



# CONSTRUCTION SAFETY AND PHASING REPORT

TERMINAL AREA TAXIWAY IMPROVEMENTS  
(PACKAGE 3)

AT

SAN ANTONIO INTERNATIONAL AIRPORT  
PROJECT NO. 33-00193  
AIP NO. 3-48-0192-XX-2015

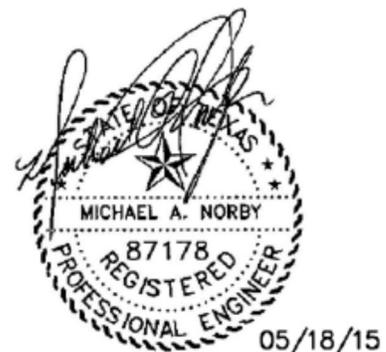
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Issued For Bid

May 18, 2015



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## **A. COORDINATION**

### Preliminary Requirements

This project consists of construction work at San Antonio International Airport, San Antonio, Texas. The purpose of this project is to repair existing pavements and to construct new pavements consistent with the future plans of the airport. The pavement areas were identified during a recent pavement management program as being in need of repair. The intent of this contract is to provide for construction and completion of the work described. It is further intended that the Contractor furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

The project is consists of a base bid that has been broken up into multiple construction phases in order to minimize the impact of construction to aircraft movements and Airport operations. A description of the project is as follows;

### **BASE BID**

The “Base Bid” consists of the construction of the south extension of Taxiway N (TWN) between the TW N connector and the south Apron (this includes N9). Construction will require the removal of the existing asphalt cement (AC) pavement and Portland Cement Concrete (PCC) pavement section including the removal of the Cement Treated Base (CTB) and Crushed Aggregate Base (AB). The new pavement section for the taxiway will be constructed with 16 inches of PCC pavement on 12 inches of CTB on 6 inches of Crushed Aggregate Base (AB) on 6 inches of lime stabilized subgrade on compacted subgrade and new airfield lighting will be installed. This work also includes airport safety and security, storm water pollution prevention, all construction surveying and layout, existing utility location, contractor quality control, pavement saw cutting, pavement removal, excavation and grading, Portland cement concrete, cement treated base, crushed aggregate base course, lime stabilized base, temporary asphalt paving, asphalt surface course shoulder pavement, paint marking & removal, electrical conduit, light, & signage installation both temporary and permanent, drainage pipe and inlet removal and installation, and engineer’s field and laboratory office.

### **ALTERNATE BID 1**

The “Alternate Bid 1” consists of the construction of Taxiway N between the south edge of TW G and the north end of Taxiway N extension (end of Base Bid work area) (approximately 1,450 feet long by varying width) and the construction of new connecting taxiways (N2, N11 and N12) between the terminal taxilane and Runway 4-22, and the reconstruction of connecting taxiways (N1, N3 N10

and N13) between the terminal taxiway and Runway 4-22. The new and reconstruction areas will require the removal of the existing Portland Cement Concrete (PCC) pavement section including the removal of the Cement Treated Base (CTB) and Crushed Aggregate Base (AB). The new pavement section for the taxiways will be constructed with 16 inches of PCC pavement on 12 inches of CTB on 6 inches of Crushed Aggregate Base (AB) on 6 inches of lime stabilized subgrade on compacted subgrade and new airfield lighting will be installed. This work also includes airport safety and security, storm water pollution prevention, all construction surveying and layout, existing utility location, contractor quality control, pavement saw cutting, pavement removal, excavation and grading, Portland cement concrete, cement treated base, crushed aggregate base course, lime stabilized base, temporary asphalt paving, asphalt surface course shoulder pavement, paint marking & removal, electrical conduit, light, & signage installation both temporary and permanent, drainage pipe and inlet removal and installation, and engineer's field and laboratory office.

## ALTERNATE BID 2

The "Alternate Bid 2" consists of the replacement of lighted taxiway signs on Taxiway N and connecting taxiways between the north edge of Runway 12R-30L and the north end of Runway 4-22 and between Taxiway N and Runway 4-22.

## COORDINATION

The project will require work that includes airport safety and security, storm water pollution prevention, all construction surveying and layout, existing utility location, contractor quality control, pavement saw cutting, pavement removal, excavation and grading, Portland cement concrete, cement treated base, crushed aggregate base course, lime stabilized base, asphalt surface course shoulder pavement, paint marking & removal, electrical conduit, light, & signage installation both temporary and permanent, drainage pipe and inlet removal and installation, and engineer's field and laboratory office.

This Construction Phasing & Safety Plan provides specific information to the Contractor and/or Subcontractors selected to carry out the construction contract for the Taxiway N Rehabilitation and Connecting Taxiway Improvements (Package 3). This plan includes the requirements and procedures for accident prevention, safety requirements, and security considerations at the San Antonio International Airport. The Airport's safety objective is to achieve accident-free construction projects. Furthermore, the Contractor must be in full compliance with FAA Advisory Circular (AC) 150/5370-

2F, Operational Safety on Airports during Construction. This will be discussed at the Pre-Bid and Pre-Construction Conferences.

The Contractor and Subcontractors shall conduct operations in a manner that will provide safe working conditions for all employees, the protection of the public and all others who may be affected by construction activities. Nothing contained in this plan is intended to relieve the Contractor, subcontractors or suppliers of the obligations assumed by the Contractor under contract with the City of San Antonio or as required by law.

Safety must be an integral part of the job. Full participation, cooperation, and support are necessary to ensure the safety and health of all persons and property involved in the project. The purpose of phasing, marking, barricading, and lighting of airside construction areas is to delineate hazardous areas and prevent unauthorized incursions into the area by personnel, vehicles, equipment, and aircraft during construction; and to positively separate construction activity from aircraft operations.

#### 1. PRECONSTRUCTION CONFERENCE

- a) A preconstruction conference will be convened and conducted by the airport and construction administration team prior to the issuance of the Notice to Proceed. Invitees and attendees will include SAT personnel, the Engineer, the Contractor's Project Superintendent, and representatives from the FAA (in person or by phone), and relevant safety-related issues will be discussed in detail at this meeting.

At the Pre-Construction Conference, topics of discussion will include the FAA Advisory Circular (AC) 150/5370-2F, Operational Safety on Airports during Construction, project scope, the Resident Engineer's responsibility and authority, identifying the Contractor's Superintendent, NOTAM responsibility, phasing and scheduling of work, Notice to Proceed date, safety during construction, security, badging and escorting requirements, quality control and testing, test reports, quality control, quality acceptance, maintenance of record drawings, labor requirements; and DBE, MBE, and EEO requirements, environmental factors, and other factors that will pertain to this construction project.

The Pre-Construction Meeting has not yet been scheduled but will tentatively take place in January/February 2016 at the Airport.

The preconstruction conference will be conducted as soon as practicable after the contract has been awarded and held before the notice to proceed is given to the contractor.

The information covered in this meeting will follow the guidelines outlined in AC 150/5300-9, "Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects."

## 2. CONTRACTOR PROGRESS MEETINGS

Weekly construction progress meetings will be held at San Antonio International Airport where the invitees and attendees will include at minimum SAT personnel, the Project Engineer, the Contractor's Project Superintendent, and the lead personnel of each Subcontractor. In addition to the discussions on the progress of the project, operational safety procedures identified within this Safety Plan will be reviewed and discussed.

- a) The progress meetings will cover safety and security, airport operations, project schedule, environmental, quality control/quality acceptance, administration and pay applications, submittals and changes.
- b) During these meetings, the contractor shall submit to the airport the following safety information if applicable:
  - Number of near misses from the previous period;
  - Number of accidents from the previous periods;
  - Number of recordable injuries from the previous period; and
  - Summarization of any accident that took place from the previous period.

Additional meetings may be scheduled in between the weekly construction meetings as seen necessary by the Project Engineer or SAT personnel.

## 3. SCOPE OR SCHEDULE CHANGES

- a) Project scope and construction schedule shall be discussed and established at the preconstruction conference.
- b) Any changes to the project scope shall be discussed throughout the duration of the project and during contractor progress meetings.
- c) The contractor shall submit an updated construction schedule and discuss any changes in the schedule during each progress meeting.

#### 4. FAA AIR TRAFFIC ORGANIZATION COORDINATION

- a) Communication with the San Antonio FAA air traffic control tower will be coordinated by the airport's construction administration team and/or the airport airfield operations division.
- b) The FAA air traffic control tower personnel will be invited to attend the preconstruction conference at which time the overall construction schedule will be presented.
- c) A meeting will be scheduled with the FAA air traffic control personnel prior to the start of each major construction phase which significantly impacts/modifies airfield closures throughout the duration of the construction project. Participants in these meetings shall include: airport staff, airport operations, design team, construction administration team, FAA regional office, FAA air traffic control, contractor, and subcontractors.

### PHASING

This project has been broken up into a Base Bid and two Alternate Bids. If only the Base Bid is awarded there will be 2 phases of construction, see **Figure 2.4 - Base Bid Overall Phasing Plan**. If the Base Bid and Alternate Bids are awarded the project will be constructed in 9 phases, see **Figure 2.5 – Base Bid and Alternate Bids Overall Phasing Plan**. Package 3 was broken into many phases at the request of the Airport to allow aircraft to navigate around construction activities and minimize runway/taxiway closure times. The detailed phasing plans for each phase and project details are shown in **Figures 2.6 -2.15** and described below:

1. Base Bid, Phase 1 consists of the construction of Taxiway N9, including shoulder pavement adjacent to the terminal taxilane, and portions of Taxiway N1 between Taxiway N and Runway 4-22. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. TW N and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will remain open to aircraft.
2. Base Bid, Phase 2 consists of the construction of temporary pavements for portions of Taxiway N1 used to transition the new pavements constructed in Phase 1 to the existing taxiway pavements. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. TW N and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will remain open to aircraft.

Alternate 1 includes all pavements associated with the Base Bid along with additional pavements areas. Due to the phasing limitations and the requirements to keep the airport operational, the Base Bid limits have been broken into different phases to meet those requirements. Each phase is explained in greater detail as follows:

3. Alternate Bid 1, Phase 1 consists of the construction of a portion of two new connecting taxiways N2 and N3. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. TW N and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft.
4. Alternate Bid 1, Phase 2 consists of the construction of portions of Taxiway N adjacent to the section of TW N2 and TW N3 constructed in Phase 1, and a portion of TW N10. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. Portions of TW N and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft.
5. Alternate Bid 1, Phase 3A and 3B consists of the construction of a portion of Taxiway N1 and the remaining portions of Taxiways N2 and N3 adjacent to RW 4-22. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. TW N, TW G and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. Taxiways N2 and N3 will be open following the completion and acceptance of this phase.
6. Alternate Bid 1, Phase 4 consists of the construction of Taxiway N9 (Base Bid pavements) and portions of pavement adjacent to the terminal taxilane, TW N1 and TW N10. During this phase, Runway 4-22 will be closed to landing and departing traffic but may be used as a taxiway to facilitate the movement of aircraft to and from the terminal area. Portions of TW N and the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. Taxiways N1 and N9 will be opened following the completion and acceptance of this phase.
7. Alternate Bid 1, Phase 5 consists of the construction of Taxiway N11, N12 and portions of Taxiway N and N10 pavement adjacent to pavements constructed in previous phases. During this phase, Runway 4-22 will be open to landing and departing traffic but may be used by the Tower to facilitate movement of aircraft to and from the terminal area. Portions of TW N and

- the terminal Taxilane will remain open to Group IV aircraft (and smaller) during this phase. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. Taxiways N10, N11 and portions of Taxiway N will be opened with the completion and acceptance of this phase.
8. Alternate Bid 1, Phase 6 consists of the construction of portions of Taxiway N, Taxiway N12 and Taxiway N3 adjacent to pavements constructed in previous phases. During this phase, Runway 4-22 will be open to landing and departing traffic. Portions of TW N and the terminal Taxilane constructed in previous phases will be used to facilitate the movement of aircraft to and from the terminal area. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. Taxiways N3 and N12 and portions of Taxiway N will be opened following the completion and acceptance of this phase.
  9. Alternate Bid 1, Phase 7 consists of the construction of portions of Taxiway N, the terminal taxilane and Taxiway N13. During this phase, Runway 4-22 will be open to landing and departing traffic. Portions of TW N and the terminal Taxilane constructed in previous phases will be used to facilitate the movement of aircraft to and from the terminal area. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. Portions of Taxiway N and N13 will be opened following the completion and acceptance of this phase.
  10. Alternate Bid 1, Phase 8 consists of the construction of portions of Taxiway N and Taxiway N13. During this phase, Runway 4-22 will be open to landing and departing traffic but a portion of Taxiway G adjacent to this phase may be closed. Portions of TW N and the terminal Taxilane constructed in previous phases will be used to facilitate the movement of aircraft to and from the terminal area. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. When completed, this phase opens the intersection of Taxiway G and Taxiway N with all the latest geometric requirements.
  11. Alternate Bid 1, Phase 9 consists of the construction of a small portion of Taxiway G shoulder and full strength pavement adjacent to the pavements completed in Phase 8. During this phase, Runway 4-22 will be open to landing and departing traffic but a portion of Taxiway G adjacent to this phase may be closed. TW N and the terminal Taxilane constructed in previous phases will be used to facilitate the movement of aircraft to and from the terminal area. Runway 12R-30L and Runway 12L-30R will also remain open to aircraft. The completion of this phase re-opens the Taxiway G and Taxiway N intersection.
  12. The “Alternate Bid 2” consists of the replacement of lighted taxiway signs on Taxiway N and connecting taxiways between the north edge of Runway 12R-30L and the north end of Runway 4-22 and between Taxiway N and Runway 4-22. This phase will be completed in

- conjunction with all the other phases. No additional time will be added to the contract for completion of this work.
13. Existing airfield lighting circuits shall remain in service for all areas open to aircraft during all hours of darkness and during instrument meteorological conditions (below 1,000 feet ceiling or less than 3 miles of visibility) unless prior approval has been obtained from the airport. No direct payment for jumpers shall be made.
  14. Construction staging areas, access and haul routes, lighting, and marking shall be as shown on the plans.

