

SPECIFICATIONS

FOR

CHEMEHUEVI VALLEY AIRPORT

RUNWAY 16-34 LIGHTING SYSTEM REPLACEMENT



Chemehuevi Indian Tribe
1990 Palo Verde Drive
Havasu Lake, CA 92363

ISSUE FOR BID

January 30, 2026

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SECTION A
ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

Chemehuevi Indian Tribe

Havasu Lake, California

Separate sealed BIDS for the Chemehuevi Valley Airport
Runway 16-34 Lighting Replacement

will be received by Steven Escobar at the:

**Chemehuevi Indian Tribe
Realty & Planning Office
1990 Palo Verde Drive
Havasu Lake, California 92363**

until **2:00 pm Pacific Standard Time, Monday April 20, 2026**, and then at said office publicly opened and read aloud.

The CONTRACT DOCUMENTS may be examined at the following locations:

**Chemehuevi Indian Tribe
Realty & Planning Office
1990 Palo Verde Drive
Havasu Lake, California 92363
(760) 858-1116**

The contract documents may be obtained using a download link provided by the Chemehuevi Indian Tribe.

Contractor shall possess a valid State of California, Arizona or Nevada Type “C-10” Contractor license prior to award of Contract or other license qualifying the bidder to bid as a prime Contractor, prior to award of Contract.

This project has a goal of 5 percent (5%) disadvantaged business enterprise (DBE) participation. The Chemehuevi Indian Tribe hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, DBEs will be afforded full opportunity to submit bids in response to this invitation.

THIS PROJECT IS SUBJECT TO THE “BUY AMERICA” PROVISIONS OF THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982 AS AMENDED BY THE INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991. (Title 49 U.S.C. Section 50101).

The Chemehuevi Indian Tribe reserves the right to reject any or all Proposals and to waive any informality in Proposals received. **By submitting a bid, it is assumed that the Contractor has**

inspected the site and the bid submitted reflects that the Contractor is satisfied as to the existing conditions, said conditions being reflected in the bid.

Each bid shall be in accordance with the Plans and Specifications adopted therefore, submitted on the Proposal form furnished and accompanied by a certified or cashier's check or bidder's bond made payable to the Chemehuevi Indian Tribe, for an amount equal to at least *ten percent (10%)* of that amount of the bid, such guaranty to be forfeited should the bidder to whom the Contract is awarded fail to enter into the Contract within *thirty (30)* days after notification of the award of Contract to the bidder and shall diligently prosecute the work to completion on or before the expiration of the number of calendar days after said notification per Section B – Bidding documents.

Plans and Specifications are now on file with the Tribal Realty & Planning Office.

A non-mandatory pre-bid job walk is scheduled for 1:30 pm on Tuesday April 7, 2026 at the Chemehuevi Tribe Realty and Planning Office at the address above. The bidders will be escorted to the airport and shown the project site.

NOTE: For Bid package to be VALID: (1) the Bidder shall submit Bid for all Bid items; (2) the Contractor and all Subcontractors shall have a valid, current, and active Contractor's license from either the State of California, Arizona or Nevada for the classification of work performed, prior to Award of Bid; (3) the Bidder shall submit all completely executed and signed Federal and Chemehuevi Indian Tribe forms under Section B – Bidding Documents:

A list of subcontractors with license status shall be submitted by the bidder together with the Proposal. Use the form supplied in the Bidding Documents. If no such list is submitted, it will be assumed that the Contractor will do all the work herein specified.

Tribal Business License. The Contractor is required to obtain a Tribal business license at an annual cost of \$300.00.

Tribal Taxes. The Contractor shall pay a 3.0 percent TERO tax on the total contract price and a 6 percent tax on materials (no labor). See Section D – Tribal General Conditions, Paragraph 13-03.

Relief of State Sales Taxes. The Contractor may apply for State sales tax relief.

The Federal minimum wage rates for this project shall be as predetermined by the United States Secretary of Labor are set forth in Section H.

**SECTION B
BIDDING DOCUMENTS**

deemed responsible, balanced and fully responsive by the Tribe. The determination of the lowest bidder shall be the lowest aggregate amount of:

Base Bid

However, the actual award and approval of the Contract will be based on the funding available for the project at the time of award. Such funding availability shall be determined at the sole discretion of the Tribe. The Contract may include or exclude certain Bid Schedules for which the Tribe may elect to add or delete to the project in conformity with the dollar amounts contained in the lowest responsible bid as awarded by the Tribe.

