts unavoidable. However, careful planning, scheduling, and coordination of construction activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety. The airport operator must understand how construction activities and aircraft operations affect one another to be able to develop an effective plan to complete the project. While the guidance in this AC is primarily used for construction operations, the concepts, methods and procedures described may also enhance the day-to-day airport maintenance operations, such as lighting maintenance and snow removal operations.

1.2 Plan for Safety.

Safety, maintaining aircraft operations, and construction costs are all interrelated. Since safety must not be compromised, the airport operator must strike a balance between maintaining aircraft operations and construction costs. This balance will vary widely depending on the operational needs and resources of the airport and will require early coordination with airport users and the FAA. As the project design progresses, the necessary construction locations, activities, and associated costs will be identified and their impact to airport operations must be assessed. Adjustments are made to the proposed construction activities, often by phasing the project, and/or to airport operations to maintain operational safety. This planning effort will ultimately result in a project Construction Safety and Phasing Plan (CSPP). The development of the CSPP takes place through the following five steps:

1.2.1 Identify Affected Areas.

The airport operator must determine the geographic areas on the airport affected by the construction project. Some, such as a runway extension, will be defined by the project. Others may be variable, such as the location of haul routes and material stockpiles.

1.2.2 Describe Current Operations.

Identify the normal airport operations in each affected area for each phase of the project. This becomes the baseline from which the impact on operations by construction activities can be measured. This should include a narrative of the typical users and aircraft operating within the affected areas. It should also include information related to airport operations: the Aircraft Approach Category (AAC) and Airplane Design Group (ADG) of the airplanes that operate on each runway; the ADG and Taxiway Design Group (TDG)¹ for each affected taxiway; designated approach visibility minimums;

¹ Find Taxiway Design Group information in [AC 150/5300-13, Airport Design](#).

available approach and departure procedures; most demanding aircraft; declared distances; available air traffic control services; airport Surface Movement Guidance and Control System (SMGCS) plan; and others. The applicable seasons, days and times for certain operations should also be identified as applicable.

1.2.3 Allow for Temporary Changes to Operations.

To the extent practical, current airport operations should be maintained during the construction. In consultation with airport users, Aircraft Rescue and Fire Fighting (ARFF) personnel, and FAA Air Traffic Organization (ATO) personnel, the airport operator should identify and prioritize the airport's most important operations. The construction activities should be planned, through project phasing if necessary, to safely accommodate these operations. When the construction activities cannot be adjusted to safely maintain current operations, regardless of their importance, then the operations must be revised accordingly. Allowable changes include temporary revisions to approach procedures, restricting certain aircraft to specific runways and taxiways, suspension of certain operations, decreased weights for some aircraft due to shortened runways, and other changes. An example of a table showing temporary operations versus current operations is shown in Appendix E.

1.2.4 Take Required Measures to Revise Operations.

Once the level and type of aircraft operations to be maintained are identified, the airport operator must determine the measures required to safely conduct the planned operations during the construction. These measures will result in associated costs, which can be broadly interpreted to include not only direct construction costs, but also loss of revenue from impacted operations. Analysis of costs may indicate a need to reevaluate allowable changes to operations. As aircraft operations and allowable changes will vary widely among airports, this AC presents general guidance on those subjects.

1.2.5 Manage Safety Risk.

The FAA is committed to incorporating proactive safety risk management (SRM) tools into its decision-making processes. FAA Order 5200.11, *FAA Airports (ARP) Safety Management System (SMS)*, requires the FAA to conduct a Safety Assessment for certain triggering actions. Certain airport projects may require the airport operator to provide a Project Proposal Summary to help the FAA determine whether a Safety Assessment is required prior to FAA approval of the CSPP. The airport operator must coordinate with the appropriate FAA Airports Regional or District Office early in the development of the CSPP to determine the need for a Safety Risk Assessment. If the FAA requires an assessment, the airport operator must at a minimum:

1. Notify the appropriate FAA Airports Regional or District Office during the project "scope development" phase of any project requiring a CSPP.
2. Provide documents identified by the FAA as necessary to conduct SRM.
3. Participate in the SRM process for airport projects.
4. Provide a representative to participate on the SRM panel.

5. Ensure that all applicable SRM identified risks elements are recorded and mitigated within the CSPP.

1.3 **Develop a Construction Safety and Phasing Plan (CSPP).**

Development of an effective CSPP will require familiarity with many other documents referenced throughout this AC. See Appendix A for a list of related reading material.

1.3.1 List Requirements.

A CSPP must be developed for each on-airfield construction project funded by the Airport Improvement Program (AIP) or located on an airport certificated under Part 139. For on-airfield construction projects at Part 139 airports funded without AIP funds, the preparation of a CSPP represents an acceptable method the certificate holder may use to meet Part 139 requirements during airfield construction activity. As per FAA Order 5200.11, projects that require Safety Assessments do not include construction, rehabilitation, or change of any facility that is entirely outside the air operations area, does not involve any expansion of the facility envelope and does not involve construction equipment, haul routes or placement of material in locations that require access to the air operations area, increase the facility envelope, or impact line-of-sight. Such facilities may include passenger terminals and parking or other structures. However, extraordinary circumstances may trigger the need for a Safety Assessment and a CSPP. The CSPP is subject to subsequent review and approval under the FAA's Safety Risk Management procedures (see paragraph 1.2.5).

1.3.2 Prepare a Safety Plan Compliance Document (SPCD).

The Safety Plan Compliance Document (SPCD) details how the contractor will comply with the CSPP. Also, it will not be possible to determine all safety plan details (for example specific hazard equipment and lighting, contractor's points of contact, construction equipment heights) during the development of the CSPP. The successful contractor must define such details by preparing an SPCD that the airport operator reviews for approval prior to issuance of a notice-to-proceed. The SPCD is a subset of the CSPP, similar to how a shop drawing review is a subset to the technical specifications.

1.3.3 Assume Responsibility for the CSPP.

The airport operator is responsible for establishing and enforcing the CSPP. The airport operator may use the services of an engineering consultant to help develop the CSPP. However, writing the CSPP cannot be delegated to the construction contractor. Only those details the airport operator determines cannot be addressed before contract award are developed by the contractor and submitted for approval as the SPCD. The SPCD does not restate nor propose differences to provisions already addressed in the CSPP.

1.4 **Who Is Responsible for Safety During Construction?**

1.4.1 Establish a Safety Culture.

Everyone has a role in operational safety on airports during construction: the airport operator, the airport's consultants, the construction contractor and subcontractors, airport users, airport tenants, ARFF personnel, Air Traffic personnel, including Technical Operations personnel, FAA Airports Division personnel, and others, such as military personnel at any airport supporting military operations (e.g. national guard or a joint use facility). Close communication and coordination between all affected parties is the key to maintaining safe operations. Such communication and coordination should start at the project scoping meeting and continue through the completion of the project. The airport operator and contractor should conduct onsite safety inspections throughout the project and immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

1.4.2 Assess Airport Operator's Responsibilities.

An airport operator has overall responsibility for all activities on an airport, including construction. This includes the predesign, design, preconstruction, construction, and inspection phases. Additional information on the responsibilities listed below can be found throughout this AC. The airport operator must:

- 1.4.2.1 Develop a CSPP that complies with the safety guidelines of Chapter 2, Construction Safety and Phasing Plans, and Chapter 3, Guidelines for Writing a CSPP. The airport operator may develop the CSPP internally or have a consultant develop the CSPP for approval by the airport operator. For tenant sponsored projects, approve a CSPP developed by the tenant or its consultant.
- 1.4.2.2 Require, review and approve the SPCD by the contractor that indicates how it will comply with the CSPP and provides details that cannot be determined before contract award.
- 1.4.2.3 Convene a preconstruction meeting with the construction contractor, consultant, airport employees and, if appropriate, tenant sponsor and other tenants to review and discuss project safety before beginning construction activity. The appropriate FAA representatives should be invited to attend the meeting. See AC 150/5370-12, Quality Management for Federally Funded Airport Construction Projects. (Note “FAA” refers to the Airports Regional or District Office, the Air Traffic Organization, Flight Standards Service, and other offices that support airport operations, flight regulations, and construction/environmental policies.)
- 1.4.2.4 Ensure contact information is accurate for each representative/point of contact identified in the CSPP and SPCD.
- 1.4.2.5 Hold weekly or, if necessary, daily safety meetings with all affected parties to coordinate activities.
- 1.4.2.6 Notify users, ARFF personnel, and FAA ATO personnel of construction and conditions that may adversely affect the operational safety of the airport via Notices to Airmen (NOTAM) and other methods, as appropriate. Convene a meeting for review and discussion if necessary.
- 1.4.2.7 Ensure construction personnel know applicable airport procedures and changes to those procedures that may affect their work.
- 1.4.2.8 Ensure that all temporary construction signs are located per the scheduled list for each phase of the project.
- 1.4.2.9 Ensure construction contractors and subcontractors undergo training required by the CSPP and SPCD.
- 1.4.2.10 Ensure vehicle and pedestrian operations addressed in the CSPP and SPCD are coordinated with airport tenants, the airport traffic control tower (ATCT), and construction contractors.
- 1.4.2.11 At certificated airports, ensure each CSPP and SPCD is consistent with Part 139.

- 1.4.2.12 Conduct inspections sufficiently frequently to ensure construction contractors and tenants comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.
 - 1.4.2.13 Take immediate action to resolve safety deficiencies.
 - 1.4.2.14 At airports subject to 49 CFR Part 1542, *Airport Security*, ensure construction access complies with the security requirements of that regulation.
 - 1.4.2.15 Notify appropriate parties when conditions exist that invoke provisions of the CSPP and SPCD (for example, implementation of low-visibility operations).
 - 1.4.2.16 Ensure prompt submittal of a Notice of Proposed Construction or Alteration (Form 7460-1) for conducting an aeronautical study of potential obstructions such as tall equipment (cranes, concrete pumps, other), stock piles, and haul routes. A separate form may be filed for each potential obstruction, or one form may be filed describing the entire construction area and maximum equipment height. In the latter case, a separate form must be filed for any object beyond or higher than the originally evaluated area/height. The FAA encourages online submittal of forms for expediency at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>. The appropriate FAA Airports Regional or District Office can provide assistance in determining which objects require an aeronautical study.
 - 1.4.2.17 Ensure prompt transmission of the Airport Sponsor Strategic Event Submission, FAA Form 6000-26, located at https://oeaaa.faa.gov/oeaaa/external/content/AIRPORT_SPONSOR_STRATEGIC_EVENT_SUBMISSION_FORM.pdf, to assure proper coordination for NAS Strategic Interruption per Service Level Agreement with ATO.
 - 1.4.2.18 Promptly notify the FAA Airports Regional or District Office of any proposed changes to the CSPP prior to implementation of the change. Changes to the CSPP require review and approval by the airport operator and the FAA. The FAA Airports Regional or District office will determine if further coordination within the FAA is needed. Coordinate with appropriate local and other federal government agencies, such as Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Transportation Security Administration (TSA), and the state environmental agency.
- 1.4.3 Define Construction Contractor's Responsibilities.
The contractor is responsible for complying with the CSPP and SPCD. The contractor must:

- 1.4.3.1 Submit a Safety Plan Compliance Document (SPCD) to the airport operator describing how it will comply with the requirements of the CSPP and supply any details that could not be determined before contract award. The SPCD must include a certification statement by the contractor, indicating an understanding of the operational safety requirements of the CSPP and the assertion of compliance with the approved CSPP and SPCD unless written approval is granted by the airport operator. Any construction practice proposed by the contractor that does not conform to the CSPP and SPCD may impact the airport's operational safety and will require a revision to the CSPP and SPCD and re-coordination with the airport operator and the FAA in advance.
- 1.4.3.2 Have available at all times copies of the CSPP and SPCD for reference by the airport operator and its representatives, and by subcontractors and contractor employees.
- 1.4.3.3 Ensure that construction personnel are familiar with safety procedures and regulations on the airport. Provide a point of contact who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport. Many projects will require 24-hour coverage.
- 1.4.3.4 Identify in the SPCD the contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site when active construction is taking place.
- 1.4.3.5 Conduct sufficient inspections to ensure construction personnel comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.
- 1.4.3.6 Restrict movement of construction vehicles and personnel to permitted construction areas by flagging, barricading, erecting temporary fencing, or providing escorts, as appropriate, and as specified in the CSPP and SPCD.
- 1.4.3.7 Ensure that no contractor employees, employees of subcontractors or suppliers, or other persons enter any part of the air operations area (AOA) from the construction site unless authorized.
- 1.4.3.8 Ensure prompt submittal through the airport operator of Form 7460-1 for the purpose of conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, and other equipment), stock piles, and haul routes when different from cases previously filed by the airport operator. The FAA encourages online submittal of forms for expediency at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

- 1.4.3.9 Ensure that all necessary safety mitigations are understood by all parties involved, and any special requirements of each construction phase will be fulfilled per the approved timeframe.
- 1.4.3.10 Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

1.4.4 Define Tenant's Responsibilities.

If planning construction activities on leased property, Airport tenants, such as airline operators, fixed base operators, and FAA ATO/Technical Operations sponsoring construction are strongly encouraged to:

1. Develop, or have a consultant develop, a project specific CSPP and submit it to the airport operator. The airport operator may forgo a complete CSPP submittal and instead incorporate appropriate operational safety principles and measures addressed in the advisory circular within their tenant lease agreements.
2. In coordination with its contractor, develop an SPCD and submit it to the airport operator for approval issued prior to issuance of a Notice to Proceed.
3. Ensure that construction personnel are familiar with safety procedures and regulations on the airport during all phases of the construction.
4. Provide a point of contact of who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport.
5. Identify in the SPCD the contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site when active construction is taking place.
6. Ensure that no tenant or contractor employees, employees of subcontractors or suppliers, or any other persons enter any part of the AOA from the construction site unless authorized.
7. Restrict movement of construction vehicles to construction areas by flagging and barricading, erecting temporary fencing, or providing escorts, as appropriate, as specified in the CSPP and SPCD.
8. Ensure prompt submittal through the airport operator of Form 7460-1 for conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, other), stock piles, and haul routes. The FAA encourages online submittal of forms for expediency at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.
9. Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

CHAPTER 2. CONSTRUCTION SAFETY AND PHASING PLANS

2.1 **Overview.**

Aviation safety is the primary consideration at airports, especially during construction. The airport operator's CSPP and the contractor's Safety Plan Compliance Document (SPCD) are the primary tools to ensure safety compliance when coordinating construction activities with airport operations. These documents identify all aspects of the construction project that pose a potential safety hazard to airport operations and outline respective mitigation procedures for each hazard. They must provide information necessary for the Airport Operations department to conduct airfield inspections and expeditiously identify and correct unsafe conditions during construction. All aviation safety provisions included within the project drawings, contract specifications, and other related documents must also be reflected in the CSPP and SPCD.

2.2 **Assume Responsibility.**

Operational safety on the airport remains the airport operator's responsibility at all times. The airport operator must develop, certify, and submit for FAA approval each CSPP. It is the airport operator's responsibility to apply the requirements of the FAA approved CSPP. The airport operator must revise the CSPP when conditions warrant changes and must submit the revised CSPP to the FAA for approval. The airport operator must also require and approve a SPCD from the project contractor.

2.3 **Submit the CSPP.**

Construction Safety and Phasing Plans should be developed concurrently with the project design. Milestone versions of the CSPP should be submitted for review and approval as follows. While these milestones are not mandatory, early submission will help to avoid delays. Submittals are preferred in 8.5 × 11 inch or 11 × 17 inch format for compatibility with the FAA's Obstruction Evaluation / Airport Airspace Analysis (OE / AAA) process.

2.3.1 Submit an Outline/Draft.

By the time approximately 25% to 30% of the project design is completed, the principal elements of the CSPP should be established. Airport operators are encouraged to submit an outline or draft, detailing all CSPP provisions developed to date, to the FAA for review at this stage of the project design.

2.3.2 Submit a CSPP.

The CSPP should be formally submitted for FAA approval when the project design is 80 percent to 90 percent complete. Since provisions in the CSPP will influence contract costs, it is important to obtain FAA approval in time to include all such provisions in the procurement contract.

2.3.3 Submit an SPCD.

The contractor should submit the SPCD to the airport operator for approval to be issued prior to the Notice to Proceed.

2.3.4 Submit CSPP Revisions.

All revisions to a previously approved CSPP must be re-submitted to the FAA for review and approval/disapproval action.

2.4 **Meet CSPP Requirements.**

2.4.1 To the extent possible, the CSPP should address the following as outlined in Chapter 3, Guidelines for Writing a CSPP. Details that cannot be determined at this stage are to be included in the SPCD.

1. Coordination.
 - a. Contractor progress meetings.
 - b. Scope or schedule changes.
 - c. FAA ATO coordination.
2. Phasing.
 - a. Phase elements.
 - b. Construction safety drawings.
3. Areas and operations affected by the construction activity.
 - a. Identification of affected areas.
 - b. Mitigation of effects.
4. Protection of navigation aids (NAVAIDs).
5. Contractor access.
 - a. Location of stockpiled construction materials.
 - b. Vehicle and pedestrian operations.
6. Wildlife management.
 - a. Trash.
 - b. Standing water.
 - c. Tall grass and seeds.
 - d. Poorly maintained fencing and gates.
 - e. Disruption of existing wildlife habitat.
7. Foreign Object Debris (FOD) management.
8. Hazardous materials (HAZMAT) management.
9. Notification of construction activities.

- a. Maintenance of a list of responsible representatives/ points of contact.
 - b. NOTAM.
 - c. Emergency notification procedures.
 - d. Coordination with ARFF Personnel.
 - e. Notification to the FAA.
10. Inspection requirements.
- a. Daily (or more frequent) inspections.
 - b. Final inspections.
11. Underground utilities.
12. Penalties.
13. Special conditions.
14. Runway and taxiway visual aids. Marking, lighting, signs, and visual NAVAIDs.
- a. General.
 - b. Markings.
 - c. Lighting and visual NAVAIDs.
 - d. Signs, temporary, including orange construction signs, and permanent signs.
15. Marking and signs for access routes.
16. Hazard marking and lighting.
- a. Purpose.
 - b. Equipment.
17. Work zone lighting for nighttime construction (if applicable).
18. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces.
- a. Runway Safety Area (RSA).
 - b. Runway Object Free Area (ROFA).
 - c. Taxiway Safety Area (TSA). Provide details for any adjustments to Taxiway Safety Area width to allow continued operation of smaller aircraft. See paragraph 2.22.3.
 - d. Taxiway Object Free Area (TOFA). Provide details for any continued aircraft operations while construction occurs within the TOFA. See paragraph 2.22.4.
 - e. Obstacle Free Zone (OFZ).
 - f. Runway approach/departure surfaces.
19. Other limitations on construction.
- a. Prohibitions.

b. Restrictions.

2.4.2 The Safety Plan Compliance Document (SPCD) should include a general statement by the construction contractor that he/she has read and will abide by the CSPP. In addition, the SPCD must include all supplemental information that could not be included in the CSPP prior to the contract award. The contractor statement should include the name of the contractor, the title of the project CSPP, the approval date of the CSPP, and a reference to any supplemental information (that is, “I, (Name of Contractor), have read the (Title of Project) CSPP, approved on (Date), and will abide by it as written and with the following additions as noted:”). The supplemental information in the SPCD should be written to match the format of the CSPP indicating each subject by corresponding CSPP subject number and title. If no supplemental information is necessary for any specific subject, the statement, “No supplemental information,” should be written after the corresponding subject title. The SPCD should not duplicate information in the CSPP:

1. Coordination. Discuss details of proposed safety meetings with the airport operator and with contractor employees and subcontractors.
2. Phasing. Discuss proposed construction schedule elements, including:
 - a. Duration of each phase.
 - b. Daily start and finish of construction, including “night only” construction.
 - c. Duration of construction activities during:
 - i. Normal runway operations.
 - ii. Closed runway operations.
 - iii. Modified runway “Aircraft Reference Code” usage.
3. Areas and operations affected by the construction activity. These areas and operations should be identified in the CSPP and should not require an entry in the SPCD.
4. Protection of NAVAIDs. Discuss specific methods proposed to protect operating NAVAIDs.
5. Contractor access. Provide the following:
 - a. Details on how the contractor will maintain the integrity of the airport security fence (gate guards, daily log of construction personnel, and other).
 - b. Listing of individuals requiring driver training (for certificated airports and as requested).
 - c. Radio communications.
 - i. Types of radios and backup capabilities.
 - ii. Who will be monitoring radios.
 - iii. Who to contact if the ATCT cannot reach the contractor’s designated person by radio.

- d. Details on how the contractor will escort material delivery vehicles.
6. Wildlife management. Discuss the following:
 - a. Methods and procedures to prevent wildlife attraction.
 - b. Wildlife reporting procedures.
7. Foreign Object Debris (FOD) management. Discuss equipment and methods for control of FOD, including construction debris and dust.
8. Hazardous Materials (HAZMAT) management. Discuss equipment and methods for responding to hazardous spills.
9. Notification of construction activities. Provide the following:
 - a. Contractor points of contact.
 - b. Contractor emergency contact.
 - c. Listing of tall or other requested equipment proposed for use on the airport and the timeframe for submitting 7460-1 forms not previously submitted by the airport operator.
 - d. Batch plant details, including 7460-1 submittal.
10. Inspection requirements. Discuss daily (or more frequent) inspections and special inspection procedures.
11. Underground utilities. Discuss proposed methods of identifying and protecting underground utilities.
12. Penalties. Penalties should be identified in the CSPP and should not require an entry in the SPCD.
13. Special conditions. Discuss proposed actions for each special condition identified in the CSPP.
14. Runway and taxiway visual aids. Including marking, lighting, signs, and visual NAVAIDs. Discuss proposed visual aids including the following:
 - a. Equipment and methods for covering signage and airfield lights.
 - b. Equipment and methods for temporary closure markings (paint, fabric, other).
 - c. Temporary orange construction signs.
 - d. Types of temporary Visual Guidance Slope Indicators (VGSI).
15. Marking and signs for access routes. Discuss proposed methods of demarcating access routes for vehicle drivers.
16. Hazard marking and lighting. Discuss proposed equipment and methods for identifying excavation areas.
17. Work zone lighting for nighttime construction (if applicable). Discuss proposed equipment, locations, aiming, and shielding to prevent interference with air traffic control and aircraft operations.

18. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces. Discuss proposed methods of identifying, demarcating, and protecting airport surfaces including:
 - a. Equipment and methods for maintaining Taxiway Safety Area standards.
 - b. Equipment and methods to ensure the safe passage of aircraft where Taxiway Safety Area or Taxiway Object Free Area standards cannot be maintained.
 - c. Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.
19. Other limitations on construction should be identified in the CSPP and should not require an entry in the SPCD.

2.5 **Coordination.**

Airport operators, or tenants responsible for design, bidding and conducting construction on their leased properties, should ensure at all project developmental stages, such as predesign, prebid, and preconstruction conferences, they capture the subject of airport operational safety during construction (see [AC 150/5370-12, *Quality Management for Federally Funded Airport Construction Projects*](#)). In addition, the following should be coordinated as required:

2.5.1 Progress Meetings.

Operational safety should be a standing agenda item for discussion during progress meetings throughout the project developmental stages.

2.5.2 Scope or Schedule Changes.

Changes in the scope or duration at any of the project stages may require revisions to the CSPP and review and approval by the airport operator and the FAA (see paragraph [1.4.2.17](#)).

2.5.3 FAA ATO Coordination.

Early coordination with FAA ATO is highly recommended during the design phase and is required for scheduling Technical Operations shutdowns prior to construction. Coordination is critical to restarts of NAVAID services and to the establishment of any special procedures for the movement of aircraft. Formal agreements between the airport operator and appropriate FAA offices are recommended. All relocation or adjustments to NAVAIDs, or changes to final grades in critical areas, should be coordinated with FAA ATO and may require an FAA flight inspection prior to restarting the facility. Flight inspections must be coordinated and scheduled well in advance of the intended facility restart. Flight inspections may require a reimbursable agreement between the airport operator and FAA ATO. Reimbursable agreements should be coordinated a minimum of 12 months prior to the start of construction. (See paragraph [2.13.5.3.2](#) for required FAA notification regarding FAA-owned NAVAIDs.)

2.6 **Phasing.**

Once it has been determined what types and levels of airport operations will be maintained, the most efficient sequence of construction may not be feasible. In this case, the sequence of construction may be phased to gain maximum efficiency while allowing for the required operations. The development of the resulting construction phases should be coordinated with local Air Traffic personnel and airport users. The sequenced construction phases established in the CSPP must be incorporated into the project design and must be reflected in the contract drawings and specifications.

2.6.1 Phase Elements.

For each phase the CSPP should detail:

- Areas closed to aircraft operations.
- Duration of closures.
- Taxi routes and/or areas of reduced TSA and TOFA to reflect reduced ADG use.
- ARFF access routes.
- Construction staging, disposal, and cleanout areas.
- Construction access and haul routes.
- Impacts to NAVAIDs.
- Lighting, marking, and signing changes.
- Available runway length and/or reduced RSA and ROFA to reflect reduced ADG use.
- Declared distances (if applicable).
- Required hazard marking, lighting, and signing.
- Work zone lighting for nighttime construction (if applicable).
- Lead times for required notifications.

2.6.2 Construction Safety Drawings.

Drawings specifically indicating operational safety procedures and methods in affected areas (i.e., construction safety drawings) should be developed for each construction phase. Such drawings should be included in the CSPP as referenced attachments and should also be included in the contract drawing package.

2.7 **Areas and Operations Affected by Construction Activity.**

Runways and taxiways should remain in use by aircraft to the maximum extent possible without compromising safety. Pre-meetings with the FAA ATO will support operational simulations. See Appendix E for an example of a table showing temporary operations versus current operations. The tables in Appendix E can be useful for coordination among all interested parties, including FAA Lines of Business.

2.7.1 Identification of Affected Areas.

Identifying areas and operations affected by the construction helps to determine possible safety problems. The affected areas should be identified in the construction safety drawings for each construction phase. (See paragraph 2.6.2.) Of particular concern are:

2.7.1.1 **Closing, or Partial Closing, of Runways, Taxiways and Aprons, and Displaced Thresholds.**

When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing, landing, or takeoff in either direction on that pavement is prohibited. A displaced threshold, by contrast, is established to ensure obstacle clearance and adequate safety area for landing aircraft. The pavement prior to the displaced threshold is normally available for take-off in the direction of the displacement and for landing and takeoff in the opposite direction. Misunderstanding this difference, may result in issuance of an inaccurate NOTAM, and can lead to a hazardous condition.

2.7.1.1.1 Partially Closed Runways.

The temporarily closed portion of a partially closed runway will generally extend from the threshold to a taxiway that may be used for entering and exiting the runway. If the closed portion extends to a point between taxiways, pilots will have to back-taxi on the runway, which is an undesirable operation. See Figure 2-1 for a desirable configuration.

2.7.1.1.2 Displaced Thresholds.

Since the portion of the runway pavement between the permanent threshold and a standard displaced threshold is available for takeoff and for landing in the opposite direction, the temporary displaced threshold need not be located at an entrance/exit taxiway. See Figure 2-2.

2.7.1.2 Closing of aircraft rescue and fire fighting access routes.

2.7.1.3 Closing of access routes used by airport and airline support vehicles.

2.7.1.4 Interruption of utilities, including water supplies for fire fighting.

2.7.1.5 Approach/departure surfaces affected by heights of objects.

2.7.1.6 Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads.

