



LAKE HAVASU CITY, ARIZONA
ADMINISTRATIVE SERVICES DEPARTMENT
♦ PROCUREMENT ♦

**INVITATION TO BID
OBSTRUCTIONS LIGHT/MARK/REMOVE EXISTING HYDRANTS AND
REPLACE PROJECT
ITB-B24-PW-104007-500450
ADDENDUM NO. 4
FEBRUARY 2, 2024**

Attention is called to the following changes, additions, clarifications and/or deletions to the original solicitation and they shall be taken into account in preparing submissions:

There is no change in the opening date. **Submissions are due no later than 3:00 p.m., Arizona Time, FEBRUARY 7, 2024**, at the City Clerk's Office, 2330 McCulloch Blvd. N., Lake Havasu City, AZ 86403 or by electronic submission via DemandStar.

ITEM ONE (1): INFORMATION

The meeting minutes and attendance sheet from the pre-bid conference have been attached (Attachment A).

ITEM TWO (2): QUESTIONS AND ANSWERS

Q1: Is the City accepting electronic bid submissions.

A1: Yes. Electronic bid submissions can be uploaded through the DemandStar system and must be in submitted status prior to the 3:00 PM deadline on the due date. The City will also be accepting physical bid documents delivered to the City Clerk's Office by the 3:00 PM deadline on the due date (see above).

Q2: Are pad finish elevations shown on the plans.

A2: Pad finish elevations have not been included in the plans as those elevations will be determined in the field, based on pothole information and existing grade elevation at the determined pad location. The ultimate pad location/geometry may be influenced by the Gradelok (hydrant branch) configuration. The intent is that the finish elevation of the pad will be at least one (1) inch above existing grade elevation.

Q3: Have the valves been tested?

A3: Yes, all valves have been tested and are working.

Q4: Will the construction time stop between potholing and when parts come in?

A4: The five (5) days given for potholing will not count against the contract time. That clock will not start until the NTP is issued after parts and materials have been delivered.

Q5: Will the contractor be required to pressure test and leak test the valves after installation?

A5: Pressure and leak testing will be according to Lake Havasu City Engineering Specifications Section 02550 Water Piping Systems.

Q6: Will radios and radio communication be required?

A6: Radios are not required for this project; however, construction related activity, particularly movement to and from work areas, requires coordination with an Airport escort having radio communication with UNICOM unless prior approval is obtained from Airport operations.

Q7: Is it possible to isolate sections of the water line?

A7: During the site inspection, it was confirmed that Hydrant 2 can be isolated, Hydrants 3 and 4 can be isolated, Hydrants 5, 6, and 8 can be isolated, and Hydrant 9 can be isolated. Sequencing can be determined in the field as needed; however, this will need to be coordinated with the on-site fire department crews so non-working hydrants can be tagged out of service.

Q8: Is night work expected?

A8: Night work is not required but may be utilized as an option.

Q9: Are there insurance requirements specifically for working at the airport?

A9: Yes. They are listed in the specifications. See Section 500A – Lake Havasu Airport Construction Contract Indemnification and Insurance Requirements.

Q10: Is there a requirement for Mueller brand equipment?

A10: No, equivalent or equal equipment may be submitted for approval.

Q11: What is the depth of the soil cement at the hydrants?

A11: The soil cement may be of varying/unknown depth, especially at Hydrants 2, 3, 4, 5, and 6.

Q12: Will new swivel tees be needed at locations where the new Hydrant is not being located on the other side of the main?

A12: The tees at hydrants 2, 6, 8, and 9 are remaining on the existing side of the main and may be left in place. New swivel tees are not required for these hydrants.

Q13: Will flow rate testing need to be performed?

A13: Bidders are advised to refer to Lake Havasu City Engineering Specifications Section 02550 Water Piping Systems for testing requirements.

Q14: Are there phasing requirements for the project?

A14: Yes. The Construction Safety Phasing Plan is attached to this Addendum (Attachment B).

Andrew Klos, MBA, CPPB
Senior Procurement Specialist

**Meeting Minutes
for
PRE-BID MEETING
January 23, 2024
LAKE HAVASU CITY MUNICIPAL AIRPORT
REMOVE EXISTING HYDRANTS AND REPLACE PROJECT
B24-PW-104007-500450
ADOT GRANT NO. E1S1V01C**

- Introductions.
- Distribute meeting attendance form.
- The scope of work and phasing requirements.
 - The scope of work for this project generally includes the removal of the existing above ground fire hydrants adjacent to Taxiways A and B, which are currently a non-frangible obstruction to taxiing aircraft, and replacing them with new flush mounted (below grade) hydrants in concrete pads in approximately their current location.
 - The work of the project will be completed in one phase. However, a Limited 5-day Notice to Proceed shall be issued to allow access to the project areas to determine the depth of the waterline prior to ordering fire hydrants and components.
- The specifications are available on the City website as well as DemandStar.
- The Bid Opening is set for **February 7, 2024, 3:00 p.m., ARIZONA TIME.**
 - Bids must be clearly addressed to the **City Clerk's Office, 2330 McCulloch Blvd. N, Lake Havasu City, Arizona, 86403.**
 - Bids received by 3:00 p.m. will be opened and read aloud in Room 109 of Lake Havasu City Hall
- SECTION 00300 outlines everything that needs to be submitted with your bid.
 - All the proposal forms need to be submitted along with the bid bond.
 - Bid Schedule – each line item needs to be completed, written in words and numerals.

Complete and sign each of the following Bid Proposal documents (as shown in SECTION 00300 BID PROPOSAL), failure to do so may be cause for rejection of the bid.

- 00300 Bid Proposal
 - 00310 Bid Schedule
 - 00400 Arizona Statutory Bid Bond
 - 00420 Bidder's Statement of Qualifications
 - 00430 Affidavit Certifying That There Was No Collusion In Bidding For Contract
 - 00450 Hazard Communication Program
 - 00460 Employment Eligibility Verification
 - Also acknowledge receipt of addenda
- Safety and Security Requirements
 - Construction Safety Phasing Plan – must be adhered to at all times during construction. Work on this project will occur outside of the Taxiway Safety Areas, near Taxiways and active aircraft operations. Aircraft have the right of way at all times.
 - Restricted Area Fencing & Gate Guards – access will be through Gate 20.
 - All gates must be closed and locked at all times unless a gate guard is present.
 - Vehicle Marking & Escorts - All vehicles must have flags or have amber beacons (amber beacons are required for any night work).
 - Badges are not required for this project. All access and movement will need to be escorted. You will need to coordinate activities with Airport personnel.
 - Access – access shall be via Gate No. 20 to Taxiway C, to the contractor's staging area (adjacent to Taxiway C), Taxiway C2 to Taxiway B.
 - Work Areas - work is to be performed in the infield areas adjacent to Taxiways A and B. If work or equipment operations need to occur within the Taxiway Safety Area, this will require local closures of the affected Taxiway. In this case a NOTAM will need to be issued, and barricades will need to be placed at the limits of the closure.
 - Maintenance - Paved areas will need to be swept and kept clear of FOD along the access route and prior to re-opening closed areas to aircraft traffic.
 - NOTAMs for taxiway closures will be issued by the Airport, and shall be coordinated through the onsite inspector.

- Time Schedule & Liquidated Damages – the construction period for this project is 60 calendar days, - see schedule of liquidated damages in Section 00100 Information for Bidders.
 - A limited notice to proceed shall be issued for a period of 5 calendar days (after project award) to allow the contractor to access the project areas to hydrovac pothole and determine the waterline depth prior to ordering fire hydrants and components. Once delivery of hydrants and components have been confirmed an official notice to proceed will be issued, starting the 60 calendar day construction period.
- Addendum Items
 - It is the contractor's responsibility to monitor the City Website and Plan Rooms for Addendums.
 - At least one more addendum will be issued which will include - clarification of questions, meeting minutes, and the sign in sheet (from this meeting).
- For technical information and questions that arise relating to this solicitation shall be directed in writing to: Randy Behm at rbehm@cscos.com with a copy to purchasing@lhcaz.gov and engineeringinfo@lhcaz.gov. by January 29, 2024 at 3:00 PM Arizona Time.
- Review of Hydrant locations and general construction sequence.
 - 7 hydrants to be replaced located in infield areas adjacent to Taxiway B.
 - After award a LNTP (5 Days) will be issued for Hydrovac potholing to determine the depth of the waterline main at each location. It's important to know the exact depth of the waterline main at each location to order the correct length barrel to put the flush mounted box to finish grade.
 - order hydrants with correct lower barrel size (in 6" increments).
 - Gradelok may assist with final adjustment.
 - once the materials are in – will issue the NTP
 - remove existing hydrant, valve and pipe to the main, install new swivel tee, attach valve and install hydrants flush with new concrete pad as shown on detail
 - The idea behind the pads is to allow firemen a flat working surface around the hydrants and valves. The amount of slope varies at each, please account for the amount of 4:1 at each location.
 - Some of the hydrant excavations will be outside of the footprint of the new hydrant and pad, the plan for backfill of those excavations is to use clean excavation material and top off with on-site millings which are stockpiled near the contractor staging area.



ATTENDEES LIST
LAKE HAVASU CITY MUNICIPAL AIRPORT
REMOVE EXISTING HYDRANTS AND REPLACE PROJECT
PRE-BID MEETING



January 23, 2024

NAME	AFFILIATION	E-MAIL ADDRESS	PHONE
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ATTACHMENT A TO SECTION 70

**CONSTRUCTION SAFETY AND
PHASING PLAN (CSPP)**

FOR THE CONSTRUCTION OF

**REMOVE EXISTING HYDRANTS AND REPLACE
PROJECT
AT**

LAKE HAVASU CITY MUNICIPAL AIRPORT

ADOT NO.: E1S1V01C

September 2023

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CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

1.0 PURPOSE.

Aviation safety is the primary consideration at airports, especially during construction. The airport owner's Construction Safety and Phasing Plan (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.