It is expressly understood and agreed that this Bid shall have the following documents completed, all of which are incorporated into and made a part hereof. **This information shall be submitted with your Proposal on Bid opening date:**

- 1. Completely executed Proposal, signed and dated;**
- 2. Signed Addendum, if any;**
- 3. Bid Bond**
- 4. Bid Schedule with Base Bid**
- 5. Bidder's Statement of Technical Ability and Experience**
- 6. Bidder's Statement of Financial Responsibility**
- 7. Bidder's Statement of Subcontractors**
- 8. Nonsegrated Facilities Certification**
- 9. Noncollusion Affidavit**
- 10. Debarment and Suspension Certification**
- 11. Nonlobbying Certification**
- 12. Equal Employment Opportunity Certification**
- 13. Bidder DBE - Information Sheet**
- 14. DBE Information - Good Faith Efforts**
- 15. Insurance Certification**
- 16. Buy American Certification**
- 17. Bidders List**

The lowest and second lowest ranked project Bidders shall submit the following forms, fully completed, to the Chemehuevi Tribal Planning Office, Chemehuevi Indian Tribe within 5 working days after Bid opening date and/or when the lowest responsible Bidder is known. The documents to be completed and submitted are the following:

- 1. Agreement**
- 2. Bond of Faithful Performance**
- 3. Labor and Material Bond**

The Prime Contractor shall submit original(s). All Subcontractor(s) shall submit original(s) or faxed copy.

Failure to comply with these requirements may result in the forfeiture of the bidders' rank in the bid process.

A list of subcontractor(s) shall be submitted together with the Proposal by the bidder. Use the form supplied in the Contract documents. If no such list is submitted, it will be assumed that the Contractor will do all the work herein specified.

The Contractor shall also submit a list of the name, address, license number & from which State/expiration date, and the portion of the work that will be done by each Subcontractor.

In case of discrepancy between the item price and the total set forth for a unit basis item, the item price shall prevail, provided, however, if the amount set forth as an item price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the item price.

The Tribe reserves the right to award the project to the lowest responsible bidder with the lowest possible bid. The basis of award will be the lowest total as noted on the Proposal. The Tribe further reserves the right to award or reject depending on available funds.

Also, the award of the contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DBE participation or has demonstrated, to the satisfaction of the Chemehuevi Indian Tribe, adequate good faith efforts to do so. Meeting the goal for DBE participation or demonstrating to the satisfaction of the Tribe, adequate good faith efforts to do so is a condition for being eligible for award of contract.

Except as may otherwise be provided herein, all work to be done under this Contract shall conform to the applicable requirements of the Plans and Specifications.

The undersigned understands that the quantities given are approximate only, being given as a basis for the comparison of bids, and the Chemehuevi Indian Tribe does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Tribe.

CONTRACT TIME. In accordance with the Specifications, the undersigned agrees to so plan the work and to prosecute it with such diligence that said work shall be commenced within *thirty (30)* calendar days after execution of the Contract on behalf of the Tribal Council and the receipt of a notice from the Tribal Council to proceed with the work and shall be completed on or before the expiration of the following number of calendar days after date of said notification based on the following Base Bid awarded:

1. Base Bid = 206 calendar days.

The undersigned further agrees that all work to be done under this Contract shall be done in accordance with the provisions of that certain form of Agreement attached hereto and hereby made a part of these Specifications.

The undersigned agrees, if awarded the Contract, that there shall be paid by the undersigned and by all Subcontractors under him/her, to all laborers, workmen and mechanics employed in the execution of such

Contract or any Subcontract there under, not less than the general prevailing rate of per diem wages,

and rates for overtime and legal holidays in the locality in which the work is to be performed, as ascertained and determined, pursuant to the state statute thereto applicable, by the Tribal Council, the schedule thereof being set forth in the advertisement for bids and in the Specifications for said work.

Enclosed herein is a (bidder's bond, certified check, or cashier check) for not less than *ten percent (10%)* of the total amount of the Proposal and the undersigned agrees that, in case of his/her default in executing the Contract and the necessary bonds after award and due notice thereof, the said check or bond and the money payable thereon shall become and remain the property of the Chemehuevi Indian Tribe as liquidated damages.