## **B. AREAS OF OPERATION AFFECTED BY THE CONSTRUCTION ACTIVITY**

### 1. Affected areas on the Airfield

Taxiways E, G, N, W, Taxiway N connectors and the Apron Taxilane will be directly affected by the construction within the limits of these existing areas of pavement. The limits specific to the project can be seen on the individual phasing sheets.

### 2. Closed or Partially closed facilities

As previously discussed, Runway 4-22 will be closed except for specific Taxiway crossings as shown in the plans and will remain closed for the duration of Phase 1-4 of the project. Portions of the Apron Taxilane, Taxiway G, and Taxiway N will be closed for specific Phases with the limits of this closure based on each phase of the project.

Work for this project will be performed concurrently with other projects (Terminal Area Taxiway Improvements Package 2) on the airport and may require additional short term temporary closures, as determined by the Airport Operations at the time of construction.

### 3. ARFF Access Road

The Contractor will be directed to maintain access for all existing paths that may be used by ARFF vehicle within the Airfield Operations Area at all times during this project.

### 4. Airport and Airline Support Vehicle Access Routes

Airport support vehicle access routes will be maintained throughout the project. If the Contractor elects to use the existing Airfield Perimeter or other Service roads, the Contractor will be required to maintain those roads at all times. Furthermore, the Contractor will be directed that Airfield

Operations will always have the right-of-way. The proposed Contractor's access routes can be seen on sheet C2.1 *Construction Operations and Safety Plan*.

5. Utilities for Firefighting

No underground utilities used for firefighting are within the project area and will be impacted as a result of or during the construction of this project. The Contractor will be responsible for performing the necessary potholing for existing utilities to ensure damage is avoided.

There is an existing fire hydrant along Wetmore at Gate number 278 that may be used for construction water, as long as doing so does not impact firefighting operations in any manner. The contractor must coordinate this with the local Utility in order to gain access to the line and have a meter installed.

6. Affected Approach and Departure Surfaces

The Approach and Departure surfaces for Runway 4-22 will be affected during the construction of Taxiway N1, N2, and N3 and will require the full closure of Runways until work within the RSA's are completed and the Runways are opened.

The Approach and Departure surfaces for parallel Runway 12L-30R and Runway 12R-30L will not be affected by the Contractor's operations or staging during this project.

7. Affected Instrument Approach Procedures and NAVAID Critical Areas

Landings will not be permitted on Runway 4-22 for the duration of Phase 1 of the project, and any NAVAID's associated with this Runway will not be in operation until this phase is complete.

8. Construction Staging Area and Haul Routes

The Contractor's Staging Area, Stockpile Area, haul routes, and construction access areas are shown on the *Construction Operations and Safety Plan*. The Contractor's Staging Area and Stockpile Area have been located outside of all Object Free Areas and runway imaginary surfaces. Construction access areas and haul routes have been chosen to minimize the impact to airfield operations however, due to the location of the project site; there will be a need for flaggers for vehicular traffic crossing active taxiways. The Contractor is required to supply gate guard's at all temporary construction entrances to the airfield depending on the specific route to be used.

Any truck drivers/contractors that will be on airport property for 14 days or more throughout the duration of this project will be required to obtain a San Antonio International Airport (SAT) airport security badge, which is known as a Security Identification Display Area (SIDA) badge.

9. Temporary Taxi Operations

Portions of the apron Taxilane, Taxiway G, and Taxiway N will be closed at different times throughout this project depending on phasing and coordination with other projects taking place at the airport. All other taxiways will remain open and operate under normal conditions. The contractor will remain outside of taxiway Object Free Areas, as required per FAA AC 150/5370-2F, *Operational Safety on Airports During Construction*. Areas of closure are shown for each phase on the individual *Construction Phasing Plans for each area*.

10. Detours for ARFF and Other Vehicles

Airport support vehicle access routes, including ARFF, will be maintained throughout the project. The Contractor must coordinate construction and construction vehicle movement with SAT Operations during each phase of construction to ensure safety. Contractor vehicle movements to and from the site will follow approved Access and Haul Roads as defined in each specific Phasing plan.

11 Maintenance of Essential Utilities

No impacts to essential utilities are anticipated during this project. The Contractor is responsible for locating and protecting all existing utilities within the project area.

12 Temporary ATCT Procedures

The SAT Air Traffic Control Tower (ATCT) will be kept up-to-date of all construction activities throughout the duration of the project. The ATCT is invited to attend the weekly construction meetings, will be provided construction schedules at least three weeks ahead of the proposed construction activities, and will be expected to provide feedback about any concerns that the ATCT has for construction areas and Contractor movements. Project exhibits and phasing plans will be provided to the ATCT so that they are aware of the impacts to aircraft operations on the ground and in the air.

Each operational and phasing plan consists of the following information:

- Description of each phase

- Areas closed to aircraft operations
- Routes open to aircraft operations
- Access routes for Aircraft Rescue Fire Fighting (ARFF) equipment
- Construction staging areas
- Construction access and haul routes
- Impacts to NAVAIDs
- Lighting and marking changes
- Lead times for required notifications

## C. PROTECTION OF NAVIGATIONAL AIDS

### 1. NAVAID Critical Areas

Landings will not be permitted on Runway 4-22 for the duration of Phase 1 of the project, and Runway 4-22 NAVAID's will not be in operation until the phase is complete. Critical Areas will remain clear.

### 2. Effects of Construction on NAVAID Performance

Runway 12R-30L and Runway 12L-30R should be fully operational during each phase of the project.

Runway 4-22 should be operational during Phases 2, 3, 4, and 5 of the project.

### 3. Protection of NAVAID Facilities

No work will take place on or near NAVAID Facilities as part of this project. Contractor shall protect NAVAID Facilities in place. All navigation equipment and NAVAID critical areas to remain active inside the limits of construction during construction shall be delineated with orange safety fence at no additional cost to the project.

The contractor shall protect in-place all navigation equipment within the limits of construction unless otherwise specified in construction documents. Any damage to navigation equipment shall be reported immediately to the airport.

### 4. Required Distance from NAVAIDs to Construction Areas

The existing PAPI systems will not be in the vicinity project operations. The contractor is to protect the existing PAPI systems in place and should maintain at least 15 feet away from PAPI locations at all time.

Equipment and materials shall not be stored near any navigation equipment.

#### 5. Coordination Procedures with FAA/ATO

SAT staff will be responsible for continually coordinating as required with the FAA/ATO during construction. Prior to commencement of construction, FAA ATO/Technical Operations office will be notified to evaluate the effect of construction activity on the navigational equipment.

### **D. CONTRACTOR ACCESS**

#### 1. CONSTRUCTION SITE ACCESS AND HAUL ROAD

- a) Haul roads to be used on this project are indicated on the drawings or otherwise specifically authorized by the designer. The contractor shall confine all vehicles and equipment to the designated construction areas, staging areas and haul routes. If deemed necessary by SAT, the Contractor will be required to mark the haul routes not on pavement with vertical panel barricades with red lights prior to the start of work. The haul route shall be delineated with barricades spaced at 40 feet with additional barricades placed at intersections the entire distance from the project location to the staging area location. Flaggers will be used to regulate construction vehicles as they cross active Taxiways, see *Construction Phasing Plan*. The entire haul route must be marked with steady burn or flashing red omni-directional lights 24/7, for the duration of the project. It is the Contractor's responsibility to monitor the haul route on a daily basis to ensure all delineators are in place and working properly.
- b) The contractor is advised that other contractors may be utilizing the same haul road and performing work in the vicinity of this project.
- c) The contractor shall keep all construction vehicles and traffic off of the west service road.
- d) Access points to the project site are shown on this plan. The specified gate shall be monitored for access control by a contractor supplied SIDA badged personnel during all contractor operations while an access gate to the SIDA is open or unlocked. Per Transportation Security Administration (TSA) pedestrian access into the SIDA on foot through a designated vehicle gate is prohibited. All vehicle access gates must be enter/exit solely by vehicles. Deviation to this rule will result in a SAT/TSA security violation.

- e) The contractor shall be responsible for restoring all airport roads to their pre-construction condition where such roads are used by the contractor. The existing condition of all anticipated haul routes shall be documented prior to hauling. See Specification *Division E Item 105 "Mobilization"* for requirements. No direct pay shall be made for this work.
- f) The contractor shall restore all turfed and paved area used for haul roads to their original condition, including establishment of new turf. All costs for constructing, removing, and restoring of haul roads required for the completion of the work shall be borne by the contractor.
- g) The contractor shall not permit any unauthorized construction personnel or traffic on the project site. The contractor shall be responsible for traffic control to and from the project site. Contractor provided directional signage at the access gate and along the delivery route to the staging area and project site shall be reviewed by the engineer and airport's security department prior to installation.
- h) All contractor material orders for delivery to the site shall be directed to the access point identified or contractor staging area.
- i) The contractor, through the airport, shall establish and maintain a list of contractor and sub-contractor vehicles authorized to operate on the project site. Vehicle use permits shall be assigned in accordance with airport security procedures.
- j) It shall be the contractor's responsibility to coordinate the use of off-site routes (state highways, county roads or city streets) with the appropriate owner who has jurisdiction over the affected route.
- k) All vehicles using haul routes including off-site routes shall be covered to prevent blowing away or spillage of loose material. All spillages on public roadways and site roads shall be promptly cleaned up and legally disposed of at no additional cost to the airport.
- l) The contractor will not be permitted to use any access or haul roads other than those designated on the contract drawings. Aircraft Rescue and Fire Fighting (ARFF) vehicles have

the right-of-way on access roads, haul roads, taxiways, and runways and shall not be impeded at any time.

2. 49 CFR Part 1542 Airport Security

The project will require that the Contractor and any employees, subcontractors and delivery staff working inside the SIDA undergo the SIDA badge process, and will be responsible for being vigilant in helping to maintain security of the SIDA. The Contractor will be responsible for posting SIDA badged personnel at Contractor access points in the SIDA and locking each access gate when leaving the project each day.

The airport is operated in strict compliance with Transportation Security Administration (TSA) and Federal Aviation Regulations (FAR), which prohibit unauthorized persons or vehicles in the SIDA. Equipment and workmen will be restricted to the work area defined on the plans. Any violation by Contractor's personnel or sub-contractors will subject the contractor to penalties imposed by the TSA, FAA or SAT.

The Contractor will assume all fines against SAT assessed to them by the FAA/TSA for the Contractor's security violations. Typical fines are ten thousand dollars (\$10,000.00) or more per incident.

The Contractor shall be responsible for the protection of the construction site, and all work, materials, equipment, and existing facilities thereon, against vandals and other unauthorized persons. Security measures shall include such additional security fencing, barricades, lighting, and other measures as the Contractor may deem necessary to protect the site.

The Contractor's responsibilities for work areas are as follows:

- a) The Contractor shall be held responsible for controlling his employees, subcontractors, and their employees with regard to traffic movement.
- b) The Contractor shall rebuild, repair, restore, and make good at his own expense all injuries or damages to any portion of the work occasioned by his use of these facilities before completion and acceptance of his work.
- c) The Contractor shall submit to the Engineer in writing a detailed work plan for each construction phase. The work plan shall include, but not be limited to, temporary

electrical facilities, installation sequence of underground electrical and storm sewer systems, paving sequence, installation sequence of electrical items, maintenance of airfield electrical and NAVAID power and control circuits. This plan shall be submitted 14 calendar days prior to the start of each construction phase. No work within the construction phase may commence until the phase work plan is approved.