Figure 2-1. Temporary Partially Closed Runway

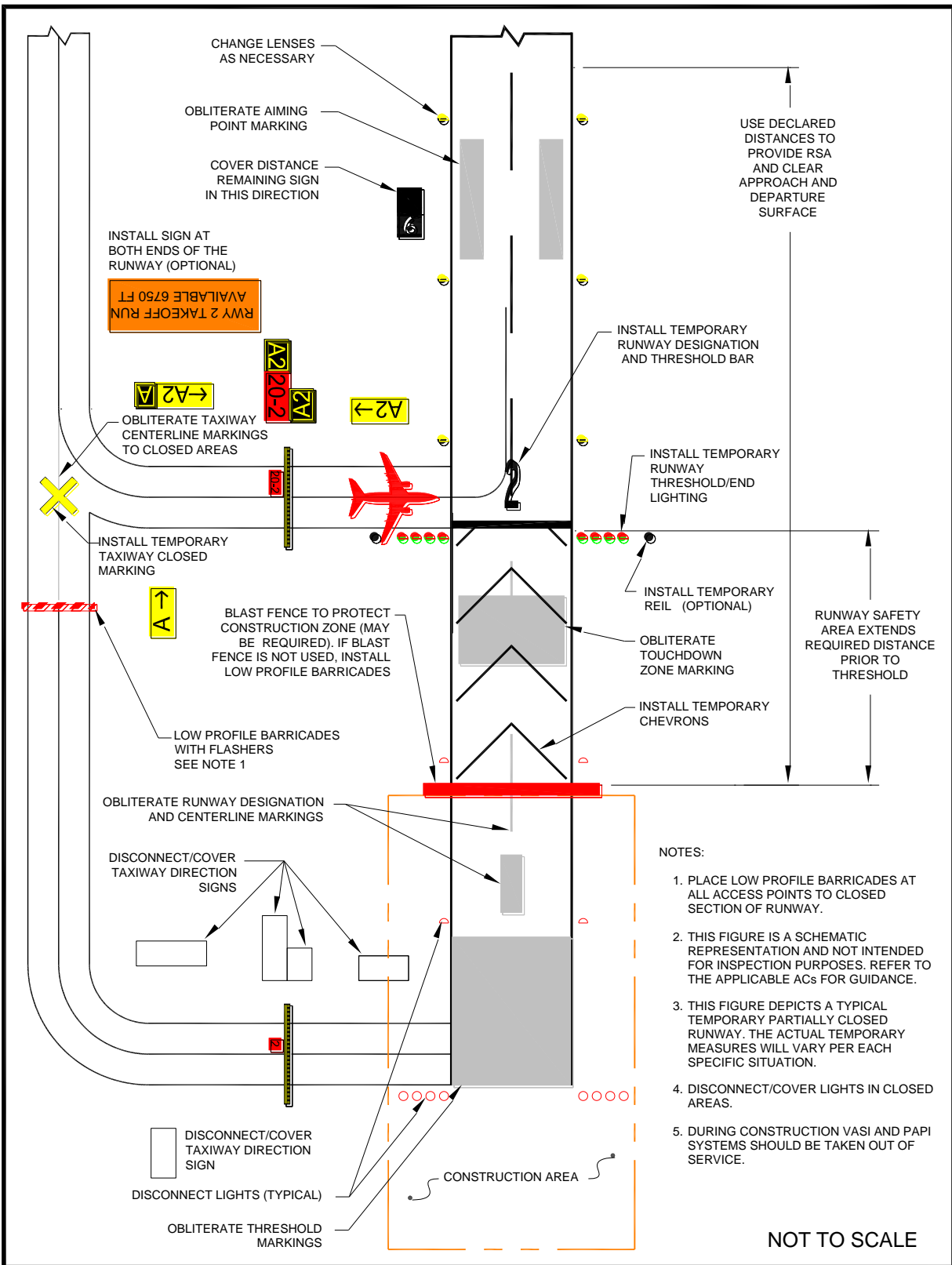
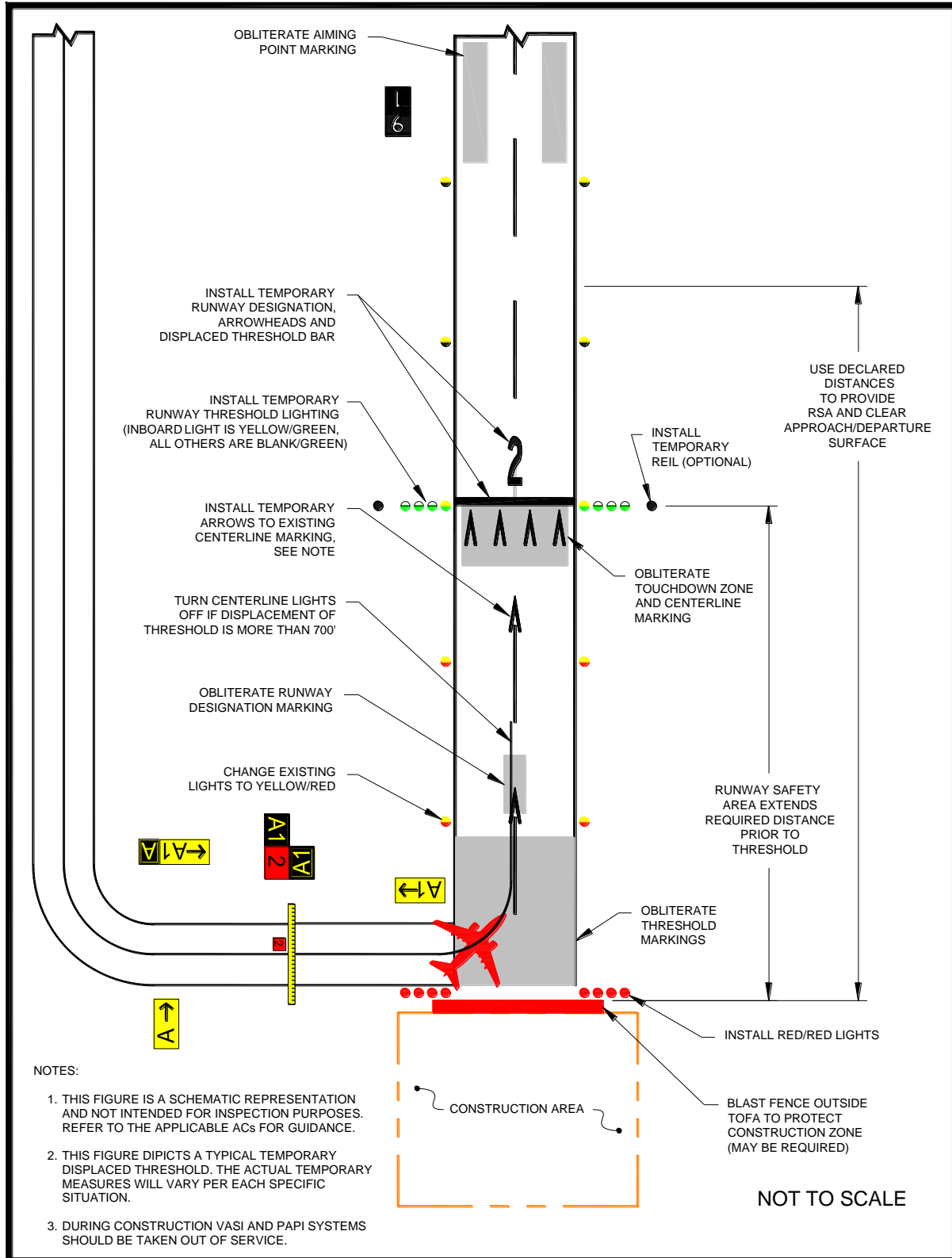


Figure 2-2. Temporary Displaced Threshold



Note: See paragraph [2.18.2.5](#).

2.7.2 Mitigation of Effects.

Establishment of specific procedures is necessary to maintain the safety and efficiency of airport operations. The CSPP must address:

- 2.7.2.1 Temporary changes to runway and/or taxi operations.
- 2.7.2.2 Detours for ARFF and other airport vehicles.
- 2.7.2.3 Maintenance of essential utilities.
- 2.7.2.4 Temporary changes to air traffic control procedures. Such changes must be coordinated with the ATO.

2.8 **Navigation Aid (NAVAID) Protection.**

Before commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID, coordinate with the appropriate FAA ATO/Technical Operations office to evaluate the effect of construction activity and the required distance and direction from the NAVAID. (See paragraph 2.13.5.3.) Construction activities, materials/equipment storage, and vehicle parking near electronic NAVAIDs require special consideration since they may interfere with signals essential to air navigation. If any NAVAID may be affected, the CSPP and SPCD must show an understanding of the “critical area” associated with each NAVAID and describe how it will be protected. Where applicable, the operational critical areas of NAVAIDs should be graphically delineated on the project drawings. Pay particular attention to stockpiling material, as well as to movement and parking of equipment that may interfere with line of sight from the ATCT or with electronic emissions. Interference from construction equipment and activities may require NAVAID shutdown or adjustment of instrument approach minimums for low visibility operations. This condition requires that a NOTAM be filed (see paragraph 2.13.2.) Construction activities and materials/equipment storage near a NAVAID must not obstruct access to the equipment and instruments for maintenance. Submittal of a 7460-1 form is required for construction vehicles operating near FAA NAVAIDs. (See paragraph 2.13.5.3.)

2.9 **Contractor Access.**

The CSPP must detail the areas to which the contractor must have access, and explain how contractor personnel will access those areas. Specifically address:

2.9.1 Location of Stockpiled Construction Materials.

Stockpiled materials and equipment storage are not permitted within the RSA and OFZ, and if possible should not be permitted within the Object Free Area (OFA) of an operational runway. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval. The airport operator must ensure that stockpiled materials and equipment adjacent to these areas are prominently marked and lighted during hours of restricted visibility or darkness. (See paragraph 2.18.2.) This includes determining and

verifying that materials are stabilized and stored at an approved location so as not to be a hazard to aircraft operations and to prevent attraction of wildlife and foreign object damage from blowing or tracked material. See paragraphs [2.10](#) and [2.11](#).

2.9.2 Vehicle and Pedestrian Operations.

The CSPP should include specific vehicle and pedestrian requirements. Vehicle and pedestrian access routes for airport construction projects must be controlled to prevent inadvertent or unauthorized entry of persons, vehicles, or animals onto the AOA. The airport operator should coordinate requirements for vehicle operations with airport tenants, contractors, and the FAA air traffic manager. In regard to vehicle and pedestrian operations, the CSPP should include the following, with associated training requirements:

2.9.2.1 **Construction Site Parking.**

Designate in advance vehicle parking areas for contractor employees to prevent any unauthorized entry of persons or vehicles onto the AOA. These areas should provide reasonable contractor employee access to the job site.

2.9.2.2 **Construction Equipment Parking.**

Contractor employees must park and service all construction vehicles in an area designated by the airport operator outside the OFZ and never in the safety area of an active runway or taxiway. Unless a complex setup procedure makes movement of specialized equipment infeasible, inactive equipment must not be parked on a closed taxiway or runway. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees should also park construction vehicles outside the OFA when not in use by construction personnel (for example, overnight, on weekends, or during other periods when construction is not active). Parking areas must not obstruct the clear line of sight by the ATCT to any taxiways or runways under air traffic control nor obstruct any runway visual aids, signs, or navigation aids. The FAA must also study those areas to determine effects on airport design criteria, surfaces established by 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (Part 77), and on NAVAIDs and Instrument Approach Procedures (IAP). See paragraph [2.13.1](#) for further information.

2.9.2.3 **Access and Haul Roads.**

Determine the construction contractor's access to the construction sites and haul roads. Do not permit the construction contractor to use any access or haul roads other than those approved. Access routes used by contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. Pay special attention to ensure that if construction traffic is to share or cross any ARFF routes that ARFF right of way is not impeded at any time, and that construction traffic on haul

roads does not interfere with NAVAIDs or approach surfaces of operational runways. Address whether access gates will be blocked or inoperative or if a rally point will be blocked or inaccessible.

- 2.9.2.4 Marking and lighting of vehicles in accordance with AC 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.
- 2.9.2.5 Description of proper vehicle operations on various areas under normal, lost communications, and emergency conditions.
- 2.9.2.6 Required escorts.
- 2.9.2.7 **Training Requirements for Vehicle Drivers to Ensure Compliance with the Airport Operator's Vehicle Rules and Regulations.**
Specific training should be provided to vehicle operators, including those providing escorts. See AC 150/5210-20, *Ground Vehicle Operations on Airports*, for information on training and records maintenance requirements.
- 2.9.2.8 **Situational Awareness.**
Vehicle drivers must confirm by personal observation that no aircraft is approaching their position (either in the air or on the ground) when given clearance to cross a runway, taxiway, or any other area open to airport operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time. At non-towered airports, all aircraft movements and flight operations rely on aircraft operators to self-report their positions and intentions. However, there is no requirement for an aircraft to have radio communications. Because aircraft do not always broadcast their positions or intentions, visual checking, radio monitoring, and situational awareness of the surroundings is critical to safety.
- 2.9.2.9 **Two-Way Radio Communication Procedures.**
- 2.9.2.9.1 General.
The airport operator must ensure that tenant and construction contractor personnel engaged in activities involving unescorted operation on aircraft movement areas observe the proper procedures for communications, including using appropriate radio frequencies at airports with and without ATCT. When operating vehicles on or near open runways or taxiways, construction personnel must understand the critical importance of maintaining radio contact, as directed by the airport operator, with:
1. Airport operations
 2. ATCT

3. Common Traffic Advisory Frequency (CTAF), which may include UNICOM, MULTICOM.
4. Automatic Terminal Information Service (ATIS). This frequency is useful for monitoring conditions on the airport. Local air traffic will broadcast information regarding construction related runway closures and “shortened” runways on the ATIS frequency.

2.9.2.9.2 Areas Requiring Two-Way Radio Communication with the ATCT.

Vehicular traffic crossing active movement areas must be controlled either by two-way radio with the ATCT, escort, flagman, signal light, or other means appropriate for the particular airport.

2.9.2.9.3 Frequencies to be Used.

The airport operator will specify the frequencies to be used by the contractor, which may include the CTAF for monitoring of aircraft operations. Frequencies may also be assigned by the airport operator for other communications, including any radio frequency in compliance with Federal Communications Commission requirements. At airports with an ATCT, the airport operator will specify the frequency assigned by the ATCT to be used between contractor vehicles and the ATCT.

2.9.2.9.4 Proper radio usage, including read back requirements.

2.9.2.9.5 Proper phraseology, including the International Phonetic Alphabet.

2.9.2.9.6 Light Gun Signals.

Even though radio communication is maintained, escort vehicle drivers must also familiarize themselves with ATCT light gun signals in the event of radio failure. See the FAA safety placard “Ground Vehicle Guide to Airport Signs and Markings.” This safety placard may be downloaded through the Runway Safety Program Web site at http://www.faa.gov/airports/runway_safety/publications/ (see “Signs & Markings Vehicle Dashboard Sticker”) or obtained from the FAA Airports Regional Office.

2.9.2.10 **Maintenance of the secured area of the airport, including:**

2.9.2.10.1 Fencing and Gates.

Airport operators and contractors must take care to maintain security during construction when access points are created in the security fencing to permit the passage of construction vehicles or personnel. Temporary gates should be equipped so they can be securely closed and locked to prevent access by animals and unauthorized people. Procedures should be in place to ensure that only authorized persons and vehicles have access to the AOA and to prohibit “piggybacking” behind another person or vehicle. The Department of Transportation (DOT) document DOT/FAA/AR-

00/52, *Recommended Security Guidelines for Airport Planning and Construction*, provides more specific information on fencing. A copy of this document can be obtained from the Airport Consultants Council, Airports Council International, or American Association of Airport Executives.

2.9.2.10.2 Badging Requirements.

Airports subject to 49 CFR Part 1542, *Airport Security*, must meet standards for access control, movement of ground vehicles, and identification of construction contractor and tenant personnel.

2.10 **Wildlife Management.**

The CSPP and SPCD must be in accordance with the airport operator's wildlife hazard management plan, if applicable. See AC 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports*, and CertAlert 98-05, *Grasses Attractive to Hazardous Wildlife*. Construction contractors must carefully control and continuously remove waste or loose materials that might attract wildlife. Contractor personnel must be aware of and avoid construction activities that can create wildlife hazards on airports, such as:

2.10.1 Trash.

Food scraps must be collected from construction personnel activity.

2.10.2 Standing Water.

2.10.3 Tall Grass and Seeds.

Requirements for turf establishment can be at odds with requirements for wildlife control. Grass seed is attractive to birds. Lower quality seed mixtures can contain seeds of plants (such as clover) that attract larger wildlife. Seeding should comply with the guidance in AC 150/5370-10, *Standards for Specifying Construction of Airports*, Item T-901, Seeding. Contact the local office of the United States Department of Agriculture Soil Conservation Service or the State University Agricultural Extension Service (County Agent or equivalent) for assistance and recommendations. These agencies can also provide liming and fertilizer recommendations.

2.10.4 Poorly Maintained Fencing and Gates.

See paragraph 2.9.2.10.1.

2.10.5 Disruption of Existing Wildlife Habitat.

While this will frequently be unavoidable due to the nature of the project, the CSPP should specify under what circumstances (location, wildlife type) contractor personnel should immediately notify the airport operator of wildlife sightings.

2.11 Foreign Object Debris (FOD) Management.

Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. Construction contractors must not leave or place FOD on or near active aircraft movement areas. Materials capable of creating FOD must be continuously removed during the construction project. Fencing (other than security fencing) or covers may be necessary to contain material that can be carried by wind into areas where aircraft operate. See AC 150/5210-24, *Foreign Object Debris (FOD) Management*.

2.12 Hazardous Materials (HAZMAT) Management.

Contractors operating construction vehicles and equipment on the airport must be prepared to expeditiously contain and clean-up spills resulting from fuel or hydraulic fluid leaks. Transport and handling of other hazardous materials on an airport also requires special procedures. See AC 150/5320-15, *Management of Airport Industrial Waste*.

2.13 Notification of Construction Activities.

The CSPP and SPCD must detail procedures for the immediate notification of airport users and the FAA of any conditions adversely affecting the operational safety of the airport. It must address the notification actions described below, as applicable.

2.13.1 List of Responsible Representatives/points of contact for all involved parties, and procedures for contacting each of them, including after hours.

2.13.2 NOTAMs.

Only the airport operator may initiate or cancel NOTAMs on airport conditions, and is the only entity that can close or open a runway. The airport operator must coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities with tenants and the local air traffic facility (control tower, approach control, or air traffic control center), and must either enter the NOTAM into NOTAM Manager, or provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM. The airport operator must file and maintain a list of authorized representatives with the FSS. Refer to AC 150/5200-28, *Notices to Airmen (NOTAMs) for Airport Operators*, for a sample NOTAM form. Only the FAA may issue or cancel NOTAMs on shutdown or irregular operation of FAA owned facilities. Any person having reason to believe that a NOTAM is missing, incomplete, or inaccurate must notify the airport operator. See paragraph 2.7.1.1 about issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

2.13.3 Emergency notification procedures for medical, fire fighting, and police response.

2.13.4 Coordination with ARFF.

The CSPP must detail procedures for coordinating through the airport sponsor with ARFF personnel, mutual aid providers, and other emergency services if construction requires:

1. The deactivation and subsequent reactivation of water lines or fire hydrants, or
2. The rerouting, blocking and restoration of emergency access routes, or
3. The use of hazardous materials on the airfield.

2.13.5 Notification to the FAA.

2.13.5.1 **Part 77.**

Any person proposing construction or alteration of objects that affect navigable airspace, as defined in Part 77, must notify the FAA. This includes construction equipment and proposed parking areas for this equipment (i.e., cranes, graders, other equipment) on airports. FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, can be used for this purpose and submitted to the appropriate FAA Airports Regional or District Office. See Appendix A to download the form. Further guidance is available on the FAA web site at oeaaa.faa.gov.

2.13.5.2 **Part 157.**

With some exceptions, Title 14 CFR Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports*, requires that the airport operator notify the FAA in writing whenever a non-Federally funded project involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport. Notification involves submitting FAA Form 7480-1, *Notice of Landing Area Proposal*, to the nearest FAA Airports Regional or District Office. See Appendix A to download the form.

2.13.5.3 **NAVAIDs.**

For emergency (short-notice) notification about impacts to both airport owned and FAA owned NAVAIDs, contact: 866-432-2622.

2.13.5.3.1 Airport Owned/FAA Maintained.

If construction operations require a shutdown of 24 hours or greater in duration, or more than 4 hours daily on consecutive days, of a NAVAID owned by the airport but maintained by the FAA, provide a 45-day minimum notice to FAA ATO/Technical Operations prior to facility shutdown, using Strategic Event Coordination (SEC) Form 6000.26 contained within FAA Order 6000.15, *General Maintenance Handbook for National Airspace System (NAS) Facilities*.

2.13.5.3.2 FAA Owned.

1. The airport operator must notify the appropriate FAA ATO Service Area Planning and Requirements (P&R) Group a minimum of 45 days prior to implementing an event that causes impacts to NAVAIDs, using SEC Form 6000.26.
2. Coordinate work for an FAA owned NAVAID shutdown with the local FAA ATO/Technical Operations office, including any necessary reimbursable agreements and flight checks. Detail procedures that address unanticipated utility outages and cable cuts that could impact FAA NAVAIDs. Refer to active Service Level Agreement with ATO for specifics.

2.14 **Inspection Requirements.**

2.14.1 Daily Inspections.

Inspections should be conducted at least daily, but more frequently if necessary to ensure conformance with the CSPP. A sample checklist is provided in Appendix D, Construction Project Daily Safety Inspection Checklist. See also AC 150/5200-18, Airport Safety Self-Inspection. Airport operators holding a Part 139 certificate are required to conduct self-inspections during unusual conditions, such as construction activities, that may affect safe air carrier operations.

2.14.2 Interim Inspections.

Inspections should be conducted of all areas to be (re)opened to aircraft traffic to ensure the proper operation of lights and signs, for correct markings, and absence of FOD. The contractor should conduct an inspection of the work area with airport operations personnel. The contractor should ensure that all construction materials have been secured, all pavement surfaces have been swept clean, all transition ramps have been properly constructed, and that surfaces have been appropriately marked for aircraft to operate safely. Only if all items on the list meet with the airport operator's approval should the air traffic control tower be notified to open the area to aircraft operations. The contractor should be required to retain a suitable workforce and the necessary equipment at the work area for any last minute cleanup that may be requested by the airport operator prior to opening the area.

2.14.3 Final Inspections.

New runways and extended runway closures may require safety inspections at certificated airports prior to allowing air carrier service. Coordinate with the FAA Airport Certification Safety Inspector (ACSI) to determine if a final inspection will be necessary.

2.15 Underground Utilities.

The CSPP and/or SPCD must include procedures for locating and protecting existing underground utilities, cables, wires, pipelines, and other underground facilities in excavation areas. This may involve coordinating with public utilities and FAA ATO/Technical Operations. Note that “One Call” or “Miss Utility” services do not include FAA ATO/Technical Operations.

2.16 Penalties.

The CSPP should detail penalty provisions for noncompliance with airport rules and regulations and the safety plans (for example, if a vehicle is involved in a runway incursion). Such penalties typically include rescission of driving privileges or access to the AOA.

2.17 Special Conditions.

The CSPP must detail any special conditions that affect the operation of the airport and will require the activation of any special procedures (for example, low-visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, Vehicle / Pedestrian Deviation (VPD) and other activities requiring construction suspension/resumption).

2.18 Runway and Taxiway Visual Aids.

This includes marking, lighting, signs, and visual NAVAIDs. The CSPP must ensure that areas where aircraft will be operating are clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs, and visual NAVAIDs that are to continue to perform their functions during construction remain in place and operational. Visual NAVAIDs that are not serving their intended function during construction must be temporarily disabled, covered, or modified as necessary. The CSPP must address the following, as appropriate:

2.18.1 General.

Airport markings, lighting, signs, and visual NAVAIDs must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, and other wind currents and constructed of materials that will minimize damage to an aircraft in the event of inadvertent contact. Items used to secure such markings must be of a color similar to the marking.

2.18.2 Markings.

During the course of construction projects, temporary pavement markings are often required to allow for aircraft operations during or between work periods. During the design phase of the project, the designer should coordinate with the project manager,

airport operations, airport users, the FAA Airports project manager, and Airport Certification Safety Inspector for Part 139 airports to determine minimum temporary markings. The FAA Airports project manager will, wherever a runway is closed, coordinate with the appropriate FAA Flight Standards Office and disseminate findings to all parties. Where possible, the temporary markings on finish grade pavements should be placed to mirror the dimensions of the final markings. Markings must be in compliance with the standards of AC 150/5340-1, *Standards for Airport Markings*, except as noted herein. Runways and runway exit taxiways closed to aircraft operations are marked with a yellow X. The preferred visual aid to depict temporary runway closure is the lighted X signal placed on or near the runway designation numbers. (See paragraph 2.18.2.1.2.)

2.18.2.1 **Closed Runways and Taxiways.**

2.18.2.1.1 Permanently Closed Runways.

For runways, obliterate the threshold marking, runway designation marking, and touchdown zone markings, and place an X at each end and at 1,000-foot (300 m) intervals. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X.

2.18.2.1.2 Temporarily Closed Runways.

For runways that have been temporarily closed, place an X at each end of the runway directly on or as near as practicable to the runway designation numbers. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X. See Figure 2-3. See also paragraph 2.18.3.3.

2.18.2.1.3 Partially Closed Runways and Displaced Thresholds.

When threshold markings are needed to identify the temporary beginning of the runway that is available for landing, the markings must comply with AC 150/5340-1. An X is not used on a partially closed runway or a runway with a displaced threshold. See paragraph 2.7.1.1 for the difference between partially closed runways and runways with displaced thresholds. Because of the temporary nature of threshold displacement due to construction, it is not necessary to re-adjust the existing runway centerline markings to meet standard spacing for a runway with a visual approach. Some of the requirements below may be waived in the cases of low-activity airports and/or short duration changes that are measured in days rather than weeks. Consider whether the presence of an airport traffic

control tower allows for the development of special procedures. Contact the appropriate FAA Airports Regional or District Office for assistance.