The CSPP sets forth benchmarks and requirements for the project to help ensure the highest levels of safety, security and efficiency at the airport at the time of construction. Requirements for this CSPP were developed from FAA Advisory Circular (AC) 150/5370-2 Operational Safety on Airports During Construction, latest edition.

The CSPP is a standalone document, written to correspond with the safety and security requirements set forth in the AC, the airport safety and security requirements, and local codes and requirements. The CSPP is to be used by all personnel involved in the project. The CSPP covers the actions of not only the construction personnel and equipment, but also the action of inspection personnel and airport staff.

This document has been developed in order to minimize interruptions to airport operations, reduce construction costs, and maximize the performance and safety of construction activity. Strict adherence to the provisions of the CSPP by all personnel assigned to or visiting the construction site is mandatory.

The Contractor shall submit a Safety Plan Compliance Document (SPCD) to the airport owner describing how the Contractor will comply with the requirements set forth in this CSPP. The SPCD must be submitted to the airport owner prior to issuance of Notice to Proceed.

In the event the Contractor's activities are found in non-compliance with the provisions of the CSPP or the SPCD, the Airport Owner's Representative will direct the Contractor, in writing, to immediately cease those operations in violation. In addition, a safety meeting will be conducted for the purpose of reviewing those provisions in the CSPP/SPCD which were violated. The Contractor will not be allowed to resume any construction operations until conclusion of the safety meeting and all corrective actions have been implemented.

2.0 SCOPE OF PROJECT AND CSPP.

The Project will include the removal of the existing above ground fire hydrants adjacent to Taxiways A and B, which are currently an obstruction to taxiing aircraft. New hydrants will be placed in underground vaults in approximately their current location.

Safety, maintaining aircraft operations, and construction costs are all interrelated. Since safety must not be compromised, the airport owner 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. As they are identified, 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 in order to maintain operational safety. This planning effort will ultimately result in a project CSPP. The development of the CSPP takes place through the following five steps:

1. Identify Affected Areas
2. Describe Current Operations
3. Allow for Temporary Changes to Operations
4. Take Required Measures to Revise Operations
5. Manage Safety Risk

3.0 PLAN REQUIREMENTS.

3.1 COORDINATION. The following items shall be coordinated as required:

- a. **Pre-construction Meeting.** A preconstruction meeting will be conducted to discuss operational safety, testing, quality control, quality acceptance, security, safety, labor requirements, environmental factors, and other issues. All parties affected by the construction will be asked to attend including, but not limited to, the airport owner, tenants, contractor, subcontractors and Engineer.

At the preconstruction meeting, the Contractor shall submit a plan of operation and schedule of work to the Engineer for approval. The Contractor's plan of operation shall indicate, in detail, the amount of construction planned and the number of shifts and/or overtime operations proposed for the project. The schedule of work shall clearly indicate the sequence of work to be performed. The Contractor shall conform, at all times, to the requirements of these provisions and with current safety practices, rules, regulations and security requirements of Airport Owner. The preconstruction meeting will be held prior to issuance of a Notice to Proceed.

- b. **Contractor Progress Meetings.** A minimum of one progress meeting to discuss scheduling and coordination shall be held each week unless otherwise directed by the Airport Owner, throughout the duration of the Contract, between the Airport Owner, Contractor, Engineer and any other interested parties at a time and place to be designated by the Engineer. These meetings shall include a detailed discussion of construction phasing and safety with regard to the Contractor's compliance with the requirements stipulated in the Contract Documents.

In attendance at these meetings shall be a Contractor's representative with the authority to make decisions concerning the scheduling and coordination of work. Progress meetings shall be facilitated by the Engineer. Operational safety shall be a standing agenda item during progress meetings throughout the construction project.

- c. **Scope or Schedule Changes.** Changes in the Scope of Work or Project Schedule shall be governed by Section 40 and Section 80 of the Contract Documents. Any proposed change that results in a deviation from the established CSPP as expressed by the Contract Documents must be submitted to the FAA, ADOT and Owner for review and approval. FAA review and approval can be expected to take sixty business days.
- d. **FAA ATO Coordination.** Early coordination with Federal Aviation Administration (FAA) Air Traffic Organization (ATO) is required to schedule airway facility shutdowns and restarts. Relocation or adjustments to NAVAIDs, or changes to final grades in critical areas, may require an FAA flight inspection prior to restarting the facility. Flight inspections shall be coordinated and scheduled well in advance of the intended facility restart. Flight inspections shall be as required by technical specifications or special provisions.
- e. **Pre-Paving Meeting.** If paving is included in this project, a pre-paving meeting will be held to discuss the status of preliminary submittals, the Engineer's inspection of the plant and laboratory, test section requirements, paving plan requirements, and production requirements.
- f. **Payment.** The cost of complying with the requirements of this section, including but not limited to scheduling; construction, maintenance and removal of temporary access roads and staging areas; providing, placing, relocating, maintaining and removing temporary barricades; maintenance of airport lighting circuits; cleaning of paved surfaces; restoration of surfaces disturbed as a result of the Contractor's operations; providing, maintaining, and removing warning signs, hazard markings, barricade lights and all security requirements shall be included under Technical Specification Item C-106, Safety, Security and Maintenance of Traffic.

3.2 PHASING.

a. Phase Elements (Work Area)

Work Area Descriptions: The work of the project will be completed in one phase. However, a Limited 5 day Notice to Proceed shall be issued to allow the contractor access to the project areas to determine the depth of the waterline prior to ordering fire hydrants and components. Once the delivery of hydrants and components are received a start date will be confirmed and a Notice to Proceed will be issued.

b. Construction Safety Requirements

The Contractor shall obtain approval from the Engineer prior to beginning any work in all areas of the airport. The Contractor shall plan and coordinate his/her work in such a manner as to insure safety and a minimum of hindrance to airport operations. All Contractor equipment and material stockpiles shall be stored at locations determined during construction or as shown on the Construction Safety Drawings (Appendix 1). No equipment will be allowed to park within the approach area of an active runway at any time.

During the work under this Contract, the Owner will make such arrangements to coordinate aircraft movements and Airport operations as necessary to conform to the construction procedures as outlined below and as shown on the Contract Drawings. The Contractor shall give adequate notice to the Engineer, so as to afford time to coordinate construction with the Owner. No work shall proceed in any area without prior approval.

The Contractor shall always confine construction operations to the contractor work area and designated haul routes. Contractor personnel, equipment, stored materials, subcontractors and suppliers will not be allowed on any other area within the Air Operations Area and within the Airport boundaries without prior approval of the Owner or Engineer.

The Engineer will perform a visual site assessment before the Contractor occupies the contractor work area. The Contractor shall be held responsible for all repairs and cleanup costs incurred as a result of the Contractor's construction operations. Restoration shall be the complete return of all work areas to the original conditions.

Prior to the start of construction operations and each work shift, the Contractor shall perform the following:

- Coordinate issuing Notices to Airmen (NOTAM) with the Airport Owner and Engineer for the construction activities involved at least 48 hours in advance of the work.

At the conclusion of construction operations, the Contractor shall perform the following:

- Test and activate airfield lighting circuits.
- Remove barricades, and closed runway markings, as indicated on the Construction Safety Drawings.
- Clean all paved surfaces in accordance with Item C-106 , Safety, Security and Maintenance of Traffic.
- Coordinate cancellation of the NOTAMs with the Airport Owner and Engineer.

Work Area: Work is to be performed during local closures of infield areas adjacent to Taxiways A and B. Contractor is required to provide and maintain barricades for each day's work. Paved areas are to be swept and clear of FOD before re-opening each day. Access shall be via Gate No. 20 to the contractor's staging area just west of Taxiway C.

At the start of each work shift, the Contractor shall perform the following:

- Verify with the Owner that a NOTAM has been issued advising that men and equipment will be working adjacent to Taxiway A and B, at the location of that day's work.
- Provide and maintain temporary barricades delineating the infield work area for that shift.

At the conclusion of each work shift, the Contractor shall perform the following:

- Remove temporary barricades.
- Sweep and clear FOD from all paved areas before re-opening each day.
- Activate and test the taxiway edge lighting circuit in the vicinity of excavation.

3.3 AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY.

Contractor, subcontractor, and supplier employees or any other unauthorized persons shall be restricted from entering an active airport operating area without previous permission from the Airport Owner and the Engineer.

In an emergency situation, the Owner or other designated airport representative may order the Contractor to suspend operations; move personnel, equipment, and materials to a safe location; and stand by until aircraft use is completed.