- d) The Contractor shall submit to the Engineer in writing a plan, by construction phase, for controlling construction equipment and vehicular movements in the Air Operations Area (AOA). This plan shall be submitted at the Pre-Construction Meeting. No work may commence until this plan is approved. The Plan must include material haul roads.
- e) The Contractor shall provide a responsible Traffic Manager whose duty shall be to direct all traffic on or near active runways, taxiways, haul roads, and highways. Paved surfaces shall be kept clear at all times and specifically must be kept free from all debris which might damage aircraft.

Airport Access Badging: All Contractor and /or subcontractor personnel performing work functions in accordance with this contract shall obtain and properly display a San Antonio International Airport (SAT) airport security badge, which is known as a Security Identification Display Area (SIDA) badge.

All contractors and sub-contractor personnel that are to be issued a SIDA badge are required to attend and successfully complete a training class before being issued a SIDA badge. Fees for the SIDA badge include attendance for the necessary training classes. Attendance of the security classes may take a minimum of 2 hours per person.

The types of training required will be determined by the scope and location of the work involved. All personnel that will receive SIDA badges shall attend the security training. Additionally, personnel operating vehicles or equipment within the SIDA must attend Airport Operations driver training and any personnel acting as a Gate Guard/Crossing Guard (Flagger) will receive additional instruction from the airport to perform their duties.

The contractor shall immediately notify Airport Operation Control Center (OCC) at (210) 207-3433 in the event personnel whose employment status has changed and the individual no longer maintain a need a SAT SIDA badge.

Both the individual and the contractor share responsibility to return the SIDA badge to Airport Security Badge & Identification office or to Airport Security when association with the contractor is discontinued. The contractor shall be responsible for retrieving all SIDA badges and return them once there is no longer a valid business need to obtain one. A fee will be charged for each SIDA badge that is damaged, lost, or not returned.

For current badging hours or any other questions pertaining to SIDA badges, you can reach the Airport Security Badge & Identification office at (210) 207-3526.

SIDA badges are issued by SAT Airport Security and will be required to properly display above the waistline on the outer most garment when working within the Security Identification Display Area (SIDA).

- SIDA badges issued by the San Antonio International Airport (SAT) are property of the San Antonio International Airport (SAT) and must be surrendered upon the request of SAT Airport Police or SAT Airport Security.
- The contractor must immediately report to the Airport Operation Control Center (OCC) at (210) 207-3433 or Airport Security Badge & Identification office at (210) 207-3526 any Lost, Stolen, or Not Returned SIDA badge or any employee who quits or is terminated.
- It is the contractors responsibility to return all employees SIDA badges to the San Antonio International Airport (SAT).once there is no longer a business need to maintain them.

### 3. CONTRACTOR STAGING AREA

- a) The limits of construction, contractor's staging area and stockpile areas required for the contractor's exclusive use during construction are shown on the plans. Additional areas may be requested by the contractor and approved by the SAT. The contractor shall provide devices visible for both day and night use to delineate the perimeter of all such areas.

- b) Contractor shall install a minimum 3” thick graded and compacted gravel bed to the limits of the contractor staging area that is not asphalt or concrete pavement. The contractor shall protect all existing drainage structures from any damage caused while the area is being used as a construction staging area. All damage shall be repaired to the satisfaction of the Aviation Department and at no additional cost to the Aviation Department. A staging area layout plan shall be submitted to the owner and the engineer for review and approved prior to construction.
- c) The contractor shall not park equipment or store materials within ten (10) feet of the SIDA fence line.
- d) The contractor shall maintain existing drainage patterns at the staging and stockpile areas and provide temporary routing of stormwater around the areas.
- e) In order to prevent sediment from leaving the contractor staging area, the contractor shall install temporary silt fence around the staging area and provide inlet protection devices for all existing drainage structures.
- f) All erosion control measures within the contractor staging area shall be incidental to the project and are outlined in the stormwater pollution prevention plan
- g) Airfield Operations will be on site for the duration of the project and will attend the weekly and daily meetings with the Contractor. At these daily meetings, the Contractor shall inform the team of the daily construction activities and priorities.
- h) Contractor shall provide an engineer's field office in accordance with Section F, Item 101, “*Preparing Right of Way*”. Engineer's field office shall be located where shown on the plans or as approved by the designer.
- i) The contractor shall provide temporary utilities to the site in accordance to Section E, Item 105, “*Mobilization*”. All costs associated with temporary utilities shall be incidental the project.

- j) All staging areas shall be inspected and approved by the airport's fire department. The contractor shall supply any and all firefighting equipment, protection and safety equipment/supplies as requested by the airport's fire department within 24 hours after requested.
  - k) Contractor shall supply trash and rubbish dumpsters and all other containers for removal of trash, rubbish, and debris resulting from the work of the contract. The contractor should not allow dumpsters to overflow.
  - l) The contractor shall completely clean up and restore the entire staging and storage areas, as approved by the designer prior to final completion. All unused materials shall be removed from the project site at the contractor's expense, unless prior approval has been given from the Aviation Department and the staging area graded smooth, sloped to drain and seeded. No direct payment shall be made.
4. CONTRACTOR EMPLOYEE AND EQUIPMENT PARKING
- a) Contractor employee parking will be coordinated with the owner prior to notice to proceed. A preliminary location is shown on the *Construction Operations and Safety Plan*. Personal vehicles will be parked at a designated area. Contractor's employees will be transported to the job site by means of a company vehicle.
  - b) All on site vehicles and equipment shall be parked in the designated staging area as shown on the plans. If a vehicle is to be serviced it shall be within the staging area and not in the employee parking area. Personal vehicles will not be allowed onto the airfield.
  - c) All materials and equipment when not in use shall be placed in approved areas where they will not constitute a hazard to aircraft operations and not penetrate clearance height restrictions as shown on the construction plan(s). All equipment shall be parked in the appropriate area(s) when not in use.
5. VEHICLE CONDITION
- a) Vehicles and equipment that are deemed a potential hazard by the engineer shall be removed from the job site and airport property at the request of the engineer. Vehicles and equipment that leak any automotive fluid especially oil, hydraulic fluid, transmission

fluid, gear oil, gasoline, diesel, etc. Will be removed to the staging area and not allowed to operate on any paved surface. If the vehicle cannot be repaired within a few days the vehicle shall be removed from the airport. Leaking fluids on pavements damage the pavement.

- b) The contractor shall cleanup, at contractor's expense, any and all leaks or spills. Leaks on paved surfaces shall be cleaned up immediately. Significant leak spots on pavement, as determined by the engineer, shall be replaced with new pavement. Asphalt will require milling and placement of new bituminous material; PCC will require saw, removal and repair as directed by the engineer. Dirt or gravel areas will require removal, legal disposal and replacement of the area with similar approved materials.

## 6. LOCATION OF STOCKPILED MATERIALS

All Contractor materials, equipment and supplies shall be staged within the designated staging area. The Contractor shall keep the staging area neat and clean of debris.

For equipment that must remain in the work area, the following criteria must be met:

- Equipment must be located outside of active the runway/taxiway safety and object free areas.
- Equipment must be marked with lighted barricades around the equipment perimeter with a spacing of no more than 10 feet.
- Equipment to be staged must be coordinated at least 48 hours in advance with the Engineer.
- The highest point of the equipment must be marked and lit with a red flashing/steady burning omni-directional obstruction light

Stockpiling of materials is permitted, as long as the following criteria are met:

- Material may be stockpiled within the closed portion of Taxiway N and Connecting Taxiways during construction.
- The Contractor may also use the Contractor's Staging area to stockpile asphalt/concrete millings.

Construction activity shall be prohibited when equipment penetrates the imaginary surface described in Title 14 CFR Part 77 and any restricted area as defined in AC 150/5300-13A, *Airport Design* current edition, unless a favorable airspace finding has been made by the FAA and SAT, and approved by the Operations manager on Duty. Equipment that penetrates the Part

77 imaginary surface must display an orange and white checkered flag during daytime operations and red obstruction light during nighttime use.

There shall not be any stockpiled materials in the active runway or taxiway safety areas or in the infield areas. Stockpiled material or equipment shall not be stored near aircraft turning areas or operational movement areas, aprons, or excavations and trenches. Stockpiled materials shall not be stored near NAVAIDs, visual or approach aids, nor shall they obstruct the ATCT's line of sight to any runway or taxiway. The contractor shall ensure that stockpiled materials do not cause degraded or hazardous conditions to airport operations safety. This includes determining and verifying that stockpiled materials are stored at an approved location, that they are properly stowed to prevent foreign object debris (FOD), attraction by wildlife, or obstruction of air operations either by their proximity to NAVAIDs or to aircraft movement areas.

All stockpiled material(s)/supplies shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions. Material(s)/supplies shall not be stored within 500 feet of aircraft turning areas or movement areas. Stockpiled material(s)/supplies shall not exceed 15 feet in height unless the contractor has complied with all requirements for spacing and secured approval from SAT airfield operation unit or City of San Antonio Aviation Department planning, design, and construction division. All material(s)/supplies shall be positioned so it will not obstruct the line of sight from the control tower to the movement area. Marking and lighting shall be in accordance with the requirements contained in barricade details checklist.

Stockpiled materials should be stabilized with water in order to reduce dust during windy conditions. The Contractor shall also try to minimize the height of stockpiles when possible. Daily inspections by the Contractor will be required of the stockpiles and other areas within the construction limits that may be affected by windy conditions. Construction Administration personnel will also be performing daily inspections on these areas to insure compliance with this aspect.

## 7. VEHICLE AND PEDESTRIAN OPERATIONS

- a) Vehicle and access routes for airport construction shall be controlled as necessary to prevent inadvertent or unauthorized entry of persons, vehicles or animals onto air operation areas (AOA). No vehicle shall enter the air operations area except at predetermined locations. The amount of construction traffic will require the contractor to

use a security guard at access gates and a flag person to control traffic crossing taxiways and other aircraft movement areas. Contractor personnel who operate vehicles in the AOA shall comply with the owner's rules and regulations for vehicle marking, lighting, and operation.

No vehicle shall operate within the Security Identification Display Area (SIDA):

- a) Unless operated by an individual in possession of a valid Security Identification Display Area (SIDA) badge with an Airport Operations driver's license or, under the direct escort of someone who is.
- b) In a careless or negligent manner.
- c) With disregard of the rights and safety of others.
- d) At a speed or in a way which endangers persons or property.
- e) While the driver is under the influence of drugs or alcohol.
- f) If such vehicle is loaded or maintained as to endanger persons or property.

#### 8. MARKING AND LIGHTING OF VEHICLES

- a) All contractor vehicles shall have operating head lights, tail lights and brake lights. Head lights shall not be set on high beam when moving about the airport.
- b) All contractors and sub-contractors vehicles must display in full view, company logos, affixed to each side of the vehicle while operating inside the Security Identification Display Area (SIDA). Company logos must be no less than six (6) inch lettering, or twelve (12) inch company logo and can be magnetic, printed or painted on, but must be commercially made.
- c) All construction vehicles/mechanized equipment authorized within the movement area or related safety areas shall be marked with a 3' x 3' orange and white checkered flag with

each box being 1' square, located on the uppermost portion of the vehicle/motorized equipment, or be escorted by a vehicle so equipped.

- d) During nighttime hours, all equipment operating on the airport exceeding 15 feet in height shall be lit with a red obstruction light located on the uppermost portion of the equipment.
- e) Vehicles/mechanized equipment authorized on the movement area (runways, taxiways, and ramps) and/or associated safety areas shall be equipped with an electrically powered, amber color, 360-degree omni-direction light, mounted on the vehicle such that it is conspicuous from any direction.
- f) All vehicle marking and lighting must comply with the most recent version of Advisory Circular 150/5210-5 "Painting, Marking and Lighting of Vehicles Used on an Airport."

#### 9. REQUIRED ESCORTS

- a) The contractor must provide an adequate number of escorts for material deliveries along haul routes and the movements of the contractor's vehicles/mechanized equipment and personnel within the movement area and non-movement areas as authorized by the SAT airfield operation units.
- b) During any absence of the approved escort(s) or for periods that they are unable to perform their specified duties, all work within the movement area and associated safety areas for projects shall stop. Additionally, all personnel and equipment shall be escorted to approved locations outside the movement area and related safety areas. No contract time extension will be granted for time lost due to the absence of escort(s). Work shall resume only with the return of the approved escort(s).
- c) The escort shall assure that all equipment maintains proper clearances from moving aircraft.

#### 10. TRAINING REQUIREMENTS FOR SIDA BADGES AND AIRPORT OPERATIONS DRIVERS LICENSE

- a) Contractor employees who require access to the construction site are required to be SAT SIDA badged by Airport Security and must attend the Security Identification Display Area (SIDA) training, and must pass the computerized test to obtain a SAT SIDA badge. Hours of Operation at the Airport Security Badge & Identification office are:

- Monday thru Thursday 8 AM to 4 PM
- Friday 8AM to 11:30 AM lunch 1 PM to 4 PM

All contractors and sub-contractors personnel that are to be issued a Security Identification Display Area (SIDA) badge are required to attend and successfully complete a training class before being issued and SAT SIDA badge. Fees for the SAT SIDA badge include attendance with the associated training class.