Figure 2-3. Markings for a Temporarily Closed Runway

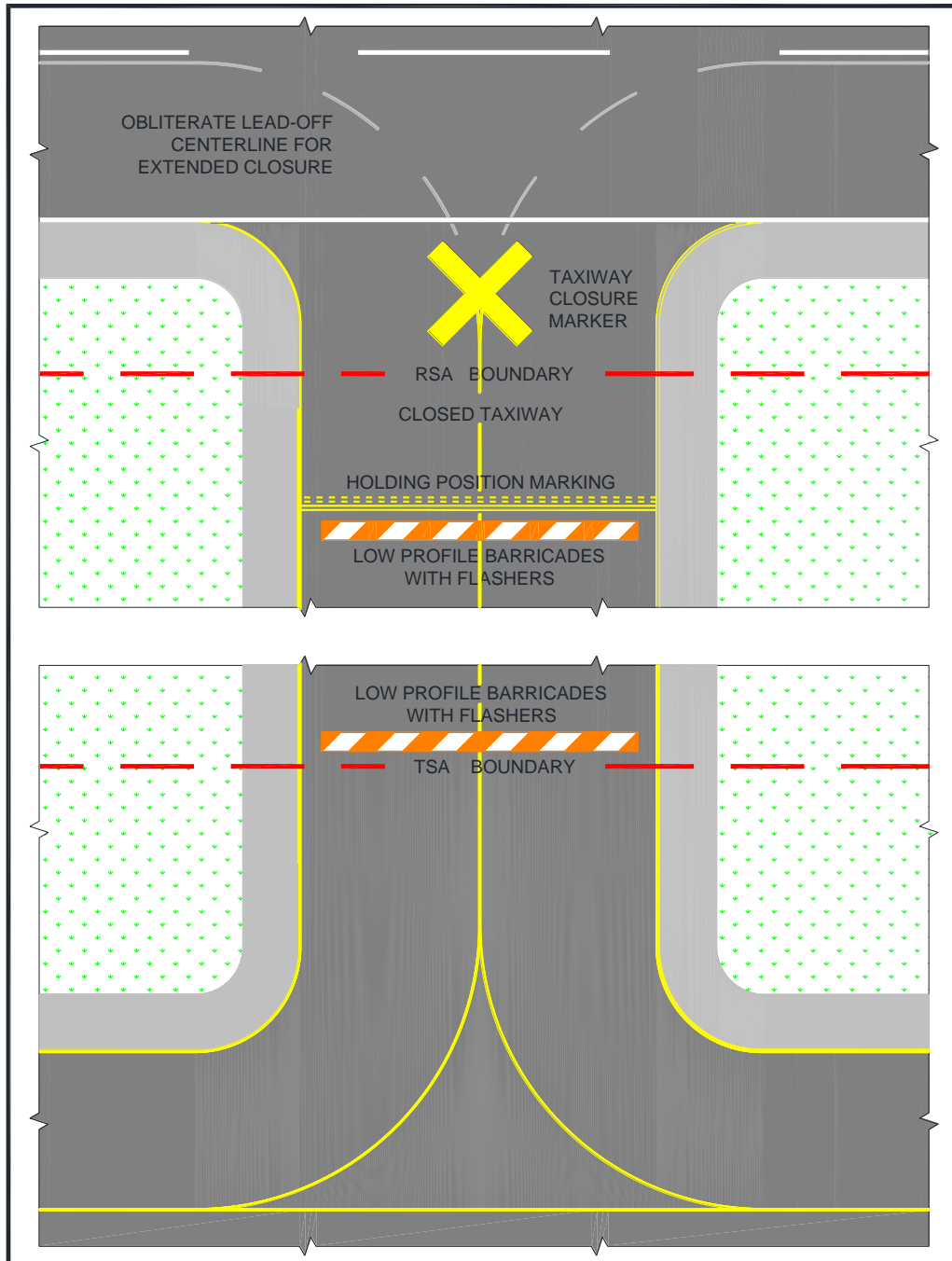


1. **Partially Closed Runways.** Pavement markings for temporary closed portions of the runway consist of a runway threshold bar, runway designation, and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing (see [AC 150/5340-1](#)). Obliterate or cover markings prior to the moved threshold. Existing touchdown zone markings beyond the moved threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See [Figure 2-4](#).
2. **Displaced Thresholds.** Pavement markings for a displaced threshold consist of a runway threshold bar, runway designation, and white arrowheads with and without arrow shafts. These markings are required to identify the portion of the runway before the displaced threshold to provide centerline guidance for pilots during approaches, takeoffs, and landing rollouts from the opposite direction. See [AC 150/5340-1](#). Obliterate markings prior to the displaced threshold. Existing touchdown zone markings beyond the displaced threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See [Figure 2-2](#).

2.18.2.1.4 Taxiways.

1. **Permanently Closed Taxiways.** *AC 150/5300-13 Airport Design*, notes that it is preferable to remove the pavement, but for pavement that is to remain, place an X at the entrance to both ends of the closed section. Obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed taxiway. See [Figure 2-4](#).

Figure 2-4. Temporary Taxiway Closure



2. **Temporarily Closed Taxiways.** Place barricades outside the safety area of intersecting taxiways. For runway/taxiway intersections, place an X at the entrance to the closed taxiway from the runway. If the taxiway will be closed for an extended period, obliterate taxiway centerline markings, including runway leadoff lines and taxiway to taxiway turns, leading to the closed section. Always obliterate runway lead-off lines for high speed exits, regardless of the duration of the closure. If the centerline markings will be reused upon reopening the taxiway, it is preferable to paint over the marking. This will result in less damage to the pavement when the upper layer of paint is ultimately removed. See Figure 2-4.

2.18.2.1.5 Temporarily Closed Airport.

When the airport is closed temporarily, mark all the runways as closed.

- 2.18.2.2 If unable to paint temporary markings on the pavement, construct them from any of the following materials: fabric, colored plastic, painted sheets of plywood, or similar materials. They must be properly configured and appropriately secured to prevent movement by prop wash, jet blast, or other wind currents. Items used to secure such markings must be of a color similar to the marking.

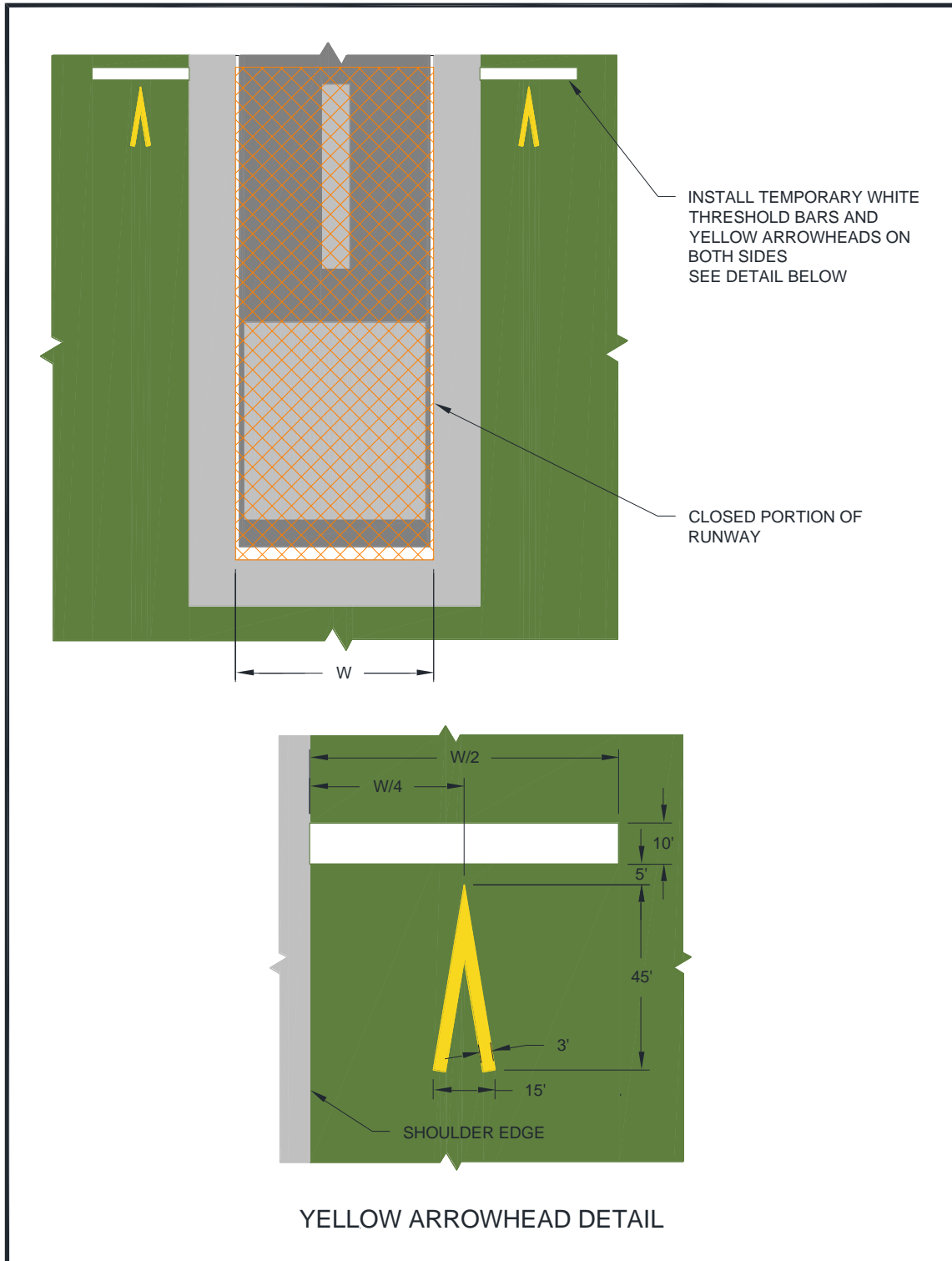
- 2.18.2.3 It may be necessary to remove or cover runway markings, including but not limited to, runway designation markings, threshold markings, centerline markings, edge stripes, touchdown zone markings and aiming point markings, depending on the length of construction and type of activity at the airport. When removing runway markings, apply the same treatment to areas between stripes or numbers, as the cleaned area will appear to pilots as a marking in the shape of the treated area.

- 2.18.2.4 If it is not possible to install threshold bars, chevrons, and arrows on the pavement, “temporary outboard white threshold bars and yellow arrowheads”, see Figure 2-5, may be used. Locate them outside of the runway pavement surface on both sides of the runway. The dimensions must be as shown in Figure 2-5. If the markings are not discernible on grass or snow, apply a black background with appropriate material over the ground to ensure they are clearly visible.

- 2.18.2.5 The application rate of paint to mark a short-term temporary runway and taxiway markings may deviate from the standard (see Item P-620, “Runway and Taxiway Painting,” in AC 150/5370-10), but the dimensions must meet the existing standards. When applying temporary markings at night, it is recommended that the fast curing, Type II paint be used to help offset the higher humidity and cooler temperatures often experienced at night. Diluting the paint will substantially increase cure time and is not recommended. Glass beads are not recommended for temporary markings. Striated markings may also be used for certain temporary markings. AC

150/5340-1, *Standards for Airport Markings*, has additional guidance on temporary markings.

Figure 2-5. Temporary Outboard White Threshold Bars and Yellow Arrowheads



2.18.3 Lighting and Visual NAVAIDs.

This paragraph refers to standard runway and taxiway lighting systems. See below for hazard lighting. Lighting installation must be in conformance with AC 150/5340-30, *Design and Installation Details for Airport Visual Aids*, and fixture design in conformance with AC 150/5345-50, *Specification for Portable Runway and Taxiway Lights*. When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. See AC 150/5340-26, *Maintenance of Airport Visual Aid Facilities*, for disconnect procedures and safety precautions. Alternately, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators and/or increase the current above its normal value. Secure, identify, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources. Maintain mandatory hold signs to operate normally in any situation where pilots or vehicle drivers could mistakenly be in that location. At towered airports certificated under Part 139, holding position signs are required to be illuminated on open taxiways crossing to closed or inactive runways. If the holding position sign is installed on the runway circuit for the closed runway, install a jumper to the taxiway circuit to provide power to the holding position sign for nighttime operations. Where it is not possible to maintain power to signs that would normally be operational, install barricades to exclude aircraft. Figure 2-1, Figure 2-2, Figure 2-3, and Figure 2-4 illustrate temporary changes to lighting and visual NAVAIDs.

2.18.3.1 **Permanently Closed Runways and Taxiways.**

For runways and taxiways that have been permanently closed, disconnect the lighting circuits.

2.18.3.2 **Temporarily Closed Runways and New Runways Not Yet Open to Air Traffic.**

If available, use a lighted X, both at night and during the day, placed at each end of the runway on or near the runway designation numbers facing the approach. (Note that the lighted X must be illuminated at all times that it is on a runway.) The use of a lighted X is required if night work requires runway lighting to be on. See AC 150/5345-55, *Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure*. For runways that have been temporarily closed, but for an extended period, and for those with pilot controlled lighting, disconnect the lighting circuits or secure switches to prevent inadvertent activation. For runways that will be opened periodically, coordinate procedures with the FAA air traffic manager or, at airports without an ATCT, the airport operator. Activate stop bars if available. Figure 2-6 shows a lighted X by day. Figure 2-7 shows a lighted X at night.

Figure 2-6. Lighted X in Daytime**Figure 2-7. Lighted X at Night**

2.18.3.3 **Partially Closed Runways and Displaced Thresholds.**

When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing and landing or taking off in either direction. A displaced threshold, by contrast, is put in place to ensure obstacle clearance by landing aircraft. The pavement prior to the displaced threshold is available for takeoff in the direction of the displacement, and for landing and takeoff in the opposite direction. Misunderstanding this difference and issuance of a subsequently inaccurate NOTAM can result in a hazardous situation. For both partially

closed runways and displaced thresholds, approach lighting systems at the affected end must be placed out of service.

2.18.3.3.1 Partially Closed Runways.

Disconnect edge and threshold lights on that part of the runway at and behind the threshold (that is, the portion of the runway that is closed). Alternately, cover the light fixtures in such a way as to prevent light leakage. See Figure 2-1.

2.18.3.3.2 Temporary Displaced Thresholds.

Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light (white for visual runways) in the opposite direction. If the displacement is 700 feet or less, blank out centerline lights in the direction of approach or place the centerline lights out of service. If the displacement is over 700 feet, place the centerline lights out of service. See AC 150/5340-30 for details on lighting displaced thresholds. See Figure 2-2.

2.18.3.3.3 Temporary runway thresholds and runway ends must be lighted if the runway is lighted and it is the intended threshold for night landings or instrument meteorological conditions.

2.18.3.3.4 A temporary threshold on an unlighted runway may be marked by retroreflective, elevated markers in addition to markings noted in paragraph 2.18.2.1.3. Markers seen by aircraft on approach are green. Markers at the rollout end of the runway are red. At certificated airports, temporary elevated threshold markers must be mounted with a frangible fitting (see 14 CFR Part 139.309). At non-certificated airports, the temporary elevated threshold markings may either be mounted with a frangible fitting or be flexible. See AC 150/5345-39, *Specification for L-853, Runway and Taxiway Retroreflective Markers*.

2.18.3.3.5 Temporary threshold lights and runway end lights and related visual NAVAIDs are installed outboard of the edges of the full-strength pavement only when they cannot be installed on the pavement. They are installed with bases at grade level or as low as possible, but not more than 3 inch (7.6 cm) above ground. (The standard above ground height for airport lighting fixtures is 14 inches (35 cm)). When any portion of a base is above grade, place properly compacted fill around the base to minimize the rate of gradient change so aircraft can, in an emergency, cross at normal landing or takeoff speeds without incurring significant damage. See AC 150/5370-10.

2.18.3.3.6 Maintain threshold and edge lighting color and spacing standards as described in AC 150/5340-30. Battery powered, solar, or portable lights that meet the criteria in AC 150/5345-50 may be used. These systems are intended primarily for visual flight rules (VFR) aircraft operations but may

be used for instrument flight rules (IFR) aircraft operations, upon individual approval from the Flight Standards Division of the applicable FAA Regional Office.

- 2.18.3.3.7 When runway thresholds are temporarily displaced, reconfigure yellow lenses (caution zone), as necessary, and place the centerline lights out of service.
- 2.18.3.3.8 Relocate the Visual Glide Slope Indicator (VGSI), such as Visual Approach Slope Indicator (VASI) and Precision Approach Path Indicator (PAPI); other airport lights, such as Runway End Identifier Lights (REIL); and approach lights to identify the temporary threshold. Another option is to disable the VGSI or any equipment that would give misleading indications to pilots as to the new threshold location. Installation of temporary visual aids may be necessary to provide adequate guidance to pilots on approach to the affected runway. If the FAA owns and operates the VGSI, coordinate its installation or disabling with the local ATO/Technical Operations Office. Relocation of such visual aids will depend on the duration of the project and the benefits gained from the relocation, as this can result in great expense. See FAA JO 6850.2, *Visual Guidance Lighting Systems*, for installation criteria for FAA owned and operated NAVAIDs.
- 2.18.3.3.9 Issue a NOTAM to inform pilots of temporary lighting conditions.

2.18.3.4 **Temporarily Closed Taxiways.**

If possible, deactivate the taxiway lighting circuits. When deactivation is not possible (for example other taxiways on the same circuit are to remain open), cover the light fixture in a way as to prevent light leakage.

2.18.4 Signs.

To the extent possible, signs must be in conformance with AC 150/5345-44, *Specification for Runway and Taxiway Signs*, and AC 150/5340-18, *Standard for Airport Sign Systems*.

2.18.4.1 **Existing Signs.**

Runway exit signs are to be covered for closed runway exits. Outbound destination signs are to be covered for closed runways. Any time a sign does not serve its normal function or would provide conflicting information, it must be covered or removed to prevent misdirecting pilots. Note that information signs identifying a crossing taxiway continue to perform their normal function even if the crossing taxiway is closed. For long term construction projects, consider relocating signs, especially runway distance remaining signs.

2.18.4.2 **Temporary Signs.**

Orange construction signs comprise a message in black on an orange background. Orange construction signs may help pilots be aware of changed conditions. The airport operator may choose to introduce these signs as part of a movement area construction project to increase situational awareness when needed. Locate signs outside the taxiway safety limits and ahead of construction areas so pilots can take timely action. Use temporary signs judiciously, striking a balance between the need for information and the increase in pilot workload. When there is a concern of pilot “information overload,” the applicability of mandatory hold signs must take precedence over orange construction signs recommended during construction. Temporary signs must meet the standards for such signs in Engineering Brief 93, *Guidance for the Assembly and Installation of Temporary Orange Construction Signs*. Many criteria in AC 150/5345-44, *Specification for Runway and Taxiway Signs*, are referenced in the Engineering Brief. Permissible sign legends are:

1. CONSTRUCTION AHEAD,
2. CONSTRUCTION ON RAMP, and
3. RWY XX TAKEOFF RUN AVAILABLE XXX FT.

Phasing, supported by drawings and sign schedule, for the installation of orange construction signs must be included in the CSPP or SPCD.

2.18.4.2.1 Takeoff Run Available (TORA) signs.

Recommended: Where a runway has been shortened for takeoff, install orange TORA signs well before the hold lines, such as on a parallel taxiway prior to a turn to a runway hold position. See EB 93 for sign size and location.

2.18.4.2.2 Sign legends are shown in Figure F-1.

Note: See Figure E-1, Figure E-2, Figure E-3, Figure F-2, and Figure F-3 for examples of orange construction sign locations.

2.19 **Marking and Signs for Access Routes.**

The CSPP should indicate that pavement markings and signs for construction personnel will conform to AC 150/5340-18 and, to the extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or State highway specifications. Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, *Frangible Connections*, which may require modification to size and height guidance in the MUTCD.

2.20 **Hazard Marking, Lighting and Signing.**

2.20.1 Hazard marking, lighting, and signing prevent pilots from entering areas closed to aircraft, and prevent construction personnel from entering areas open to aircraft. The CSPP must specify prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles. Hazard marking and lighting must also be specified to identify open manholes, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast. Also consider less obvious construction-related hazards and include markings to identify FAA, airport, and National Weather Service facilities cables and power lines; instrument landing system (ILS) critical areas; airport surfaces, such as RSA, OFA, and OFZ; and other sensitive areas to make it easier for contractor personnel to avoid these areas.

2.20.2 Equipment.

2.20.2.1 **Barricades.**

Low profile barricades, including traffic cones, (weighted or sturdily attached to the surface) are acceptable methods used to identify and define the limits of construction and hazardous areas on airports. Careful consideration must be given to selecting equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast. The spacing of barricades must be such that a breach is physically prevented barring a deliberate act. For example, if barricades are intended to exclude aircraft, gaps between barricades must be smaller than the wingspan of the smallest aircraft to be excluded; if barricades are intended to exclude vehicles, gaps between barricades must be smaller than the width of the excluded vehicles, generally 4 feet (1.2 meters). Provision must be made for ARFF access if necessary. If barricades are intended to exclude pedestrians, they must be continuously linked. Continuous linking may be accomplished through the use of ropes, securely attached to prevent FOD.

2.20.2.2 **Lights.**

Lights must be red, either steady burning or flashing, and must meet the luminance requirements of the State Highway Department. Batteries powering lights will last longer if lights flash. Lights must be mounted on barricades and spaced at no more than 10 feet (3 meters). Lights must be operated between sunset and sunrise and during periods of low visibility whenever the airport is open for operations. They may be operated by photocell, but this may require that the contractor turn them on manually during periods of low visibility during daytime hours.

2.20.2.3 **Supplement Barricades with Signs (for example) As Necessary.**

Examples are “No Entry” and “No Vehicles.” Be aware of the increased effects of wind and jet blast on barricades with attached signs.

2.20.2.4 **Air Operations Area – General.**

Barricades are not permitted in any active safety area or on the runway side of a runway hold line. Within a runway or taxiway object free area, and on aprons, use orange traffic cones, flashing or steady burning red lights as noted above, highly reflective collapsible barricades marked with diagonal, alternating orange and white stripes; and/or signs to separate all construction/maintenance areas from the movement area. Barricades may be supplemented with alternating orange and white flags at least 20 by 20 inch (50 by 50 cm) square and securely fastened to eliminate FOD. All barricades adjacent to any open runway or taxiway / taxilane safety area, or apron must be as low as possible to the ground, and no more than 18 inches high, exclusive of supplementary lights and flags. Barricades must be of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, and other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 inch (7.6 cm) above the ground. [Figure 2-8](#) and [Figure 2-9](#) show sample barricades with proper coloring and flags.

Figure 2-8. Interlocking Barricades



Figure 2-9. Low Profile Barricades

2.20.2.5 Air Operations Area – Runway/Taxiway Intersections.

Use highly reflective barricades with lights to close taxiways leading to closed runways. Evaluate all operating factors when determining how to mark temporary closures that can last from 10 to 15 minutes to a much longer period of time. However, even for closures of relatively short duration, close all taxiway/runway intersections with barricades. The use of traffic cones is appropriate for short duration closures.

2.20.2.6 Air Operations Area – Other.

Beyond runway and taxiway object free areas and aprons, barricades intended for construction vehicles and personnel may be many different shapes and made from various materials, including railroad ties, sawhorses, jersey barriers, or barrels.

2.20.2.7 Maintenance.

The construction specifications must include a provision requiring the contractor to have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The contractor must file the contact person's information with the airport operator. Lighting should be checked for proper operation at least once per day, preferably at dusk.

2.21 Work Zone Lighting for Nighttime Construction.

Lighting equipment must adequately illuminate the work area if the construction is to be performed during nighttime hours. Refer to [AC 150/5370-10](#) for minimum illumination levels for nighttime paving projects. Additionally, it is recommended that all support equipment, except haul trucks, be equipped with artificial illumination to safely

illuminate the area immediately surrounding their work areas. The lights should be positioned to provide the most natural color illumination and contrast with a minimum of shadows. The spacing must be determined by trial. Light towers should be positioned and adjusted to aim away from ATCT cabs and active runways to prevent blinding effects. Shielding may be necessary. Light towers should be removed from the construction site when the area is reopened to aircraft operations. Construction lighting units should be identified and generally located on the construction phasing plans in relationship to the ATCT and active runways and taxiways.

2.22 **Protection of Runway and Taxiway Safety Areas.**

Runway and taxiway safety areas, OFZs, OFAs, and approach surfaces are described in [AC 150/5300-13](#). Protection of these areas includes limitations on the location and height of equipment and stockpiled material. An FAA airspace study may be required. Coordinate with the appropriate FAA Airports Regional or District Office if there is any doubt as to requirements or dimensions (see paragraph [2.13.5](#)) as soon as the location and height of materials or equipment are known. The CSPP should include drawings showing all safety areas, object free areas, obstacle free zones and approach departure surfaces affected by construction.

2.22.1 Runway Safety Area (RSA).

A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway (see [AC 150/5300-13](#)). Construction activities within the existing RSA are subject to the following conditions:

- 2.22.1.1 No construction may occur within the existing RSA while the runway is open for aircraft operations. The RSA dimensions may be temporarily adjusted if the runway is restricted to aircraft operations requiring an RSA that is equal to the RSA width and length beyond the runway ends available during construction. (See [AC 150/5300-13](#)). The temporary use of declared distances and/or partial runway closures may provide the necessary RSA under certain circumstances. Coordinate with the appropriate FAA Airports Regional or District Office to have declared distances information published, and appropriate NOTAMs issued. See [AC 150/5300-13](#) for guidance on the use of declared distances.
- 2.22.1.2 The airport operator must coordinate the adjustment of RSA dimensions as permitted above with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and issue a NOTAM.
- 2.22.1.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations.

2.22.1.4 **Excavations.**

2.22.1.4.1 Open trenches or excavations are not permitted within the RSA while the runway is open. Backfill trenches before the runway is opened. If backfilling excavations before the runway must be opened is impracticable, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the runway across the trench without damage to the aircraft.

2.22.1.4.2 Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

2.22.1.5 **Erosion Control.**

Soil erosion must be controlled to maintain RSA standards, that is, the RSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

2.22.2 Runway Object Free Area (ROFA).

Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use, and material should not be stockpiled in the ROFA if not necessary. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval.

2.22.3 Taxiway Safety Area (TSA).

2.22.3.1 A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. (See AC 150/5300-13.) Since the width of the TSA is equal to the wingspan of the design aircraft, no construction may occur within the TSA while the taxiway is open for aircraft operations. The TSA dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a TSA that is equal to the TSA width available during construction. Give special consideration to TSA dimensions at taxiway turns and intersections. (see AC 150/5300-13).

2.22.3.2 The airport operator must coordinate the adjustment of the TSA width as permitted above with the appropriate FAA Airports Regional or District Office and the FAA air traffic manager and issue a NOTAM.

2.22.3.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations.

2.22.3.4 **Excavations.**

1. Curves. Open trenches or excavations are not permitted within the TSA while the taxiway is open. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the taxiway across the trench without damage to the aircraft.
2. Straight Sections. Open trenches or excavations are not permitted within the TSA while the taxiway is open for unrestricted aircraft operations. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, cover the excavations to allow the safe passage of ARFF equipment and of the heaviest aircraft operating on the taxiway across the trench without causing damage to the equipment or aircraft. In rare circumstances where the section of taxiway is indispensable for aircraft movement, open trenches or excavations may be permitted in the TSA while the taxiway is open to aircraft operations, subject to the following restrictions:
 - a. Taxiing speed is limited to 10 mph.
 - b. Appropriate NOTAMs are issued.
 - c. Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.
 - d. Low mass, low-profile lighted barricades are installed.
 - e. Appropriate temporary orange construction signs are installed.
3. Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

2.22.3.5 **Erosion control.**

Soil erosion must be controlled to maintain TSA standards, that is, the TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

2.22.4 Taxiway Object Free Area (TOFA).

Unlike the Runway Object Free Area, aircraft wings regularly penetrate the taxiway object free area during normal operations. Thus, the restrictions are more stringent. Except as provided below, no construction may occur within the taxiway object free area while the taxiway is open for aircraft operations.

- 2.22.4.1 The taxiway object free area dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a taxiway object free area that is equal to the taxiway object free area width available. Give special consideration to TOFA dimensions at taxiway turns and intersections.
- 2.22.4.2 Offset taxiway centerline and edge pavement markings (do not use glass beads) may be used as a temporary measure to provide the required taxiway object free area. Where offset taxiway pavement markings are provided, centerline lighting, centerline reflectors, or taxiway edge reflectors are required. Existing lighting that does not coincide with the temporary markings must be taken out of service.
- 2.22.4.3 Construction activity, including open excavations, may be accomplished without adjusting the width of the taxiway object free area, subject to the following restrictions:
 - 2.22.4.3.1 Taxiing speed is limited to 10 mph.
 - 2.22.4.3.2 NOTAMs issued advising taxiing pilots of hazard and recommending reduced taxiing speeds on the taxiway.
 - 2.22.4.3.3 Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.
 - 2.22.4.3.4 If desired, appropriate orange construction signs are installed. See paragraph 2.18.4.2 and Appendix F.
 - 2.22.4.3.5 Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). If such clearance can only be maintained if an aircraft does not have full use of the entire taxiway width (with its main landing gear at the edge of the usable pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.
 - 2.22.4.3.6 Flaggers furnished by the contractor must be used to direct and control construction equipment and personnel to a pre-established setback distance for safe passage of aircraft, and airline and/or airport personnel. Flaggers must also be used to direct taxiing aircraft. Due to liability issues, the airport operator should require airlines to provide flaggers for directing taxiing aircraft.

2.22.5 Obstacle Free Zone (OFZ).

In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. If a penetration to the OFZ is necessary, it may be possible to continue aircraft operations through operational restrictions. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

2.22.6 Runway Approach/Departure Areas and Clearways.

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, as defined in AC 150/5300-13. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

2.22.6.1 Construction activity in a runway approach/departure area may result in the need to partially close a runway or displace the existing runway threshold. Partial runway closure, displacement of the runway threshold, as well as closure of the complete runway and other portions of the movement area also require coordination through the airport operator with the appropriate FAA air traffic manager (FSS if non-towered) and ATO/Technical Operations (for affected NAVAIDS) and airport users.