All questions about the meaning or intent of the Contract documents shall be submitted to the Tribal Planner in writing by e-mail. Replies will be issued by Addenda e-mailed to all parties recorded by Tribal Planner as having received the bidding documents. **QUESTIONS RECEIVED LESS THAN SEVEN (7) DAYS PRIOR TO THE DATE OF THE OPENING BIDS WILL NOT BE ANSWERED.** Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Any and all Addenda to the Plans and/or Specifications shall be signed and attached hereto this Proposal.

Licensed in accordance with an act providing for the registration of Contractors,

License No. _____ **Expiration Date** _____.

(If bidder is a joint venture, each member shall specify license number, expiration date, and statement regarding representations made).

(If an individual, so state. If a firm or co-partnership, state the firm name and give the names of all individuals/ co-partners composing the firm. If a corporation, state legal names of corporation, also names of President, Secretary, Treasurer, and Manager thereof).

Business Address

Signature of Bidder _____
(Signature in blue ink)

Dated: _____, 2026.

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

**Runway 16-34 Lighting System Replacement Project
Chemehuevi Valley Airport
Bid Schedule**

ITEM #	SPEC #	PAY ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
		Base Bid				
1	C-105-1	Mobilization and Demobilization (5% Max)	1	LS	_____	_____
2	C-100-1	Contractor's Quality Control Program	1	LS	_____	_____
3	C-102-1	Stormwater Pollution Prevention Control Plan	1	LS	_____	_____
4	C-115-1	Construction Safety and Phasing Plan	1	LS	_____	_____
5	P-151-1	Clearing and Grubbing Existing Vegetation Within the Runway Safety Area	1	LS	_____	_____
6	L-100-1	Electrical Demolition and General Requirements	1	LS	_____	_____
7	L-107-1	L-807(L) Primary Windcone on Existing Foundation	1	EA	_____	_____
8	L-107-2	Repair Segmented Circle Marker	1	LS	_____	_____
9	L-108-1	No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Conduit	14,000	LF	_____	_____
10	L-108-2	No. 2 AWG, 600V, THW-2 Cable, Installed in Conduit	1,400	LF	_____	_____
11	L-108-3	No. 2 AWG, LV ground, THW-2 Cable, Installed in Conduit	1,400	LF	_____	_____
12	L-108-4	No. 6 AWG, Bare, Stranded Equipment Ground, Installed in Conduit	14,000	LF	_____	_____
13	L-108-5	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed Above the Duct Bank or Conduit, Including Connections/Terminations	10,000	LF	_____	_____
14	L-108-6	5/8" Dia. X 8' Ground Rod	81	EA	_____	_____
15	L-109-1	4KW Constant Current Regulator, 3-Step	1	EA	_____	_____
16	L-109-2	7.5KW Constant Current Regulator, 3-Step	1	EA	_____	_____
17	L-109-3	L-821 Lighting Controller Panel Repair	1	EA	_____	_____
18	L-109-4	L-854 Radio Controller	1	EA	_____	_____
19	L-109-5	6.6A Series Cut-Out	1	EA	_____	_____
20	L-109-6	Airfield Lighting Vault Improvements	1	LS	_____	_____
21	L-110-1	2" Conduit PVC Sch 80 Direct Buried	10,500	LF	_____	_____

**Runway 16-34 Lighting System Replacement Project
Chemehuevi Valley Airport
Bid Schedule**

ITEM #	SPEC #	PAY ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
22	L-115-1	L-867 Class 1A, Size B, Light Base Can with Concrete Apron	61	EA	_____	_____
23	L-125-1	Elevated LED Runway Edge Lights with Isolation Transformer, L-861(L)	54	EA	_____	_____
24	L-125-2	Elevated LED Threshold/End Lights with Isolation Transformer, L-861E(L)	14	EA	_____	_____
25	L-125-3	Replace Airfield Sign Panels	15	EA	_____	_____

Total Base Bid Items = _____

TERO Tax (3% of Total Base Bid) = _____

Tribal Sales Tax (6% of Materials for Base Bid) = _____

Grand Total Base Bid = _____

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BIDDER'S STATEMENT OF TECHNICAL ABILITY AND EXPERIENCE

(This form shall be submitted with this bid)

The Bidder is required to state what work of a similar character to that included in the proposed Contract he/she has successfully performed and give references which will enable the Tribal Council to judge his/her responsibility, experience, skill and business standing.