The types of training required will be determined by the scope and location of the work involved. All personnel that will receive Airport badges shall attend the security training. Additionally, personnel operating vehicles or equipment within the Security Identification Display Area (SIDA) must attend Airport Operations Driver training.

## 11. TWO-WAY RADIO COMMUNICATIONS PROCEDURES

- a) At no time should the Contractor have a two-way radio communications with the air traffic control tower. If a need arises, the Contractor shall contact Members of SAT operations who will be on site for the duration of the project. SAT operations call and communicate with the tower. This procedure will be discussed at the Pre-Construction meeting in detail to which the Contractor shall follow while in the AOA. Emergencies and operating conditions may necessitate sudden changes, both in airport operations and in the operations of the contractor. Aircraft operations shall always have priority over any and all of the contractor's operations. Should runways or taxiways be required for the use of aircraft and should airport operations, the control tower, or the engineer deem the contractor to be too close to active runways or taxiways the contractor shall suspend his operations, remove his personnel, plant, equipment, and materials to a safe distance and stand by until the runways and taxiways are no longer required for use by aircraft. There will be no compensation for delays or inefficiencies due to these changes.

- b) For project scheduling, the contractor shall schedule daily with Airport operations and the Resident Engineer.

## 12. MAINTENANCE OF THE SECURITY IDENTIFICATION DISPLAY AREA (SIDA) AT THE SAN ANTONIO INTERNATIONAL AIRPORT (SAT)

- a) The contractor shall delineate work limits within these areas as per the phasing plan. Confine men, equipment and materials outside of the runway safety area (RSA) when the runway is active. Confine men, equipment and materials outside of the taxiway safety area (TSA) when the taxiway is active. Work site will generally be enclosed with barricades and safety fence. See the specifications for special conditions and for other conditions relating safety.
- b) The contractor shall have access to the airport only at those locations designated on the plans. All other access shall be by special request and subject to approval by the Aviation Department. The contractor will provide a SIDA badge person to provide access control at the contractor's access gate, and at NO time shall any access gate onto the SIDA be unlocked or opened without a SIDA badge person controlling access.

## E. WILDLIFE MANAGEMENT

The Contractor will be required to follow any Airport Wildlife Management Procedures that are in place, but at a minimum the Contractor will be required to:

1. Contractor shall instruct employees not to discard food or other trash on or around work sites that could attract wildlife in the dumpsters and trash can provided by the Contractor on site. Contractor employees shall not intentionally feed any wildlife while working at the airport.
2. Contractor shall properly seal all trash containers at work sites such that wildlife cannot gain access to containers during non-construction periods.
3. Contractor shall notify airport operations division staff if large numbers of birds or significant wildlife are observed at work sites. Contractor shall immediately notify operations staff if deer are sighted within the airfield fence.

4. Contractor shall provide and install seeding in compliance with contract Specification T-901 of the contract documents. The grass shall be maintained throughout the duration of the project by the contractor at no cost to the owner.
5. Close and lock any airfield access gates that are not in use.

#### **F. FOREIGN OBJECT DEBRIS MANAGEMENT**

1. Since this project will require the contractor to cross active taxiways, the contractor shall have available at all times multiple vacuum type mechanical sweeper and water trucks to clean all taxiway and apron pavement of dirt, stones, and loose debris where construction traffic crosses at all active movement areas. No direct pay will be made for vacuum and water trucks or for pavement cleaning.
2. No debris shall be allowed to remain on the roadways or airport paved surfaces. Active taxiways and aprons shall be kept free of debris at all times. Contractor shall maintain one power vacuum sweeper on site for every active taxiway crossed. Other pavements shall be cleaned by the contractor daily, and as required, using power vacuum sweepers to keep all access and construction areas clear of soils, clods, or other debris. Payment for vacuum sweeping and cleaning of runway, taxiways and/or aprons is incidental to Special Provision Specification item SP-10-1 Airport Safety and Security.
3. The contractor shall have available on-site at all times a method of periodic spraying of any stockpile or exposed areas to limit dust. The Contractor will be required to keep water on construction areas to minimize the possibility of FOD generated by wind. The Contractor will be required to conduct FOD checks at the end of each working shift/day to remove any FOD that has made its way onto the airfield pavements from the Contractor's construction activities. Airport Operations and Construction Administration personnel will be present for these FOD checks to insure compliance.

#### **G. HAZARDOUS MATERIALS MANAGEMENT**

1. Hazardous materials can be identified using the U.S. Department of Transportation (DOT) labeling and identification system. All hazardous materials arriving on site must be properly labeled, stored, and managed as required by the material safety data sheet (MSDS) for that

material, or as directed by City of San Antonio Aviation Department and the airport's fire, environmental and risk management.

2. All wastes shall be properly stored, labeled, managed, and disposed of in accordance with the project specifications, local requirements, and Texas Commission of Environmental Quality (TCEQ) regulations, or as otherwise directed by the City of San Antonio's environmental personnel.
3. Contractors and subcontractors are required to have copies of all MSDSs for all materials brought on site.
4. If suspect unknown hazardous materials are identified, then the job should stop until further direction by the City of San Antonio's environmental and risk management departments.
5. If potentially hazardous waste/materials have been indicated in the bid documents and could be foreseen in a project, proposal, or work order, then the contractor is expected to have onsite the proper personal protective equipment and instruments for detection and safety.
6. Projects that include abatement or remediation must have their own specific job plans.
7. Contractor to immediately report spills to airport operations and TCEQ. Reports are to conform to TCEQ requirements.

## **H. NOTIFICATION OF CONSTRUCTION ACTIVITIES**

1. Prior to commencement of construction activity, the contractor shall notify in writing, at least 72 hours in advance, Aviation Department operations and the engineer of its intentions to begin construction, stating the proposed time, date, and area of which construction is to occur in order for the appropriate notice-to-airmen (NOTAM) to be issued. During the performance of this contract, the airport facility shall remain in use to the maximum extent possible. The contractor shall not allow employees, subcontractors, suppliers, or any other unauthorized persons to enter in any airport area which may be open for aircraft use.

2. The contractor shall notify airfield operations on a daily basis to inform them of the daily construction activities and shall call them at the desk at (210) 413-4928 if there are any unexpected changes or delays
  
3. Responsible representative/points of contact will be distributed to the Contractor at the Pre-Construction meeting. The following is a list of some of the necessary information that will be provided.
  - a) Aviation Department
    - Airfield operations –
    - Airport fire –
    - Airport security -
    - Project manager -
    - Senior project supervisor -
  - b) Construction administration
    - Resident project representative -
    - Senior construction observer -
    - Construction observer –
    - Project manager -
    - Project engineer -
    - Project engineer -
    - Electrical engineer -
  - c) Contractor
    - TBA
  
4. NOTAMS
  - a) In order for the contractor to operate within airport property, appropriate notices to airmen (NOTAM) must be issued by the Aviation Department through the FAA flight service station. These notices provide information on closed, limited, or hazardous conditions to airmen and users of the airport. A 5-day notice is required for issuance of the proper NOTAM; all construction operations must be closely coordinated with the engineer for NOTAM issuance.
  
5. EMERGENCY NOTIFICATION PROCEDURES
  - a) The contractor shall immediately call the Airport Operations Control Center at (210) 207-3433 if an accident occurs with injuries on airport property.
  
  - b) The contractor shall also immediately notify SAT airfield operations to coordinate all emergency efforts.

- c) Within 24 hours, the contractor shall report all accidents to Aviation Department airfield operations, the construction management team, the Aviation Department senior project supervisor, Aviation Department project manager and Aviation Department safety risk management officer
6. COORDINATION WITH ARFF
- a) The contractor shall immediately call the Airport Operations Control Center at (210) 207-3433 if a fire occurs on airport property. The contractor shall not attempt to fight the fire beyond what may be doused by use of a fire extinguisher.
  - b) Non-emergency communication with the SAT ARFF will be coordinated by the City of San Antonio Aviation Department construction administration team.
  - c) A SAT ARFF representative will be invited to attend the preconstruction conference at which time the overall construction schedule will be presented.
  - d) A meeting will be scheduled with the SAT ARFF representative prior to the start of each major construction phase which significantly impacts/modifies airfield closures throughout the duration of the construction project. Participants in these meetings shall include: airport staff, airport operations, design team, construction administration team, contractor, and subcontractors.
7. NOTIFICATION TO THE FAA
- a) The contractor's use of cranes, boom trucks, concrete pump trucks, drill rigs and other tall objects will require submittal and approval by the Aviation Department and engineer. Dependent on the location and usage, the equipment may require FAA airspace review as submittal on FAA form 7460-1 notice of construction.
  - b) The contractor shall submit an FAA form 7460-1 at least 60 days prior to any crane erections. All construction involving cranes shall further be coordinated at least 72 hours in advance, excluding weekends, with the applicable SAT airfield operation division or Aviation Department planning, design, and construction division. This does not include the time required for airspacing. The following information and actions are required:

- Location of the crane.
  - Maximum extendable height.
  - Hours of operation.
  - The top of each crane boom shall be marked by a 3' x 3' orange and white checkered flag -- each box being 1' square.
  - Each crane shall be lowered at night and during periods of poor visibility as directed by Aviation Department airfield operation units or Aviation Department planning, design, and construction division. In the event the crane is approved to remain extended during the hours from sunset to sunrise, the highest point of the crane boom will be lit with a red obstruction light in accordance with AC 70/7460-1.
- c) The City of San Antonio Aviation Department will submit to the FAA for approval a notice of construction (7460-1) for the staging area, limits of construction, and stockpiling area as show on the plans.

## I. INSPECTION REQUIREMENTS

1. Aviation Department personnel and/or the engineer's field personnel will conduct routine inspections of all construction areas to ensure compliance with airfield safety. Daily inspections will be required for areas requiring haul routes over active airfield pavements to insure that FOD is minimized. In addition, daily inspections of Contractor access areas will be performed to help ensure safety on the airfield. Daily inspections will be conducted by an Airport Operations employee, a Contractor representative, and a Construction Administration field representative.

All discrepancies noted in the inspection must be corrected to the satisfaction of the Engineer prior to the Contractor leaving the worksite.

Should any inspection reveal any FOD concerns, the Contractor shall have a crew ready to remove any FOD prior to reopening the pavements. Should any inspection reveal work that does not meet Contract requirements or that is deficient in any way; the Contractor shall mobilize a crew as soon as possible to remedy the deficient areas so as to avoid prolonging the continued closure of the areas.

2. The construction administration team will monitor the contractor's activities for conformance with the contract documents.

3. The contractor shall assign a safety officer to the project to conduct daily inspections of all construction areas to ensure conformance with the construction safety and phasing plan (CSPP) and safety plan compliance document (SPCD).

4. FREQUENCY OF INSPECTION

- a) Self-inspections are performed daily by Aviation Department's personnel and/or the engineer's field personnel.
- b) Additional safety inspections shall be conducted whenever required by the following circumstances:
  - During and after construction activity
  - During rapidly changing meteorological conditions
  - Immediately after any incident or accident
  - After any unusual condition on the airport

5. REPORTING SYSTEM

- a) Any corrective action needed for unsafe airport conditions will be reported to airfield operations and followed up with a written work order.
- b) Conditions which affect any airport tenants will be communicated via the airport's IDS4, direct digital entry NOTAM, airport operations NOTAM system and airport status report.

6. INSPECTION RECORDS

- a) Inspection records will show the conditions observed and all corrective action taken.
- b) Inspection records will be maintained in the final Engineer's report.

## J. UNDERGROUND UTILITIES

The Contractor is required to Blue Stake and pothole (if necessary) all existing utilities within the project area prior to the beginning of any construction activities on the airfield. Protection of utilities may include, but are not limited to, flagging utilities, marking lines on pavement, placement of barricades along utility lines and at manholes. A detailed Technical Specification has been provided to the Contractor for additional requirements.

1. Prior to commencing any excavation (on or off AOA), drilling (on or off the AOA), driving fence posts (along the AOA), trenching (on or off the AOA), saw cutting (AOA only), the contractor shall review drawings with City of San Antonio Aviation Department personnel and/or the engineer's personnel to insure that all underground obstructions and utilities are identified. In addition the contractor shall contact Texas 811 and coordinate with the City of San Antonio Aviation Department to assign the verification of utilities by airport maintenance. Both Texas 811 and airport maintenance and the contractor shall attempt to locate utilities. The contractor will be completely responsible for all damage to underground utilities.
2. Each utility shall be swept/identified in the following manner:
  - a) Flags can be used but shall be color coordinated. In addition the "acronym" for that utility shall be written on one side of the flag with a permanent marker.
  - b) Stakes can be used. The top two inches of the stake shall be painted in color. In addition the "acronym" for that utility shall be written on one side of the stake with a permanent marker.
  - c) Painting is only authorized on asphalt, concrete, and metal surfaces. Markings shall be color coordinated. The acronym for the utility shall be used for each utility. A line that shows the direction of the utility shall emanate from the acronym in each direction.
3. If abandoned the Contractor shall still stake, mark, or flag but write down "aband" before the abbreviated prefix indicated above.
4. The individual marking, staking, or flagging shall mark the utilities in a way that coincides with the drawings.
5. If a utility or any underground obstruction is found it shall be reported immediately to the engineer or the owner's project supervisor.
6. Contractor employees in an excavation shall be protected from cave-ins by an adequate protective system unless the excavation is:
  - a) Made entirely of stable rock, or

- b) Less than 5 feet deep and determination has been made that there is no potential for a cave-in.
  