2.22.6.2 **Caution About Partial Runway Closures.**

When filing a NOTAM for a partial runway closure, clearly state that the portion of pavement located prior to the threshold is not available for landing and departing traffic. In this case, the threshold has been moved for both landing and takeoff purposes (this is different than a displaced threshold). There may be situations where the portion of closed runway is available for taxiing only. If so, the NOTAM must reflect this condition).

2.22.6.3 **Caution About Displaced Thresholds.**

Implementation of a displaced threshold affects runway length available for aircraft landing over the displacement. Depending on the reason for the displacement (to provide obstruction clearance or RSA), such a displacement may also require an adjustment in the landing distance available and accelerate-stop distance available in the opposite direction. If project scope includes personnel, equipment, excavation, or other work within the existing RSA of any usable runway end, do not implement a displaced threshold unless arrivals and departures toward the construction activity are prohibited. Instead, implement a partial closure.

2.23 **Other Limitations on Construction.**

The CSPP must specify any other limitations on construction, including but not limited to:

2.23.1 Prohibitions.

- 2.23.1.1 No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.
- 2.23.1.2 No use of open flame welding or torches unless fire safety precautions are provided and the airport operator has approved their use.
- 2.23.1.3 No use of electrical blasting caps on or within 1,000 feet (300 meters) of the airport property. See AC 150/5370-10.

2.23.2 Restrictions.

- 2.23.2.1 Construction suspension required during specific airport operations.
- 2.23.2.2 Areas that cannot be worked on simultaneously.
- 2.23.2.3 Day or night construction restrictions.
- 2.23.2.4 Seasonal construction restrictions.
- 2.23.2.5 Temporary signs not approved by the airport operator.
- 2.23.2.6 Grades changes that could result in unplanned effects on NAVAIDs.

CHAPTER 3. GUIDELINES FOR WRITING A CSPP

3.1 **General Requirements.**

The CSPP is a standalone document written to correspond with the subjects outlined in paragraph 2.4. The CSPP is organized by numbered sections corresponding to each subject listed in paragraph 2.4, and described in detail in paragraphs 2.5 - 2.23. Each section number and title in the CSPP matches the corresponding subject outlined in paragraph 2.4 (for example, 1. Coordination, 2. Phasing, 3. Areas and Operations Affected by the Construction Activity, and so on). With the exception of the project scope of work outlined in Section 2. Phasing, only subjects specific to operational safety during construction should be addressed.

3.2 **Applicability of Subjects.**

Each section should, to the extent practical, focus on the specific subject. Where an overlapping requirement spans several sections, the requirement should be explained in detail in the most applicable section. A reference to that section should be included in all other sections where the requirement may apply. For example, the requirement to protect existing underground FAA ILS cables during trenching operations could be considered FAA ATO coordination (Coordination, paragraph 2.5.3), an area and operation affected by the construction activity (Areas and Operations Affected by the Construction Activity, paragraph 2.7.1.4), a protection of a NAVAID (Protection of Navigational Aids (NAVAIDs), paragraph 2.8), or a notification to the FAA of construction activities (Notification of Construction Activities, paragraph 2.13.5.3.2). However, it is more specifically an underground utility requirement (Underground Utilities, paragraph 2.15). The procedure for protecting underground ILS cables during trenching operations should therefore be described in 2.4.2.11: “The contractor must coordinate with the local FAA System Support Center (SSC) to mark existing ILS cable routes along Runway 17-35. The ILS cables will be located by hand digging whenever the trenching operation moves within 10 feet of the cable markings.” All other applicable sections should include a reference to 2.4.2.11: “ILS cables shall be identified and protected as described in 2.4.2.11” or “See 2.4.2.11 for ILS cable identification and protection requirements.” Thus, the CSPP should be considered as a whole, with no need to duplicate responses to related issues.

3.3 **Graphical Representations.**

Construction safety drawings should be included in the CSPP as attachments. When other graphical representations will aid in supporting written statements, the drawings, diagrams, and/or photographs should also be attached to the CSPP. References should be made in the CSPP to each graphical attachment and may be made in multiple sections.

3.4 **Reference Documents.**

The CSPP must not incorporate a document by reference unless reproduction of the material in that document is prohibited. In that case, either copies of or a source for the referenced document must be provided to the contractor. Where this AC recommends references (e.g. as in paragraph 3.9) the intent is to include a reference to the corresponding section in the CSPP, not to this Advisory Circular.

3.5 **Restrictions.**

The CSPP should not be considered as a project design review document. The CSPP should also avoid mention of permanent (“as-built”) features such as pavements, markings, signs, and lighting, except when such features are intended to aid in maintaining operational safety during the construction.

3.6 **Coordination.**

Include in this section a detailed description of conferences and meetings to be held both before and during the project. Include appropriate information from AC 150/5370-12. Discuss coordination procedures and schedules for each required FAA ATO Technical Operations shutdown and restart and all required flight inspections.

3.7 **Phasing.**

Include in this section a detailed scope of work description for the project as a whole and each phase of work covered by the CSPP. This includes all locations and durations of the work proposed. Attach drawings to graphically support the written scope of work. Detail in this section the sequenced phases of the proposed construction. Include a reference to paragraph 3.8, as appropriate.

3.8 **Areas and Operations Affected by Construction.**

Focus in this section on identifying the areas and operations affected by the construction. Describe corresponding mitigation that is not covered in detail elsewhere in the CSPP. Include references to paragraphs below as appropriate. Attach drawings as necessary to graphically describe affected areas and mechanisms proposed. See Appendix F for sample operational effects tables and figures.

3.9 **NAVAID Protection.**

List in this section all NAVAID facilities that will be affected by the construction. Identify NAVAID facilities that will be placed out of service at any time prior to or during construction activities. Identify individuals responsible for coordinating each shutdown and when each facility will be out of service. Include a reference to paragraph 3.6 for FAA ATO NAVAID shutdown, restart, and flight inspection coordination. Outline in detail procedures to protect each NAVAID facility remaining in service from interference by construction activities. Include a reference to paragraph 3.14 for the

issuance of NOTAMs as required. Include a reference to paragraph 3.16 for the protection of underground cables and piping serving NAVAIDs. If temporary visual aids are proposed to replace or supplement existing facilities, include a reference to paragraph 3.19. Attach drawings to graphically indicate the affected NAVAIDs and the corresponding critical areas.

3.10 **Contractor Access.**

This will necessarily be the most extensive section of the CSPP. Provide sufficient detail so that a contractor not experienced in working on airports will understand the unique restrictions such work will require. Due to this extent, it should be broken down into subsections as described below:

3.10.1 Location of Stockpiled Construction Materials.

Describe in this section specific locations for stockpiling material. Note any height restrictions on stockpiles. Include a reference to paragraph 3.21 for hazard marking and lighting devices used to identify stockpiles. Include a reference to paragraph 3.11 for provisions to prevent stockpile material from becoming wildlife attractants. Include a reference to paragraph 3.12 for provisions to prevent stockpile material from becoming FOD. Attach drawings to graphically indicate the stockpile locations.

3.10.2 Vehicle and Pedestrian Operations.

While there are many items to be addressed in this major subsection of the CSPP, all are concerned with one main issue: keeping people and vehicles from areas of the airport where they don't belong. This includes preventing unauthorized entry to the AOA and preventing the improper movement of pedestrians or vehicles on the airport. In this section, focus on mechanisms to prevent construction vehicles and workers traveling to and from the worksite from unauthorized entry into movement areas. Specify locations of parking for both employee vehicles and construction equipment, and routes for access and haul roads. In most cases, this will best be accomplished by attaching a drawing. Quote from AC 150/5210-5 specific requirements for contractor vehicles rather than referring to the AC as a whole, and include special requirements for identifying HAZMAT vehicles. Quote from, rather than incorporate by reference, AC 150/5210-20 as appropriate to address the airport's rules for ground vehicle operations, including its training program. Discuss the airport's recordkeeping system listing authorized vehicle operators.

3.10.3 Two-Way Radio Communications.

Include a special section to identify all individuals who are required to maintain communications with Air Traffic (AT) at airports with active towers, or monitor CTAF at airports without or with closed ATCT. Include training requirements for all individuals required to communicate with AT. Individuals required to monitor AT frequencies should also be identified. If construction employees are also required to communicate by radio with Airport Operations, this procedure should be described in detail. Usage of vehicle mounted radios and/or portable radios should be addressed. Communication procedures for the event of disabled radio communication (that is, light

signals, telephone numbers, others) must be included. All radio frequencies should be identified (Tower, Ground Control, CTAF, UNICOM, ATIS, and so on).

3.10.4 Airport Security.

Address security as it applies to vehicle and pedestrian operations. Discuss TSA requirements, security badging requirements, perimeter fence integrity, gate security, and other needs. Attach drawings to graphically indicate secured and/or Security Identification Display Areas (SIDA), perimeter fencing, and available access points.

3.11 **Wildlife Management.**

Discuss in this section wildlife management procedures. Describe the maintenance of existing wildlife mitigation devices, such as perimeter fences, and procedures to limit wildlife attractants. Include procedures to notify Airport Operations of wildlife encounters. Include a reference to paragraph 3.10 for security (wildlife) fence integrity maintenance as required.

3.12 **FOD Management.**

In this section, discuss methods to control and monitor FOD: worksite housekeeping, ground vehicle tire inspections, runway sweeps, and so on. Include a reference to paragraph 3.15 for inspection requirements as required.

3.13 **HAZMAT Management.**

Describe in this section HAZMAT management procedures: fuel deliveries, spill recovery procedures, Safety Data Sheet (SDS), Material Safety Data Sheet (MSDS) or Product Safety Data Sheet (PSDS) availability, and other considerations. Any specific airport HAZMAT restrictions should also be identified. Include a reference to paragraph 3.10 for HAZMAT vehicle identification requirements. Quote from, rather than incorporate by reference, AC 150/5320-15.

3.14 **Notification of Construction Activities.**

List in this section the names and telephone numbers of points of contact for all parties affected by the construction project. We recommend a single list that includes all telephone numbers required under this section. Include emergency notification procedures for all representatives of all parties potentially impacted by the construction. Identify individual representatives – and at least one alternate – for each party. List both on-duty and off-duty contact information for each individual, including individuals responsible for emergency maintenance of airport construction hazard lighting and barricades. Describe procedures to coordinate immediate response to events that might adversely affect the operational safety of the airport (such as interrupted NAVAID service). Explain requirements for and the procedures for the issuance of Notices to Airmen (NOTAMs), notification to FAA required by 14 CFR Part 77 and Part 157 and in the event of affected NAVAIDs. For NOTAMs, identify an individual, and at least one alternate, responsible for issuing and cancelling each specific type of Notice to

Airmen (NOTAM) required. Detail notification methods for police, fire fighting, and medical emergencies. This may include 911, but should also include direct phone numbers of local police departments and nearby hospitals. Identify the E911 address of the airport and the emergency access route via haul roads to the construction site. Require the contractor to have this information available to all workers. The local Poison Control number should be listed. Procedures regarding notification of Airport Operations and/or the ARFF Department of such emergencies should be identified, as applicable. If airport radio communications are identified as a means of emergency notification, include a reference to paragraph 3.10. Differentiate between emergency and nonemergency notification of ARFF personnel, the latter including activities that affect ARFF water supplies and access roads. Identify the primary ARFF contact person and at least one alternate. If notification is to be made through Airport Operations, then detail this procedure. Include a method of confirmation from the ARFF department.

3.15 Inspection Requirements.

Describe in this section inspection requirements to ensure airfield safety compliance. Include a requirement for routine inspections by the resident engineer (RE) or other airport operator's representative and the construction contractors. If the engineering consultants and/or contractors have a Safety Officer who will conduct such inspections, identify this individual. Describe procedures for special inspections, such as those required to reopen areas for aircraft operations. Part 139 requires daily airfield inspections at certificated airports, but these may need to be more frequent when construction is in progress. Discuss the role of such inspections on areas under construction. Include a requirement to immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

3.16 Underground Utilities.

Explain how existing underground utilities will be located and protected. Identify each utility owner and include contact information for each company/agency in the master list. Address emergency response procedures for damaged or disrupted utilities. Include a reference to paragraph 3.14 for notification of utility owners of accidental utility disruption as required.

3.17 Penalties.

Describe in this section specific penalties imposed for noncompliance with airport rules and regulations, including the CSPP: SIDA violations, VPD, and others.

3.18 Special Conditions.

Identify any special conditions that may trigger specific safety mitigation actions outlined in this CSPP: low visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, VPD, and other activities requiring construction suspension/resumption. Include a reference to paragraph 3.10 for compliance with airport safety and security measures and for radio communications as required. Include

a reference to paragraph 3.14 for emergency notification of all involved parties, including police/security, ARFF, and medical services.

3.19 Runway and Taxiway Visual Aids.

Include marking, lighting, signs, and visual NAVAIDS. Detail temporary runway and taxiway marking, lighting, signs, and visual NAVAIDS required for the construction. Discuss existing marking, lighting, signs, and visual NAVAIDS that are temporarily, altered, obliterated, or shut down. Consider non-federal facilities and address requirements for reimbursable agreements necessary for alteration of FAA facilities and for necessary flight checks. Identify temporary TORA signs or runway distance remaining signs if appropriate. Identify required temporary visual NAVAIDS such as REIL or PAPI. Quote from, rather than incorporate by reference, AC 150/5340-1, Standards for Airport Markings; AC 150/5340-18, Standards for Airport Sign Systems; and AC 150/5340-30, as required. Attach drawings to graphically indicate proposed marking, lighting, signs, and visual NAVAIDS.

3.20 Marking and Signs for Access Routes.

Detail plans for marking and signs for vehicle access routes. To the extent possible, signs should be in conformance with the Federal Highway Administration MUTCD and/or State highway specifications, not hand lettered. Detail any modifications to the guidance in the MUTCD necessary to meet frangibility/height requirements.

3.21 Hazard Marking and Lighting.

Specify all marking and lighting equipment, including when and where each type of device is to be used. Specify maximum gaps between barricades and the maximum spacing of hazard lighting. Identify one individual and at least one alternate responsible for maintenance of hazard marking and lighting equipment in the master telephone list. Include a reference to paragraph 3.14. Attach drawings to graphically indicate the placement of hazard marking and lighting equipment.

3.22 Work Zone Lighting for Nighttime Construction.

If work is to be conducted at night, specify all lighting equipment, including when and where each type of device is to be used. Indicate the direction lights are to be aimed and any directions that aiming of lights is prohibited. Specify any shielding necessary in instances where aiming is not sufficient to prevent interference with air traffic control and aircraft operations. Attach drawings to graphically indicate the placement and aiming of lighting equipment. Where the plan only indicates directions that aiming of lights is prohibited, the placement and positioning of portable lights must be proposed by the Contractor and approved by the airport operator's representative each time lights are relocated or repositioned.

3.23 Protection of Runway and Taxiway Safety Areas.

This section should focus exclusively on procedures for protecting all safety areas, including those altered by the construction: methods of demarcation, limit of access, movement within safety areas, stockpiling and trenching restrictions, and so on. Reference AC 150/5300-13, as required. Include a reference to paragraph 3.10 for procedures regarding vehicle and personnel movement within safety areas. Include a reference to paragraph 3.10 for material stockpile restrictions as required. Detail requirements for trenching, excavations, and backfill. Include a reference to paragraph 3.21 for hazard marking and lighting devices used to identify open excavations as required. If runway and taxiway closures are proposed to protect safety areas, or if temporary displaced thresholds and/or revised declared distances are used to provide the required Runway Safety Area, include a reference to paragraphs 3.14 and 3.19. Detail procedures for protecting the runway OFZ, runway OFA, taxiway OFA and runway approach surfaces including those altered by the construction: methods of demarcation, limit of cranes, storage of equipment, and so on. Quote from, rather than incorporate by reference, AC 150/5300-13, as required. Include a reference to paragraph 3.24 for height (i.e., crane) restrictions as required. One way to address the height of equipment that will move during the project is to establish a three-dimensional “box” within which equipment will be confined that can be studied as a single object. Attach drawings to graphically indicate the safety area, OFZ, and OFA boundaries.

3.24 Other Limitations on Construction.

This section should describe what limitations must be applied to each area of work and when each limitation will be applied: limitations due to airport operations, height (i.e., crane) restrictions, areas which cannot be worked at simultaneously, day/night work restrictions, winter construction, and other limitations. Include a reference to paragraph 3.7 for project phasing requirements based on construction limitations as required.

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APPENDIX A. RELATED READING MATERIAL

Obtain the latest version of the following free publications from the FAA on its Web site at <http://www.faa.gov/airports/>.

Table A-1. FAA Publications

Number	Title and Description
<u>AC 150/5200-28</u>	<i>Notices to Airmen (NOTAMs) for Airport Operators</i> Guidance for using the NOTAM System in airport reporting.
<u>AC 150/5200-30</u>	<i>Airport Field Condition Assessments and Winter Operations Safety</i> Guidance for airport owners/operators on the development of an acceptable airport snow and ice control program and on appropriate field condition reporting procedures.
<u>AC 150/5200-33</u>	<i>Hazardous Wildlife Attractants On or Near Airports</i> Guidance on locating certain land uses that might attract hazardous wildlife to public-use airports.
<u>AC 150/5210-5</u>	<i>Painting, Marking, and Lighting of Vehicles Used on an Airport</i> Guidance, specifications, and standards for painting, marking, and lighting vehicles operating in the airport air operations areas.
<u>AC 150/5210-20</u>	<i>Ground Vehicle Operations to include Taxiing or Towing an Aircraft on Airports</i> Guidance to airport operators on developing ground vehicle operation training programs.
<u>AC 150/5300-13</u>	<i>Airport Design</i> FAA standards and recommendations for airport design. Establishes approach visibility minimums as an airport design parameter, and contains the Object Free area and the obstacle free-zone criteria.
<u>AC 150/5210-24</u>	<i>Airport Foreign Object Debris (FOD) Management</i> Guidance for developing and managing an airport foreign object debris (FOD) program

Number	Title and Description
<u>AC 150/5320-15</u>	<i>Management of Airport Industrial Waste</i> Basic information on the characteristics, management, and regulations of industrial wastes generated at airports. Guidance for developing a Storm Water Pollution Prevention Plan (SWPPP) that applies best management practices to eliminate, prevent, or reduce pollutants in storm water runoff with particular airport industrial activities.
<u>AC 150/5340-1</u>	<i>Standards for Airport Markings</i> FAA standards for the siting and installation of signs on airport runways and taxiways.
<u>AC 150/5340-18</u>	<i>Standards for Airport Sign Systems</i> FAA standards for the siting and installation of signs on airport runways and taxiways.
<u>AC 150/5345-28</u>	<i>Precision Approach Path Indicator (PAPI) Systems</i> FAA standards for PAPI systems, which provide pilots with visual glide slope guidance during approach for landing.
<u>AC 150/5340-30</u>	<i>Design and Installation Details for Airport Visual Aids</i> Guidance and recommendations on the installation of airport visual aids.
<u>AC 150/5345-39</u>	<i>Specification for L-853, Runway and Taxiway Retroreflective Markers</i>
<u>AC 150/5345-44</u>	<i>Specification for Runway and Taxiway Signs</i> FAA specifications for unlighted and lighted signs for taxiways and runways.
<u>AC 150/5345-53</u>	<i>Airport Lighting Equipment Certification Program</i> Details on the Airport Lighting Equipment Certification Program (ALECP).
<u>AC 150/5345-50</u>	<i>Specification for Portable Runway and Taxiway Lights</i> FAA standards for portable runway and taxiway lights and runway end identifier lights for temporary use to permit continued aircraft operations while all or part of a runway lighting system is inoperative.
<u>AC 150/5345-55</u>	<i>Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure</i>

Number	Title and Description
<u>AC 150/5370-10</u>	<i>Standards for Specifying Construction of Airports</i> Standards for construction of airports, including earthwork, drainage, paving, turfing, lighting, and incidental construction.
<u>AC 150/5370-12</u>	<i>Quality Management for Federally Funded Airport Construction Projects</i>
EB 93	<i>Guidance for the Assembly and Installation of Temporary Orange Construction Signs</i>
FAA Order 5200.11	<u>FAA Airports (ARP) Safety Management System (SMS)</u> Basics for implementing SMS within ARP. Includes roles and responsibilities of ARP management and staff as well as other FAA lines of business that contribute to the ARP SMS.
FAA Certalert 98-05	<i>Grasses Attractive to Hazardous Wildlife</i> Guidance on grass management and seed selection.
FAA Form 7460-1	<u>Notice of Proposed Construction or Alteration</u>
FAA Form 7480-1	<u>Notice of Landing Area Proposal</u>
FAA Form 6000.26	National NAS Strategic Interruption Service Level Agreement, Strategic Events Coordination, Airport Sponsor Form

Obtain the latest version of the following free publications from the Electronic Code of Federal Regulations at <http://www.ecfr.gov/>.

Table A-2. Code of Federal Regulation

Number	Title
Title 14 CFR Part 77	Safe, Efficient Use and Preservation of the Navigable Airspace
Title 14 CFR Part 139	Certification of Airports
Title 49 CFR Part 1542	Airport Security

Obtain the latest version of the Manual on Uniform Traffic Control Devices from the Federal Highway Administration at <http://mutcd.fhwa.dot.gov/>.

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APPENDIX B. TERMS AND ACRONYMS**Table B-1. Terms and Acronyms**

Term	Definition
Form 7460-1	Notice of Proposed Construction or Alteration. For on-airport projects, the form submitted to the FAA regional or airports division office as formal written notification of any kind of construction or alteration of objects that affect navigable airspace, as defined in 14 CFR Part 77, <i>Safe, Efficient Use, and Preservation of the Navigable Airspace</i> . (See guidance available on the FAA web site at https://oeaaa.faa.gov .) The form may be downloaded at http://www.faa.gov/airports/resources/forms/ , or filed electronically at: https://oeaaa.faa.gov .
Form 7480-1	Notice of Landing Area Proposal. Form submitted to the FAA Airports Regional Division Office or Airports District Office as formal written notification whenever a project without an airport layout plan on file with the FAA involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport The form may be downloaded at http://www.faa.gov/airports/resources/forms/ .
Form 6000-26	Airport Sponsor Strategic Event Submission Form
AC	Advisory Circular
ACSI	Airport Certification Safety Inspector
ADG	Airplane Design Group
AIP	Airport Improvement Program
ALECP	Airport Lighting Equipment Certification Program
ANG	Air National Guard
AOA	Air Operations Area, as defined in 14 CFR Part 107. Means a portion of an airport, specified in the airport security program, in which security measures are carried out. This area includes aircraft movement areas, aircraft parking areas, loading ramps, and safety areas, and any adjacent areas (such as general aviation areas) that are not separated by adequate security systems, measures, or procedures. This area does not include the secured area of the airport terminal building.
ARFF	Aircraft Rescue and Fire Fighting
ARP	FAA Office of Airports
ASDA	Accelerate-Stop Distance Available
AT	Air Traffic
ATCT	Airport Traffic Control Tower
ATIS	Automatic Terminal Information Service
ATO	Air Traffic Organization
Certificated Airport	An airport that has been issued an Airport Operating Certificate by the FAA under

Term	Definition
	the authority of 14 CFR Part 139, <i>Certification of Airports</i> .
CFR	Code of Federal Regulations
Construction	The presence of construction-related personnel, equipment, and materials in any location that could infringe upon the movement of aircraft.
CSPP	Construction Safety and Phasing Plan. The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
CTAF	Common Traffic Advisory Frequency
Displaced Threshold	A threshold that is located at a point on the runway other than the designated beginning of the runway. The portion of pavement behind a displaced threshold is available for takeoffs in either direction or landing from the opposite direction.
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FOD	Foreign Object Debris/Damage
FSS	Flight Service Station
GA	General Aviation
HAZMAT	Hazardous Materials
HMA	Hot Mix Asphalt
IAP	Instrument Approach Procedures
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LDA	Landing Distance Available
LOC	Localizer antenna array
Movement Area	The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading aprons and aircraft parking areas (reference 14 CFR Part 139).
MSDS	Material Safety Data Sheet
MUTCD	Manual on Uniform Traffic Control Devices
NAVAID	Navigation Aid
NAVAID Critical Area	An area of defined shape and size associated with a NAVAID that must remain clear and graded to avoid interference with the electronic signal.
Non-Movement Area	The area inside the airport security fence exclusive of the Movement Area. It is important to note that the non-movement area includes pavement traversed by aircraft.

Term	Definition
NOTAM	Notices to Airmen
Obstruction	Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, subpart C.
OCC	Operations Control Center
OE / AAA	Obstruction Evaluation / Airport Airspace Analysis
OFA	Object Free Area. An area on the ground centered on the runway, taxiway, or taxi lane centerline provided to enhance safety of aircraft operations by having the area free of objects except for those objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. (See AC 150/5300-13 for additional guidance on OFA standards and wingtip clearance criteria.)
OFZ	Obstacle Free Zone. The airspace below 150 ft (45 m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway and for missed approaches. The OFZ is subdivided as follows: Runway OFZ, Inner Approach OFZ, Inner Transitional OFZ, and Precision OFZ. Refer to AC 150/5300-13 for guidance on OFZ.
OSHA	Occupational Safety and Health Administration
OTS	Out of Service
P&R	Planning and Requirements Group
NPI	NAS Planning & Integration
PAPI	Precision Approach Path Indicator
PFC	Passenger Facility Charge
PLASI	Pulse Light Approach Slope Indicator
Project Proposal Summary	A clear and concise description of the proposed project or change that is the object of Safety Risk Management.
RA	Reimbursable Agreement
RE	Resident Engineer
REIL	Runway End Identifier Lights
RNAV	Area Navigation
ROFA	Runway Object Free Area
RSA	Runway Safety Area. A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway, in accordance with AC 150/5300-13 .
SDS	Safety Data Sheet
SIDA	Security Identification Display Area
SMS	Safety Management System

Term	Definition
SPCD	Safety Plan Compliance Document. Details developed and submitted by a contractor to the airport operator for approval providing details on how the performance of a construction project will comply with the CSPP.
SRM	Safety Risk Management
SSC	System Support Center
Taxiway Safety Area	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway, in accordance with AC 150/5300-13 .
TDG	Taxiway Design Group
Temporary	Any condition that is not intended to be permanent.
Temporary Runway End	The beginning of that portion of the runway available for landing and taking off in one direction, and for landing in the other direction. Note the difference from a displaced threshold.
Threshold	The beginning of that portion of the runway available for landing. In some instances, the landing threshold may be displaced.
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available. The length of the runway less any length of runway unavailable and/or unsuitable for takeoff run computations. See AC 150/5300-13 for guidance on declared distances.
TSA	Taxiway Safety Area, or Transportation Security Administration
UNICOM	A radio communications system of a type used at small airports.
VASI	Visual Approach Slope Indicator
VGSI	Visual Glide Slope Indicator. A device that provides a visual glide slope indicator to landing pilots. These systems include precision approach path indicator (PAPI), visual approach slope indicator (VASI), and pulse light approach slope indicator (PLASI).
VFR	Visual Flight Rules
VOR	Very High Frequency Omnidirectional Radio Range
VPD	Vehicle / Pedestrian Deviation

APPENDIX C. SAFETY AND PHASING PLAN CHECKLIST

This appendix is keyed to Chapter 2. In the electronic version of this AC, clicking on the paragraph designation in the Reference column will access the applicable paragraph. There may be instances where the CSPP requires provisions that are not covered by the list in this appendix.

This checklist is intended as an aid, not a required submittal.