The Runway 16-34 Lighting System Replacement at Chemehuevi Valley Airport includes the construction of new runway lights, conduits, duct banks, cables, constant current regulators, pilot lighting control system, and quality control testing required for FAA projects. The work shall be completed by an experienced Bidder with a minimum of 5 years of recent experience in construction of projects in similar character, size and nature.

The Bidder shall provide a statement of four (4) previously completed projects containing the following information with the bid to be considered responsive:

1. Contract amount
2. Type of work / project description
3. Date of completion
4. References with contact information

The Bidder shall provide the work experience and qualifications of key personnel who will be engaged in this project to be considered responsive:

1. Name
2. Specialty / Expertise
3. Years of experience
4. Capacity (Role / Responsibility)

(Please complete the form on the following page and submit with this bid)

BIDDER'S STATEMENT OF TECHNICAL ABILITY AND EXPERIENCE

(This form shall be completed and submitted with this bid)

Each Bidder is required to furnish work record for the Bidder for other public works/airport contracts performed by the Bidder within the past five (5) years. Bids will be considered non-responsive when in the judgment of the Tribal Council that the technical ability and experience of the Bidder is not qualified and unable perform the work required of the project or the Bidder has received an unsatisfactory rating from a reference. List the most current public works/airport contracts first, and if it has not engaged in any public works/airport contracts within such time period, mark the work "NONE", below:

<u>Contract Amount</u>	<u>Type of Work</u>	<u>Date of Completion</u>	<u>Public Agency Name & Address</u>	<u>Public Agency Officer Name In Charge of Project</u>	<u>Phone # Of Person In Charge</u>
(1) _____	_____	_____	_____	_____	_____
(2) _____	_____	_____	_____	_____	_____
(3) _____	_____	_____	_____	_____	_____
(4) _____	_____	_____	_____	_____	_____
(5) _____	_____	_____	_____	_____	_____

The undersigned submits below a statement of the work of a similar character to that included in the Proposed Contract which he/she has successfully performed.

SIGNED _____
(Signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BIDDER'S STATEMENT OF TECHNICAL ABILITY AND EXPERIENCE (CONTINUED)

(This form shall be completed and submitted with this bid)

As presently organized, each Bidder it shall list the work experience for principals and other key personnel who will be engaged on this project.

	<u>Name</u>	<u>Specialty / Expertise</u>	<u>Years of Experience</u>	<u>Capacity (Foreman, etc.)</u>
Bidder's Personnel (1)	_____	_____	_____	_____
Bidder's Personnel (2)	_____	_____	_____	_____
Bidder's Personnel (3)	_____	_____	_____	_____
Bidder's Personnel (4)	_____	_____	_____	_____
Bidder's Personnel (5)	_____	_____	_____	_____

The undersigned submits below a statement of the work of a similar character to that included in the Proposed Contract which he/she has successfully performed.

SIGNED _____
(Signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BIDDER'S STATEMENT OF FINANCIAL RESPONSIBILITY

(This form shall be completed and submitted with this bid)

Bidder shall attach a statement or report of its financial resources and liabilities as of the last calendar year end or the end of the Bidder's last fiscal year certified by a public accountant. By submitting a Bidder's Proposal, the Bidder certifies that such statement or report of the Bidder's financial responsibility accurately reflects the Bidder's financial responsibility as of the date of submission of its Bidder's Proposal or attach a signed statement identifying material changes in the Bidder's financial responsibility, as set forth in the certified statement or report submitted. Said statement or report may be considered by the Tribal Council to judge the Bidder's financial standing. The Tribe shall exercise its best efforts to protect the confidentiality of any such business financial records provided to the Tribe from disclosure as public records.

Has Bidder been involved in litigation with a public agency on any public works/airport project within the last five (5) years?

YES _____

NO _____

If "YES", please identify the public agency and the project:

To the best knowledge of the Bidder, has any subcontractor been involved in litigation with a public agency on any public works/airport project within the last five (5) years?

YES _____

NO _____

If "YES", please identify the public agency and the project:

In the last five (5) years, has the bidder failed to pay, or satisfactorily settle, all bills due for labor and materials on former contracts including Subcontractors and suppliers.

YES _____

NO _____

If "YES", please identify the public agency and the project:

The undersigned submits herewith a statement of his/her financial responsibility.

SIGNED _____
(Signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BIDDER'S STATEMENT OF SUBCONTRACTORS

(This form shall be completed and submitted with this bid)

The Bidder is required to state the name and address of each Subcontractor and the portion of the work that each Subcontractor will do. The list of subcontractors shall include the material laboratory and testing firm required as part of the Contractor's Quality Control Program.