- 7. Excavation shall be protected using proper barricading materials which shall be installed a minimum of 6 feet back from excavation (unless in conflict with airfield requirements). Barricade material can be wood, steel cables, or chain supported at intervals so that the barricade does not sag or droop below the required height. Caution tape is not an approved barricade material. Guardrail/jersey barriers may be required and shall provide a top rail, mid rail, and toe board at proper elevations and be able to withstand a minimum 200 pound of force without collapsing.
  
- 8. The contractor is responsible for documenting utility information for use during construction and preparation of as-builts.

### PENALTIES

- 1. In the event that a report is received of unauthorized vehicles or persons on the airport operations area, an airport vehicle will be dispatched to intercept and escort the violator from the premises. A report will be prepared and kept on file concerning all incidents.
  
- 2. Continuous surveillance shall be maintained to ensure that only authorized vehicles operate on the movement area and that established rules are complied with. Should an individual violate the airports procedure on the operation of ground vehicles or should an individual have a runway incursion, their Airport Operations driver's license shall be confiscated immediately.
  
- 3. An individual who has violated the airport's procedures will not be authorized to re-enter the movement area until a letter is forwarded to the office of the CEO or his designee from the supervisor of the individual committing the violation. The letter must indicate that the individual has been counseled on the severity of the violation and has received recurrent training from the company.
  
- 4. The Airport Operations driver's license of an individual who has violated the airport's procedures will not be returned until the individual has attended another ground vehicle operations class conducted by the airport training department and passed a written exam.

5. Any individual's failure to complete recurrent movement area training within any 12 consecutive calendar month period will result in suspension of that individual's airport operations area (AOA) driving privileges until such time as the individual completes the required training.
6. The director of airfield operations or his/her designee will notify an individual who has violated the airport's procedures and their supervisor in writing that the individual's AOA driving privileges have been suspended for failure to complete required movement area training.

## SPECIAL CONDITIONS

1. During non-working hours and/or weather conditions approaching 1,000 foot ceilings (broken or overcast) or 3 mile visibility, all men, equipment and materials shall be pulled back to a position that is a least 250 feet from an active runway centerline. At no time shall equipment be operated or remain within 400 feet of an active centerline if its height (highest elevation) would exceed 25 feet above the active centerline elevation. The contractor will receive notification from SAT operations who will be informed by the air traffic control tower (ATCT) when visibility conditions require, or are expected to require equipment pullback. Current sky conditions at SAT can be checked by the contractor anytime by calling (210) 805-5583 and listening to the recording.
2. During special events as designated by airport operations or in emergencies, the contractor may be required to stop work and vacate the construction site as directed by the Aviation Department. Notification will be given by the Aviation Department to the contractor when work will be able to resume.
3. Special unforeseen conditions or circumstances may require the activation of special procedures by the Airport. In cases involving aircraft emergencies or distressed aircraft the Contractor may be required to temporarily halt construction activities and immediately vacate the area in which he is working. The nearest Airport Operations employee will be expected to notify all Contractor personnel in the vicinity, and promote safe and orderly removal of all Contractor personnel and equipment to an area that is no longer in conflict with the emergency at hand. The Contractor will be expected to immediately comply with all Airport personnel directions, and may not return to the subject work area until given the all clear to do so.

## **K. RUNWAY AND TAXIWAY VISUAL AIDS**

1. Runways closed to aircraft operations will have portable lighted runway closure markers over each of the runway designations on each end and temporary closed runway markers placed periodically along the length of the runway. For the closure of Runway 4-22 the Runway 4 pavement markings will be removed. This is required because a lighted X cannot be placed over these markings because the Runway will be used for taxiing aircraft. Because of this two sets of lighted X's will be placed as shown in the plans and discussed with Airport Operations and the ATCT. The contractor shall provide all lighted X's and The Contractor shall be responsible for maintaining and providing fuel for the lighted X's as needed. Pavements closed to aircraft operations will be delineated with low profile barricades and temporary taxiway ending markers at each intersection. Lighting for low-profile barricades used within the AOA shall be red and shall be a steady-burn or flashing light. Lighting used for construction barricades shall be red, and shall be a steadyburn or flashing light. All barricading and lighting shall conform to the details in the plans and specifications. Low-profile barricades shall be spaced per the plans for the specific requirement and shall be placed to prevent ground vehicle traffic from unintentionally moving onto active airfield pavements, and alert aircraft traffic of closed facilities. Locations and placement of barricades shall be placed as shown the Phasing plans.
2. Airfield guidance signs for runways and taxiways that are closed will either be removed or covered.
3. Airfield lighting for runways and taxiways that are closed will either be either de-energized or disconnected.
4. All centerline markings leading into the construction area will be obliterated.
5. All permanent and temporary pavement markings will be in compliance with ac 150/5340-1K "Standards for Airport Markings.
6. All permanent and temporary lighting and signage will be in compliance with AC 150/5340-30 Design and Installation Details for Airport Visual Aids and 150/5340-18 Standard for Airport Sign Systems.

## **L. MARKING AND SIGNS FOR ACCESS ROUTES**

1. Access routes to and from the construction site are as shown on the operational plans.
2. The contractor shall provide a traffic control plan that includes marking and signage per MUTCD standards.

Temporary signing used for Contractor access/haul routes, open trenching or other hazards shall be clear, concise, reflective, and large enough so as to minimize safety-related issues. All temporary signing shall meet the requirements of the most current version of the MUTCD, and shall be frangible.

## **M. HAZARD MARKING AND LIGHTING**

### **1. HAZARD MARKING**

Hazard-marking barricades, traffic cones, flashers, etc. should be used: to identify and define the limits of construction making them visible to aircraft, personnel, or vehicles; to identify hazards such as open manholes, small areas under repair, stockpiled material, waste areas, etc.; to prevent aircraft from taxiing onto a closed taxiway; and to identify FAA, airport, and national weather service facilities, cables, power lines, instrument landing system (ILS) critical areas, and other sensitive areas to prevent damage, interference, and facility shutdown. Hazardous areas, in which no part of an aircraft may enter, should be indicated by the use of barricades marked with diagonal, alternating orange and white stripes. The barricades should be supplemented with alternating orange and white flags, and installed so that they are always in the extended position and properly oriented. During reduced visibility or night hours, the barricades should be supplemented with flashing yellow lights. The intensity of the lights and spacing for barricades, flags, and lights should be adequate to delineate the hazardous area without ambiguity. The contractor shall have a designated person on call 24-hours a day for emergency maintenance of airport hazard lighting and barricades.

### **2. MARKING AND LIGHTING**

Low profile lights retro-reflective taxiway edge markers, low level barricades, and warning flags shall be provided and erected by the contractor as shown on the plans or as directed by the engineer. All construction areas, including closed taxiways, should be clearly and visibly

separated from active air operation areas. Hazard areas, facilities, cables, and power lines should also be clearly identified by the contractor. The contractor is responsible for maintaining the condition and visibility of all markers identifying above-mentioned areas and that marking and lighting aids remain in place. Alternating orange and white flags, traffic cones, omnidirectional yellow flashers, and/or signs should be used as necessary to clearly separate all construction/maintenance areas from other parts of the AOA. All barricades, temporary markers, flags supports, and other objects placed and left in safety areas on any open taxiway, or taxilane should be: as low as possible to the ground; of low mass; easily collapsible upon contact with an aircraft or any of its components; weighted down or sturdily attached to the surface to prevent displacement from propwash, jet blast, wing vortex, or other surface wind currents; and if affixed to the surface, frangible at ground level.

### 3. EQUIPMENT

#### a) LOW PROFILE BARRICADES

- The contractor shall provide low profile barricades along runway or taxiway edges wherever open excavations or irregular grades are left within the safety area of an active runway or taxiway or where temporary pavement closures or aircraft limitations are required. Barricades along active apron or taxiway pavement shall be placed approximately 10 feet from the edge of the full strength pavement, where possible, or as shown on the operational and phasing plans or as determined by the engineer and airport operations to delineate the contractors work areas. Gaps between barricades shall be no more than 4 feet end to end. No gaps are allowed between barricades located adjacent to runway safety areas.
- The contractor shall maintain the lights and barricades in an operable condition for the duration of the project.
- All barricades shall be checked visually for signs of wear and tear on a weekly basis and shall be repainted and/or replaced when deemed appropriate by the engineer. The condition of lighting units shall be checked daily. All light fixtures shall be verified operating by the contractor on a daily basis before the contractor ceases operations for the day. The areas around all barricades shall be cleaned at least once each week and the contractor shall sweep up accumulated debris and remove it from the site. All activities conducted adjacent to active runways or taxiways shall be coordinated with the engineer.
- Barricades shall be as shown on details. All incidental connectors, spacers, splice plates, etc., shall be painted white.

- Alternate forms of barricades may be proposed by the contractor which meets these functional requirements. Approvals of any such substitution (if granted) shall be by the airport's operations department and the engineer.
- The final location for the barricades shall be established in the field with concurrence from the engineer and airport operations.
- The contractor shall have replacement barricades, lights and batteries on site and shall replace barricades, lights and/or batteries within one hour of notification by the engineer or airport personnel. Contractor shall provide the name and telephone number for an on-call representative 24 hours per day, seven days per week to replace barricades, batteries and inoperative lights.
- Red steady burn lights shall be placed at the ends and at corners of each line of barricades; all other lights on barricades shall be red flashing.
- Contractor shall be responsible for maintaining proper positioning of all barricades.
- Sandbags and/or anchors may be required to hold the barricades in place where exposed to jet blast.
- All costs associated with furnishing, placement, maintenance and subsequent relocation of the low profile barricades are incidental to the requirements of airport safety.

b) LIGHTED RUNWAY CLOSURE MARKER SHALL:

- Be placed over the runway numbers at all times when the runway requires a closure. The runway closure marker may be moved off of the runway numbers only when required by construction activity and then immediately replaced when the construction activity is complete but no later than sunset each day. Lighted X's shall be fueled and maintained as necessary each day by the contractor.
- Be a portable, towable unit that can be quickly removed from the runway.
- Consist of clear incandescent lamps or transmit a white color, arranged in the shape of a letter "X" with arms crossed at an appropriate angle to make the "X" discernible. The arms shall be painted yellow on all sides so that the unit will be clearly visible when it is in position.
- Be energized by a portable power supply with an alternating current (plug) option.
- Be controlled so that the lighted signal will flash at an approximate rate of 2.5-3 seconds "on" (+/-20%) and 2.5 seconds "off" (+/-20%).

- Provide the following daytime and nighttime visual reference during visual flight rule (VFR) conditions when placed on centerline and within 250 feet of the runway end:
  - i. Visible to the pilot at a range of at least 5 nautical miles.
  - ii. Recognizable as a letter "X" from a range of at least 1 nautical mile.
- Provide lamp dimming capability for nighttime operations.
- Produce a signal that provides a horizontal coverage to at least 15 degrees on each side of the runway centerline, and a vertical coverage from 0 degrees to 10 degrees above horizontal, both day and night, at a range of 1 nautical mile.
- Adjustable aiming and leveling to allow tilting to an optimum angle of 3 degrees from vertical.

## **N. PROTECTION OF RUNWAY AND TAXIWAY SAFETY AREAS, OFA'S, OFZ'S AND APPROACH SURFACES**

### **1. Construction within Runway and Taxiway Safety Areas**

No construction activities may occur within any active Runway or Taxiway Safety Areas without taking the appropriate measures to close the runway or taxiway. These measures include strict coordination with the Airport, ATCT and the Engineer. Although not anticipated for this project, if the Contractor requests to perform work outside of the current construction area that would impact an active Safety Area, a minimum of at least a 48-hour notice to the Airport is required.

### **2. Adjustment of RSA's and TSA's**

No adjustments to the RSA's and TSA's are anticipated for this project.

### **3. Blast Protection Procedures**

The Contractor's company safety plan/guidelines shall include a provision for jet blast protection. At a minimum, it should address requirements for the securing of clothing and hardhats, as well as any requirements for hearing protection.