Table C-1. CSPP Checklist

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
General Considerations					
Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction are specified.	<u>2.5</u>				
Operational safety is a standing agenda item for construction progress meetings.	<u>2.5</u>				
Scheduling of the construction phases is properly addressed.	<u>2.6</u>				
Any formal agreements are established.	<u>2.5.3</u>				
Areas and Operations Affected by Construction Activity					
Drawings showing affected areas are included.	<u>2.7.1</u>				
Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	<u>2.7.1.1</u>				
Access routes used by ARFF vehicles affected by the project are addressed.	<u>2.7.1.2</u>				
Access routes used by airport and airline support vehicles affected by the project are addressed.	<u>2.7.1.3</u>				
Underground utilities, including water supplies for firefighting and drainage.	<u>2.7.1.4</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Approach/departure surfaces affected by heights of temporary objects are addressed.	<u>2.7.1.5</u>				
Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	<u>2.7.1</u>				
Temporary changes to taxi operations are addressed.	<u>2.7.2.1</u>				
Detours for ARFF and other airport vehicles are identified.	<u>2.7.2.2</u>				
Maintenance of essential utilities and underground infrastructure is addressed.	<u>2.7.2.3</u>				
Temporary changes to air traffic control procedures are addressed.	<u>2.7.2.4</u>				
NAVAIDs					
Critical areas for NAVAIDs are depicted on drawings.	<u>2.8</u>				
Effects of construction activity on the performance of NAVAIDs, including unanticipated power outages, are addressed.	<u>2.8</u>				
Protection of NAVAID facilities is addressed.	<u>2.8</u>				
The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	<u>2.8</u>				
Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contact, are included.	<u>2.8, 2.13.1, 2.13.5.3.1, 2.18.1</u>				
Contractor Access					
The CSPP addresses areas to which contractor will have access and how	<u>2.9</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
the areas will be accessed.					
The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	<u>2.9</u>				
The location of stockpiled construction materials is depicted on drawings.	<u>2.9.1</u>				
The requirement for stockpiles in the ROFA to be approved by FAA is included.	<u>2.9.1</u>				
Requirements for proper stockpiling of materials are included.	<u>2.9.1</u>				
Construction site parking is addressed.	<u>2.9.2.1</u>				
Construction equipment parking is addressed.	<u>2.9.2.2</u>				
Access and haul roads are addressed.	<u>2.9.2.3</u>				
A requirement for marking and lighting of vehicles to comply with <i>AC 150/5210-5, Painting, Marking and Lighting of Vehicles Used on an Airport</i> , is included.	<u>2.9.2.4</u>				
Proper vehicle operations, including requirements for escorts, are described.	<u>2.9.2.5, 2.9.2.6</u>				
Training requirements for vehicle drivers are addressed.	<u>2.9.2.7</u>				
Two-way radio communications procedures are described.	<u>2.9.2.9</u>				
Maintenance of the secured area of the airport is addressed.	<u>2.9.2.10</u>				
Wildlife Management					
The airport operator's wildlife management procedures are addressed.	<u>2.10</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Foreign Object Debris Management					
The airport operator's FOD management procedures are addressed.	<u>2.11</u>				
Hazardous Materials Management					
The airport operator's hazardous materials management procedures are addressed.	<u>2.12</u>				
Notification of Construction Activities					
Procedures for the immediate notification of airport user and local FAA of any conditions adversely affecting the operational safety of the airport are detailed.	<u>2.13</u>				
Maintenance of a list by the airport operator of the responsible representatives/points of contact for all involved parties and procedures for contacting them 24 hours a day, seven days a week is specified.	<u>2.13.1</u>				
A list of local ATO/Technical Operations personnel is included.	<u>2.13.1</u>				
A list of ATCT managers on duty is included.	<u>2.13.1</u>				
A list of authorized representatives to the OCC is included.	<u>2.13.2</u>				
Procedures for coordinating, issuing, maintaining and cancelling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	<u>2.8, 2.13.2, 2.18.3.3.9</u>				
Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	<u>2.13.2</u>				
Emergency notification procedures for medical, fire fighting, and police	<u>2.13.3</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
response are addressed.					
Coordination with ARFF personnel for non-emergency issues is addressed.	<u>2.13.4</u>				
Notification to the FAA under 14 CFR parts 77 and 157 is addressed.	<u>2.13.5</u>				
Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDs are addressed.	<u>2.13.5.3.2</u>				
Inspection Requirements					
Daily and interim inspections by both the airport operator and contractor are specified.	<u>2.14.1, 2.14.2</u>				
Final inspections at certificated airports are specified when required.	<u>2.14.3</u>				
Underground Utilities					
Procedures for protecting existing underground facilities in excavation areas are described.	<u>2.15</u>				
Penalties					
Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	<u>2.16</u>				
Special Conditions					
Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	<u>2.17</u>				
Runway and Taxiway Visual Aids - Marking, Lighting, Signs, and Visual NAVAIDs					
The proper securing of temporary airport markings, lighting, signs, and visual NAVAIDs is addressed.	<u>2.18.1</u>				
Frangibility of airport markings, lighting, signs, and visual NAVAIDs is specified.	<u>2.18.1, 2.18.3, 2.18.4.2, 2.20.2.4</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
The requirement for markings to be in compliance with <u>AC 150/5340-1</u> , <i>Standards for Airport Markings</i> , is specified.	<u>2.18.2</u>				
Detailed specifications for materials and methods for temporary markings are provided.	<u>2.18.2</u>				
The requirement for lighting to conform to <u>AC 150/5340-30</u> , <i>Design and Installation Details for Airport Visual Aids</i> ; <u>AC 150/5345-50</u> , <i>Specification for Portable Runway and Taxiway Lights</i> ; and <u>AC 150/5345-53</u> , <i>Airport Lighting Certification Program</i> , is specified.	<u>2.18.3</u>				
The use of a lighted X is specified where appropriate.	<u>2.18.2.1.2</u> , <u>2.18.3.2</u>				
The requirement for signs to conform to <u>AC 150/5345-44</u> , <i>Specification for Runway and Taxiway Signs</i> ; <u>AC 150/5340-18</u> , <i>Standards for Airport Sign Systems</i> ; and <u>AC 150/5345-53</u> , <i>Airport Lighting Certification Program</i> , is specified.	<u>2.18.4</u>				
Marking and Signs For Access Routes					
The CSPP specifies that pavement markings and signs intended for construction personnel should conform to <u>AC 150/5340-18</u> and, to the extent practicable, with the MUTCD and/or State highway specifications.	<u>2.18.4.2</u>				
Hazard Marking and Lighting					
Prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles are specified.	<u>2.20.1</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	<u>2.20.1</u>				
The CSPP considers less obvious construction-related hazards.	<u>2.20.1</u>				
Equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast is specified.	<u>2.20.2.1</u>				
The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	<u>2.20.2.1</u>				
Red lights meeting the luminance requirements of the State Highway Department are specified.	<u>2.20.2.2</u>				
Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are specified to be as low as possible to the ground, and no more than 18 inch high.	<u>2.20.2.3</u>				
Barricades are specified to indicate construction locations in which no part of an aircraft may enter.	<u>2.20.2.3</u>				
Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	<u>2.20.2.5</u>				
Markings for temporary closures are specified.	<u>2.20.2.5</u>				
The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	<u>2.20.2.7</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Work Zone Lighting for Nighttime Construction					
If work is to be conducted at night, the CSPP identifies construction lighting units and their general locations and aiming in relationship to the ATCT and active runways and taxiways.	<u>2.21</u>				
Protection of Runway and Taxiway Safety Areas					
The CSPP clearly states that no construction may occur within a safety area while the associated runway or taxiway is open for aircraft operations.	<u>2.22.1.1,</u> <u>2.22.3.1</u>				
The CSPP specifies that the airport operator coordinates the adjustment of RSA or TSA dimensions with the ATCT and the appropriate FAA Airports Regional or District Office and issues a local NOTAM.	<u>2.22.1.2,</u> <u>2.22.3.2</u>				
Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	<u>2.22.3.3</u>				
The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open, subject to approved exceptions.	<u>2.22.1.4</u>				
Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	<u>2.22.1.4</u>				
The CSPP includes provisions for prominent marking of open trenches and excavations at the construction site.	<u>2.22.1.4</u>				
Grading and soil erosion control to maintain RSA/TSA standards are	<u>2.22.3.5</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
addressed.					
The CSPP specifies that equipment is to be removed from the ROFA when not in use.	<u>2.22.2</u>				
The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	<u>2.22.3</u>				
Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	<u>2.22.4</u>				
Measures to ensure that personnel, material, and/or equipment do not penetrate the OFZ or threshold siting surfaces while the runway is open for aircraft operations are included.	<u>2.22.4.3.6</u>				
Provisions for protection of runway approach/departure areas and clearways are included.	<u>2.22.6</u>				
Other Limitations on Construction					
The CSPP prohibits the use of open flame welding or torches unless adequate fire safety precautions are provided and the airport operator has approved their use.	<u>2.23.1.2</u>				
The CSPP prohibits the use of electrical blasting caps on or within 1,000 ft (300 m) of the airport property.	<u>2.23.1.3</u>				

APPENDIX D. CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST

The situations identified below are potentially hazardous conditions that may occur during airport construction projects. Safety area encroachments, unauthorized and improper ground vehicle operations, and unmarked or uncovered holes and trenches near aircraft operating surfaces pose the most prevalent threats to airport operational safety during airport construction projects. The list below is one tool that the airport operator or contractor may use to aid in identifying and correcting potentially hazardous conditions. It should be customized as appropriate for each project including information such as the date, time and name of the person conducting the inspection.

Table D-1. Potentially Hazardous Conditions

Item	Action Required (Describe)	No Action Required (Check)
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.		
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.		
Runway resurfacing projects resulting in lips exceeding 3 inch (7.6 cm) from pavement edges and ends.		
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.		
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.		
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and		

Item	Action Required (Describe)	No Action Required (Check)
approach zones.		
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.		
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.		
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.		
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.		
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.		
Obliterated or faded temporary markings on active operational areas.		
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.		

Item	Action Required (Describe)	No Action Required (Check)
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.		
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.		
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.		
Lack of radio communications with construction vehicles in airport movement areas.		
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.		
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.		
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		

Item	Action Required (Describe)	No Action Required (Check)
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.		
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		
Site burning, which can cause possible obscuration.		
Construction work taking place outside of designated work areas and out of phase.		

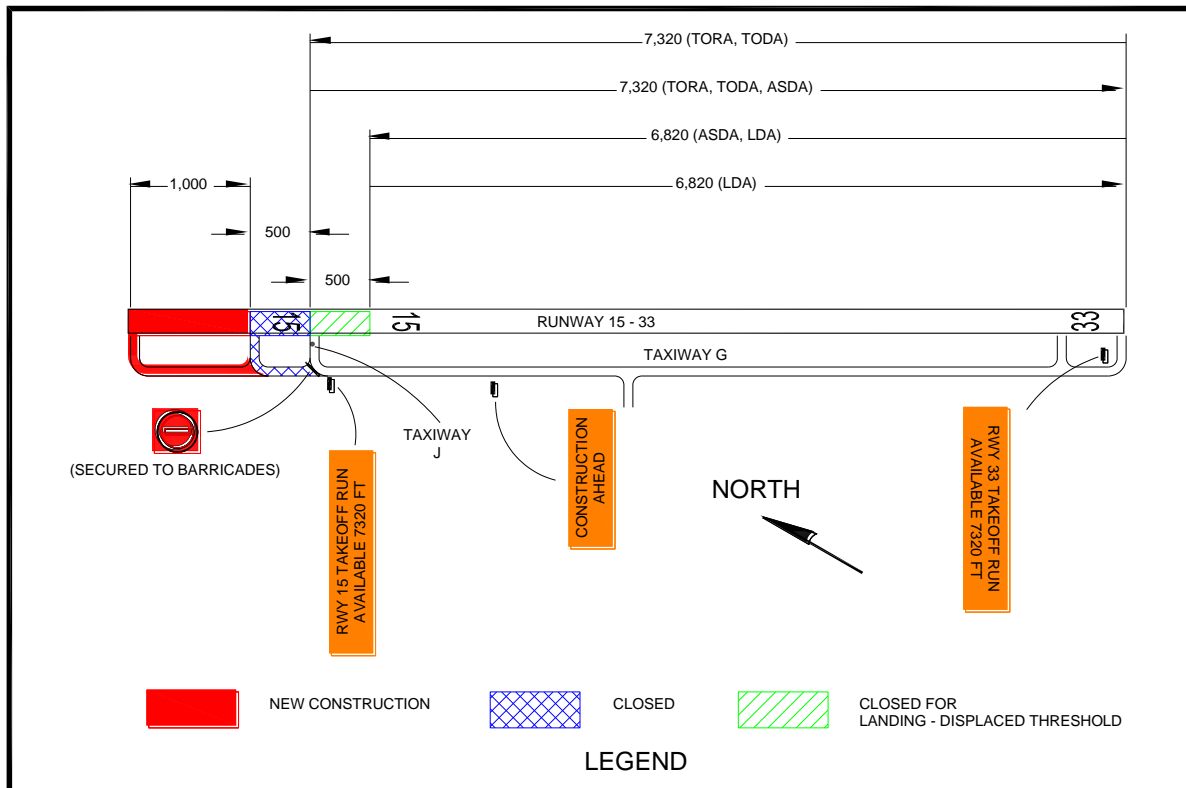
APPENDIX E. SAMPLE OPERATIONAL EFFECTS TABLE

E.1 Project Description.

Runway 15-33 is currently 7820 feet long, with a 500 foot stopway on the north end. This project will remove the stopway and extend the runway 1000 feet to the north and 500 feet to the south. Finally, the existing portion of the runway will be repaved. The runway 33 glide slope will be relocated. The new runway 33 localizer has already been installed by FAA Technical Operations and only needs to be switched on. Runway 15 is currently served only by a localizer, which will remain in operation as it will be beyond the future RSA. Appropriate NOTAMS will be issued throughout the project.

E.1.1 During Phase I, the runway 15 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 15 takeoff and the departure end of runway 33 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 33 will be adjusted to provide the required RSA and applicable departure surface. Excavation near Taxiway G will require its ADG to be reduced from IV to III. See Figure E-1.

Figure E-1. Phase I Example

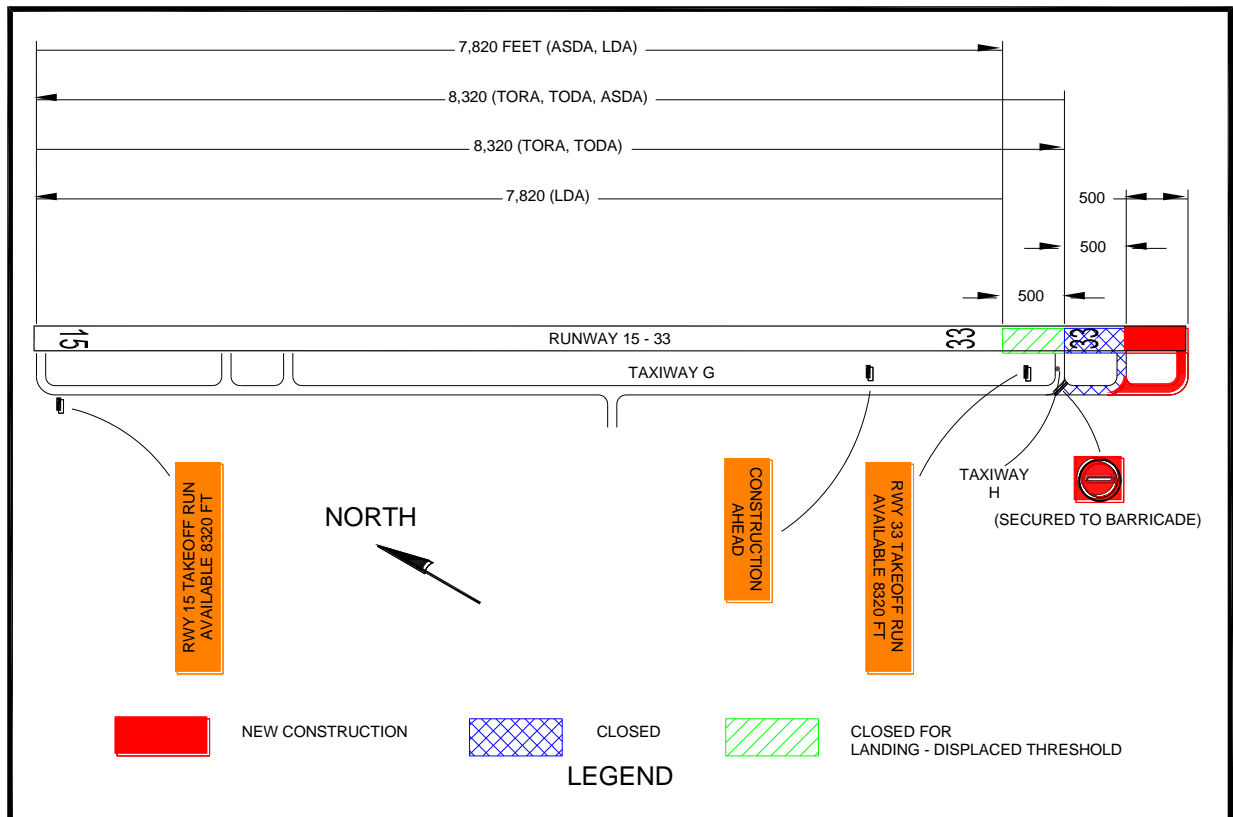


Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 33 departures, the maximum equipment height in the construction area is 12.5 feet ($500/40 = 12.5$).

E.2 During Phase II, the runway 33 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 33 takeoff and the departure end of runway 15 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 15 will be adjusted to provide the required RSA and applicable departure surface. See Figure E-2.

Figure E-2. Phase II Example



Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 15 departures, the maximum equipment height in the construction area is 12.5 feet ($500/40 = 12.5$).

- E.3 During Phase III, the existing portion of the runway will be repaved with Hot Mix Asphalt (HMA) and the runway 33 glide slope will be relocated. Construction will be accomplished between the hours of 8:00 pm and 5:00 am, during which the runway will be closed to operations.

Figure E-3. Phase III Example

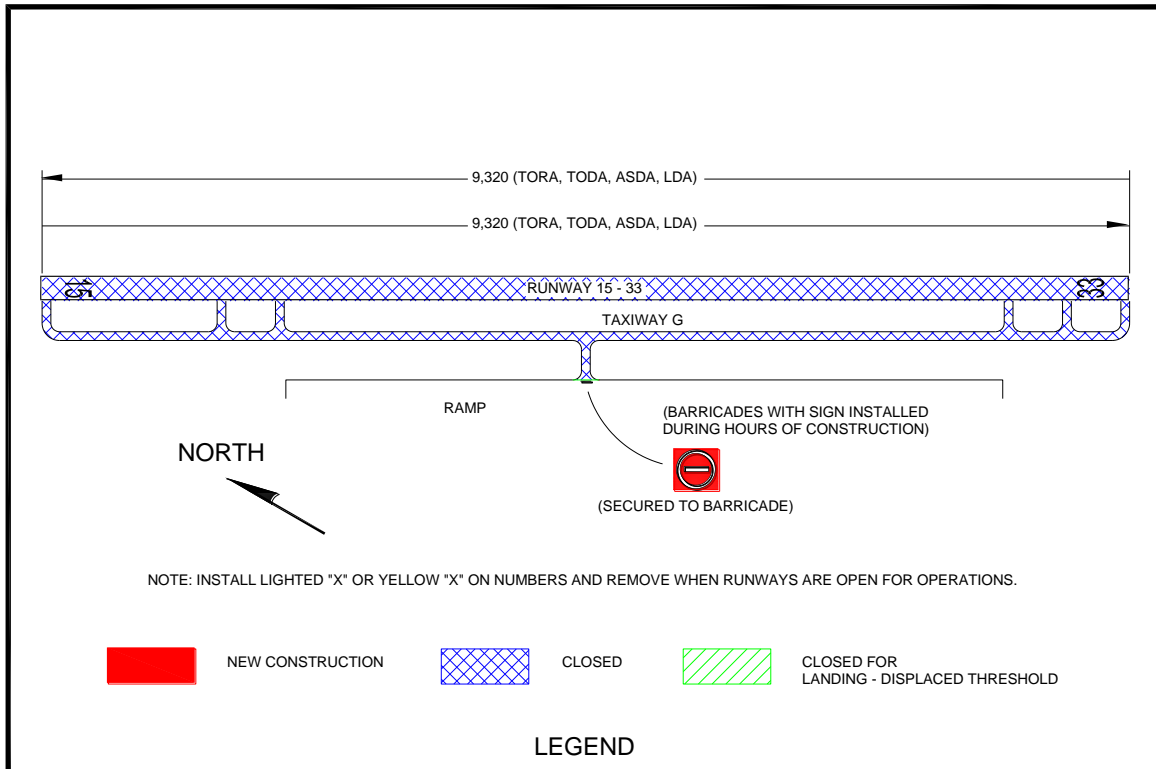


Table E-1. Operational Effects Table

Project	Runway 15-33 Extension and Repaving			
Phase	Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Scope of Work	N/A	Extend Runway 15-33 1,000 ft on north end with Hot Mix Asphaltic Concrete (HMA).	Extend Runway 15-33 500 ft on south end with Hot Mix Asphaltic Concrete (HMA).	Repave existing runway with HMA Relocate Runway 33 Glide Slope
Effects of Construction Operations	N/A	Existing North 500 ft closed	Existing South 500 ft closed	Runway closed between 8:00 pm and 5:00 am Edge lighting out of service
Construction Phase	N/A	Phase I (Anticipated)	Phase II (Anticipated)	Phase III (Anticipated)
Runway 15 Average Aircraft Operations	Carrier: 52 /day GA: 26 /day Military: 11 /day	Carrier: 40 /day GA: 26 /day Military: 0 /day	Carrier: 45 /day GA: 26 /day Military: 5 /day	Carrier: 45 / day GA: 20 / day Military: 0 /day
Runway 33 Average Aircraft Operations	Carrier: 40 /day GA: 18 /day Military: 10 /day	Carrier: 30 /day GA: 18 /day Military: 0 /day	Carrier: 25 /day GA: 18 /day Military: 5 /day	Carrier: 20 /day GA: 5 /day Military: 0 /day
Runway 15-33 Aircraft Category	C-IV	C-IV	C-IV	C-IV
Runway 15 Approach Visibility Minimums	1 mile	1 mile	1 mile	1 mile
Runway 33 Approach Visibility Minimums	¾ mile	¾ mile	¾ mile	1 mile

Note: Proper coordination with Flight Procedures group is necessary to maintain instrument approach procedures during construction.

Project		Runway 15-33 Extension and Repaving			
Phase		Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Runway 15 Declared Distances	TORA	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	7,820	7,320	7,820	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 33 Declared Distances	TORA	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	8,320	6,820	8,320	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 15 Approach Procedures	LOC only	LOC only	LOC only	LOC only	LOC only
	RNAV	RNAV	RNAV	RNAV	RNAV
	VOR	VOR	VOR	VOR	VOR
Runway 33 Approach Procedures	ILS	ILS	ILS	ILS	LOC only
	RNAV	RNAV	RNAV	RNAV	RNAV
	VOR	VOR	VOR	VOR	VOR
Runway 15 NAVAIDs	LOC	LOC	LOC	LOC	
Runway 33 NAVAIDs	ILS, MALSR	ILS, MALSR	ILS, MALSR	LOC, MALSR	
Taxiway G ADG	IV	III	IV	IV	
Taxiway G TDG	4	4	4	4	
ATCT (hours open)	24 hours	24 hours	24 hours	0500 - 2000	
ARFF Index	D	D	D	D	

Project	Runway 15-33 Extension and Repaving			
Phase	Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Special Conditions	Air National Guard (ANG) military operations	All military aircraft relocated to alternate ANG Base	Some large military aircraft relocated to alternate ANG Base	All military aircraft relocated to alternate ANG Base
Information for NOTAMs		Refer above for applicable declared distances. Taxiway G limited to 118 ft wingspan	Refer above for applicable declared distances.	Refer above for applicable declared distances. Airport closed 2000 – 0500. Runway 15 glide slope OTS.

Note: This table is one example. It may be advantageous to develop a separate table for each project phase and/or to address the operational status of the associated NAVAIDs per construction phase.

Complete the following chart for each phase to determine the area that must be protected along the runway and taxiway edges:

Table E-2. Runway and Taxiway Edge Protection

Runway/Taxiway	Aircraft Approach Category* A, B, C, or D	Airplane Design Group* I, II, III, or IV	Safety Area Width in Feet Divided by 2*

*See AC 150/5300-13 to complete the chart for a specific runway/taxiway.

Complete the following chart for each phase to determine the area that must be protected before the runway threshold:

Table E-3. Protection Prior to Runway Threshold

Runway End Number	Airplane Design Group* I, II, III, or IV	Aircraft Approach Category* A, B, C, or D	Minimum Safety Area Prior to the Threshold*	Minimum Distance to Threshold Based on Required Approach Slope*	
				ft	: 1
			ft	ft	: 1
			ft	ft	: 1
			ft	ft	: 1
			ft	ft	: 1

*See AC 150/5300-13 to complete the chart for a specific runway.