The Contractor shall cooperate with the airport users through the Engineer, in coordination with airport operations, in scheduling the operations to provide adequate clearance for safe aircraft parking, fueling, maintenance, loading or unloading, maneuvering, taxing operations, or other aircraft operations.

a. Identification of Affected Areas

The following is a summary of impacts to the Airport Operations Areas resulting from the proposed construction safety and work phasing requirements:

Table 3.3A Construction Effect on Airport Operations		
Project	Remove Existing Hydrants and Replace Project	
Phase	Entire project	
Operational Requirements	Normal (Existing)	Anticipated (During Construction)
Scope of Work	This project consists of removing the existing above ground fire hydrants adjacent to Taxiways A and B, and placing new hydrants underground vaults.	
Runway 14-32 ARC	B-II	
RW 14 Approach Visibility Minimums	>1 Mile	Unaffected
RW 32 Approach Visibility Minimums	>1 Mile	Unaffected
Runway 14-32 Declared Distances	TORA: 8,001'	TORA: Unaffected
	TODA: 8,001'	TODA: Unaffected
	ASDA: 8,001	ASDA: Unaffected
	LDA: 8,001'	LDA: Unaffected
Runway 14-32 Visual NAVAIDs	Airport Beacon	Unaffected
	PAPIs (4)	Unaffected
	REILS	Unaffected
	Segmented Circle	Unaffected
	Wind Cone	Unaffected

b. 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 Owner's Representative and the Airport Operations Manager. Any required NOTAM's to be issued will be sent through the Owner's Representative and issued by Airport Operations.

i. Temporary Changes to runway and/or taxiway operations:

Any affected Airport Operations Areas identified in the previous section for reduced access or identified as being closed entirely to aircraft traffic, will be barricaded by the use of low profile, lighted barricades placed as shown in the exhibits provided in Appendix 1. In addition, required NOTAM's shall be issued on the various temporary changes to aircraft access through the affected areas.

ii. 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.

iii. Maintenance of essential utilities:

Special attention shall be given to preventing unscheduled interruption of utility services and facilities. Where required due to construction purposes, the Owner and FAA shall locate all of their underground utilities. It is the Contractor's responsibility to have the locations of cabling and other underground utilities marked prior to beginning excavation. Any locations provided by the Owner or FAA are approximate locations and the Contractor shall verify all locations prior to beginning excavations. 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.

3.4 PROTECTION OF NAVIGATIONAL AIDS (NAVAIDS).

Existing NAVAIDS will not be affected by this project.

3.5 CONTRACTOR ACCESS.

This section of the CSPP details the areas to which the contractor must have access, and how contractor personnel will access those project work areas.

a. Location of stockpiled construction materials.

The Contractor shall store material and equipment and schedule his operations for work to be done so that no unauthorized interference to normal Airport operations will result there from. Construction operations shall not be conducted in a manner to cause interference with Airport Operations. Stockpiled materials and equipment storage are not permitted within the Runway Safety Area/ Taxiway Safety Area (RSA/TSA), Obstacle Free Zone (OFZ) or Object Free Area (OFA) of an operational runway or taxiway. Stockpiled construction materials must be located inside the contractor staging area as shown on the Construction Safety Drawings (Appendix 1) unless otherwise approved by the Engineer.

Stockpiled material shall be constrained in a manner to prevent movement resulting from either aircraft jet blast or wind conditions in excess of ten miles per hour. In addition, stockpiled material shall have silt fence located around the material to prevent Foreign Object Debris (FOD) from moving onto the airfield pavements or polluting watercourses.

Open trenches exceeding 3 inches in depth and 5 inches in width or stockpiled material are not permitted within the limits of safety areas of operational runways or taxiways. Stockpiled material shall not be permitted within the protected areas of the runways, or allowed to penetrate into any of the protected airspace.

Spoil and Disposal Areas: Spoil shall be disposed of offsite by the contractor. The Contractor shall submit the "Spoils Deposition Release Form" for any spoils which are transported from the project site. A copy of the form can be found in Appendix 4. No direct payment will be made for spoiling and disposal operations. The cost of spoiling material on site, or of spoiling material off-site, shall be considered incidental to this Contract and the costs shall be included in the various pay items involved.

b. Vehicle and pedestrian operations. 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 Air Operations Area (AOA).

The airport owner will coordinate requirements for vehicle operations with the affected airport tenants. Specific vehicle and pedestrian requirements for this project are as follows:

All construction vehicles and personnel shall be restricted to the immediate work areas specified by the contract for this project. These areas include the haul routes into the work area, the designated contractor staging area and the apron area under construction. Use of alternate haul routes or staging areas by the contractor shall not be permitted without prior notification and approval by the Owner's Representative.

i. Construction Site Parking:

The Contractor's personal vehicle parking area shall be as shown near the contractor staging area, as shown on the Construction Safety Drawings (Appendix 1). Contractor personal vehicles will not be allowed inside the airport fence Air Operations Area (AOA) or secured area.

A staging area, as indicated on the Contract Drawings, will be provided where the Contractor may set up a field office and store equipment and materials. The Contractor shall make his own arrangements for, and bear all costs of required utilities. The Contractor shall use and maintain the site in accordance with requirements of the Owner. Upon completion of work, the Contractor's staging area shall be removed and the area cleaned and restored to original or better condition.

ii. Construction Equipment Parking:

The Contractor's equipment storage area shall be in the contractor staging area as shown on the Construction Safety Drawings (Appendix 1). The Contractor's equipment and construction vehicles shall be restricted to the construction site or storage areas during construction and parked in the equipment storage area during non-working periods. Maximum allowable equipment height in the staging area shall be 15 feet. Maximum allowable equipment height in the work areas shall be 15 feet.

Contractor must service all construction vehicles within the limits of the project work area or the Contractor's Staging Area. Parked construction vehicles must be outside the OFA and never in the safety area of an active runway or taxiway. Inactive equipment must not be parked on closed

taxiways or runways. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees shall 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 of aircraft view, to any taxiways or runways, nor obstruct any runway visual aids, signs, or navigation aids.

iii. Access and Haul Roads:

The Contractor shall clear, construct and maintain haul routes as required for the prosecution of the work. The haul routes and access points shall only be in the locations approved by the Engineer and the Owner or as shown on the Construction Safety Drawings (Appendix 1).

Access or haul routes used by contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. Construction traffic must remain on the designated haul routes, never straying from the approved paths. Haul and access routes shall be clearly delineated with temporary marking and signage by the Contractor. Signage and marking placement shall be reviewed and approved by the Engineer and Owner prior to being put into service. The Contractor shall fully describe the appropriate access routes to all his/her employees, subcontractors and material delivery personnel.

The Contractor shall be responsible for maintaining existing haul routes. At the completion of the project, these areas shall be returned to their original lines and grades and shall be restored to a condition equal to or better than original. All non-paved areas that are disturbed by Contractor's haul roads, staging area, etc., located outside of the seeding limits shown on the plans shall be re-seeded and restored to their original or better condition by the Contractor at no additional cost to the Owner.

The Contractor shall coordinate haul routes, closures and schedules with other projects which may be underway during the same time period as this contract.

The Contractor shall control and coordinate the material (supplies) that are hauled to and from the work area. Delivery of equipment and materials to the area of work shall be by way of the access route shown on the Construction Safety Drawings (Appendix 1) or designated by the Owner or Engineer.

The Contractor shall maintain all haul routes and work areas in a dust free condition at all times. The Contractor shall control dust from the construction operations by vacuum type sweeping, watering or other methods as approved by the Engineer. Contractor shall have equipment (in operating condition) on site, at all times, to control dust. If the Contractor fails to comply with this requirement, construction will be suspended until a plan for controlling the dust is approved by the Engineer. Landside haul routes, boulevards and drives shall be kept clean by use of a vacuum sweeper on a daily basis as required. Application of water on dirt or gravel haul routes must be provided as often as necessary. Haul roads in any airport traffic areas must be especially monitored for dust and debris to prevent any potential Foreign Object Debris (FOD) situations.

The existing perimeter road shall remain open and accessible for airport personnel at all times. Special attention must be given to ensure that if construction traffic is to share or cross any Airport Rescue and Fire Fighting (ARFF) routes that ARFF right of way is not impeded at any time, and that construction traffic on haul roads do not interfere with NAVAIDs or approach surfaces of operational runways.

Portions of the project area(s) shall be bounded by the low profile barricades identifying Contractor personnel and vehicle area operation limits. The locations of any barricaded project limits, haul routes, Contractor Staging Areas, and associated safety and security details are also provided graphically in the attached exhibits.

iv. Marking and Lighting of Vehicles:

When any vehicle or piece of equipment, other than one that has prior approval from the Owner, must operate on an airport, it shall be escorted and properly identified.

The Contractor shall limit access within the airport security fence to authorized vehicles. All authorized vehicles shall have a vehicle dash board placard permit issued by the Owner or an identification sign on both sides of the vehicle containing the Contractor's company name. Private vehicles of the Contractor's personnel must be parked outside the airport security fence and will not be allowed within the airport security fence at any time.

All vehicles operating on the airport and in the general vicinity of the safety area or in aircraft movement areas must be marked with flashing yellow/amber beacons or orange and white flags during daylight hours. During hours of darkness or low visibility they shall be marked with at least flashing yellow/amber beacons.

Beacons and flags must be maintained to standards and in good working and operational condition. Beacons must be located on the uppermost part of the vehicle structure, visible from any direction, and flash 75 +/- 15 flashes per minute. Flags shall be 3' by 3' with alternating 1' by 1' international orange and white squares, and shall be replaced by the contractor if they become faded, discolored, or ragged as determined by Airport Operations or the Owner's Representative.

v. Description of Proper Vehicle Operations:

The Contractor shall be required to follow guidance on the additional identification and control of construction equipment per the Airport's Security Plan. No Contractor's vehicle or pedestrian crossing of active runways or taxiways will be allowed at any time during the work of this Contract, unless otherwise specified. No deviation from the pedestrian and vehicle routes to and from the Project Areas will be allowed unless specific permission has been granted by the Owner.

The ground movement of aircraft shall have the right-of-way at all times, and the Contractor's vehicles and equipment shall yield to aircraft at all times.

vi. Required Escorts:

At no time will vehicles or personnel enter portions of the secure AOA outside the contract area unless permitted and accompanied by an airport approved escort.

All construction-related activity taking place within any airport defined movement area requires the presence of an authorized Airport escort having radio communication with UNICOM unless prior approval is obtained from Airport Operations. Spotters and/or flaggers having radio or telephone contact with the Airport may be used with the approval of the owner.