### **4. Requirements for Open Trenches**

Although not anticipated for this project, no trenches shall be left open within active RSA's and TSA's. Any trenching within an RSA or TSA needing to be left open after the Contractor leaves the work site for the day shall be properly plated and capable of safely supporting aircraft traffic, but it is the intent that this be a unique situation with very limited occurrences. Any requests of

this type shall be submitted in writing to the Engineer at least 48 hours prior to the construction. The Engineer will confer with the Airport and the FAA, and any decision related to the particular situation at hand shall be final.

Contractors shall close trenches located within active safety areas at the end of each workday. No open trenches or excavations will be allowed within the following active safety areas without prior coordination and approval from the Engineer:

- Within 250 feet parallel to an active runway centerline (trenches/excavations within 200 feet of a runway centerline require a runway closure).
- Within 107 feet parallel to a taxiway centerline.
- Open trenches not to exceed 500 feet in length at any one time.

5. Appropriate Covering of Excavations within RSA's and TSA's

All excavated areas will be within the closed portions of Taxiway N, Taxiway G, Connecting Taxiways, and Runway 4-22. No excavation will be required within active RSA's or TSA's.

6. Marking of Excavations and Open Trenches

All potential hazards, including but not limited to, open trenches, manholes, and steep embankments shall be barricaded and lighted with caution tape or orange fabric construction fencing to prohibit accidental falls. The Contractor's site-specific and company safety plan/guidelines shall address the protection of these areas and the protection of the employees against these hazards. See Section N for further information.

7. Maintenance of RSA's and TSA's

Upon completion of the project, the Contractor is responsible for returning the affected RSA's and TSA's back to meet the requirements set by the FAA.

8. Construction Equipment not in Use

Construction equipment not in use shall be returned to the Contractor's Staging Area by the Contractor, where practicable. In no case shall construction equipment be left within any Object Free Areas.

9. Construction within Taxiway Safety Areas

No construction activities may occur within any Taxiway Safety Areas without taking the appropriate measures to close the subject facility. These measures include strict coordination with the Airport, ATCT and Engineer. Although not anticipated for this project, if the Contractor requests to perform work outside of the current construction area that would impact an active Safety Area, a minimum of at least a 48-hour notice to the Airport is required.

10. Taxiway OFA Construction Details

Work within adjacent Taxiway OFA's is not anticipated as part of this project, but portions on connecting taxiways will be barricaded and closed until the project is complete in order to prevent aircraft traffic from unintentionally entering the construction area. See *Construction Phasing Plan*, for barricaded and closed portions of connecting taxiways.

11. Penetrations of OFZ and Threshold Siting Surfaces

Runway 4-22 will be closed until the rehabilitation within the OFZ's are complete.

12. Protection of Runway Approach and Departure Surfaces and Clearways

The Approach/Departure for Runway 4-22 will be closed until Phase 1 of the project is complete and re-opened.

## **O. OTHER LIMITATIONS ON CONSTRUCTION**

1. Open Flame Welding and Torches

Open flame welding and the use of torches shall be approved by the Airport prior to the project commencing. Open flame welding and the use of torches may require approval by the City of San Antonio, or the Airport's Aircraft Rescue and Fire Fighting (ARFF) department. If this type of work is required on this project, the Contractor shall notify the Airport.

2. Use of Flare Pots

The use of flare pots is not permitted within the AOA at any time.

3. Use of Electrical Blasting Caps

The use of electrical blasting caps is not permitted within 1,000 feet of the Airport property.

#### 4. Airfield Lighting Vault Lock-Out/Tag-Out Policy

The purpose of this procedure is to standardize the lock-out/tag-out procedures between Electrical Contractors, Airport Electricians, Operations, and the Air Traffic Control Tower:

- a) The Airport electricians responding to a lock-out/tag-out request will coordinate with the ATCT through Operations.
- b) After Operations notifies electricians of closures, the SAT electricians will turn off the closed runways/taxiways using the airfield computer system.
- c) The Contractor will supply an approved breaker-locking device and lock, then lock off the individual breakers for the circuits to be locked out. These items will remain in the vault in a lock box provided by SAT.
- d) The load break elbows and/or S-1 switches will be pulled, locked on the corresponding regulator by the Electrical Contractor, and the S-1 cabinet will be locked by the Contractor.
- e) The Electrical Contractor and SAT electricians must fill out lock-out/tag-out forms before leaving the Vault.
- f) Upon completion of the lock-out, the Contractor will remove all locks and install the load breaks. All circuits must be verified by operations in the manual mode on the regulator. Operations will perform a complete check of the lights in the field to verify actual operation.
- g) When that has been completed, SAT electricians will notify SAT Operations when lock-out is complete and regulators are in remote control; Operations will notify the ATCT that they have control of the airfield lighting.

\*This Procedure will be updated prior to construction.

#### 5. Contractor Employee Safety

The Contractor and its employees shall employ safe practices per the Contractor's safety procedures and industry safety standards. The Contractor's safety procedures will ultimately dictate the use of protective clothing and equipment for its employees, but at a minimum, the Contractor's employees must be equipped with a Type 2 safety vest, and every employee that enters the site must be wearing said vest. The vest must be worn the entire time that the employee enters and is within the Security Identification Display Area (SIDA).

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## **APPENDIX**

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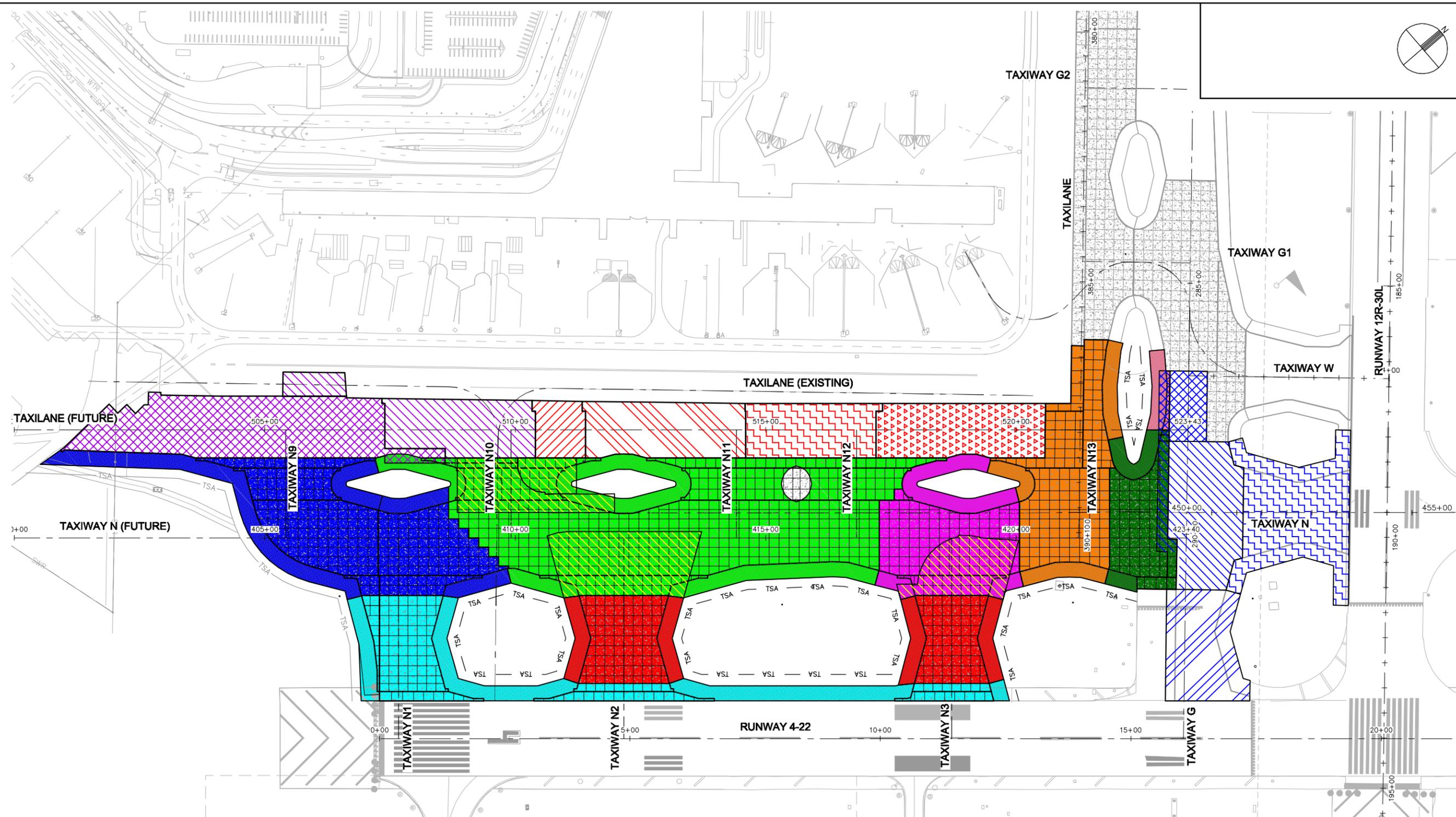
**Kimley-Horn**  
KIMLEY-HORN AND ASSOCIATES, INC.  
601 NW LOOP 410, SUITE 350  
SAN ANTONIO, TEXAS 78216  
PHONE: (210) 541-9166  
TEXAS REGISTERED FIRM,  
NO. 928

**RUNWAY AND TAXIWAY  
IMPROVEMENTS (PACKAGE 3)**



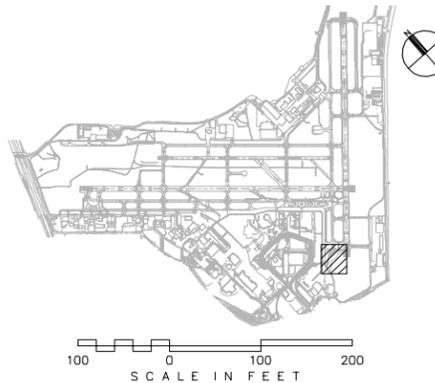
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DRAWN BY: CAD  
CHECKED BY: MAN  
COPYRIGHT: 2016  
SHEET TITLE:  
**Figure 1.2**  
OVERALL PHASING  
PLAN  
EXHIBIT



**PHASING LEGEND**

- |  |                                    |  |                                  |  |  |
|--|------------------------------------|--|----------------------------------|--|--|
|  | PACKAGE 2 - ALTERNATE 3B (80 DAYS) |  | PACKAGE 2 - BASE BID A (40 DAYS) |  | PACKAGE 3 - ALTERNATE 1 PHASE 1 (55 DAYS)(03/11/16 START DATE) |
|  | PACKAGE 2 - ALTERNATE 3A (55 DAYS) |  | PACKAGE 2 - BASE BID B (50 DAYS) |  | PACKAGE 3 - ALTERNATE 1 PHASE 2 (45 DAYS)(ALL NIGHTWORK)       |
|  | PACKAGE 2 - ALTERNATE 2D (55 DAYS) |  | PACKAGE 2 - BASE BID C (60 DAYS) |  | PACKAGE 3 - ALTERNATE 1 PHASE 3A (50 DAYS), PHASE 3B (60 DAYS) |
|  | PACKAGE 2 - ALTERNATE 2C (40 DAYS) |  | PACKAGE 2 - BASE BID D (50 DAYS) |  | PACKAGE 3 - ALTERNATE 1 PHASE 4 (95 DAYS)                      |
|  | PACKAGE 2 - ALTERNATE 2B (55 DAYS) |  |                                  |  | PACKAGE 3 - ALTERNATE 1 PHASE 5 (125 DAYS)                     |
|  | PACKAGE 2 - ALTERNATE 2A (45 DAYS) |  |                                  |  | PACKAGE 3 - ALTERNATE 1 PHASE 6 (70 DAYS)                      |
|  |                                    |  |                                  |  | PACKAGE 3 - ALTERNATE 1 PHASE 7 (85 DAYS)                      |
|  |                                    |  |                                  |  | PACKAGE 3 - ALTERNATE 1 PHASE 8 (55 DAYS)                      |
|  |                                    |  |                                  |  | PACKAGE 3 - ALTERNATE 1 PHASE 9 (50 DAYS)                      |