The undersigned submits herewith a list of Subcontractors whom he/she proposes to employ on the work, with the proper firm name and business address of each.

If no list submitted, it will be assumed that the Contractor will do all the work as specified.

No Subcontractors, other than those listed hereon, will be allowed to perform work under this Contract. Substituting a subcontractor in place of a subcontractor listed in the original bid without the Tribe's approval, or subcontracting work to which no subcontractor was designated in the original bid (and was required to be designated), or other subcontracting violations, may at the Tribe's discretion, result in cancellation of the Contract or a financial penalty.

The Contractor and all Subcontractors shall have valid Contractor's licenses for the classification of work performed, prior to submittal of bid.

***SUBCONTRACTOR:** _____

Address: _____

Telephone No.: _____ Fax No.: _____ E-mail Address: _____

Bid Item Numbers and Percent of Each Bid Item _____

*License Number/State: _____ *Expiration Date: _____

DBE: YES ___ NO ___

***SUBCONTRACTOR:** _____

Address: _____

Telephone No.: _____ Fax No.: _____ E-mail Address: _____

Bid Item Numbers and Percent of Each Bid Item _____

*License Number/State: _____ *Expiration Date: _____

DBE: YES ___ NO ___

BIDDER'S STATEMENT OF SUBCONTRACTORS – cont.

** Shall provide minimum data required to be considered as an acceptable document. The remainder of the information may be required by the Tribe in order to evaluate their bid.*

***SUBCONTRACTOR:** _____

Address: _____

Telephone No.: _____ Fax No.: _____ E-mail Address: _____

Bid Item Numbers and Percent of Each Bid Item _____

*License Number/State: _____ *Expiration Date: _____

DBE: YES ___ NO ___

***SUBCONTRACTOR:** _____

Address: _____

Telephone No.: _____ Fax No.: _____ E-mail Address: _____

Bid Item Numbers and Percent of Each Bid Item _____

*License Number/State: _____ *Expiration Date: _____

DBE: YES ___ NO ___

***SUBCONTRACTOR:** _____

Address: _____

Telephone No.: _____ Fax No.: _____ E-mail Address: _____

Bid Item Numbers and Percent of Each Bid Item _____

*License Number/State: _____ *Expiration Date: _____

DBE: YES ___ NO ___

** Shall provide minimum data required to be considered as an acceptable document. The remainder of the information may be required by the Tribe in order to evaluate their bid.*

SIGNED _____

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

**CONTRACTOR’S CERTIFICATION OF NONSEGREGATED FACILITIES*
FEDERALLY ASSISTED PROJECTS**

(This form shall be completed and submitted with this Bid)

The Bidder certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The Bidder certifies further that he/she shall not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she shall not permit his/her employees to perform their services at any location under his/her control where segregated facilities are maintained. The Bidder agrees that a breach of this certification shall be a violation of the Equal Opportunity clause in any Contract resulting from acceptance of this Bid. As used in this certification, the term “segregated facilities” means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed Subcontractors for specific time periods) he/she shall obtain identical certifications from proposed Subcontractors prior to the award of Subcontracts exceeding \$10,000 which are not exempt from the Provisions of the Equal Opportunity clause, and that he/she shall retain such certifications in his/her files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. Section 1001.

Date _____, 20____ _____
(Name of Bidder)

Official Address (including ZIP Code): _____
By: _____
(signature in blue ink)

(Title)

*Must be included without alteration.

NONCOLLUSION AFFIDAVIT
(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

(This form shall be completed and submitted with this Bid)

To the Chemehuevi Indian Tribe, Chemehuevi Tribal Planning Officer

In accordance with Title 23 United States Code Section 112, the Bidder hereby states, under penalty of perjury, that he/she has not, either directly or indirectly, entered into any agreement participated in any collusion, or otherwise taken any action in restraint of free competitive Bidding in connection with this Contract. And Public Contract Code 7106 the Bidder declares that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Bid is genuine and not collusive or sham; that the Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham Bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or that anyone shall refrain from Bidding; that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder, or to secure any advantage against the public body awarding the Contract of anyone interested in the proposed Contract; that all statements contained in the Bid are true; and, further, that the Bidder has not, directly or indirectly, submitted his or her Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and shall not pay, any fee to any corporation, partnership, company association, organization, Bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid.