At no time shall active taxiways or taxilanes be crossed by construction equipment without notification and proper approval/clearance from radio-trained gate guards or Airport Operations.

viii. Situational Awareness:

Aircraft traffic will continue to use existing runways, aprons, and taxiways of the Airport during the time that work under a contract is being performed. The Contractor shall, at all time, conduct the work as to create no hindrance, hazard, or obstacle to aircraft using the Airport.

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

ix. Two-way Radio Communication Procedures:

If two-way radio communications are required between Contractors and Airport Aeronautical Advisory Stations (UNICOM/CTAF) Vehicular traffic located in or crossing an active movement area shall be directed by a flag person in radio contact with and monitoring Airport Aeronautical Advisory Stations (UNICOM/CTAF) frequency 122.7 Mhz. Prior to proceeding into the active movement area, all drivers shall confirm through personal observation that no aircraft is approaching the vehicle position. Construction personnel may operate in movement areas without two-way radio communication provided a NOTAM is issued closing the area, and provided that the area is properly marked to prevent incursions.

The Contractor shall comply with proper radio usage, including read back requirements and proper phraseology including the International Phonetic Alphabet.

Escort vehicle drivers must also familiarize themselves with 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.

x. Maintenance of the Secured Area of the Airport.

Airport owner and contractors must also maintain a high level of security during construction when access points are created in the security fencing to permit construction vehicle access. Gates shall be equipped and/or manned by construction personnel to prevent unauthorized access by vehicles, animals or people. Procedures conforming to Airport security protocols 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. Access shall be made available at all times to all airport emergency vehicles traveling to operations areas within the proximity of the construction work zone.

c. Security.

The Contractor shall be responsible for maintaining security at all access gates used during the project and will be held liable by the Owner for any breach of security. No gate shall be left open. The Contractor shall be required to post a guard at the gate to open and close the gate for personnel and equipment. No gate shall be left open. Guard shall be responsible for ensuring that no unauthorized persons or vehicles enter the secure area. Airport owner 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 shall 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 Contractor shall be required to maintain security throughout the duration of the project. The Contractor and the Surety shall indemnify and save harmless the Owner, Engineer and third party or political subdivision from any and all breaches of security and shall indemnify the Owner for any fines, expenses and damages which it may be obliged to pay by reason of any breach of security resulting from the Contractor's actions at any time during the prosecution of the work.

3.6 WILDLIFE MANAGEMENT.

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.

- a. Trash.** Food scraps from construction personnel activity must be collected and disposed of at a proper facility.
- b. Standing water.** Water shall not be allowed to collect and pool for more than any single 24-hour period. Temporary grading may be required to promote drainage during daily operations as well as between work phases.
- c. Tall grass and seeds.** The use of millet seed in turfing and seeding operations shall not be permitted.
- d. Poorly maintained fencing and gates.** The Contractor shall maintain a constant secure perimeter to the airfield, including continuous security perimeter fencing and gates (if applicable).
- e. Disruption of existing wildlife habitat.** Not applicable to this project.

Contractor shall take immediate remedial action to remove wildlife attractants should any occurrence be noted. Contractor shall immediately report to the Engineer and Owner should any wildlife congregation be noted, and in particular if mammals enter the airport through the construction gate

3.7 FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT.

Special care and measures shall be taken to prevent Foreign Object Debris (FOD) damage when working in an airport environment. Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. The Contractor shall be responsible for implementing an approved FOD Management Plan prior to the start of construction activities. The FOD Management Plan will have procedures for prevention, regular cleanup, and containment of construction material and debris. The Contractor will ensure all vehicles related to the construction project using paved surfaces in the AOA shall be free of any debris that could create a FOD hazard. Special attention will be given to the cleaning of cracks and pavement joints. All taxiways, aprons, and runways must remain clean. Waste containers with attached lids shall be required on construction sites.

Special attention should be given to securing lightweight construction material (concrete insulating blankets, tarps, insulation, etc.). Specific securing procedures and/or chainlink enclosures may be required.

Contractors will provide their own equipment for vehicle and equipment washing and clean up.

Immediate access to a power sweeper is required when construction occurs on any pavement area inside the AOA, unless an appropriate alternative has been approved by the Owner’s Representative and Airport Operations Manager.

3.8 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, hydraulic fluid, or other chemical fluid leaks. Transport and handling of other hazardous materials on an airport also requires special procedures. To that end, the Contractor is required to develop a spill prevention plan and response procedures for vehicle operations prior to the start of construction activities. This includes maintenance of appropriate MSDS data and appropriate prevention and response equipment on-site.

Fueling Procedures and Spill Recovery Procedures shall be in accordance with Fire Code, latest edition, and the National Fire Protection Association standard procedures for spill response, latest edition. If fueling is to take place in the staging area, it must be away from catch basins. Contractor must have spill containment kits on site.

In the event of a fuel spill or the spill of other hazardous materials, the Contractor shall immediately notify the Environmental Protection Agency, the Owner and the Engineer.

Contractor shall abide by the specific requirements contained in the Technical Specifications of this contract.

3.9 NOTIFICATION OF CONSTRUCTION ACTIVITY.

The following is information and procedures for immediate notification of airport users and the FAA of any conditions adversely affecting the operational safety of the airport.

- a. **Maintenance of a list of Responsible Representatives/ Point of contact.** A list of responsible representatives and points of contact shall be created by the Engineer, the Airport and the Contractor prior to the start of construction. This list shall be compiled as part of the project pre-construction meeting agenda. Procedures will be established to contact all parties, including after regular work hours. Updates will be made to the list throughout the project duration by the Engineer. Contractor points of contact shall be incorporated into the contractor's SPCD.
- b. **Notices to Airman (NOTAM)/AWOS Advisory.** Only the airport owner may initiate or cancel NOTAMs/AWOS Advisories on airport conditions, and is the only entity that can close or open a runway or taxiway. The airport owner must coordinate the issuance, maintenance, and cancellation of NOTAMs/AWOS Advisories about airport conditions resulting from construction activities with tenants and the local air traffic facility, and must provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM/AWOS Advisories. The airport owner must file and maintain a list of authorized representatives with the FSS. 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 owner. See Section 3.14 regarding issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

Any NOTAMs/AWOS Advisories for planned airfield closures for this project must be coordinated through the airport manager and the airports duly appointed construction management representative. Reference Section 3.2 for planned closures for this project, which require issuance of a NOTAM/AWOS Advisory.

- c. **Emergency Notification Procedures.** In the event of an aircraft emergency, severe weather conditions, or any issue as determined by the Airport that may affect aircraft operations, the Contractor's personnel and/or equipment may be required to immediately vacate the area(s) affected. Points of contact for the

various parties involved with the project shall be identified and shared at the pre-construction meeting among the various parties. Emergency points of contact shall be incorporated into the contractor's SPCD.

- d. **Accidents.** 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 work. The Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance for the work, whether on or adjacent to the site which caused death, personal injury or property damages, 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 or messenger to both the Engineer and the Owner.

If any claim is made by anyone against the Contractor or any Subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer giving full details of the claims.

- e. **Coordination with ARFF Personnel.** The contractor shall coordinate, through the duly appointed airport representative, with ARFF personnel, mutual aid providers and other emergency services if construction requires the following:

- The deactivation and subsequent reactivation of water lines or fire hydrants, or
- The re-routing, blocking and restoration of emergency access routes, or
- The use of hazardous materials on the airfield.

Procedures and methods for addressing any planned or emergency response actions on the airfield concerning this project shall be established and implemented prior to the start of construction.

- f. **Notification to the FAA.**

- i. **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, is used for this purpose and submitted to the appropriated FAA Airports Regional or District Office. A 7460-1 form for this project has been completed and submitted by the Engineer for using equipment with a maximum height of x feet. A new 7460-1 form must be submitted to the FAA for review and comment for any equipment which the Contractor will use which is taller than the equipment used in the above 7460-1 submission. The Engineer will be responsible for submitting the new 7460-1 form to the FAA. To that end, the Contractor shall identify the equipment in his SPCD, including the maximum height it will extended to during construction, the area(s) in which the equipment will be used, and the duration the equipment will be used
- ii. **Part 157.** It is not anticipated that Part 157 notifications will be required for this project.
- iii. **NAVAIDS.** For emergency (short-notice) notification about impacts to both airport owned NAVAIDS, contact: 928-854-0755.
1. **Airport owned.** If construction operations require a shutdown of more than 24 hours, or more than 4 hours daily on consecutive days, of a NAVAID owned by the airport, provide a 45-day minimum notice to the owner prior to facility shutdown.

3.10 INSPECTION REQUIREMENTS.

a. Daily (or more frequent) inspections. Inspections shall be conducted by the Contractor at least daily, but more frequently if necessary, to ensure conformance with the CSPP. A sample checklist is provided in Appendix 2 of this document. In addition to Contractor's required inspections, airport operations will inspect the construction site at least one (1) time a day to ensure compliance with the CSPP and the SPCD. The Owner's Representative will have full-time inspectors monitoring activity throughout construction. Promptly take all actions necessary to prevent or remedy any unsafe or potentially unsafe conditions as soon as they are discovered.

b. Final inspections. A final inspection with the Owner's Representative, Airport and Contractor will take place prior to allowing airport operations.

3.11 UNDERGROUND UTILITIES.

Special attention shall be given to preventing unscheduled interruption of utility services and facilities. Where required due to construction purposes, the FAA shall locate all of their underground cables. The Contractor shall locate and/or arrange for the location of all the underground cables. When an underground cable is damaged due to the Contractor's negligence the Contractor shall immediately repair the cable affected 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 will be marked prior to beginning excavation.