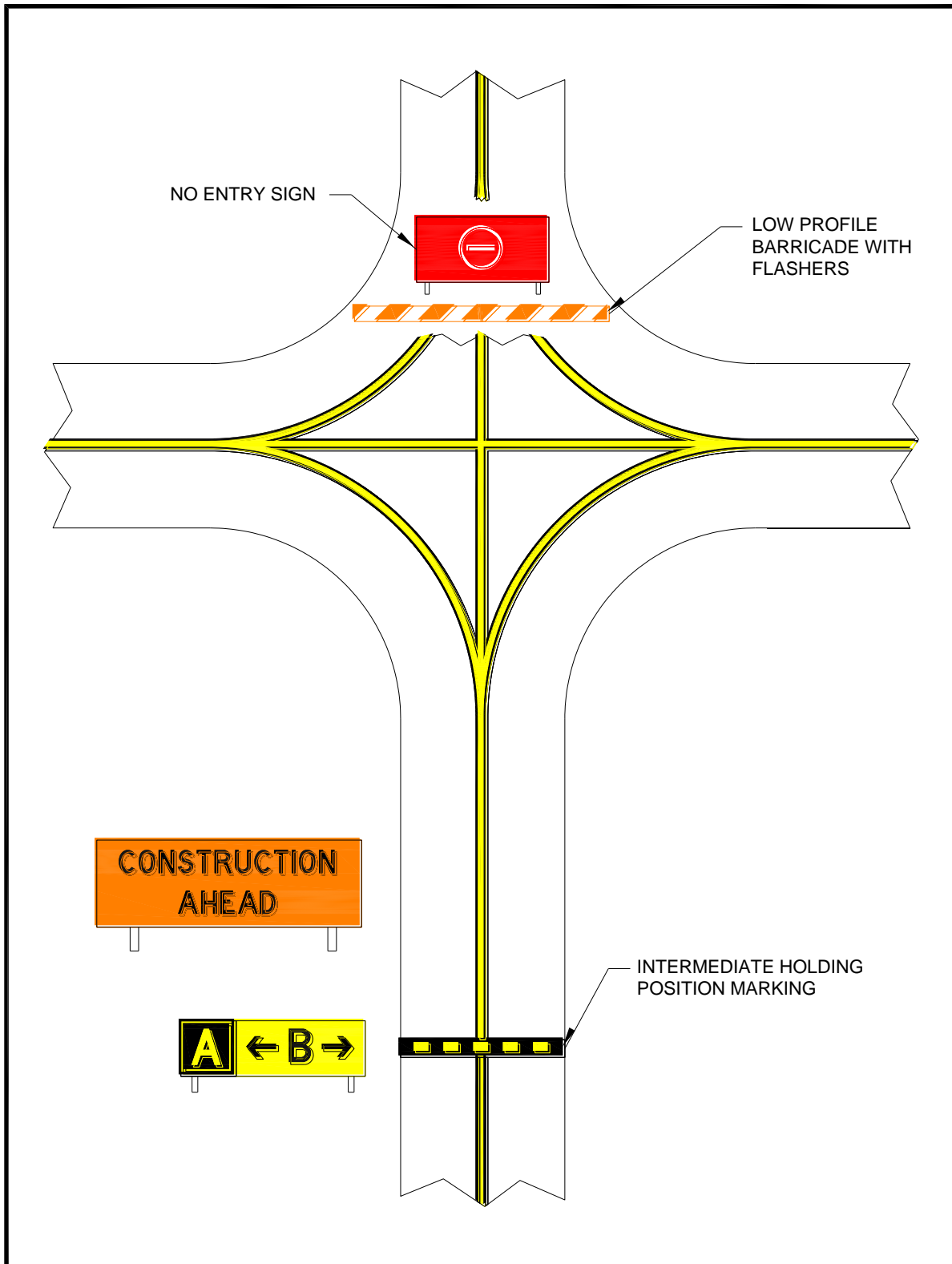
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APPENDIX F. ORANGE CONSTRUCTION SIGNS

Figure F-1. Approved Sign Legends

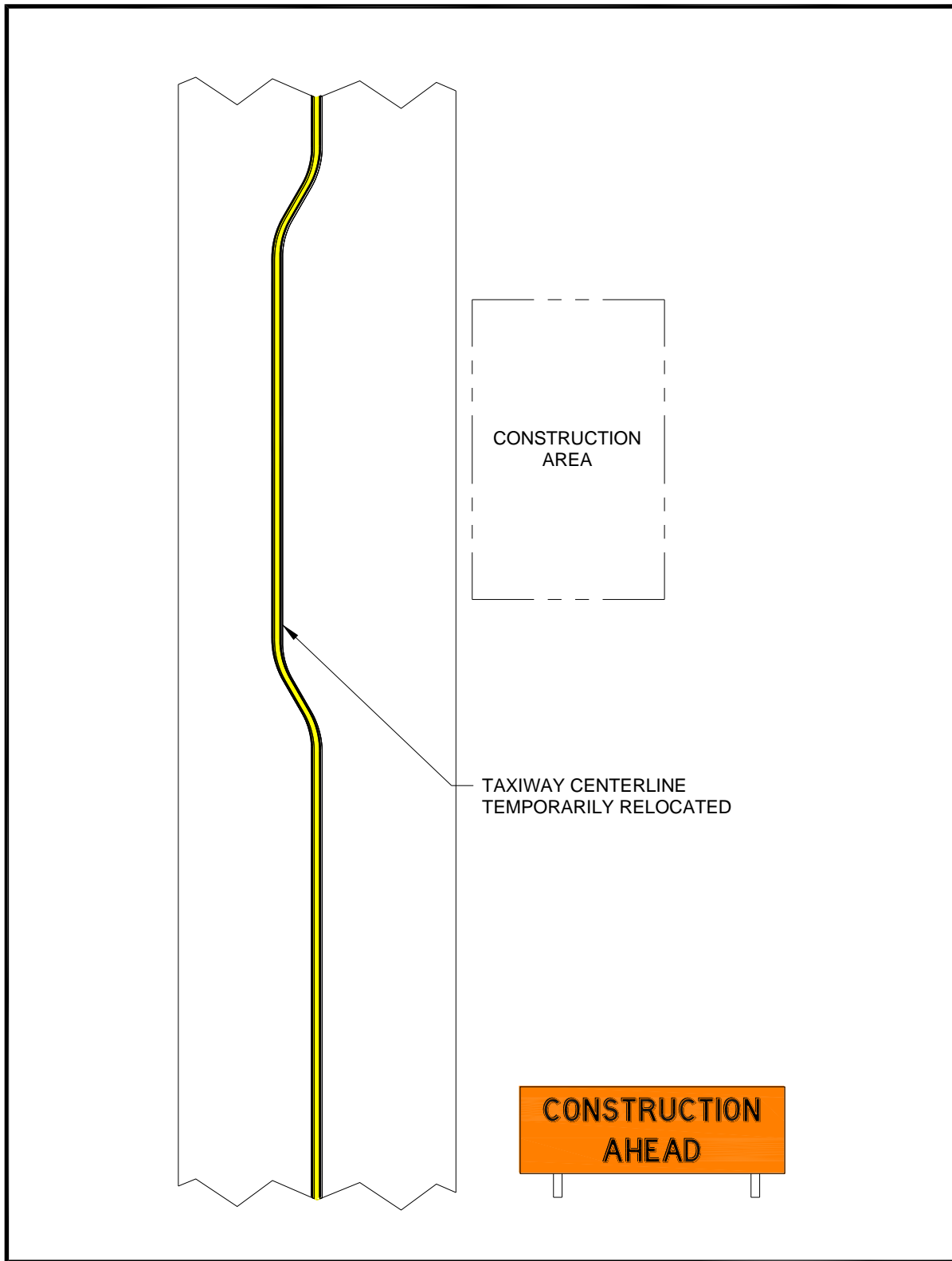


Figure F-2. Orange Construction Sign Example 1



Note: For proper placement of signs, refer to EB 93.

Figure F-3. Orange Construction Sign Example 2



Note: For proper placement of signs, refer to EB 93.

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Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Engineering Division, Federal Aviation Administration ATTN: AAS-100, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of the Office of Airport Safety and Standards at (202) 267-5383.

Subject: AC 150/5370-2G

Date: _____

Please check all appropriate line items:

An error (procedural or typographical) has been noted in paragraph _____ on page _____.

Recommend paragraph _____ on page _____ be changed as follows:

In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

Other comments:

I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____

Date: _____

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Appendix C
Contractor's Safety Plan Compliance Documentation

SOUTHEAST QUADRANT STORMWATER DRAINAGE IMPROVEMENTS
AT THE
SAVANNAH INTERNATIONAL AIRPORT

CONTRACTOR'S SAFETY PLAN COMPLIANCE DOCUMENT

I, **(CONTRACTOR TO BE DETERMINED)**, have read the **Southeast Quadrant Stormwater Drainage Improvements** "Construction Safety and Phasing Plan" and all attached documents. I will abide by these safety requirements and project guidelines and adhere to all other safety requirements of the airport. Any modifications or additional contractor safety guidelines have been attached to this signed statement if applicable.

Name

Signature

Title

Date

CONTRACTOR'S SAFETY AND SECURITY REQUIREMENTS

SAFETY

- 1. THE CONTRACTOR SHALL ACQUAINT ITS SUPERVISORS AND EMPLOYEES WITH THE AIRPORT ACTIVITY AND OPERATIONS THAT ARE INHERENT IN THIS ACTIVE AIR CARRIER AIRPORT AND SHALL CONDUCT ITS CONSTRUCTION ACTIVITIES TO CONFORM TO ALL ROUTINE AND EMERGENCY AIR TRAFFIC REQUIREMENTS AND GUIDELINES ON SAFETY AS SPECIFIED IN THE SUPPLEMENTARY GENERAL PROVISIONS OF THE CONTRACT DOCUMENTS.
2. ALL CONTRACTOR VEHICLES THAT ARE AUTHORIZED TO OPERATE ON THE AIRPORT OUTSIDE OF THE DESIGNATED CONSTRUCTION AREA LIMITS OR HAUL ROUTES AS SPECIFIED ON THE PLANS AND IN THE ACTIVE AIRCRAFT OPERATIONS AREA (AOA) SHALL: DISPLAY IN FULL VIEW ABOVE THE VEHICLE, A 3' X 3' OR LARGER, ORANGE AND WHITE CHECKERBOARD FLAG, EACH CHECKERBOARD COLOR BEING 1' SQUARE; AND BE ESCORTED AND UNDER THE CONTROL OF ONE CONTRACTOR'S MOBILE (TWO-WAY) RADIO OPERATOR ON THE JOB AT ALL TIMES. ANY VEHICLE OPERATING IN THE ACTIVE AOA DURING THE HOURS OF DARKNESS SHOULD BE EQUIPPED WITH A FLASHING AMBER (YELLOW) DOME-TYPE LIGHT, MOUNTED ON TOP OF THE VEHICLE AND OF SUCH INTENSITY TO CONFORM TO LOCAL CODES FOR MAINTENANCE AND EMERGENCY VEHICLES.
3. ALL CONTRACTOR VEHICLES THAT ARE REQUIRED TO CROSS ACTIVE RUNWAYS AND TAXIWAYS OR RUNWAY PROTECTION ZONES SHALL DO SO UNDER THE DIRECT CONTROL OF A FLAGMAN WHO IS IN DIRECT (TWO-WAY) RADIO COMMUNICATION WITH THE GROUND CONTROLLER OF THE AIR TRAFFIC CONTROL TOWER, ON GROUND CONTROL FREQUENCY 121.9. THE FLAGMAN AND RADIO OPERATOR SHALL BE TRAINED AND INSTRUCTED BY THE AIRPORT MANAGEMENT IN THE REGULATIONS GOVERNING OPERATIONS ON THE AOA, THE FLAG AND RADIO OPERATOR SHALL REMAIN WITH HIS VEHICLE AT ALL TIMES. FLAGMAN AND TWO-WAY RADIO SHALL BE FURNISHED BY THE CONTRACTOR. CONTRACTOR VEHICLES THAT ARE REQUIRED TO CROSS ACTIVE TAXIWAYS OR APRONS WHO DO SO UNDER THE DIRECT CONTROL OF A FLAGMAN (WITHOUT RADIO CONTROL) WHO IS TRAINED AND INSTRUCTED BY THE AIRPORT MANAGEMENT IN REGULATIONS GOVERNING OPERATIONS ON THE AOA, ALL AIRCRAFT TRAFFIC ON RUNWAYS, TAXIWAYS AND APRONS SHALL HAVE PRIORITY OVER CONTRACTOR'S TRAFFIC.
4. NO RUNWAY, TAXIWAY, APRON OR AIRPORT ROADWAY SHALL BE CLOSED WITHOUT WRITTEN APPROVAL OF THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS TRANSMITTED BY THE RESIDENT ENGINEER, TO ENABLE NECESSARY "NOTICES TO AIRMEN" (NOTAM) OR ADVISORIES TO AIRPORT SERVICE OR TENANTS. A MINIMUM OF 48 HOURS NOTICE OF REQUESTED CLOSING SHALL BE DIRECTED TO THE RESIDENT ENGINEER, WHO WILL COORDINATE THE REQUEST WITH SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS.
5. ANY CONSTRUCTION ACTIVITY WITHIN 200' OF AN ACTIVE RUNWAY EDGE OR 100' FROM AN ACTIVE TAXIWAY EDGE OR OPEN EXCAVATIONS IN EXCESS OF 3-INCHES DEEP WITHIN THE ABOVE AREAS, WILL REQUIRE CLOSURE OF THE AFFECTED RUNWAY OR TAXIWAY, UNLESS OTHERWISE APPROVED BY SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS. CLOSURE REQUIRES THE SAME PROVISIONS AS PARAGRAPH 4 ABOVE.
6. OPEN FLAME, WELDING, OR TORCH CUTTING OPERATIONS ARE PROHIBITED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS HAVE BEEN TAKEN AND THE PROCEDURE APPROVED BY THE COUNTY, THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT, AND THE AIRPORT FIRE DEPARTMENT.
7. STOCKPILE MATERIAL SHOULD BE CONSTRAINED IN A MANNER TO PRECLUDE MOVEMENT RESULTING FROM AIRCRAFT JET BLAST OR WIND CONDITIONS IN EXCESS OF 10 KNOTS.
8. OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIAL LOCATED IN THE AOA SHALL BE PROMINENTLY MARKED WITH FLAGS AND LIGHTED BY APPROVED LIGHT UNITS DURING HOURS OF RESTRICTED VISIBILITY AND DARKNESS.
9. DEBRIS WASTE AND LOOSE MATERIAL CAPABLE OF CAUSING DAMAGE TO AIRCRAFT LANDING GEAR AND PROPELLERS OR BEING INGESTED IN JET ENGINES SHALL NOT BE ALLOWED ON ACTIVE AIRCRAFT MOVEMENT AREAS, IF THESE MATERIAL ARE OBSERVED TO BE ON ACTIVE AIRCRAFT MOVEMENT AREAS, THEY SHALL BE REMOVED IMMEDIATELY AND/OR CONTINUOUSLY DURING CONSTRUCTION.
10. THE RESIDENT ENGINEER WILL ARRANGE WITH SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS FOR INSPECTION PRIOR TO OPENING FOR AIRCRAFT USE ANY RUNWAY OR TAXIWAY THAT HAS BEEN CLOSED FOR WORK, ON OR ADJACENT THERETO, OR THAT HAS BEEN USED FOR A CROSSING POINT OR HAUL ROUTE BY THE CONTRACTOR.
11. THE CONTRACTOR'S SECURITY OFFICER (C.S.O.) WILL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS. PRIOR TO THE COMMENCEMENT OF THE WORK, THE C.S.O. SHALL PROVIDE THE RESIDENT ENGINEER AN OUTLINE OF A PROPOSED ACCIDENT AND FIRE PROTECTION PLAN FOR ALL WORK CONTEMPLATED UNDER THE CONTRACT AND CONDUCT AT LEAST ONE SAFETY MEETING EACH MONTH FOR EACH SHIFT AND REQUIRE THE ATTENDANCE OF ALL SUPERVISORS AT SUCH MEETINGS. COPIES OF THE MINUTES OF SAFETY MEETING SHALL BE KEPT ON FILE IN THE CONTRACTOR'S FIELD OFFICE AND AVAILABLE UPON DEMAND BY THE RESIDENT ENGINEER.

SECURITY

- 1. GENERAL INTENT: THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE AIRPORT SECURITY PLAN AND WITH THE SECURITY REQUIREMENTS SPECIFIED HEREIN. THE CONTRACTOR SHALL DESIGNATE TO THE RESIDENT ENGINEER IN WRITING, THE NAME OF HIS "CONTRACTOR SECURITY OFFICER" (C.S.O.). THE C.S.O. SHALL REPRESENT THE CONTRACTOR ON THE SECURITY REQUIREMENTS FOR THE CONTRACT.
2. CONSTRUCTION SECURITY COMMITTEE: THE COMMITTEE SHALL BE ESTABLISHED CONCURRENT WITH THE LIFE OF THIS CONTRACT TO MONITOR, COORDINATE AND ADOPT NEW SECURITY PROVISIONS, IF REQUIRED, ON ALL MATTERS OF AIRPORT SECURITY RELATING TO THIS CONTRACT. MEETINGS SHALL BE SCHEDULED BY THE AIRPORT RESIDENT ENGINEER. COMMITTEE MEMBERSHIP SHALL INCLUDE THE "CONTRACTOR SECURITY OFFICER," RESIDENT ENGINEER, CONTRACTOR'S SUPERINTENDENT AND ONE REPRESENTATIVE EACH FROM SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS, FAA-SECURITY DIVISION, GEORGIA DEPARTMENT OF TRANSPORTATION AND FAA AIR TRAFFIC CONTROL TOWER. IN THE EVENT THAT SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT MAY REVISE AND/OR MODIFY THE GENERAL REQUIREMENTS IN ORDER TO MAINTAIN THE SAFETY AND SECURITY OF OPERATIONS ON THE AIRPORT, THE CONTRACTOR SHALL COOPERATE IN IMPLEMENTING ANY NECESSARY CHANGES IN THE WORK AND SHALL NOT BE ENTITLED TO MAKE ANY CLAIM FOR EXTRA COMPENSATION. IN ADDITION, THE CONTRACTOR IS ADVISED THAT CERTAIN RULES AND RESTRICTIONS, AS CONTAINED IN FAA CIRCULAR 150/5370-2G AND AUGMENTED BY THESE PLANS AND SPECIFICATIONS, WILL APPLY TO THE WORK.
3. CONTRACTOR PERSONNEL SECURITY ORIENTATION: THE CONTRACTOR SECURITY OFFICER SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON THESE REQUIREMENTS FROM TIME TO TIME, AND OTHER SECURITY PROVISIONS ADOPTED BY THE CONSTRUCTION SECURITY COMMITTEE. ALL NEW CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON THESE REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA. ALL CONTRACTOR EMPLOYEES ON SITE SHALL HAVE A GOVERNMENT ISSUED PHOTO IDENTIFICATION. THE CONTRACTOR SHALL UTILIZE THE U.S. DEPARTMENT OF HOMELAND SECURITY'S E-VERIFY SYSTEM TO VERIFY THE EMPLOYMENT ELIGIBILITY OF ALL PERSONS EMPLOYED BY THE CONTRACTOR DURING THE PROJECT DURATION.
4. ACCESS TO THE SITE: CONTRACTOR'S ACCESS TO THE SITE SHALL BE AS SHOWN ON THE PLANS. NO OTHER ACCESS POINTS SHALL BE ALLOWED UNLESS APPROVED BY THE RESIDENT ENGINEER. ALL CONTRACTOR TRAFFIC AUTHORIZED TO ENTER THE SITE SHALL BE EXPERIENCED IN THE ROUTE OR GUIDED BY CONTRACTOR PERSONNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL TO AND FROM THE VARIOUS CONSTRUCTION AREAS ON THE SITE. SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT WILL CONTROL ACCESS AT THE GATE. A CONTRACTOR'S FLAG MAN OR TRAFFIC CONTROL PERSON SHALL MONITOR AND COORDINATE ALL CONTRACTOR TRAFFIC AT THE ACCESS GATE WITH SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT SECURITY. THE CONTRACTOR SHALL NOT PERMIT ANY UNAUTHORIZED CONSTRUCTION PERSONNEL OR TRAFFIC ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR IMMEDIATE CLEAN UP OF ANY DEBRIS DEPOSITED ALONG THE ACCESS ROUTE AS A RESULT OF HIS CONSTRUCTION TRAFFIC. DIRECTIONAL SIGNING AT THE ACCESS GATE AND ALONG THE DELIVERY ROUTE TO THE STORAGE AREA, PLANT SITE, OR WORK SITE SHALL BE AS DIRECTED BY THE RESIDENT ENGINEER.
5. MATERIAL DELIVERY TO THE SITE: ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE WORK SITE WILL USE AS A DELIVERY ADDRESS THE STREET NAME ASSIGNED TO THE ACCESS POINT AT THE CONTRACTOR'S STORAGE SITE AT THE AIRPORT. THE NAME "SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT" SHALL NOT BE USED IN THE DELIVERY ADDRESS AT ANY TIME. THIS WILL PRECLUDE DELIVERY TRUCKS FROM ENTERING INTO THE TERMINAL COMPLEX, OR TAKING SHORT CUTS THROUGH THE PERIMETER GATES AND ENTERING INTO AIRCRAFT OPERATIONS AREAS INADVERTENTLY.
6. CONSTRUCTION AREA LIMITS: THE LIMITS OF CONSTRUCTION, MATERIAL STORAGE AREAS, PLANT SITE, EQUIPMENT STORAGE AREA, PARKING AREA AND OTHER AREAS DEFINED AS REQUIRED FOR THE CONTRACTORS EXCLUSIVE USE DURING CONSTRUCTION SHALL BE MARKED BY THE CONTRACTOR. THE CONTRACTOR SHALL ERECT AND MAINTAIN AROUND THE PERIMETER OF THESE AREAS SUITABLE FENCING, MARKING AND/OR WARNING DEVICES VISIBLE FOR DAY/NIGHT USE. TEMPORARY BARRICADES, FLAGGING AND FLASHING WARNING LIGHT WILL BE REQUIRED AT CRITICAL ACCESS POINTS. TYPE OF MARKING AND WARNING DEVICES SHALL BE APPROVED BY SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT OPERATIONS.
7. IDENTIFICATION - VEHICLES OPERATING INSIDE THE SECURED AIRPORTS OPERATIONS AREA: THE CONTRACTOR, THROUGH THE CONTRACTOR SECURITY OFFICER, SHALL ESTABLISH AND MAINTAIN A LIST OF CONTRACTORS AND SUBCONTRACTOR VEHICLES AUTHORIZED TO OPERATE ON THE SITE AND SHALL ISSUE A PERMIT TO EACH VEHICLE TO BE MADE AVAILABLE UPON DEMAND BY THE RESIDENT ENGINEER OR ANY AIRPORT SECURITY OFFICER. VEHICLES DELIVERING MATERIALS TO THE CONSTRUCTION SITE SHALL PICK UP A TEMPORARY PASS AT THE ACCESS GATE. VEHICLE PERMITS SHALL BE ASSIGNED IN A MANNER TO ASSURE POSITIVE IDENTIFICATION OF THE UNIT AT ALL TIMES. IN LIEU OF ISSUING INDIVIDUAL VEHICLE PERMITS THE C.S.O. CAN REQUIRE EACH VEHICLE TO DISPLAY A LARGE COMPANY SIGN ON BOTH SIDES OF VEHICLE, AND PROVIDE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT SECURITY AND OPERATIONS WITH A CURRENT LIST OF COMPANIES AUTHORIZED TO ENTER AND CONDUCT WORK ON THE AIRPORT. CONTRACTOR EMPLOYEE PERSONAL VEHICLES SHALL BE RESTRICTED TO THE CONTRACTOR'S STAGING AREA AND ARE NOT ALLOWED ON THE AIRFIELD AT ANY TIME.

GENERAL

- 1. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS AND ANY RULES, REGULATIONS, STANDARDS OR SPECIFICATIONS REFERENCED THEREIN. THE PROJECT IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT, THE FEDERAL AVIATION ADMINISTRATION (FAA) AND OTHER GOVERNING AGENCIES.
2. LIQUIDATED DAMAGES, AS STATED IN THE SPECIFICATIONS AND IN THE CONTRACT AGREEMENT, SHALL APPLY TO THIS PROJECT.
3. CONSTRUCTION WILL OCCUR WITHIN THE AIR OPERATIONS AREA (AOA). THIS IS A CLOSELY MAINTAINED SECURITY AREA WITH RESTRICTED ACCESS. THE CONTRACTOR SHALL MEET ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THIS AREA AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THE AOA. FURTHER, IT WILL REMAIN THE CONTRACTOR'S RESPONSIBILITY TO KEEP ADVISED OF ANY CHANGES IN THESE REQUIREMENTS AND TO ADHERE TO CURRENT REGULATIONS.
4. BECAUSE THE CONSTRUCTION IS ON OR NEAR ACTIVE RUNWAY, TAXILANES AND APRONS, ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN A MANNER ACCEPTABLE TO THE OWNER AND THE FEDERAL AVIATION ADMINISTRATION (FAA) TO PROVIDE ACCEPTABLE LEVELS OF SAFETY FOR ALL AIRPORT OPERATIONS.
5. EACH CONTRACTOR INVOLVED SHALL ASSUME ALL LIABILITY, FINANCIAL OR OTHERWISE, IN CONNECTION WITH THEIR CONTRACT AND SHALL PROTECT AND SAVE HARMLESS THE OWNER FROM ANY AND ALL DAMAGES OR CLAIMS THAT MAY ARISE BECAUSE OF INCONVENIENCES, DELAYS, OR LOSS EXPERIENCED BY THEM BECAUSE OF THE PRESENCE AND OPERATIONS OF HIS SUB-CONTRACTORS WORKING WITHIN THE LIMITS OF THE SAME PROJECT.

CONTRACTOR REQUIREMENTS

- 1. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR THE PERFORMANCE OF THIS CONTRACT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PAY ALL PERMIT FEES. COSTS FOR PERMITS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
2. THE CONTRACTOR MUST OBTAIN PROPER PERMITS FOR DELIVERY OF MATERIALS AND EQUIPMENT TO THE SITE. ANY DAMAGE TO OFF-SITE ROADS SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.
3. ALL CONTRACTOR'S VEHICLES AND TRAFFIC (UNLESS OTHERWISE AUTHORIZED) SHALL REMAIN WITHIN THE DESIGNATED CONSTRUCTION LIMITS OR HAUL ROUTES.
4. THE CONTRACTOR SHALL CONTROL DUST FROM OPERATIONS TO A LEVEL ACCEPTABLE TO THE AIRPORT AND ENGINEER AT ALL TIMES. THE CONTRACTOR SHALL HAVE AVAILABLE VACUUM BROOMS, WATERING TRUCKS AND OTHER EQUIPMENT NECESSARY TO CONTROL DUST AND DEBRIS AT ALL TIMES. ALL METHODS FOR CONTROLLING DUST AND DEBRIS SHALL BE SUBJECT TO THE AIRPORT'S APPROVAL. DUST AND DEBRIS CONTROL SHALL BE STRICTLY MONITORED DUE TO ITS IMPACT ON AIRCRAFT SAFETY. FAILURE TO PROPERLY CONTROL DUST AND DEBRIS OR TO RESPOND TO ANY REQUESTS TO DO SO WILL RESULT IN CONSTRUCTION ACTIVITIES BEING STOPPED.
5. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS THAT ARE PERTINENT TO THIS WORK.
6. ALL CONSTRUCTION ACTIVITY WITHIN A SAFETY AREA WILL REQUIRE THE CLOSURE OF A TAXIWAY, TAXILANE, APRON OR A DESIGNATED AREA. THE CONTRACTOR SHALL REQUEST, THROUGH THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT PROJECT MANAGER, THE CLOSURE OF THE REQUIRED PORTION OF PAVEMENT. THIS REQUEST SHALL INCLUDE THE TIMES REQUESTED AND THE CONTRACTOR'S PROPOSED DETAILED SCHEDULE OF OPERATIONS WITHIN THE AREA. THE CONTRACTOR IS ADVISED THAT THERE MAY BE CONSTRUCTION AND AIRFIELD MAINTENANCE THAT MAY REQUIRE TAXILANE, OR APRON CLOSURES, THEREFORE; CLOSE COORDINATION BY THE CONTRACTOR WITH THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT PROJECT MANAGER IS REQUIRED.
7. BEFORE RECEIVING A NOTICE TO PROCEED, THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH A DETAILED CRITICAL PATH METHOD SCHEDULE OF WORK FOR EACH PHASE OF CONSTRUCTION INCLUDING THE VARIOUS REQUIRED PAVEMENT CLOSURES.
8. ALL ELEMENTS OF THE CONSTRUCTION SHALL BE DONE IN SUCH A MANNER THAT, AT THE END OF THE CLOSURE PERIOD, THE AREA WILL BE IN A CONDITION SUITABLE FOR AIRPORT OPERATIONS, SUBJECT TO AIRPORT AND ENGINEER APPROVAL.

COORDINATION AND OPERATIONS

- 1. THE CONTRACTOR SHALL ACQUAINT HIS SUPERVISORS AND EMPLOYEES TO THE AIRPORT ACTIVITY AND OPERATIONS THAT ARE INHERENT TO THIS AIRPORT. HE SHALL CONDUCT HIS CONSTRUCTION ACTIVITIES TO CONFORM TO ALL ROUTINE AND EMERGENCY AIR TRAFFIC REQUIREMENTS AND GUIDELINES AS NOTED AND/OR SHOWN ON THE PLANS AND THE SAFETY AND SECURITY REQUIREMENTS DETAILED IN THE SPECIFICATIONS.
2. THE CONTRACTOR SHALL CONDUCT WEEKLY COORDINATION MEETINGS TO DISCUSS WORK AREAS, SCHEDULING, SAFETY, ETC. WITH THE ENGINEER, THE AIRPORT, FAA, AND OTHER APPROPRIATE OFFICIALS. MINUTES FROM THE WEEKLY MEETINGS SHALL BE PREPARED BY THE CONTRACTOR AND COPIES DISTRIBUTED TO ALL APPROPRIATE INDIVIDUALS.
3. CONSTRUCTION AND MAINTENANCE OPERATIONS BY OTHERS MAY OCCUR CONCURRENTLY AND AT TIMES IN THE VICINITY OF CONSTRUCTION ASSOCIATED WITH THIS PROJECT. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS AND COOPERATE WITH MAINTENANCE CREWS AND OTHER CONTRACTORS WORKING ON THE AIRPORT. COORDINATION WITH APPROPRIATE GOVERNMENT AND UTILITY AGENCIES IS ALSO REQUIRED.