Note: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

(This form shall be completed and submitted with this Bid)

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of the Tribal Planner, partner, director, officer, manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions shall not necessarily result in denial of award, but shall be considered in determining Bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

NONLOBBYING CERTIFICATION FOR FEDERAL-AID CONTRACTS

(This form shall be completed and submitted with this Bid)

The prospective participant certifies, by signing and submitting this Bid or Proposal, to the best of his/her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or shall be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal Contract, the making of any Federal grant, the making of any Federal loan, the entering into any cooperative agreement, and the extension continuation, renewal, amendment, or modification of any Federal Contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or shall be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard For-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by the Provisions in Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his/her Bid or Proposal that he/she shall require that the language of this certification be included in all lower tier Subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(Signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

(This form shall be completed and submitted with this Bid)

The Bidder _____, proposed Subcontractor _____, hereby certifies that he/she has _____, has not _____, participated in a previous Contract or Subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he/she has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government Contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and shall be submitted by Bidders and proposed Subcontractors only in connection with Contracts and Subcontracts which are subject to the equal opportunity clause. Contracts and Subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only Contracts or Subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime Contractors and Subcontractors who have participated in previous Contract or Subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of Contracts and Subcontracts unless such Contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BIDDER - DBE - INFORMATION SHEET

(This form shall be completed and submitted with this Bid)

IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Copies of the DBE quotes are required. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above shall be consistent with the names and items of work in the "List of Subcontractors" submitted with your Bid pursuant to the Subcontractors Listing Law and the Special Provisions.

BID AMOUNT: \$ _____

BIDDER'S NAME: _____

DBE GOAL FROM CONTRACT: 5% _____

DBE PRIME CONTRACTOR CERTIFICATION _____

ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED	DBE CERT. NO.	NAME OF DBEs (Must be certified on the date Bids are opened - include DBE address and phone number)	DOLLAR AMOUNT DBE
		Total Claimed Participation	\$ _____ _____ %

BIDDER – DBE-INFORMATION SHEET - cont.

<p>1. DBE prime Contractors shall enter their DBE certification number. DBE prime Contractors shall indicate all work to be performed by DBEs including work performed by its own forces.</p> <p>2. If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE.</p>	<hr/>
	<p>(Signature of Bidder in blue ink)</p> <hr/>
	<p>Date (Area Code) Tel. No.</p> <hr/>
<p>Person to Contact (Please Type or Print)</p>	

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

DBE INFORMATION - GOOD FAITH EFFORTS

(This form shall be completed and submitted with this bid.)

Federal-aid Project No. _____ Bid Opening Date _____

The Chemehuevi Indian Tribe established a Disadvantaged Business Enterprise (DBE) goal of **5%** for this project. The information provided herein shows that a good faith effort was made.

- A. The names and dates of each publication in which a request for DBE participation for this project was placed by the Bidder (please attach copies of advertisements or proofs of publication):

Publications

Dates of Advertisement

- B. The names and dates of written notices sent to certified DBEs soliciting Bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

Names of DBEs Solicited
Methods and Dates

Date of Initial Solicitation

Follow Up

- C. The items of work which the Bidder made available to DBE firms, including, where appropriate, any breaking down of the Contract work items (including those items normally performed by the Bidder with its own forces) into economically feasible units to facilitate DBE participation. It is the Bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation was made available to DBE firms.

Items of Work

Breakdown of Items

DBE INFORMATION GOOD FAITH EFFORTS - cont.

- D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the Bidder's rejection of the DBEs, and the firms selected for that work (please attach copies of quotes from the firms involved):

Names, addresses and phone numbers of rejected DBEs and the reasons for the Bidder's rejection of the DBEs:

Names, addresses and phone numbers of firms selected for the work above:

- E. Efforts made to assist interested DBEs in obtaining bonding, lines of credit or insurance, and any technical assistance or information related to the Plans, Specifications, and requirements for the work which was provided to DBEs:

- F. Efforts made to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, excluding supplies and equipment the DBE Subcontractor purchases or leases from the prime Contractor or its affiliate:

DBE INFORMATION GOOD FAITH EFFORTS - cont.