Prior to opening an excavation, effort shall be made to determine whether underground installation: i.e., sewer, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the approximate locations of such an installation, the exact locations shall be determined by careful hand probing or hand digging, and/or use of a vacuum truck, and when it is uncovered, adequate protection shall be provided for the existing installation. All known owners of underground facilities in the area concerned shall be advised of proposed work at least 48 hours prior to the start of actual excavation.

The information concerning underground utilities was compiled from information and sketches furnished by or obtained from utility companies and the Airport. The Owner and the Engineer do not guarantee their accuracy. The Contractor is advised to determine the exact locations from the available sources of information or provide his own means of detection. The only case in which the Engineer will consider redesign or relocation of a proposed facility in the project is when an existing utility is located within the construction limits. In this case, the Engineer will work with the Airport Owner to determine the appropriate action to resolve the conflict. If such relocation is impossible, the Engineer will consider redesign or relocation of the proposed facilities. In both cases, Contractor shall be responsible for all underground utilities and shall not be separately compensated for delays or extra cost.

Note that Arizona 811 services do not include locating FAA and Owner facilities.

3.12 PENALTIES.

Failure on the part of the contractor to adhere to prescribed requirements may have consequences that jeopardize the health, safety or lives of customers and employees at the airport. The Airport may issue warnings on the first offense based upon the circumstances of the incident. Individuals involved in non-compliance violations may be prohibited from working at the airport, pending an investigation of the matter.

Penalties for violations related to airport safety and security procedures will be established by the Airport.

Note: When construction operations are suspended, activity shall not resume until all deficiencies are rectified.

3.13 SPECIAL CONDITIONS.

In the event of an aircraft emergency, the Contractor's personnel and/or equipment may be required to immediately vacate the area. The Contractor will receive notification from airport operations or engineer when special conditions require the construction site to be vacated. In any event, extreme care should be exercised should construction personnel identify any ARFF (Airport Rescue and Fire-Fighting) or other emergency or rescue vehicle moving toward the Runway with emergency lights displayed. This will generally mean that an emergency situation is imminent.

Special conditions that could require suspension of the construction work include the following: aircraft in distress, aircraft accident, security breach, VIP operation, vehicle/pedestrian deviation, severe weather, or failing to abide by this Construction Safety and Phasing Plan and/or the Safety Plan Compliance Document.

3.14 RUNWAY AND TAXIWAY VISUAL AIDS.

This topic includes marking, lighting, signs, and visual NAVAIDs. Those areas where aircraft will be operating shall be clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, the Contractor shall inspect and verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs and visual NAVAIDs remain in place and operational.

- a. **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, or other wind currents and constructed of materials that would minimize damage to an aircraft in the event of inadvertent contact.
- b. **Maintenance of Airport Lighting.** All existing airfield lighting circuits shall be maintained in full operation throughout the period of this Contract. Where disconnections are required, such work shall be scheduled at such times and in such a manner as approved by the Owner.
All circuits in the vicinity of the work area shall be tested prior to, during and after construction. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits as specified below. The Contractor shall perform all tests in the presence of the Engineer. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the Engineer. All costs for testing are incidental and shall be at the sole expense of the Contractor.

Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The Engineer shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

3.15 MARKING AND SIGNS FOR ACCESS ROUTES.

Location of haul routes on the airport site shall be as specified in the project drawing set and as provided graphically in the attached exhibits, reference Appendix 1. It shall be the Contractor's responsibility to coordinate off-site haul routes with the appropriate owner who has jurisdiction over the affected route.

3.16 HAZARD MARKING AND LIGHTING.

a. Purpose. Hazard marking and lighting prevents pilots from entering areas closed to aircraft, and prevents construction personnel from entering areas open to aircraft. To that end, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles shall be installed and maintained by the Contractor for the duration of construction operations.

b. Equipment. Low Profile Barricades of the type detailed in the project drawings with red omnidirectional flashing lights shall be placed outside the safety area of intersecting taxiways at the edge of the closed airfield surfaces and the project work limits. Layout locations for this equipment are as shown on the Construction Safety Drawings and attached exhibits, reference Appendix 1.

The Contractor shall 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 owner. Lighting should be checked for proper operation at least once per day, preferably at dusk.

3.17 PROTECTION OF AIRFIELD AREAS.

Safety area encroachments, improper ground vehicle operations and unmarked or uncovered holes and trenches in the vicinity of aircraft operation surfaces and construction areas are the three most recurring threats to safety during construction. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces shall be a standing requirement for the duration of construction operations.

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 by aircraft.

Runway	Aircraft Design Group	RSA Distance from		RSA Width	RSA Length from End of Runway
		Centerline RSA	Holdline		
14-32	B-II	75 ft.	258 ft.	150 ft.	300 ft.

No construction may occur within the existing RSA while the runway is open. Any construction between RSA and Holdline must be approved with Airport Operations prior to starting work.

The airport owner must coordinate any adjustment of RSA dimensions, to meet the above requirement, with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and issue a NOTAM.

Open trenches or excavations are not permitted within the RSA while the runway is open. The Contractor must backfill trenches before the runway is opened. Coverings are not allowed in runway safety areas. There shall be no stockpiled materials or equipment stored within the limits of the RSA.

After the Runway has been closed, Contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport owner, and light them with red lights during hours of restricted visibility or darkness.

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 firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

b. 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.

Runway	Aircraft Design Group	ROFA Distance from Centerline	ROFA Width	ROFA Length from End of Runway
14-32	B-II	250 ft.	500 ft.	300 ft.

c. Taxiway Safety Area (TSA). The 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.

Taxiway	Aircraft Design Group	TSA Distance from Centerline	TSA Width
All	ADG-II	39.5 ft.	79 ft.

Open trenches or excavations are not permitted within the TSA while the taxiway is open. The Contractor must backfill trenches before the taxiway is opened. Coverings are not allowed in taxiway safety areas.

The airport owner must coordinate any adjustment of TSA dimensions, to meet the above requirement, with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and issue a NOTAM.

After the Taxiway has been closed, Contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport owner, and light them with red lights during hours of restricted visibility or darkness.

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.

d. Taxiway Object Free Area (TOFA). Unlike the Runway Object Free Area, aircraft wings regularly penetrate the taxiway/taxilane object free area during normal operations. Thus the restrictions are more stringent. No construction equipment may be parked within the TOFA while the taxiway/taxilane is open for aircraft operations.

Construction activity may be accomplished without adjusting the width of the taxiway object free area, subject to the following restrictions:

- (i) Appropriate NOTAMs are issued.
- (ii) Marking and lighting meeting the provisions above are implemented.
- (iii) Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). In these situations, flaggers must be used to direct construction equipment, and wing walkers will be necessary to guide aircraft. Wing walkers should be airline/aviation personnel rather than construction workers. 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 pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.

Taxiway	Aircraft Design Group	TOFA Distance from Centerline	TOFA Width
All	ADG-II	65.5 ft.	131 ft.

Taxilane	Aircraft Design Group	TLOFA Distance from Centerline	TLOFA Width
All	ADG-II	57.5 ft.	115 ft.

e. Obstacle Free Zone (OFZ). Construction personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. The OFZ is a defined volume of airspace centered about and above the runway centerline.

f. Runway approach/departure surfaces. All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces. 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.

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 owner with the appropriate FAA air traffic manager (FSS if non-towered) and ATO/Technical Operations (for affected NAVAIDS) and airport users.

Runway End	Aircraft Approach Category	Airplane Design Group	Minimum Safety Area Behind Threshold	Minimum Unobstructed Approach Slope
14	B	II	300'	20:1 to 200 feet behind threshold
32	B	II	300'	20:1 to 200 feet behind threshold

3.18 OTHER LIMITATIONS ON CONSTRUCTION.

A. Prohibitions. The following prohibitions are in effect for the duration of this project:

1. No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.
2. No use of open flame welding or torches unless fire safety precautions are provided and the airport owner has approved their use.
3. No use of electrical blasting caps or explosives of any kind on or within 1,000 ft (300 m) of the airport property.
4. No use of flare pots within the AOA.

B. Restrictions.

- i. Construction suspension required during specific airport operations – Not Applicable
- ii. Areas that cannot be worked on simultaneously – Not Applicable
- iii. Day or night construction restrictions – Not Applicable
- iv. Seasonal Construction Restrictions – Not Applicable

APPENDIX 1

GENERAL PLAN

(Sheet V-401 of the Contract Drawings)

CONSTRUCTION SAFETY AND PHASING PLAN

(Sheet G 101 of the Contract Drawings)