GENERAL CONTRACT NOTES

MATERIALS AND EQUIPMENT

- 1. ALL MATERIALS AND EQUIPMENT, WHEN NOT IN USE, SHALL BE PLACED IN APPROVED AREAS WHERE THEY WILL NOT CONSTITUTE A HAZARD TO AIRCRAFT OPERATIONS. ALL EQUIPMENT SHALL BE STORED IN A LOWERED CONFIGURATION WHEN NOT IN USE. THE APPROVED STORAGE AREA FOR EQUIPMENT AND MATERIALS IS THE CONTRACTOR'S STAGING AREA. ANY OTHER AREAS TO BE USED FOR STORAGE MUST BE APPROVED BY THE AIRPORT'S PROJECT MANAGER. EQUIPMENT AND STOCKPILED MATERIAL SHALL BE CONSTRAINED IN A MANNER TO PREVENT MOVEMENT RESULTING FROM AIRCRAFT JET BLAST OR WIND CONDITIONS.
2. ALL EXCESS EXCAVATED MATERIAL, UNSUITABLE MATERIAL AND CONSTRUCTION DEBRIS SHALL BE PROMPTLY DISPOSED OF OFF AIRPORT PROPERTY UNLESS DIRECTED OTHERWISE BY THE AIRPORT.
3. ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE WORK SITE WILL USE A DELIVERY ADDRESS. THE DELIVERY ADDRESS SHALL BE ESTABLISHED AT THE PRE-CONSTRUCTION CONFERENCE.

CONSTRUCTION LAYOUT

- 1. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT. EXISTING AND PROPOSED GRADES ARE SHOWN ON THE DRAWINGS. EXISTING GRADES SHOWN ARE BELIEVED TO BE ACCURATE, BUT THE AIRPORT OWNER NOT THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE ACCURACY OF THESE GRADES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING PRIOR TO CONSTRUCTION OF ANY DISCREPANCIES WITH THE ELEVATIONS GIVEN ON THE DRAWINGS. FAILURE TO NOTIFY THE ENGINEER SHALL RESULT IN A WAIVER OF THE CONTRACTOR'S RIGHT FOR A CHANGE ORDER. ALL ELEVATIONS ARE BASED UPON THE STATE PLANE DATUM.
2. THE VERTICAL CONTROL ON THIS PROJECT IS TIED TO BENCH MARKS LOCATED ON THE AIRPORT. ALL EXISTING SURVEY MONUMENTS SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION. ALL MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESET BY A REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.

EXISTING UTILITY & NAVIGATIONAL FACILITIES

- 1. BEFORE ANY WORK IS STARTED ON ANY PHASE OF THIS PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT, REPRESENTATIVES OF THE CONTRACTOR AND THE AIRPORT SHALL MAKE AN INSPECTION OF THE EXISTING STORM SEWERS, CATCH BASINS, MANHOLES, ELECTRICAL MANHOLES, HANDHOLES, DUCT BANKS, WHICH ARE TO REMAIN IN SERVICE OR WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION WILL BE KEPT BY THE AIRPORT. THE CONTRACTOR SHALL PROVIDE TO THE AIRPORT A VIDEO TAPE OR DIGITAL PICTURES OF SURFACE AND SEWER CONDITIONS IN THE PROJECT AREA BEFORE START OF WORK AND UPON COMPLETION OF THE PROJECT.
2. ALL EXISTING FACILITIES, INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES, SHALL BE PROTECTED, MAINTAINED, AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGES IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS SOLE EXPENSE TO THE SATISFACTION OF THE ENGINEER.

CONTRACTOR ACCESS & STORAGE AREAS

- 1. THE CONTRACTOR'S ACCESS POINTS TO THE SITE SHALL BE AS SHOWN ON THE CONTRACT LAYOUT AND PHASING PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL VEHICLES AND PERSONNEL WHO ENTER THROUGH THESE GATES. GATES SHALL BE LOCKED WHEN NOT IN USE.
2. AREAS WILL BE MADE AVAILABLE FOR THE CONTRACTOR'S MOBILIZATION AND STAGING AS SHOWN ON THE CONTRACT LAYOUT AND PHASING PLANS. THESE AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT AT THE CONTRACTOR'S EXPENSE. ON-SITE EMPLOYEE PARKING SHALL BE ADDRESSED AT THE PRE-CONSTRUCTION CONFERENCE.

HAUL ROUTES

- 1. LOCATION OF HAUL ROUTES AND STAGING AREAS ON THE AIRPORT SITE SHALL BE AS SHOWN ON THE CONTRACT LAYOUT AND PHASING PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE OFF-SITE HAUL ROUTES (STATE HIGHWAYS, COUNTY ROADS OR CITY STREETS) WITH THE APPROPRIATE OWNER WHO HAS JURISDICTION OVER THE AFFECTED ROUTE. ON-SITE HAUL ROUTES AND STAGING AREAS SHALL BE MAINTAINED BY THE CONTRACTOR AND SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UPON COMPLETION OF BEING USED AS A HAUL ROUTE AT THE CONTRACTOR'S EXPENSE. THE BEFORE AND AFTER CONDITION OF ON-SITE HAUL ROUTES AND STAGING AREAS SHALL BE JOINTLY INSPECTED AND DOCUMENTED BY THE CONTRACTOR, AIRPORT, AND/OR ENGINEER. THE CONTRACTOR SHALL PROVIDE A VIDEO TAPE OR DIGITAL PICTURES OF ALL ON-SITE HAUL ROUTES AND STAGING AREAS BEFORE START OF WORK AND UPON COMPLETION. FENCING, DRAINAGE, SEDIMENT CONTROL, GRADING AND OTHER MISCELLANEOUS CONSTRUCTION REQUIRED TO CONSTRUCT TEMPORARY HAUL ROUTES OR ACCESS POINTS ON THE AIRPORT WILL BE THE CONTRACTOR'S TOTAL RESPONSIBILITY AND SHALL BE APPROVED BY THE AIRPORT PRIOR TO THE WORK. ALL ON-SITE ACCESS ROADS TO AIRPORT FACILITIES SHALL REMAIN OPEN AND MAINTAINED AT ALL TIMES.
2. USE OF UNAUTHORIZED HAUL ROUTES WILL NOT BE ACCEPTABLE. THE CONTRACTOR SHALL ONLY USE THE HAUL ROUTES APPROVED BY THE SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT PROJECT MANAGER. THE HAUL TRUCKS MUST BE COVERED AT ALL TIMES. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN THE HAUL ROUTE WITH A POWER VACUUM DURING ALL PERIODS WHEN HAULING. FAILURE TO MAINTAIN THE HAUL ROUTE IN AN ACCEPTABLE MANNER WILL RESULT IN SUSPENSION OF WORK. IN THE EVENT THAT ANY FOREIGN OBJECT, SPILLAGE, DEBRIS OR DUST BUILDS UP AS A RESULT OF HAULING, THE CONTRACTOR SHALL BE REQUIRED TO IMMEDIATELY CLEAN AND REMOVE THE MATERIAL.

UNDERGROUND UTILITIES

- 1. THE LOCATION OF THE UNDERGROUND UTILITIES AND FAA CABLES SHOWN ON THE PLANS HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND ARE BELIEVED TO BE THE BEST INFORMATION AT THE TIME OF PLAN PREPARATION. NO GUARANTEE IS MADE AS TO THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL LOCATE AND IDENTIFY ALL UNDERGROUND UTILITIES IN THE WORK AREA PRIOR TO CONSTRUCTION. ANY UNDERGROUND UTILITIES LOCATED WHICH DO NOT APPEAR ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY DAMAGE TO UTILITIES, CAUSED BY THE CONTRACTOR, SHALL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.
2. INTERRUPTION TO EXISTING AIRFIELD LIGHTING SYSTEMS NOT INCLUDED IN THIS PROJECT SHALL NOT BE PERMITTED. ALL AIRFIELD ELECTRICAL CIRCUITS AFFECTED BY THIS PROJECT SHALL BE PROTECTED AND MAINTAINED DURING OPERATIONAL PERIODS BY THE CONTRACTOR. THE CONTRACTOR AT HIS EXPENSE SHALL IMMEDIATELY REPAIR, WITH IDENTICAL MATERIAL AND BY SKILLED WORKMEN, ANY UNDERGROUND CABLES SERVING FAA NAVAIDS, WEATHER BUREAU AND/OR OTHER AIRPORT FACILITIES, WHICH ARE DAMAGED BY HIS WORKMEN, EQUIPMENT OR WORK. PRIOR WRITTEN APPROVAL OF THE FAA MUST BE OBTAINED FOR THE MATERIALS, WORKMEN, TIME OF DAY OR NIGHT, METHOD OF REPAIRS, AND FOR ANY TEMPORARY OR PERMANENT REPAIRS THE CONTRACTOR PROPOSES TO MAKE TO ANY FAA NAVAIDS AND FACILITIES DAMAGED BY THE CONTRACTOR. LIKE APPROVAL MUST BE OBTAINED FROM THE AIRPORT'S PROJECT MANAGER OR FROM THE REPRESENTATIVE DESIGNATED BY THE AIRPORT MANAGEMENT FOR ANY REPAIRS THE CONTRACTOR PROPOSES TO MAKE TO ANY OTHER AIRPORT FACILITIES AND CABLES DAMAGED BY THE CONTRACTOR. SUCH REPAIRS MUST BE STARTED IMMEDIATELY AND CONTINUED UNTIL COMPLETE. ANY FAA CABLE AND OR CONDUIT DAMAGED MUST BE REPLACED FROM FIXTURE TO FIXTURE IN ACCORDANCE WITH FAA REQUIREMENTS AND IN THE PRESENCE OF AN FAA REPRESENTATIVE. THE OWNER MAY ELECT TO HAVE ANY REPAIR PERFORMED BY OTHERS BUT THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR PAYING THE INCURRED COSTS.

SUPERVISION

- 1. THE PRIME CONTRACTOR SHALL HAVE AT ALL TIMES ON SITE, WHILE WORK IS IN PROGRESS, A JOB SUPERINTENDENT/FOREMAN. THIS PERSON SHALL BE FAMILIAR WITH ALL TYPES OF CONSTRUCTION BEING PERFORMED AND SHALL BE THE SAME PERSON EACH DAY THROUGHOUT THE PROJECT. THE SUPERINTENDENT/FOREMAN SHALL HAVE THE RESPONSIBILITY OF COORDINATING EACH DAYS WORK WITH THE AIRPORT OR AUTHORIZED REPRESENTATIVE AND SHALL HAVE AUTHORITY TO SCHEDULE AND ADJUST ALL WORKERS, PRIME AND SUB-CONTRACTORS, TO ACCOMMODATE AIRPORT OPERATION AS DIRECTED BY THE AIRPORT PERSONNEL OR AUTHORIZED REPRESENTATIVE.
2. ALL PERSONNEL SHALL CLEAR THE CONSTRUCTION AREA ONCE WORK HAS STOPPED FOR THE DAY OR EVENING. ALL MECHANICS NEEDING ACCESS TO THE AOA DURING DAYS, EVENINGS AND WEEKENDS TO WORK ON CONSTRUCTION EQUIPMENT SHALL BE ESCORTED AND HAVE THEIR VEHICLES IDENTIFIED WITH THE CONTRACTOR'S NAME AND APPROPRIATE LIGHTING.

CONTRACTOR'S VEHICLES

- 1. ALL CONTRACTOR VEHICLES SHALL BE IN GOOD WORKING ORDER. ALL CONTRACTOR VEHICLES SHALL BE ESCORTED WHILE INSIDE THE A.O.A THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ESCORTS WITH THE AIRPORT'S PROJECT MANAGER.
2. ALL CONTRACTOR VEHICLES/EQUIPMENT THAT ARE AUTHORIZED TO OPERATE ON THE AIRPORTS A.O.A. SHALL DISPLAY IN FULL VIEW ABOVE THE VEHICLE/EQUIPMENT A 3'x3' (MIN.) ORANGE AND WHITE CHECKER BOARD FLAG (DAY OPERATIONS). EACH CHECKER BOARD COLOR BEING ONE SQUARE FOOT. ANY VEHICLE OPERATING ON THE A.O.A. SHALL ALSO BE EQUIPPED WITH A FLASHING AMBER (YELLOW) DOME TYPE LIGHT, MOUNTED ON TOP OF THE VEHICLE AND OF SUCH INTENSITY TO CONFORM TO LOCAL AND FEDERAL CODES FOR MAINTENANCE AND EMERGENCY VEHICLES (DAY OR NIGHT OPERATIONS).

CONTACT INFORMATION:

SAVANNAH AIRPORT COMMISSION
AIRPORT PROJECT MANAGER:
MARK DENMARK - 912-964-0514

GAANG
FRANCISCO ORELLANA, GS-12
GoENVIRONMENTAL PROGRAM MANAGER 165AW/CEIE
W: 912-966-8336
C: 912-856-8164

FAA
MARIA K. ZINGG
TECHNICAL OPERATIONS
COLUMBIA DISTRICT
SAVANNAH SSC MANAGER
O: 912-964-3160
C: 912-210-3105

CALL BEFORE YOU DIG -- UTILITIES PROTECTION CENTER
GEORGIA LAW MANDATES THAT, BEFORE BEGINNING ANY MECHANIZED DIGGING OR EXCAVATION WORK, YOU MUST CONTACT GEORGIA 811 BY CALLING 811 OR 1-800-282-7411 AT LEAST 48 HOURS BUT NO MORE THAN 10 WORKING DAYS IN ADVANCE TO HAVE UTILITY LINES MARKED.

Table with 4 columns: DATE, DESCRIPTION, BY, AUTH. Row 1: MAR. 2021, BID DOCUMENTS, APD, RWP.

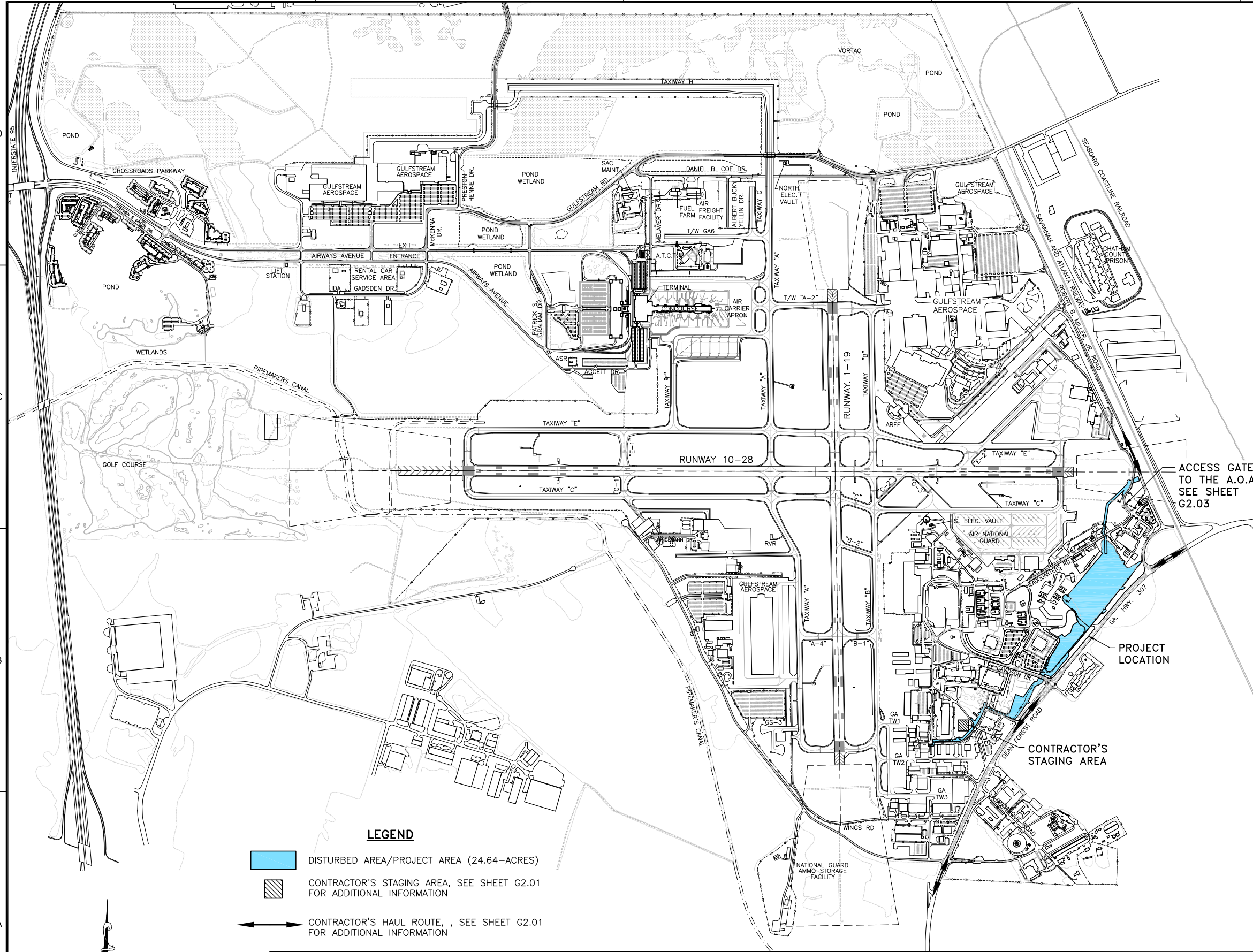


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SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS
GENERAL CONTRACT NOTES AND SAFETY & SECURITY REQUIREMENTS
SHEET TITLE: G1.03

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_3EQuadDrng\Design\900-Work\910 CAD\20-SHEETS\G1-03-SAV-GEN-NOTES.dwg LAYOUT NAME: G1-03 PLOTTED: Friday, February 26, 2021 8:20am USER: NormaPressley

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_SEQuadRng\900-Work\910 CAD\20-SHEETS\G1-04-CLP.dwg LAYOUT NAME: G1-04 PLOTTED: Friday, February 26, 2021 - 8:21am USER: Norma.Pressley

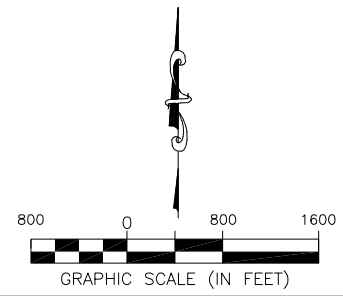


- NOTES FOR CONTRACTOR'S STAGING AREA**
1. THE CONTRACTOR SHALL MAINTAIN THE AIRPORT OPERATION AREA (A.O.A.) AND THE GEORGIA AIR NATIONAL GUARD (G.A.N.G.) IN A SECURED MODE AT ALL TIMES. A GUARD MUST BE POSTED AT THE ACCESS POINT INTO THE A.O.A. OR G.A.N.G. AREA AT ALL TIMES THAT THE GATE IS NOT LOCKED TO KEEP THE A.O.A. AND G.A.N.G. AREA SECURED.
 2. SEE PHASING PLANS FOR ACCESS TO THE A.O.A. DURING EACH PHASE.
 3. ALL MATERIAL DELIVERIES AND STORAGE OF MATERIALS WILL BE CONFINED TO THE CONTRACTOR'S STAGING AREA.
 4. UTILITIES AVAILABLE TO THE CONTRACTOR'S STAGING AREA INCLUDE WATER ONLY. THE CONTRACTOR WILL HAVE TO PROVIDE PORTABLE TOILETS SINCE SANITARY SEWER IS NOT IMMEDIATELY AVAILABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND PAYMENT OF ANY OR ALL ASSOCIATED FEES AND FOR MAKING ALL NECESSARY CONNECTIONS. ALL COSTS SHALL BE INCIDENTAL TO THE COST OF THE PROJECT.
 5. UPON THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY DEBRIS, EXCESS MATERIALS, ETC. AND SHALL GRADE, SEED AND MULCH ANY DISTURBED AREA AND SWEEP OFF ANY PAVED AREAS WITHIN THE STAGING AREA TO ITS ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE ENGINEER. ALL COSTS SHALL BE INCIDENTAL TO THE PROJECT.

- GENERAL NOTES:**
1. BEARINGS AND COORDINATES SHOWN HERE ON THESE PLANS ARE GRID, BASED ON GEORGIA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD83).
 2. THE VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 3. SEE SHEET G1.02 FOR INDEX OF DRAWINGS.
 4. SEE SHEET G1.03 FOR GENERAL CONTRACT NOTES AND SAFETY AND SECURITY REQUIREMENTS.
 5. SEE SHEET G1.04 FOR CONTRACT LAYOUT PLAN.
 6. SEE SHEETS G2.01 THRU G2.03 FOR PHASING PLANS AND NOTES.
 7. SEE SHEET G3.01 FOR SAFETY DETAILS.
 8. SEE SHEET G4.01 FOR PROJECT HORIZONTAL & VERTICAL CONTROL PLAN.
 9. SEE SHEET G4.02 FOR HORIZONTAL & VERTICAL CONTROL TABLES.
 10. SEE SHEET C1.01 FOR NEW STORM POND NO. 2 WETLAND IDENTIFICATION PLAN.
 11. SEE SHEETS C1.02 AND C1.03 FOR TREE CLEARING DEMOLITION PLANS.
 12. SEE SHEETS C1.04 AND C1.05 FOR TEMPORARY SECURITY FENCING PLANS.
 13. SEE SHEETS C1.21 THRU C1.24 FOR TYPICAL SECTIONS AND PAVEMENT REPLACEMENT DETAILS.
 14. SEE "C2" SERIES FOR EXISTING CONDITIONS & DEMOLITION PLANS.
 15. SEE "C3" SERIES FOR NEW STORM WATER PLAN & PROFILES.
 16. SEE "C4" SERIES FOR PROJECT ALIGNMENTS, GRADING AND DRAINAGE PLANS, NOTES AND DETAILS, DRAINAGE PIPE AND STRUCTURE DATA SCHEDULES AND DRAINAGE AND CONTROL STRUCTURE DETAILS.
 17. SEE "C5" SERIES FOR EROSION AND SEDIMENT CONTROL PLANS, NOTES AND DETAILS.
 18. SEE "C6" SERIES FOR FENCING PLANS AND DETAILS.
 19. SEE "C7" SERIES EXISTING UTILITIES & RELOCATION PLANS, NOTES, PROFILES AND DETAILS.
 20. SEE "X1 & X2" SERIES FOR PROJECT CROSS SECTIONS.
 21. SEE "SV" SERIES FOR PROJECT FIELD SURVEY PLANS.

LEGEND

- DISTURBED AREA/PROJECT AREA (24.64-ACRES)
- CONTRACTOR'S STAGING AREA, SEE SHEET G2.01 FOR ADDITIONAL INFORMATION
- CONTRACTOR'S HAUL ROUTE, SEE SHEET G2.01 FOR ADDITIONAL INFORMATION



DATE	DESCRIPTION	BY	AUTH
MAR. 2021	BID DOCUMENTS	APD	RWP

COLEMAN COMPANY
ENGINEERS • SURVEYORS
1480 Chatham Parkway, Suite 100
Savannah, Georgia | (912) 200-3041

AECOM
AECOM Technical Services, Inc.
7650 W. Courtney Campbell Causeway
Tampa, FL 33607-1462
Tel: 813.286.1711

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Savannah / Hilton Head International Airport
400 Airways Avenue
Savannah, Georgia 31408

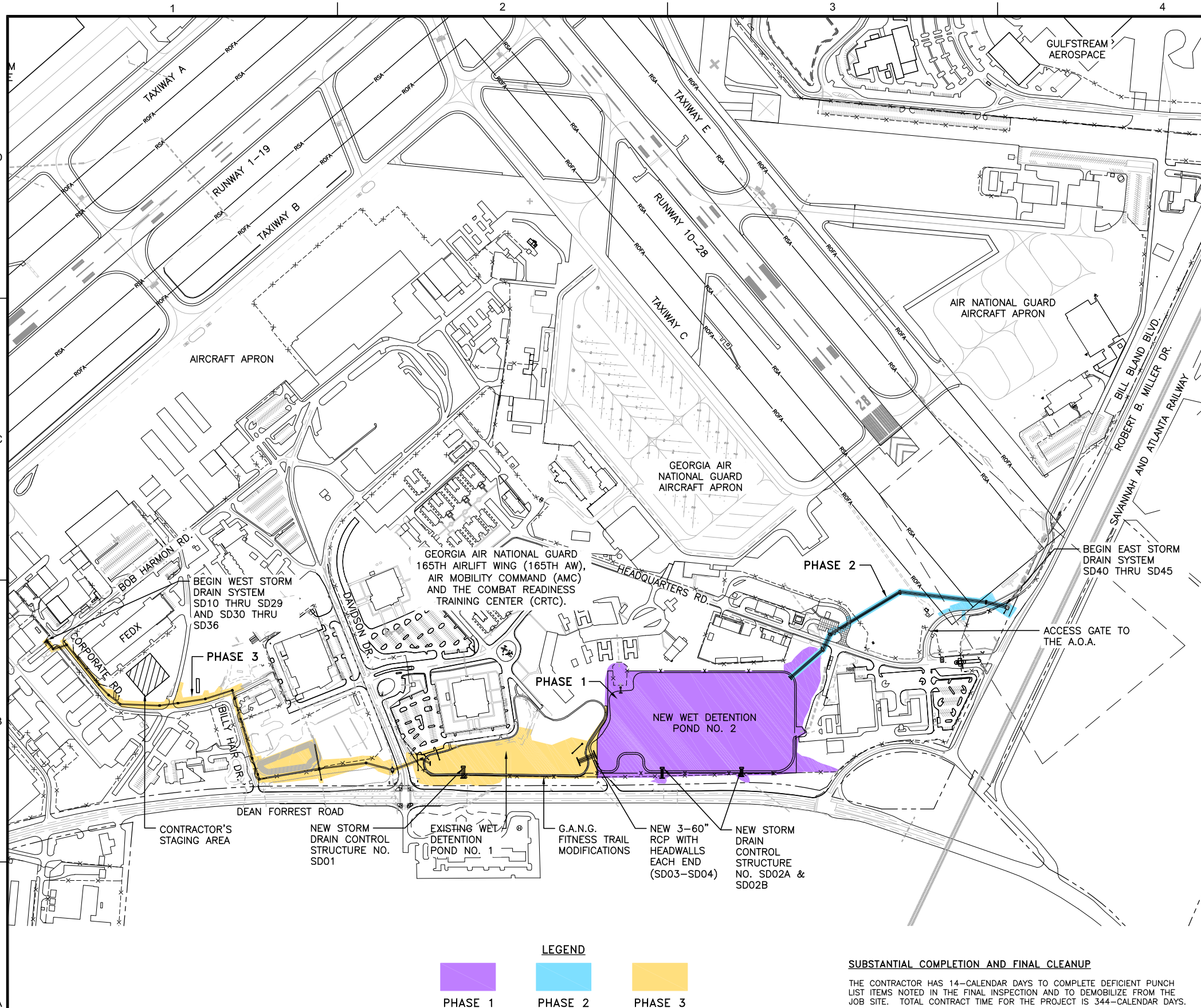
PM:	RWP
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SCALE:	AS NOTED
PROJECT NO.	60611019
DATE:	MARCH, 2021

SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS

SHEET TITLE: **CONTRACT LAYOUT PLAN**

SHEET NO.: **G1.04**

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_SEQuadDwg\Design\900-Work\910_CAD\20-SHEETS\G2-01_OV_PHASING.dwg LAYOUT NAME: G2-01 PLOTTED: Friday, February 26, 2021 - 8:21am USER: Norma.Pressley



CONSTRUCTION PHASING

MOBILIZATION – 30 CALENDAR DAYS

MOBILIZATION SHALL CONSIST OF SITE MOBILIZATION, ESTABLISHMENT OF HAUL ROUTES, INSTALLATION OF SEDIMENT AND EROSION CONTROL SYSTEMS, SUBMITTAL OF SHOP DRAWINGS, STOCK PILING OF MATERIALS, ETC..