G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.):

Name of Agency/Organization	Method/Date of Contact	Results

H. Any additional data to support a demonstration of Good Faith Efforts (use additional sheets if necessary):

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(signature in blue ink)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

INSURANCE CERTIFICATION

(This certification shall be completed and submitted with this bid)

By signing below I hereby certify that _____
(Insert company name)

is currently insured by an insurance company that is an **“Authorized”** carrier by the Insurance Commissioner of the California State Department of Insurance to transact the business of insurance in the State of California, and shall be written by insurers with a current A.M. Best Rating of “A-“ or better, and a financial size of “VII” or greater. Said insurance will expire on _____.

I further hereby certify that, as the signer of this bid proposal, I have read and understand the Tribe’s insurance requirements as described in the section entitled “Certificate of Insurance” within these specifications and that proof of insurance will be required before the Public Works contract is recommended for award. Such proof shall be provided on an ISO Accord 25(s) from and an endorsement naming the Chemehuevi Indian Tribe as additionally insured is on the ISO CG 20 10 11 85 form or any other comparable endorsement, which does not further limit coverage, and which may be approved and accepted by the Tribe’s Risk Management staff.

(Print Name)

Signature of Bidder: _____
(Signature in blue ink) (DATE)

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BUY AMERICAN CERTIFICATION

(Title 49 U.S.C. Section 50101)

(This certification shall be completed and submitted with this bid)

As a condition of bid responsiveness, the bidder must certify its compliance with the Buy American preferences established under Title 49 U.S.C. Section 50101 as follows:

U.S.C. Section 50101 – Buying goods produced in the United States

- (a) Preference. – The Secretary of Transportation may obligate an amount that may be appropriated to carry out section 106(k), 44502(a)(2), or 44509, subchapter 1 of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title for a project only if steel and manufactured goods used in the project are produced in the United States.
- (b) Waiver. – The Secretary may waive subsection (a) of this section if the Secretary finds that –
- (1) Applying subsection (a) would be inconsistent with the public interest;
 - (2) The steel and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality;
 - (3) When procuring a facility or equipment under section 44502(a)(2) or 44509, subchapter 1 of chapter 471 (except section 47127), or chapter 481 (except sections 48102(e), 48106, 48107, and 48110) of this title –
 - (A) The cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the facility or equipment; and
 - (B) Final assembly of the facility or equipment has occurred in the United States; or
- (c) Labor Costs. – In this section, labor costs involved in final assembly are not included in calculating the cost of components.

* * * * *

The Bidder must select the appropriate certification for its proposal from one of the following statements:

- The bidder hereby certifies that they will comply with Title 49 U.S.C Section 50101 by only installing steel and manufactured products produced in the United States of America.**
- The bidder hereby certifies that they cannot fully comply with the Buy American preferences of Title 49 U.S.C. Section 50101(a) and therefore requests a waiver per Title 49 U.S.C Section 50101(b) for the items listed below.**

Component/ Item	Country of Origin	Total Component Cost in Project	Total All Components in Project

NOTES:

- 1) All requested information must be submitted for each individual; product/item waiver request.
- 2) All steel used in this project must be produced in the USA. Regional waivers will not be issued for steel not produced in the USA.
- 3) All products, equipment, things requiring assembly must be assembled in the USA. Regional waivers will not be issued for products, equipment, etc. not final assembled in the USA.
- 4) The Owner will submit any requested waiver by the apparent low bidder to the FAA for a determination of AIP eligibility. Bidders are hereby advised there is no implied or expressed guarantee that a requested waiver will be approved by the Owner or the Federal Aviation Administration.

Bidder's Firm Name

Date

Attach Notary Acknowledgment if signature is not the same as the Proposal signature(s).

BIDDER'S LIST
For
The Chemehuevi Valley Airport
Chemehuevi Tribal Planning Office

(This form shall be completed and submitted with this bid.)

All bidders are required to provide the following information for all DBE and non-DBE contractors, who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also required from the proposed prime contractor, and shall be submitted with their bid/proposal. In order for the Chemehuevi Indian Tribe to conform with Federally-Mandated DBE Program Bidders List, it will use this information to maintain and update a "Bidders List" to assist in the overall annual goal DBE goal setting process.

Firm Name: _____ Phone: _____

Address: _____ Fax: _____

_____ License # _____

Expiration Date _____

Contact

Person & Title: _____ No. of Years in Business: _____

Is the firm currently certified as a DBE under the new regulations (49 CFR Part 26)?

___ YES ___ NO

Type of work/services/materials provided by firm: _____

What was your firm's Gross Annual receipts for last year?