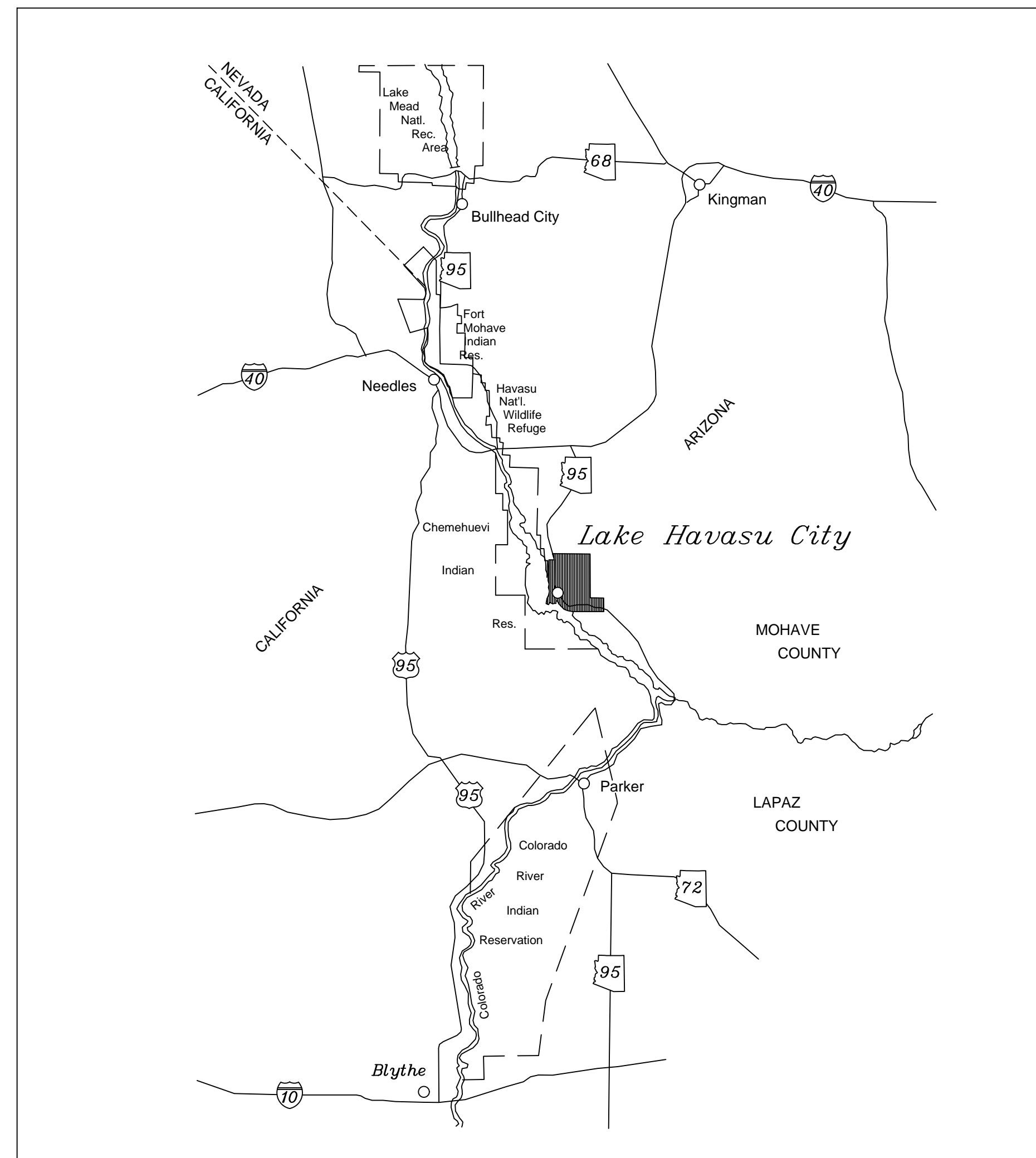


CONTRACT DRAWINGS
FOR THE CONSTRUCTION OF

REMOVE EXISTING HYDRANTS AND REPLACE

LAKE HAVASU CITY MUNICIPAL AIRPORT

LAKE HAVASU CITY, ARIZONA



LOCATION MAP

LHC: 104007

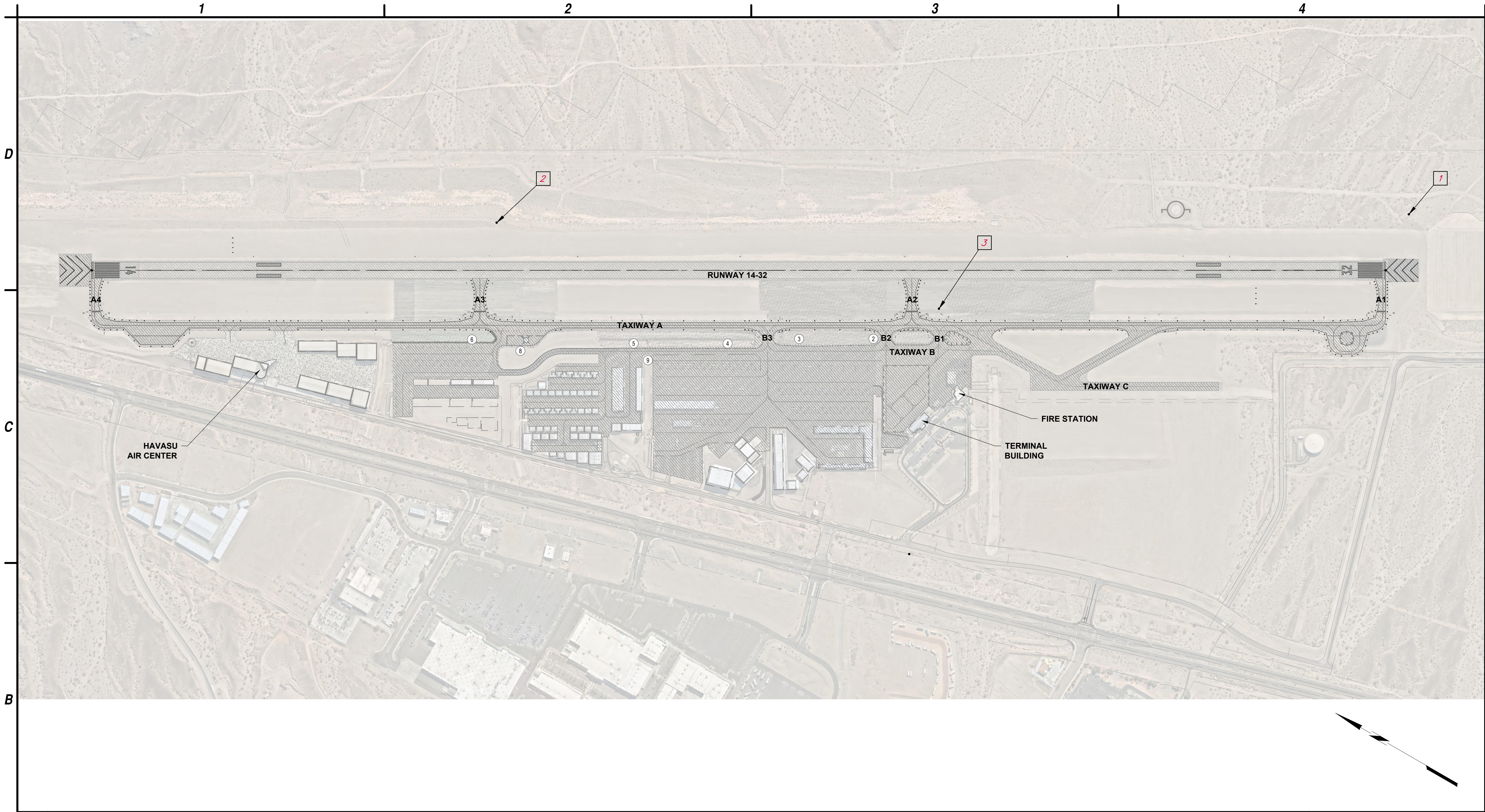
ADOT GRANT NO: E1S1V01C

C&S PROJECT: K33.004.002

NOVEMBER 2023



G001



B1 GENERAL PLAN AND SURVEY CONTROL

BASIS OF BEARINGS AND COORDINATES

LINEAR UNIT: INTERNATIONAL FEET
GEODETIC DATUM: NORTH AMERICAN DATUM OF 1983 (NA2011)
VERTICAL DATUM: NAVD 1988 (SEE BELOW)
SYSTEM: U.S. STATE PLANE OF 1983 (AT GRID)
ZONE: ARIZONA WEST ZONE (0203)
PROJECTION
TRANSVERSE MERCATOR
LATITUDE OF GRID ORIGIN: 31°00'00" N
LONGITUDE OF CENTRAL MERIDIAN: 113°45'00" W
NORTHING AT GRID ORIGIN: 0.000 FT
EASTING AT CENTRAL MERIDIAN: 700,000.000 FT
SCALE FACTOR ON CENTRAL MERIDIAN: 0.9999333333

ALL DISTANCES AND BEARINGS SHOWN HEREON ARE GRID VALUES BASED ON THE PRECEDING PROJECTION DEFINITION.
THE BASIS OF BEARINGS IS TRUE GEODETIC NORTH AS DETERMINED FROM THE GPS SOLUTION. NOTE THAT THE GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.
ORTHOMETRIC HEIGHTS (ELEVATIONS) WERE TRANSFERRED TO THE SITE FROM NGS POINT "HAVASU". THE FIELD SURVEY WAS CONDUCTED USING GPS REFERENCED TO THE FOLLOWING COORDINATES.
POINT "HAVASU" (EU1257)
LATITUDE: N34°33'58.27478"
LONGITUDE: W114°21'41.53094"
ELLIPSOID HEIGHT: 596.027 FT
POINT "HII D" PACS (AC6812)
LATITUDE: N34°34'04.29375"
LONGITUDE: W114°21'24.75967"
ELLIPSOID HEIGHT: 653.547 FT
POINT "HII B" SACS (AC6814)
LATITUDE: N34°34'30.29151"
LONGITUDE: W114°21'35.79711"
ELLIPSOID HEIGHT: 659.905 FT

HORIZONTAL AND VERTICAL CONTROL BASED ON SURVEY PROVIDED BY:

Shephard Wisnitzer, Inc.
75 Kallof Place, Sedona, AZ 86336
(928) 282-1061
www.swiaz.com

ALL COORDINATES LISTED ARE NAD83 (NA2011) U.S. STATE PLANE OF 1983, ARIZONA WEST ZONE (AT GRID), INTERNATIONAL FEET, GEOID MODEL 12A
ELEVATIONS SHOWN HEREON ARE ON NAVD 88 DATUM.