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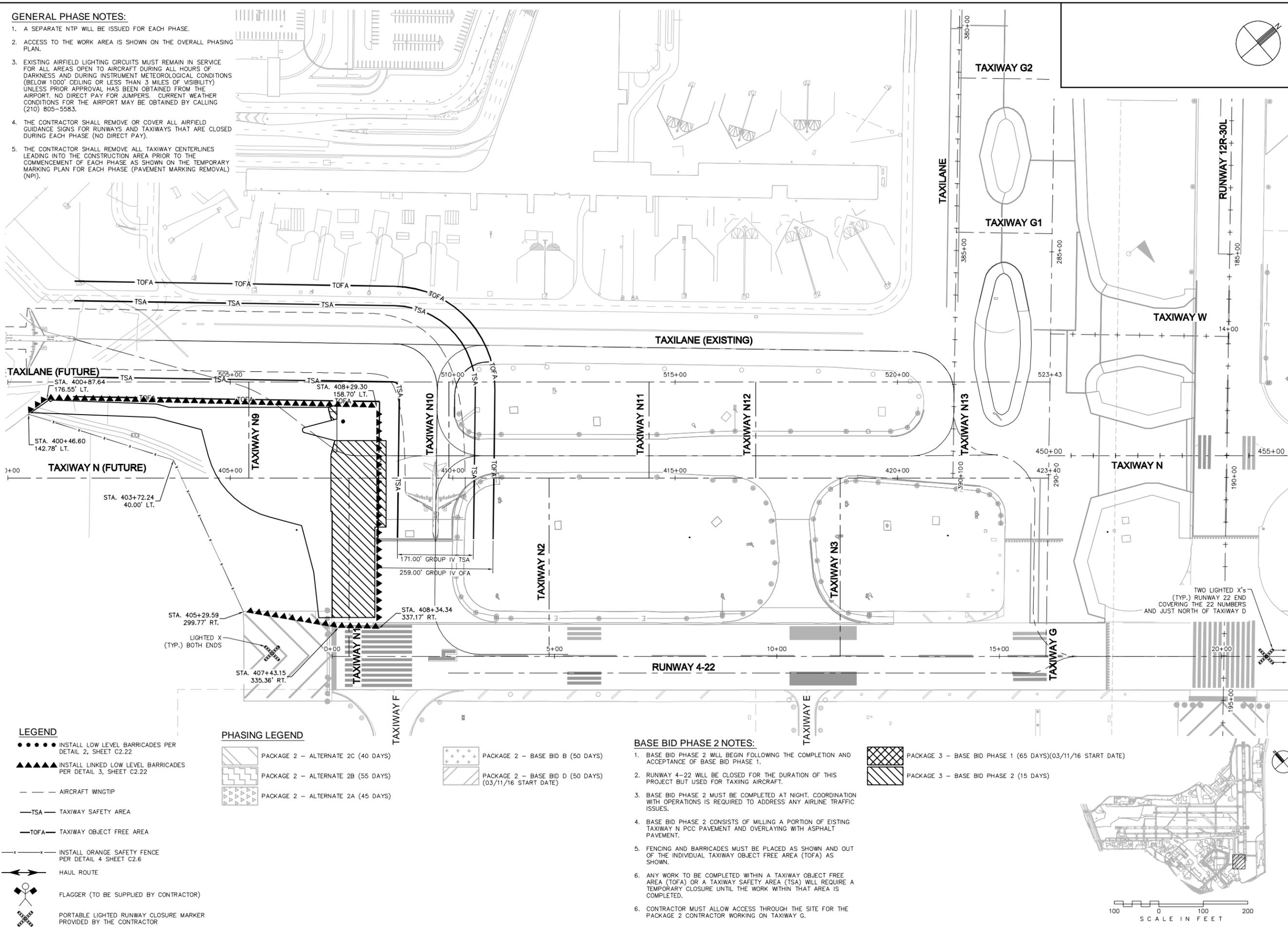






**GENERAL PHASE NOTES:**

1. A SEPARATE NTP WILL BE ISSUED FOR EACH PHASE.
2. ACCESS TO THE WORK AREA IS SHOWN ON THE OVERALL PHASING PLAN.
3. EXISTING AIRFIELD LIGHTING CIRCUITS MUST REMAIN IN SERVICE FOR ALL AREAS OPEN TO AIRCRAFT DURING ALL HOURS OF DARKNESS AND DURING INSTRUMENT METEOROLOGICAL CONDITIONS (BELOW 1000' CEILING OR LESS THAN 3 MILES OF VISIBILITY) UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE AIRPORT. NO DIRECT PAY FOR JUMPERS. CURRENT WEATHER CONDITIONS FOR THE AIRPORT MAY BE OBTAINED BY CALLING (210) 805-5583.
4. THE CONTRACTOR SHALL REMOVE OR COVER ALL AIRFIELD GUIDANCE SIGNS FOR RUNWAYS AND TAXIWAYS THAT ARE CLOSED DURING EACH PHASE (NO DIRECT PAY).
5. THE CONTRACTOR SHALL REMOVE ALL TAXIWAY CENTERLINES LEADING INTO THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF EACH PHASE AS SHOWN ON THE TEMPORARY MARKING PLAN FOR EACH PHASE (PAVEMENT MARKING REMOVAL) (NPI).

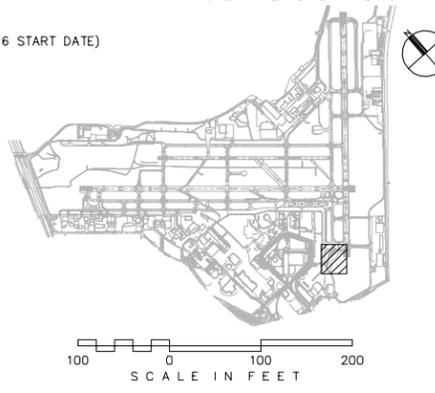


- LEGEND**
- INSTALL LOW LEVEL BARRICADES PER DETAIL 2, SHEET C2.22
  - ▲▲▲▲▲ INSTALL LINKED LOW LEVEL BARRICADES PER DETAIL 3, SHEET C2.22
  - — — AIRCRAFT WINGTIP
  - TSA — TAXIWAY SAFETY AREA
  - TOFA — TAXIWAY OBJECT FREE AREA
  - x x x x x INSTALL ORANGE SAFETY FENCE PER DETAIL 4 SHEET C2.6
  - ↔ HAUL ROUTE
  - ⚠ FLAGGER (TO BE SUPPLIED BY CONTRACTOR)
  - ⓧ PORTABLE LIGHTED RUNWAY CLOSURE MARKER PROVIDED BY THE CONTRACTOR

- PHASING LEGEND**
- ▨ PACKAGE 2 - ALTERNATE 2C (40 DAYS)
  - ▩ PACKAGE 2 - ALTERNATE 2B (55 DAYS)
  - ▧ PACKAGE 2 - ALTERNATE 2A (45 DAYS)
  - ⊕ PACKAGE 2 - BASE BID B (50 DAYS)
  - ⊖ PACKAGE 2 - BASE BID D (50 DAYS) (03/11/16 START DATE)

- BASE BID PHASE 2 NOTES:**
1. BASE BID PHASE 2 WILL BEGIN FOLLOWING THE COMPLETION AND ACCEPTANCE OF BASE BID PHASE 1.
  2. RUNWAY 4-22 WILL BE CLOSED FOR THE DURATION OF THIS PROJECT BUT USED FOR TAXIING AIRCRAFT.
  3. BASE BID PHASE 2 MUST BE COMPLETED AT NIGHT. COORDINATION WITH OPERATIONS IS REQUIRED TO ADDRESS ANY AIRLINE TRAFFIC ISSUES.
  4. BASE BID PHASE 2 CONSISTS OF MILLING A PORTION OF EXISTING TAXIWAY N PCC PAVEMENT AND OVERLAYING WITH ASPHALT PAVEMENT.
  5. FENCING AND BARRICADES MUST BE PLACED AS SHOWN AND OUT OF THE INDIVIDUAL TAXIWAY OBJECT FREE AREA (TOFA) AS SHOWN.
  6. ANY WORK TO BE COMPLETED WITHIN A TAXIWAY OBJECT FREE AREA (TOFA) OR A TAXIWAY SAFETY AREA (TSA) WILL REQUIRE A TEMPORARY CLOSURE UNTIL THE WORK WITHIN THAT AREA IS COMPLETED.
  6. CONTRACTOR MUST ALLOW ACCESS THROUGH THE SITE FOR THE PACKAGE 2 CONTRACTOR WORKING ON TAXIWAY G.

- ▨ PACKAGE 3 - BASE BID PHASE 1 (65 DAYS)(03/11/16 START DATE)
- ▩ PACKAGE 3 - BASE BID PHASE 2 (15 DAYS)



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 TEXAS REGISTERED FIRM, NO. 928

TERMINAL AREA TAXIWAY IMPROVEMENTS - (PACKAGE 3)



MARK	DATE	DESCRIPTION

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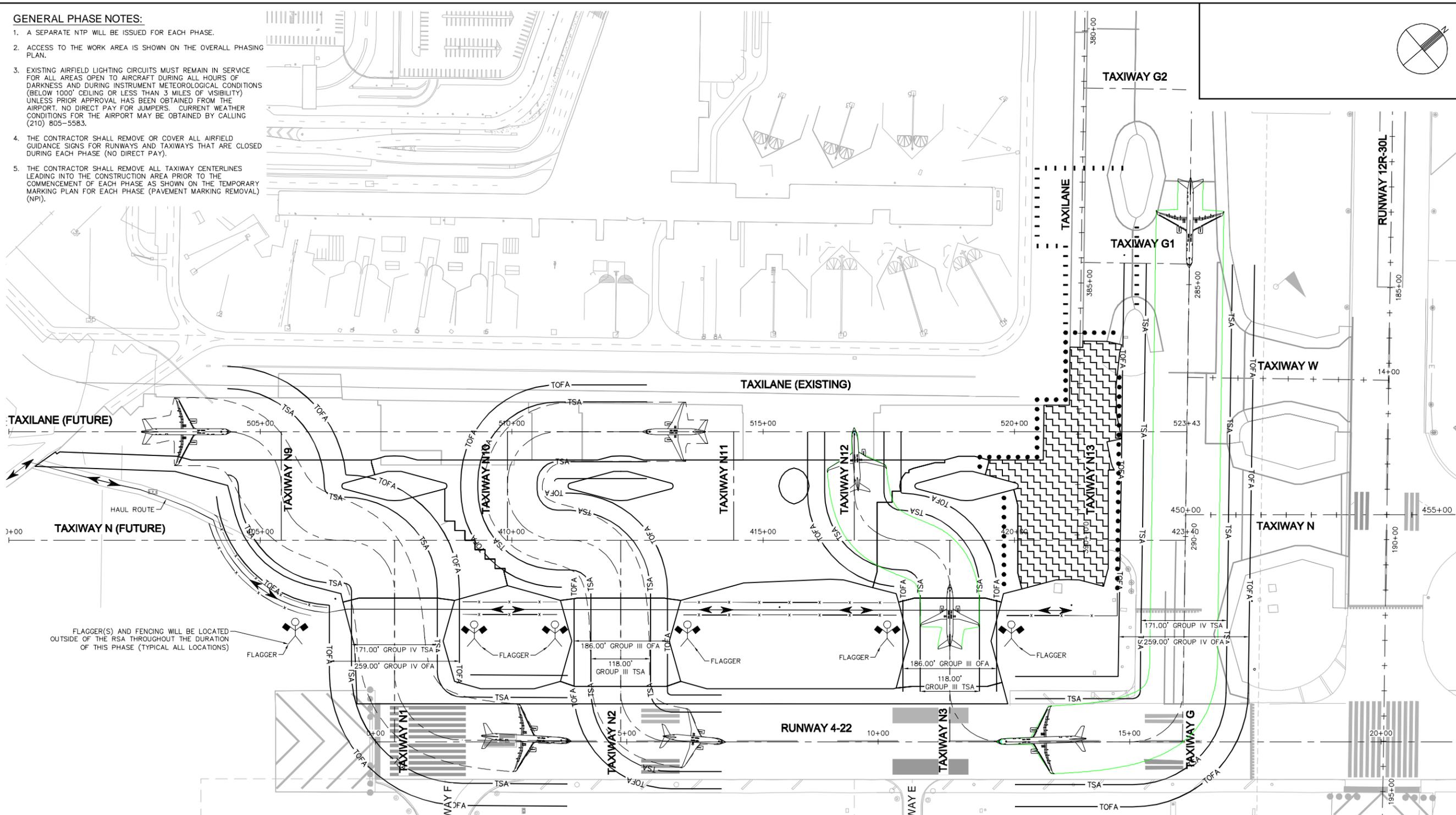






**GENERAL PHASE NOTES:**

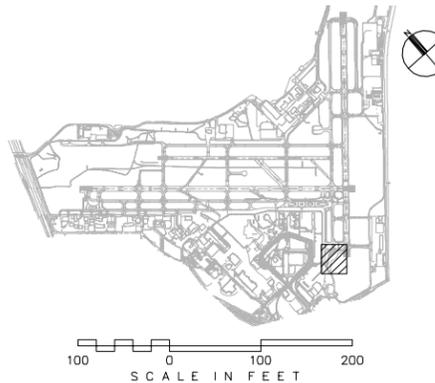
1. A SEPARATE NTP WILL BE ISSUED FOR EACH PHASE.
2. ACCESS TO THE WORK AREA IS SHOWN ON THE OVERALL PHASING PLAN.
3. EXISTING AIRFIELD LIGHTING CIRCUITS MUST REMAIN IN SERVICE FOR ALL AREAS OPEN TO AIRCRAFT DURING ALL HOURS OF DARKNESS AND DURING INSTRUMENT METEOROLOGICAL CONDITIONS (BELOW 1000' CEILING OR LESS THAN 3 MILES OF VISIBILITY) UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE AIRPORT. NO DIRECT PAY FOR JUMPERS. CURRENT WEATHER CONDITIONS FOR THE AIRPORT MAY BE OBTAINED BY CALLING (210) 805-5583.
4. THE CONTRACTOR SHALL REMOVE OR COVER ALL AIRFIELD GUIDANCE SIGNS FOR RUNWAYS AND TAXIWAYS THAT ARE CLOSED DURING EACH PHASE (NO DIRECT PAY).
5. THE CONTRACTOR SHALL REMOVE ALL TAXIWAY CENTERLINES LEADING INTO THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF EACH PHASE AS SHOWN ON THE TEMPORARY MARKING PLAN FOR EACH PHASE (PAVEMENT MARKING REMOVAL) (NPI).