PHASE 1

PHASE 1 WORK SHALL BE COMPLETED IN 150 CALENDAR DAYS. PHASE 1 WORK SHALL CONSIST OF THE CLEARING AND GRUBBING OF THE POND AREA, POND EXCAVATION, SECURITY FENCE INSTALLATION, INSTALLATION OF OUTFALL CONTROL STRUCTURES AND SODDING.

PHASE ELEMENT	PHASE 1
AREAS CLOSED TO AIRCRAFT OPERATIONS	NONE
DURATION OF CLOSURES	NONE
TAXI ROUTES	NO IMPACTS
ARFF ACCESS ROUTES	CONTRACTOR SHALL MAINTAIN ACCESS THROUGH THE ENTIRE PROJECT
CONSTRUCTION STAGING AREAS	OUTSIDE AOA
CONSTRUCTION ACCESS AND HAUL ROUTES	SEE SHEET G1.04
IMPACTS TO NAVAIDS	N/A
LIGHTING AND MARKING CHANGES	NONE
AVAILABLE RUNWAY LENGTH	RW 10-28 (9351 FT); RW 1-19 (7,002 FT.)
DECLARED DISTANCES	N/A
REQUIRED HAZARD MARKING AND LIGHTING	NONE
LEAD TIMES FOR REQUIRED NOTIFICATIONS	COORDINATE WITH OPERATIONS

PHASE 2

PHASE 2 WORK SHALL BE COMPLETED WITHIN 60 CALENDAR DAYS. PHASE 2 WORK SHALL BE COMPLETED WEEKDAYS BETWEEN 7 AM AND 5 PM AND SHALL INCLUDE INSTALLATION OF THE STORM WATER CONVEYANCE SYSTEM FROM BILL BLAND BLVD. ACROSS THE RUNWAY 28 APPROACH AND THROUGH THE AIR GUARD AREA. PHASE 2 WORK MAY NOT BEGIN UNTIL PHASE 1 WORK IS COMPLETE AND ACCEPTED.

PHASE ELEMENT	PHASE 2
AREAS CLOSED TO AIRCRAFT OPERATIONS	NONE
DURATION OF CLOSURES	NONE
TAXI ROUTES	NO IMPACTS
ARFF ACCESS ROUTES	CONTRACTOR SHALL MAINTAIN ACCESS THROUGH THE ENTIRE PROJECT
CONSTRUCTION STAGING AREAS	OUTSIDE AOA
CONSTRUCTION ACCESS AND HAUL ROUTES	SEE SHEET G1.04
IMPACTS TO NAVAIDS	N/A
LIGHTING AND MARKING CHANGES	NONE
AVAILABLE RUNWAY LENGTH	RW 10-28 (9351 FT); RW 1-19 (7,002 FT.)
DECLARED DISTANCES	N/A
REQUIRED HAZARD MARKING AND LIGHTING	NONE
LEAD TIMES FOR REQUIRED NOTIFICATIONS	COORDINATE WITH OPERATIONS

PHASE 3

PHASE 3 WORK SHALL BE COMPLETED IN 150 CALENDAR DAYS. PHASE 3 WORK SHALL BEGIN AT THE COMPLETION OF PHASE 1 AND WILL PROCEED IN PARALLEL WITH PHASE 2. PHASE 3 WORK SHALL CONSIST OF THE INSTALLATION OF THE STORM WATER CONVEYANCE SYSTEM IN THE REMAINDER OF THE SOUTHEAST QUADRANT, INCLUDING MOT FOR ROADWAY CROSSING, UTILITY CONFLICT RESOLUTION, ETC..

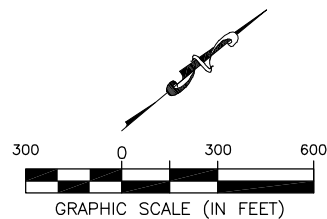
PHASE ELEMENT	PHASE 3
AREAS CLOSED TO AIRCRAFT OPERATIONS	NONE
DURATION OF CLOSURES	NONE
TAXI ROUTES	NO IMPACTS
ARFF ACCESS ROUTES	CONTRACTOR SHALL MAINTAIN ACCESS THROUGH THE ENTIRE PROJECT
CONSTRUCTION STAGING AREAS	OUTSIDE AOA
CONSTRUCTION ACCESS AND HAUL ROUTES	SEE SHEET G1.04
IMPACTS TO NAVAIDS	N/A
LIGHTING AND MARKING CHANGES	NONE
AVAILABLE RUNWAY LENGTH	RW 10-28 (9351 FT); RW 1-19 (7,002 FT.)
DECLARED DISTANCES	N/A
REQUIRED HAZARD MARKING AND LIGHTING	NONE
LEAD TIMES FOR REQUIRED NOTIFICATIONS	COORDINATE WITH OPERATIONS

SUBSTANTIAL COMPLETION AND FINAL CLEANUP

THE CONTRACTOR HAS 14-CALENDAR DAYS TO COMPLETE DEFICIENT PUNCH LIST ITEMS NOTED IN THE FINAL INSPECTION AND TO DEMOBILIZE FROM THE JOB SITE. TOTAL CONTRACT TIME FOR THE PROJECT IS 344-CALENDAR DAYS.

LEGEND

PHASE 1	PHASE 2	PHASE 3



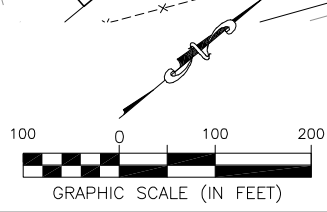
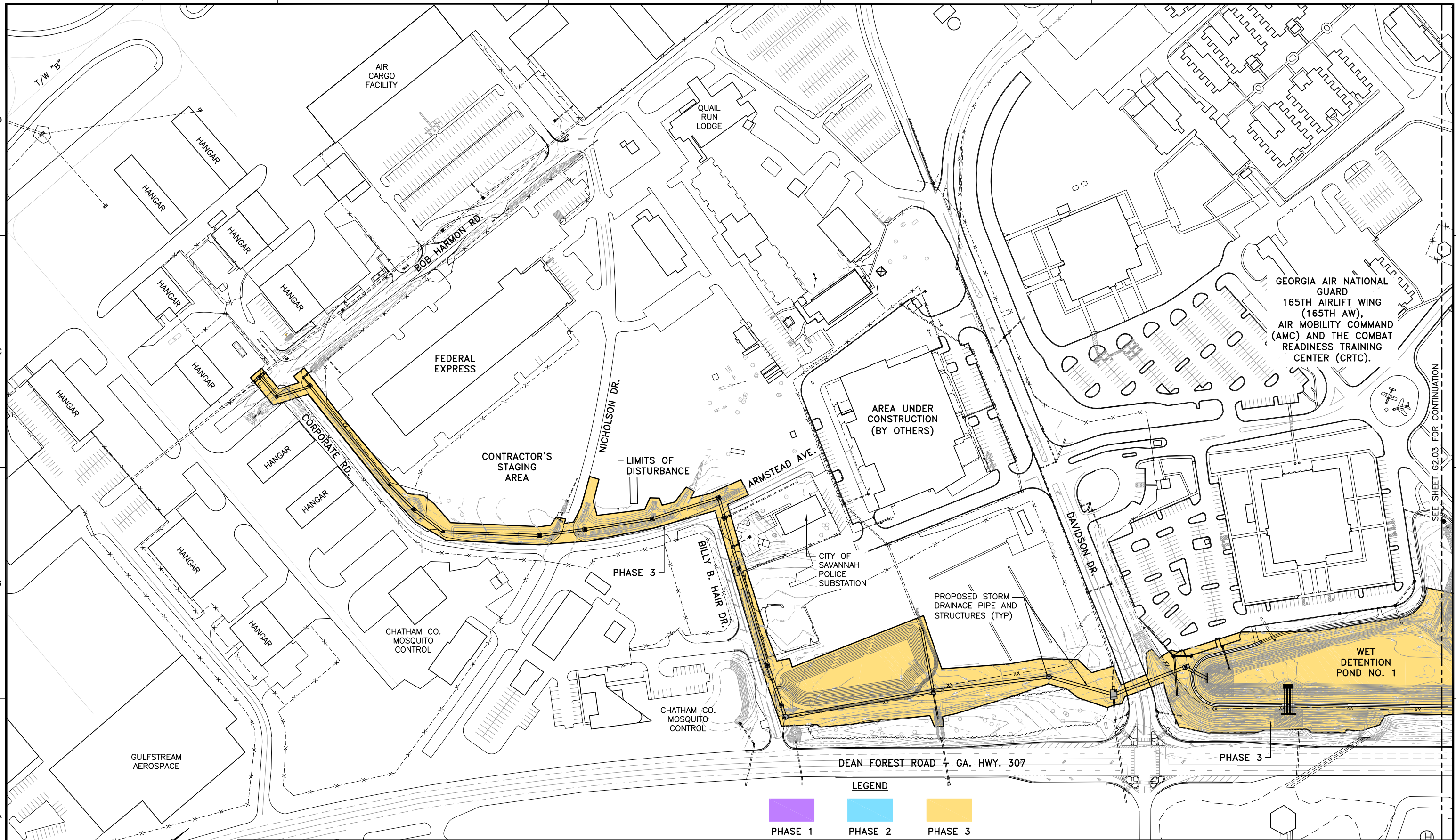
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SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS	
SHEET TITLE	SHEET NO.
OVERALL PHASING PLAN AND NOTES	G2.01

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_SEQuadDwg\900-Work\910_CAD\20-SHEETS\G2-02-G2-03 PHASING.dwg LAYOUT NAME: G2-02 PLOTTED: Friday, February 26, 2021 - 8:22am USER: Norma.Pressley



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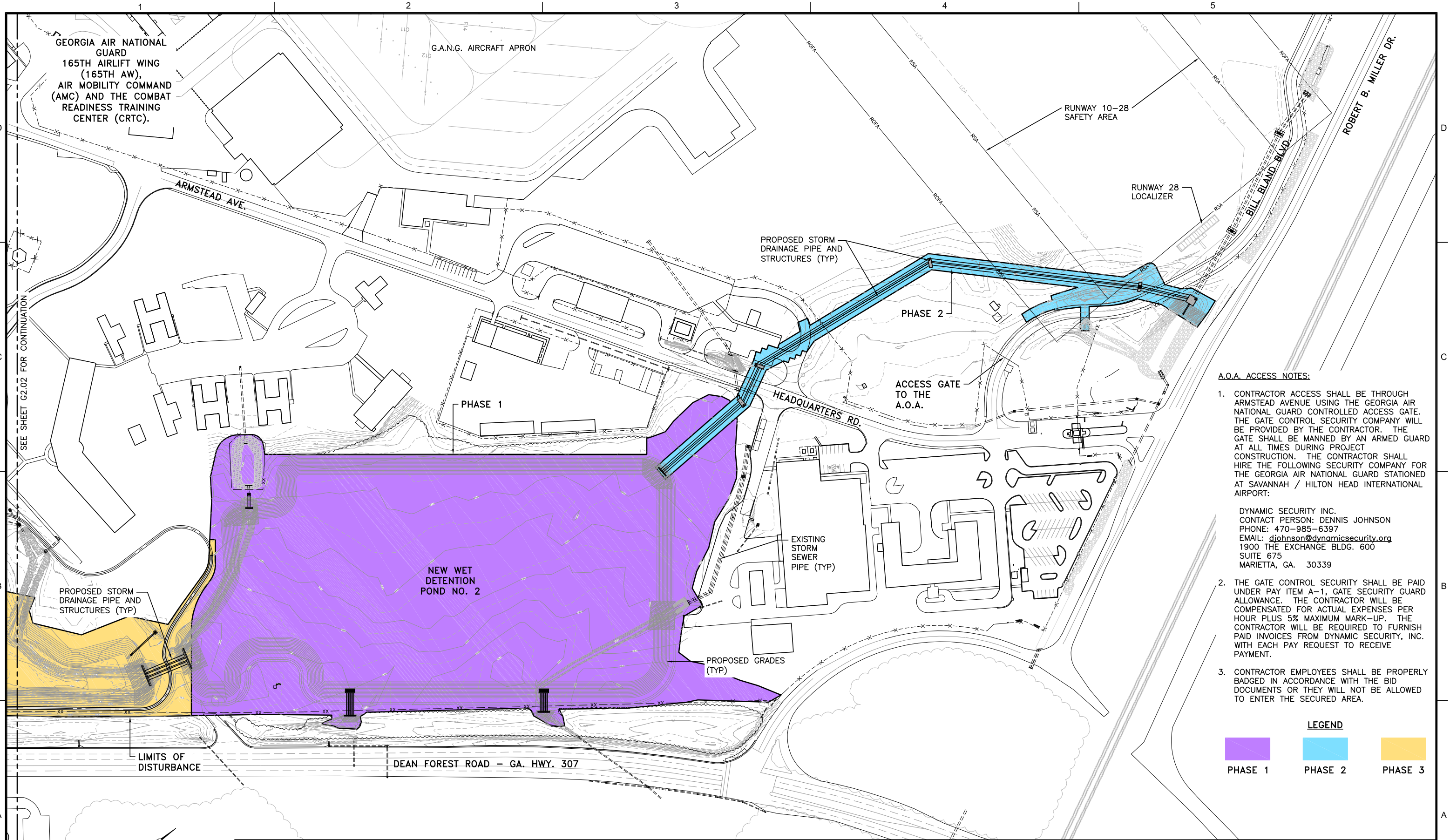
PM:	RWP
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SCALE:	AS NOTED
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SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS

SHEET TITLE: PHASING PLAN (1) SHEET NO.: G2.02

DRAWING SIZE REDUCED IF LESS THAN 34"x22"

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_SEQuadRng\900-Work\910_CAD\20-SHEETS\G2-02-G2-03 PHASING.dwg LAYOUT NAME: G2-03 PLOTTED: Friday, February 26, 2021 - 8:22am USER: Norma.Pressley

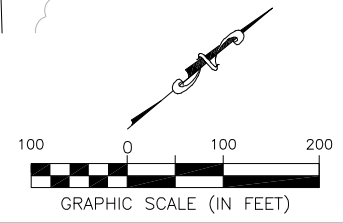


- A.O.A. ACCESS NOTES:**
- CONTRACTOR ACCESS SHALL BE THROUGH ARMSTEAD AVENUE USING THE GEORGIA AIR NATIONAL GUARD CONTROLLED ACCESS GATE. THE GATE CONTROL SECURITY COMPANY WILL BE PROVIDED BY THE CONTRACTOR. THE GATE SHALL BE MANNED BY AN ARMED GUARD AT ALL TIMES DURING PROJECT CONSTRUCTION. THE CONTRACTOR SHALL HIRE THE FOLLOWING SECURITY COMPANY FOR THE GEORGIA AIR NATIONAL GUARD STATIONED AT SAVANNAH / HILTON HEAD INTERNATIONAL AIRPORT:

DYNAMIC SECURITY INC.
CONTACT PERSON: DENNIS JOHNSON
PHONE: 470-985-6397
EMAIL: djohnson@dynamicsecurity.org
1900 THE EXCHANGE BLDG. 600 SUITE 675
MARIETTA, GA. 30339
 - THE GATE CONTROL SECURITY SHALL BE PAID UNDER PAY ITEM A-1, GATE SECURITY GUARD ALLOWANCE. THE CONTRACTOR WILL BE COMPENSATED FOR ACTUAL EXPENSES PER HOUR PLUS 5% MAXIMUM MARK-UP. THE CONTRACTOR WILL BE REQUIRED TO FURNISH PAID INVOICES FROM DYNAMIC SECURITY, INC. WITH EACH PAY REQUEST TO RECEIVE PAYMENT.
 - CONTRACTOR EMPLOYEES SHALL BE PROPERLY BADGED IN ACCORDANCE WITH THE BID DOCUMENTS OR THEY WILL NOT BE ALLOWED TO ENTER THE SECURED AREA.

LEGEND

PHASE 1	PHASE 2	PHASE 3



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SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS	
SHEET TITLE	SHEET NO.
PHASING PLAN (2)	G2.03

DRAWING SIZE REDUCED IF LESS THAN 34"x22"

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\Airport Commission\900-Work\910 CAD\20-SHEETS\03-01 SAFETY DETAILS.dwg LAYOUT NAME: 03-01 SAFETY DETAILS.dwg PLOTTED: Friday, February 26, 2021 - 8:22am USER: Norma Pressley

MAINTENANCE OF TRAFFIC

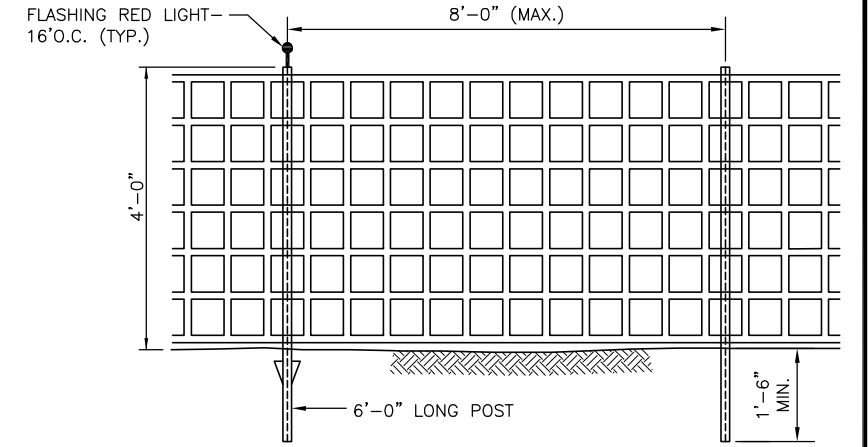
NOTE:

THE CONTRACTOR SHALL PROVIDE AT LEAST 10' OF TRAVEL LANE IN EACH DIRECTION FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION, ESPECIALLY DURING CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE OPEN CUT OF PAVEMENT AT ROADWAYS TO REMOVE EXISTING PIPE AND/OR INSTALL PROPOSED STORM SEWER PIPE AT THE LOCATIONS SHOWN ON THE TABLE BELOW.

Roadways With Open Cuts Requiring MOT	
Roadway Name	Plan Sheets
Bob Harmon Rd.	C2.11, C3.01 & C4.11
Corporate Rd.	C2.11, C3.01 & C4.11
Armstead Ave. near Nicholson Dr.	C2.12, C3.02 & C4.12
Armstead Ave. near Billy B. Hair Dr.	C2.12, C3.02 & C4.12
Davidson Dr.	C2.14, C3.04 & C4.14
Headquarters Rd.	C2.19, C2.20, C3.05, C4.19 & C4.20
Bill Bland Blvd.	C2.21, C3.07 & C4.21

NOTES:

1. SEE SHEET C5.81 FOR CONSTRUCTION EXIT DETAIL, SECTIONS AND NOTES.

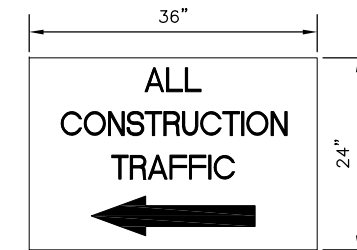


NOTE:

CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCE AROUND THE STAGING AREA. FENCE SHALL BE TENSAR POLYGRID SF OR APPROVED EQUAL. LINE POST SPACING SHALL BE A MAXIMUM OF 8'-0". FENCE SHALL BE FASTENED TO POLES WITH 5 PLASTIC TIES.

VISUAL CONSTRUCTION BARRIER DETAIL

N.T.S.

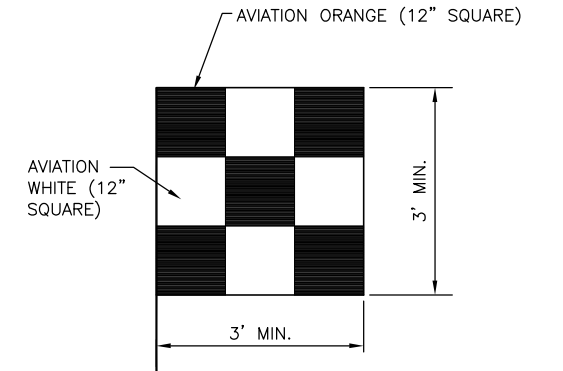


CONSTRUCTION TRAFFIC SIGN

N.T.S.

CONSTRUCTION TRAFFIC SIGN NOTES:

1. SIGN BACKGROUND IS TO BE WHITE. SIGN LETTERING IS TO BE BLACK, MINIMUM HEIGHT OF 3", AND BE A BOLD LETTERING STYLE SIMILAR TO DETAIL SHOWN ON THIS SHEET.
2. SIGN IS TO BE LOCATED HIGH ENOUGH TO ALLOW EASY VIEWING FROM ALL CONSTRUCTION VEHICLES ENTERING THE CONSTRUCTION SITE.
3. SIGN PLACEMENT SHALL BE AS DIRECTED BY THE RESIDENT ENGINEER.
4. ALL CONSTRUCTION TRAFFIC SIGNAGE SHALL BE INCLUDED AND CONSIDERED INCIDENTAL TO THE PROJECT.



CONSTRUCTION SAFETY FLAG

N.T.S.

CONSTRUCTION SAFETY FLAG NOTES:

1. SAFETY FLAG SHALL BE PROMINENTLY DISPLAYED ON ALL CONSTRUCTION EQUIPMENT.

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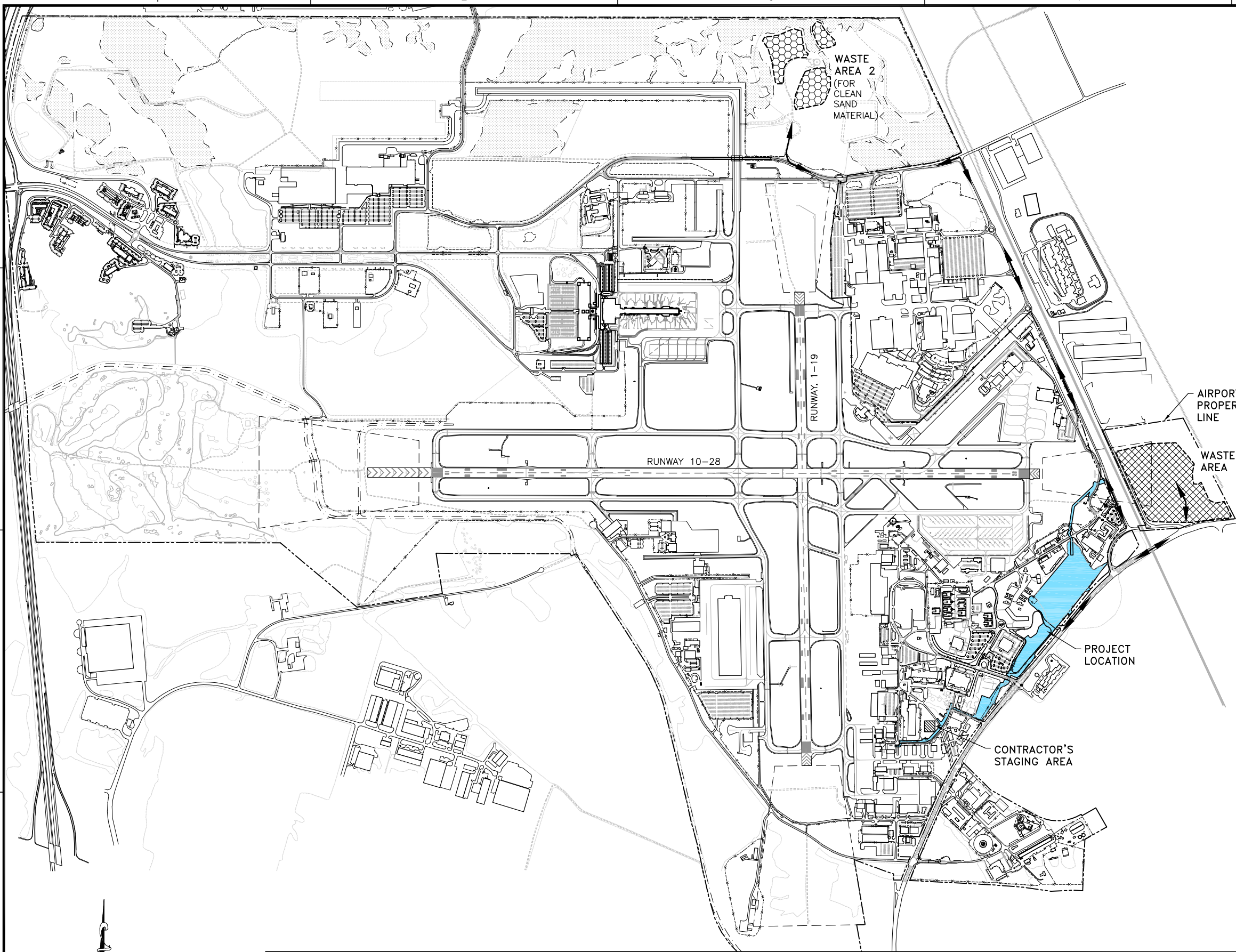


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CHK. BY:	SGH
DSG. BY:	APD
SCALE:	AS NOTED
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DATE:	MARCH, 2021

SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS

SHEET TITLE	SHEET NO.
SAFETY DETAILS	G3.01

FILE NAME: L:\DCS\Projects\Legacy\Savannah Airport Commission\60611019_SEQuadDwg\900-Work\910 CAD\20-SHEETS\05-01 WASTE DIRT.dwg LAYOUT NAME: 05-01 PLOTTED: Friday, February 26, 2021 - 8:22am USER: Norma.Pressley







GENERAL NOTES

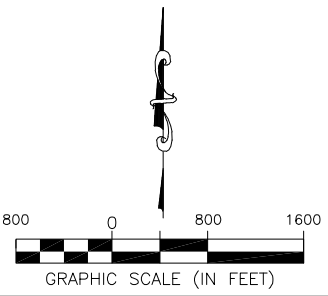
1. THE CONTRACTOR SHALL MAINTAIN THE AIRPORT OPERATION AREA (A.O.A.) AND THE GEORGIA AIR NATIONAL GUARD (G.A.N.G.) IN A SECURED MODE AT ALL TIMES. A GUARD MUST BE POSTED AT THE ACCESS POINT INTO THE A.O.A. OR G.A.N.G. AREA AT ALL TIMES THAT THE GATE IS NOT LOCKED TO KEEP THE A.O.A. AND G.A.N.G. AREA SECURED.
2. SEE PHASING PLANS FOR ACCESS TO THE A.O.A. DURING EACH PHASE.

WASTE AREA NOTES:

1. THE CONTRACTOR SHALL SEPARATE POND UNCLASSIFIED EXCAVATION MATERIAL INTO CLEAN SAND AND OTHER. ALL CLEAN SAND SHALL BE STOCKPILED IN WASTE AREA NO. 2 FOR FUTURE USE BY THE AIRPORT. ALL OTHER MATERIAL SHALL BE WASTED AT WASTE AREA NO. 1.
2. PRIOR TO PLACING ANY WASTE MATERIAL, THE CONTRACTOR SHALL VERIFY THE LOCATION AND LIMITS OF THE FILL AREA AND PLACE APPROPRIATE SILT FENCE. THE SILT FENCING IS ESTIMATED AT 6000 L.F. FOR THE WASTE AREAS NO. 1 AND 2.
3. AT PROJECT CONCLUSION, FINAL GRADE AND HYDROSEED THE WASTE AREA. THE HYDROSEEDING SHALL INCLUDE A BIRD REPELLANT IN THE APPROACHES TO RUNWAY 19 AND RUNWAY 28.
4. SEE SHEET X1.00 FOR UNCLASSIFIED EXCAVATION CUT AND FILL TOTALS.

LEGEND

-  PROJECT LOCATION
-  WASTE AREA 1 - MIXED MATERIAL
-  WASTE AREA 2 - CLEAN SAND MATERIAL
-  CONTRACTOR'S HAUL ROUTE TO WASTE MATERIAL



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SOUTHEAST QUADRANT STORM DRAINAGE IMPROVEMENTS

SHEET TITLE: **WASTE MATERIAL LOCATION PLAN**

SHEET NO.: **G5.01**