SURVEY CONTROL POINTS

PT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1296396.18	519257.86	799.34	GVT HII A AC6813
2	1301253.55	516392.41	760.56	GVT HII B AC6814
3	1298619.79	517299.55	754.26	GVT HII D AC6812

— HYDRANT NUMBER

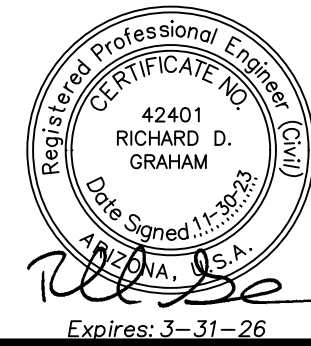
A1 BASIS OF BEARINGS AND COORDINATES

A3 SURVEY SUPPORTING INFORMATION

A4 SURVEY CONTROL POINTS AND LEGEND



C&S Engineers, Inc.
2575 East Camelback Rd
Suite 740
Phoenix, Arizona 85016
Phone: 602-997-7536
Fax: 602-997-7592
www.cscos.com



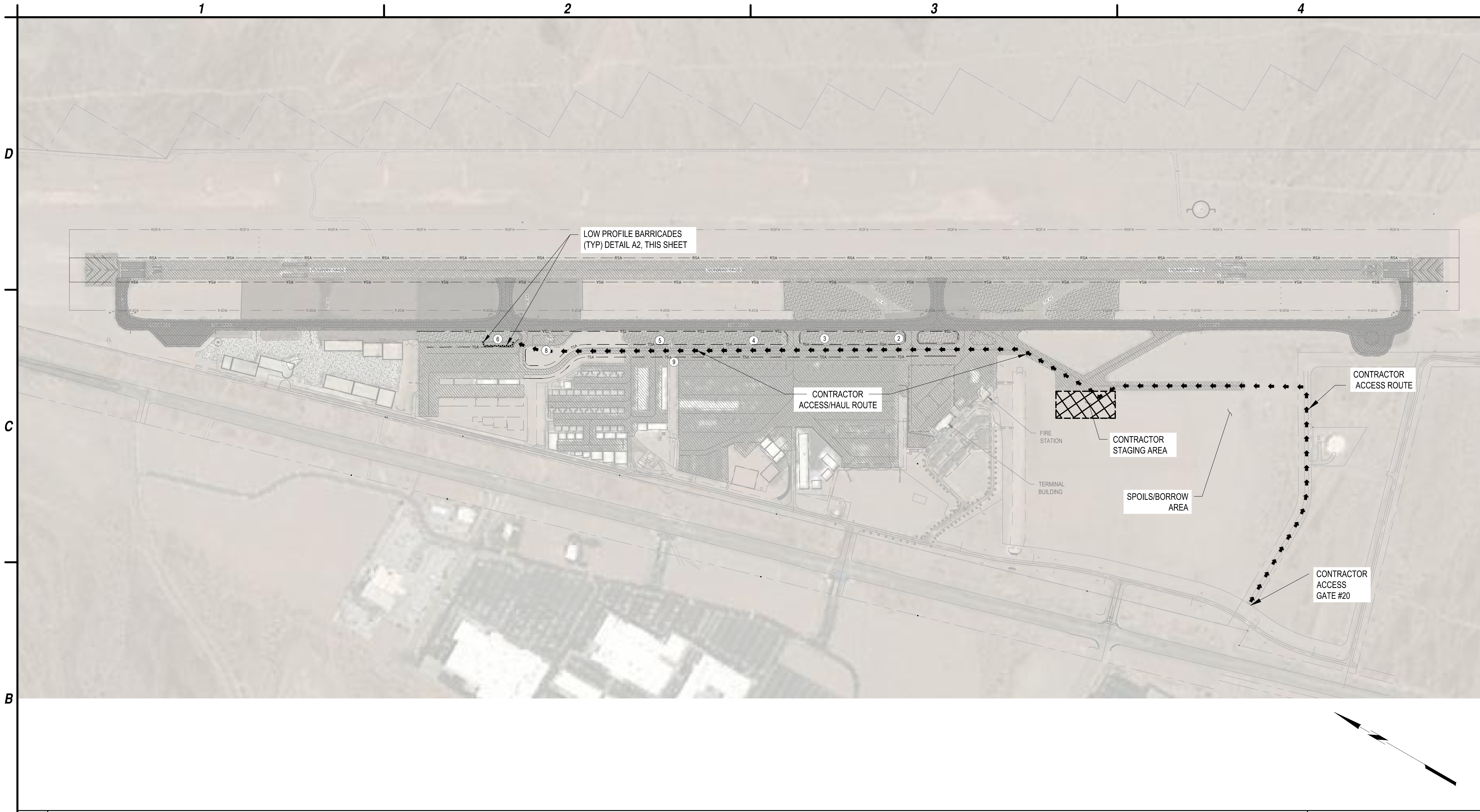
**REMOVE EXISTING HYDRANTS
AND REPLACE**
LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA

MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO: K33004002		
DATE: NOVEMBER 2023		
DRAWN BY: RB		
DESIGNED BY: RB		
CHECKED BY: RDG		

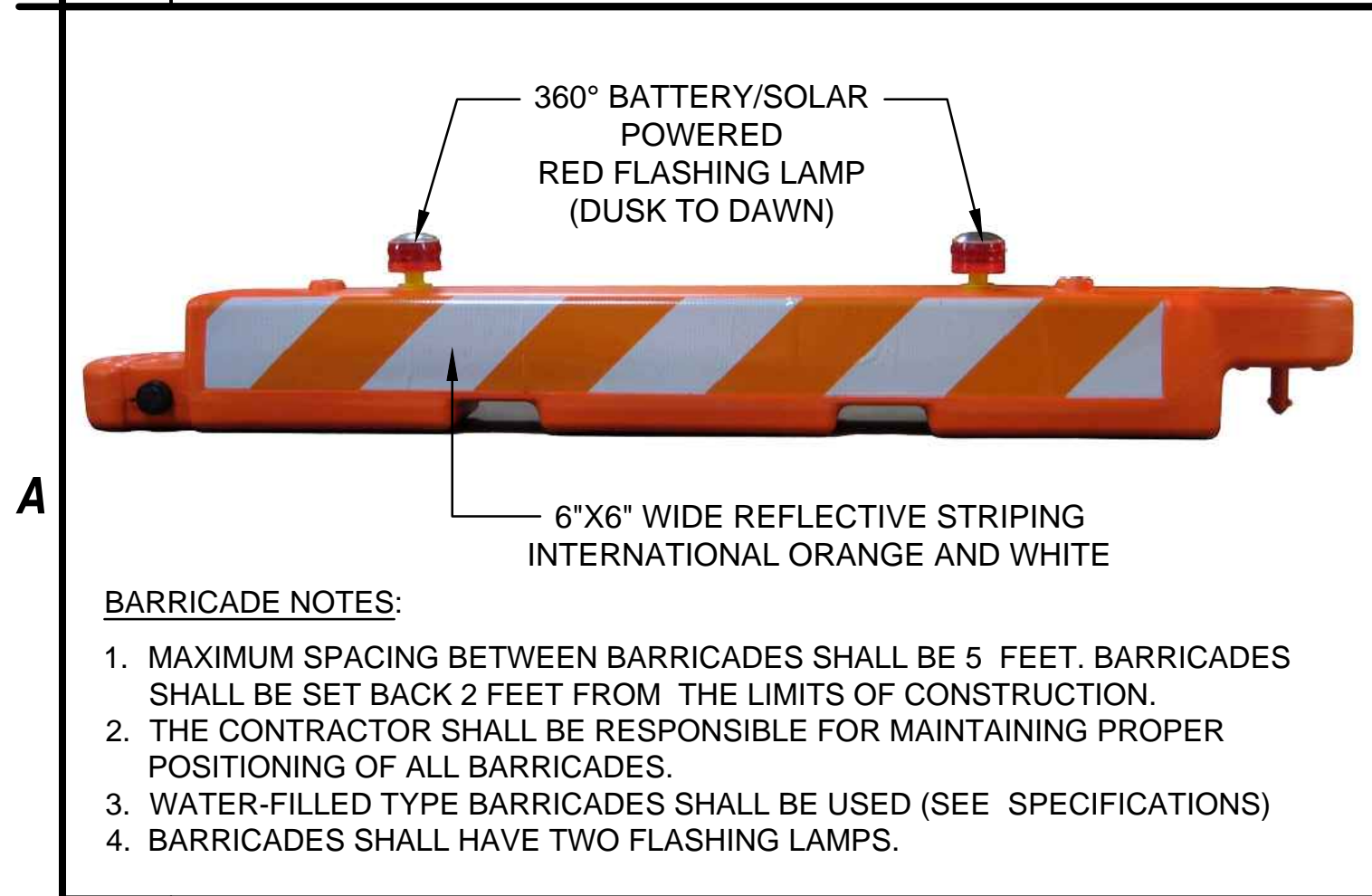
**GENERAL
PLAN
AND
SURVEY
CONTROL**

V401

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B1 CONSTRUCTION SAFETY AND PHASING PLAN
SCALE: 1:300'



A1 LOW PROFILE SAFETY BARRICADE DETAIL
NOT TO SCALE

1. A LIMITED NOTICE TO PROCEED SHALL BE ISSUED FOR A PERIOD OF 5 CALENDAR DAYS TO ALLOW THE CONTRACTOR TO ACCESS THE PROJECT AREAS TO HYDROVAC POT HOLE AND DETERMINE THE WATERLINE DEPTH PRIOR TO ORDERING FIRE HYDRANTS AND COMPONENTS. ONCE DELIVERY OF HYDRANTS AND COMPONENTS HAVE BEEN CONFIRMED AN OFFICIAL NOTICE TO PROCEED WILL BE ISSUED, STARTING THE 60 CALENDAR DAY CONSTRUCTION PERIOD.