- LEGEND**
- INSTALL LOW LEVEL BARRICADES PER DETAIL 2, SHEET C2.22
  - ▲▲▲▲▲ INSTALL LINKED LOW LEVEL BARRICADES PER DETAIL 3, SHEET C2.22
  - — — AIRCRAFT WINGTIP
  - TSA — TAXIWAY SAFETY AREA
  - TOFA — TAXIWAY OBJECT FREE AREA
  - x x x x x INSTALL ORANGE SAFETY FENCE PER DETAIL 4 SHEET C2.5
  - ↔ HAIL ROUTE
  - ⚠ FLAGGER (TO BE SUPPLIED BY CONTRACTOR)
  - ✂ PORTABLE LIGHTED RUNWAY CLOSURE MARKER PROVIDED BY THE CONTRACTOR

- PHASING LEGEND**
- PACKAGE 2 - BASE BID B (50 DAYS)
  - PACKAGE 2 - BASE BID D (50 DAYS) (03/11/16 START DATE)
  - PACKAGE 2 - ALTERNATE 2C (40 DAYS)
  - PACKAGE 2 - ALTERNATE 2B (55 DAYS)
  - PACKAGE 2 - ALTERNATE 2A (45 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 1 (55 DAYS)(03/11/16 START DATE)
  - PACKAGE 3 - ALTERNATE 1 PHASE 2 (45 DAYS)(ALL NIGHTWORK)
  - PACKAGE 3 - ALTERNATE 1 PHASE 3A (50 DAYS), PHASE 3B (60 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 4 (95 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 5 (125 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 6 (70 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 7 (85 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 8 (55 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 9 (50 DAYS)

- ALTERNATE 1 PHASE 7 NOTES:**
1. ALTERNATE 1 PHASE 7 CAN BEGIN WITH THE COMPLETION AND ACCEPTANCE OF PHASE 6.
  2. ALTERNATE 1 PHASE 7 INCLUDES THE RECONSTRUCTION OF TAXIWAY N AND THE INNER TAXILANE.
  3. FENCING AND BARRICADES MUST BE PLACED AS SHOWN AND OUT OF THE INDIVIDUAL RUNWAY SAFETY AREA (RSA) AND TAXIWAY OBJECT FREE AREA (TOFA) AS SHOWN.
  4. ALL TRAFFIC BETWEEN CONNECTING TAXIWAYS MUST REMAIN CLEAR OF THE RUNWAY SAFETY AREA (RSA) AND THE TAXIWAY OBJECT FREE AREA (TOFA).
  5. ANY WORK TO BE COMPLETED WITHIN THE RUNWAY SAFETY AREA (RSA), TAXIWAY OBJECT FREE AREA (TOFA) OR A TAXIWAY SAFETY AREA (TSA) WILL REQUIRE A TEMPORARY CLOSURE UNTIL THE WORK WITHIN THAT AREA IS COMPLETED.



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TEXAS REGISTERED FIRM,  
NO. 928

TERMINAL AREA TAXIWAY  
IMPROVEMENTS -  
(PACKAGE 3)



MARK	DATE	DESCRIPTION

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CHECKED BY: MAN  
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SHEET TITLE:  
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ALTERNATE 1 -  
PHASE 7 PLAN  
C2.25  
SHEET NO. 77 OF 140

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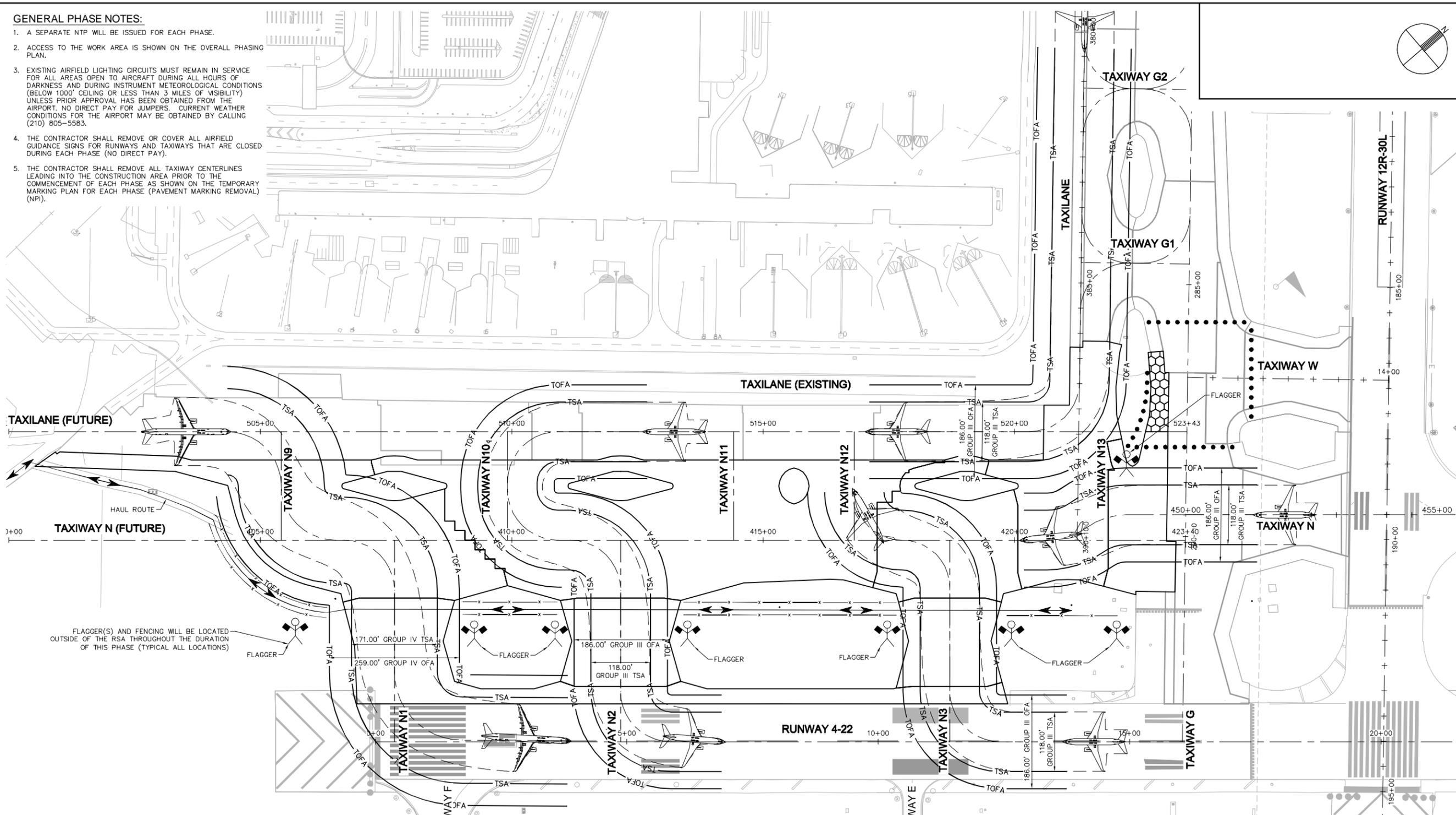






**GENERAL PHASE NOTES:**

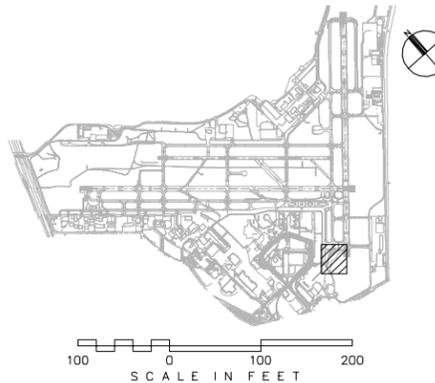
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4. THE CONTRACTOR SHALL REMOVE OR COVER ALL AIRFIELD GUIDANCE SIGNS FOR RUNWAYS AND TAXIWAYS THAT ARE CLOSED DURING EACH PHASE (NO DIRECT PAY).
5. THE CONTRACTOR SHALL REMOVE ALL TAXIWAY CENTERLINES LEADING INTO THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF EACH PHASE AS SHOWN ON THE TEMPORARY MARKING PLAN FOR EACH PHASE (PAVEMENT MARKING REMOVAL) (MPI).



- LEGEND**
- INSTALL LOW LEVEL BARRICADES PER DETAIL 2, SHEET C2.22
  - ▲▲▲▲▲ INSTALL LINKED LOW LEVEL BARRICADES PER DETAIL 3, SHEET C2.22
  - — — AIRCRAFT WINGTIP
  - TSA — TAXIWAY SAFETY AREA
  - TOFA — TAXIWAY OBJECT FREE AREA
  - x x x x x INSTALL ORANGE SAFETY FENCE PER DETAIL 4 SHEET C2.5
  - ↔ HAUL ROUTE
  - ⚠ FLAGGER (TO BE SUPPLIED BY CONTRACTOR)
  - ⓧ PORTABLE LIGHTED RUNWAY CLOSURE MARKER PROVIDED BY THE CONTRACTOR

- PHASING LEGEND**
- PACKAGE 2 - BASE BID B (50 DAYS)
  - PACKAGE 2 - BASE BID D (50 DAYS) (03/11/16 START DATE)
  - PACKAGE 2 - ALTERNATE 2C (40 DAYS)
  - PACKAGE 2 - ALTERNATE 2B (55 DAYS)
  - PACKAGE 2 - ALTERNATE 2A (45 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 1 (55 DAYS)(03/11/16 START DATE)
  - PACKAGE 3 - ALTERNATE 1 PHASE 2 (45 DAYS)(ALL NIGHTWORK)
  - PACKAGE 3 - ALTERNATE 1 PHASE 3A (50 DAYS), PHASE 3B (60 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 4 (95 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 5 (125 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 6 (70 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 7 (85 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 8 (55 DAYS)
  - PACKAGE 3 - ALTERNATE 1 PHASE 9 (50 DAYS)

- ALTERNATE 1 PHASE 9 NOTES:**
1. ALTERNATE 1 PHASE 9 CAN BEGIN WITH THE COMPLETION AND ACCEPTANCE OF PHASE 8.
  2. ALTERNATE 1 PHASE 9 INCLUDES THE REMOVAL OF PAVEMENT TO DEFINE AN OPEN ISLAND AS WELL AS PAVEMENT TO MEET FAA ADVISORY CIRCULAR GEOMETRIC REQUIREMENTS.
  3. FENCING AND BARRICADES MUST BE PLACED AS SHOWN AND OUT OF THE INDIVIDUAL RUNWAY SAFETY AREA (RSA) AND TAXIWAY OBJECT FREE AREA (TOFA) AS SHOWN.
  4. ALL VEHICLE TRAFFIC BETWEEN THE CONNECTING TAXIWAYS MUST REMAIN OUT OF THE RUNWAY SAFETY AREA (RSA) AND THE TAXIWAY OBJECT FREE AREA (TOFA).
  5. ANY WORK TO BE COMPLETED WITHIN THE RUNWAY SAFETY AREA (RSA), TAXIWAY OBJECT FREE AREA (TOFA), OR A TAXIWAY SAFETY AREA (TSA) WILL REQUIRE A TEMPORARY CLOSURE UNTIL THE WORK WITHIN THAT AREA IS COMPLETED.



100 0 100 200  
SCALE IN FEET



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TEXAS REGISTERED FIRM,  
NO. 928

TERMINAL AREA TAXIWAY  
IMPROVEMENTS -  
(PACKAGE 3)



MARK	DATE	DESCRIPTION

PROJECT NO: 33-00193  
FILE NAME: 33-00193-R1CO-420-C01  
DRAWN BY: CAD  
CHECKED BY: MAN  
COPYRIGHT: 2015  
SHEET TITLE:  
**Figure 2.14**  
ALTERNATE 1 -  
PHASE 9 PLAN  
C2.29  
SHEET NO. 81 OF 140

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