A2 LNTP NOTES
NOT TO SCALE

1. THE CONTRACTOR MUST NOTIFY THE FIRE DEPARTMENT PRIOR TO CLOSING WATER VALVES OR ISOLATING WATERLINE SEGMENTS OR HYDRANTS, AND ALSO COORDINATE THE MARKING AND REMOVAL FROM SERVICE ALL EFFECTED HYDRANTS.
2. THE CONTRACTOR SHALL NOT LEAVE GATES UNATTENDED OR UNLOCKED AT ANY TIME.
3. ALL CONSTRUCTION (EQUIPMENT AND ACTIVITY) SHALL REMAIN OUTSIDE THE TAXIWAY SAFETY AREAS WHILE THE TAXIWAY IS OPEN.
4. ANY WORK WITHIN THE TAXIWAY SAFETY AREAS WILL REQUIRE LOCAL CLOSURE OF THE TAXIWAY.
- COORDINATE LOCAL TAXIWAY CLOSURES AND BARRICADE PLACEMENT WITH AIRPORT. PROVIDE A MINIMUM OF 72 HOURS NOTICE FOR TAXIWAY CLOSURES.

A3 GENERAL NOTES
NOT TO SCALE

- TSA --- TAXIWAY SAFETY AREA
- LOW PROFILE BARRICADES - SEE DETAIL A2, THIS SHEET
- CONTRACTOR ACCESS/HAUL ROUTE
- ② HYDRANT NUMBER

A4 LEGEND
NOT TO SCALE

C&S
COMPANIES

C&S Engineers, Inc.
2575 East Camelback Rd
Suite 740
Phoenix, Arizona 85016
Phone: 602-997-7536
Fax: 602-997-7592
www.cscos.com

Registered Professional Engineer (Civil)
42401
RICHARD D. GRAHAM
Die Signed 11-30-23
Expire: 1-31-26

LAKE HAVASU CITY, ARIZONA
INCORPORATED 1978

**REMOVE EXISTING HYDRANTS
AND REPLACE**

**LAKE HAVASU CITY MUNICIPAL AIRPORT
LAKE HAVASU CITY, AIRIZONA**

MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO: K33004002		
DATE: NOVEMBER 2023		
DRAWN BY: RB		
DESIGNED BY: RB		
CHECKED BY: RDG		

**CONSTRUCTION
SAFETY
AND
PHASING
PLAN**

GC101

5 of 19

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APPENDIX 2

CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST

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 uncovers 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 contractor may use to aid in identifying and correcting potentially hazardous conditions.

Potentially Hazardous Conditions

Item	Action Required	or	None
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.			<input type="checkbox"/>
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.			<input type="checkbox"/>
Runway resurfacing projects resulting in lips exceeding 3 in (7.6 cm) from pavement edges and ends.			<input type="checkbox"/>
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.			<input type="checkbox"/>
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.			<input type="checkbox"/>
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 approach zones.			<input type="checkbox"/>
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on an apron, open taxiway, or open taxi lane or in related safety, approach, or departure area.			<input type="checkbox"/>
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			<input type="checkbox"/>

materials may blow about, potentially causing personal injury or equipment damage.			
Item	Action Required	or	None
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.			<input type="checkbox"/>
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.			<input type="checkbox"/>
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.			<input type="checkbox"/>
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.			<input type="checkbox"/>
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.			<input type="checkbox"/>
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.			<input type="checkbox"/>
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.			<input type="checkbox"/>
			<input type="checkbox"/>

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.		
Item	Action Required	or None
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.		<input type="checkbox"/>
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		<input type="checkbox"/>
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		
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.		<input type="checkbox"/>
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		<input type="checkbox"/>
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		<input type="checkbox"/>
Site burning, which can cause possible obscuration.		<input type="checkbox"/>
Construction work taking place outside of designated work areas and out of phase.		<input type="checkbox"/>

APPENDIX 3

CONTRACTORS SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

(The SPCD Certification is located in the Proposal Section)

SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

Project Location: LAKE HAVASU CITY MUNICIPAL AIRPORT

Project Name: Remove Existing Hydrants and Replace

General Statement:

The Construction Safety and Phasing Plan (CSPP), identified as Attachment "A" to Section 80, has been prepared in accordance with FAA Advisory Circular 150/5370-2F, *Operational Safety on Airports During Construction and the requirements of the Airport Owner*. The CSPP has been submitted to the FAA for review and comment. Any comments from the FAA which were received prior to bid opening have been incorporated into the CSPP.

In the event that the FAA transmits comments which require that the CSPP be revised after bid opening, I understand that I am obligated to abide by the conditions and statements contained in the revised CSPP. I further understand that I will be given the opportunity to evaluate the revised CSPP as it relates to my contract and request appropriate compensation in accordance with the provisions of the contract.

Supplemental Information:

Where the CSPP covers a subject and no additional information is needed, the statement below reads, "No supplemental information required". Where additional information is required by the Contractor, the information shall be provided in the spaces below.

The section numbers below correspond with the section numbers in the CSPP.

3.1 Coordination

Statement: [Explain how you will distribute information and details of meetings to employees and subcontractors.]

3.2 Phasing

Statement: [List the number of days each Work Area will take. State the time day work will start and finish for each work area.]

3.3 Areas and operations affected by the construction activity

Statement: Information is provided in the CSPP. No supplemental information is required.

3.4 Protection of NAVAIDs

Statement: Information is provided in the CSPP. No supplemental information is required.

3.5 Contractor Access

Security Statement: [Explain how you will maintain integrity of the airport security fence at the access gate, e.g.: Gate guards, closed and locked gates, temporary fencing, etc.]

Training Statement: [List individuals who will receive driver training (for certificated airports and as requested.)]

Communication Statement: [Identify types of radios, if any, you will use to communicate with drivers and personnel. Identify who will be monitoring radios. Identify a contact person and phone number if ATCT cannot reach the contractor's designated person by radio.]

Escort Statement: [Identify who will escort material delivery vehicles.]

3.6 Wildlife Management

Statement: [Identify who will be monitoring wildlife in the construction area. Identify who will be monitoring wildlife at the construction gate.]

3.7 Foreign Object Debris (FOD) Management

Statement: [Identify who will be preparing a FOD Management Plan. (Plan must be approved prior to the start of construction activities.)]

3.8 Hazardous material (HAZMAT) management

Statement: [Identify who will be preparing a Spill Prevention Plan. (Plan must be approved prior to the start of construction activities.)]

3.9 Notification of construction activities. Provide the following:

Key Personnel Statement: [Identify your key personnel points of contact with phone numbers.]

Emergency Contacts Statement: [Identify your emergency contacts with 24 hour phone numbers.]

Equipment Statement: [Part 77: Identify equipment you will be using that is taller than 25 feet, including on-site batch plants. Identify the maximum height it will be extended to during construction for each Work Area and the expected duration. Identify when during the day it will be used.]

3.10 Inspection requirements.

Statement: [Identify the person who will be responsible for daily inspections to ensure conformance with the CSPP. Describe additional inspections you will employ, if any, to ensure conformance.]

3.11 Underground utilities.

Statement: [Discuss proposed methods of identifying and protecting underground utilities.]

3.12 Penalties

Statement: Information is provided in the CSPP. No supplemental information is required.

3.13 Special conditions.

Statement: [Identify who will be responsible for moving equipment and personnel from the work area and vacating the area in the event of a special condition listed in the CSPP.]

3.14 Runway and taxiway visual aids. Including marking, lighting, signs, and visual NAVAIDs.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.15 Marking and signs for access routes. Discuss proposed methods of demarcating access routes for vehicle drivers.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.16 Hazard marking and lighting.

Statement: [Identify who will be responsible for maintaining hazard marking and lighting. Include a 24 hour phone number.]

3.17 Protection of taxiway and runway safety areas. Include object free areas, obstacle free zones, approach/departure surfaces and safety areas as required. Discuss proposed methods of identifying, demarcating, and protecting airport surfaces including:

Equipment and methods for maintaining Taxiway/Taxilane Safety Area standards.

Statement: Information is provided in the CSPP. No supplemental information is required.

Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.18 Other limitations on construction.

Other limitations are identified in the CSPP and do not require an entry in this document.

APPENDIX 4

SPOIL DEPOSITION RELEASE FORM

SPOILS DEPOSITION RELEASE FORM

To: LAKE HAVASU CITY, 5600 OLD STATE HIGHWAY 95, #1, LAKE HAVASU CITY, ARIZONA

86404 (OWNER), and

C&S Engineers, Inc., 2575 E. CAMELBACK ROAD, SUITE 740, SCOTTSDALE, ARIZONA 85016

(ENGINEER).

Project: Remove Existing Hydrants and Replace

This SPOILS DEPOSITION RELEASE FORM is being forwarded to the above referenced OWNER and ENGINEER to satisfy the Contract Documents governing the above referenced project. Pursuant to the Contract Documents, LANDOWNER has granted permission to CONTRACTOR to deposit spoils at LANDOWNER'S property located at _____

_____ (give specific location).

Further, CONTRACTOR hereby agrees to the greatest extent of the law, to release, indemnify, hold harmless, and defend the OWNER and ENGINEER from any and all damage, liability, or cost (including reasonable attorney's fees and cost of defense) to the extent caused by or arising out of the deposition of the spoils on LANDOWNER'S property.

CONTRACTOR:

LANDOWNER:

Signature

Signature

Written Name & Title

Written Name & Title

Company Name

Company Name

Mailing Address (Street Name and Number)

Mailing Address (Street Name and Number)

City, State, Zip Code

City, State, Zip Code

Daytime Phone Number (Include Area Code)

Daytime Phone Number (Include Area Code)

Date

Date