- _____ Less than \$1 Million
- _____ Less than \$5 Million
- _____ Less than \$10 Million
- _____ Less than \$15 Million
- _____ More than \$15 Million

I declare under penalty or perjury under the laws of the State of California that the foregoing is true and correct.

SIGNED _____
(Signature in blue ink)

This form may be copied as needed to report all bidders (DBEs and non-DBEs) information.

This page intentionally left blank.

SECTION C
CONTRACT DOCUMENTS

GENERAL INSTRUCTIONS TO LOW BIDDER

(To be submitted after project award)

BIDDER'S SIGNATURES

- (A) The Bidder shall sign two documents included in the Bid Documents:
Bid
Bidder's Security
- (B) The name of the Bidder shall be typewritten or printed below the signature line. The type of legal entity shall be included in the name of the Bidder (Examples: individual, sole proprietorship, general partnership, limited partnership or corporation).
- (C) The name and title of all individuals signing for the entity shall be typewritten or printed below the signature line. **All signatures shall be notarized with a notary acknowledgment.**
- (D) The Bidder shall provide evidence that the individual signing the document is authorized to bind the legal entity of the Bidder. The notarization does not constitute such proof unless the Bidder is signing as an individual.
- (E) If the Bidder is a corporation, proof of authorization shall be established (pursuant to Corporations Code Section 313) if one of the corporate officers listed in column A below and one of the corporate officers listed in column B below both sign the documents.

A

Chairman of the Board,
or
President,
or
Vice President

AND

B

Secretary,
or
Assistant Secretary,
or
Chief Financial Officer,
or
Assistant Treasurer

For any other combination of signatures of corporate officers, a copy of the Board minutes, resolution, or articles of incorporation may be submitted to prove that the individuals have the authority to bind the corporation.

- (F) If the Bidder is any legal entity other than an individual or corporation, documentation shall be submitted which establishes that the individuals have the legal authority to bind the legal entity of the Bidder.
- (G) If the legal entity is a Limited Partnership, a Certificate of Limited Partnership (State form LP-1) is sufficient to establish the authority of a single General Partner to bind the

Limited Partnership.

If the Bidder is a General Partnership, a Certificate of General Partnership or General Partnership agreement is sufficient to establish the names of all general partners of a General Partnership.

- (H) All general partners shall sign the documents, unless proof is submitted which authorizes an individual partner to bind the other general partners.
- (I) If the individual signing the document is signing as a sole proprietorship, either a Fictitious Business Name Statement or a Chemehuevi Indian Tribe business License is sufficient to establish the authority of an individual to bind a sole proprietorship.
- (J) If the individual or individuals signing the documents are signing on behalf of an entity other than the Bidder, and that other entity is authorized to bind the legal entity of the Bidder, then documentation shall be submitted which establishes that the individuals have the authority to bind the other entity, and that the other entity has the authority to bind the legal entity of the Bidder.

BIDDER'S/CONTRACTOR'S SECURITY

Each bidder's security (including bidder's bond, faithful performance bond, labor and materials bond, and any other required bond) shall be in one of the following forms:

- a. Cash
- b. Cashier's check made payable to the Tribe
- c. A certified check made payable to the Tribe

A bond executed by an admitted surety insurer, made payable to the Tribe in the form of the bonds in the Contract documents. The Power of attorney for the attorney-in-fact of the surety shall be current, contain an authorization to bind for at least minimum dollar amount of the bond, and be attached to the bond. **The signature of the attorney-in-fact shall be notarized.**

BOND OF FAITHFUL PERFORMANCE

(To be completed and submitted for project award)

KNOW ALL MEN BY THESE PRESENT: THAT, WHEREAS, the Chemehuevi Indian Tribe, Havasu Lake, State of California, Resolution No. _____ (N.C.S.) passed _____, 2026, has been awarded to

hereinafter designated as "Principal," a Contract for constructing

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WHEREAS, said Principal is required under the terms of said Contract to furnish a Bond for the faithful performance of said Contract;

Now, therefore, we, the Principal and _____ as Surety, are held and firmly bounded to the Chemehuevi Indian Tribe, Havasu Lake, California, in the penal sum of

(\$ _____) Dollars, lawful money of the United States, being not less than **one hundred percent (100%)** of the estimated Contract cost of the work, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bound Principal, his/her or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions, and agreements in the said Contract and any alterations made as therein provided, on his/her or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Chemehuevi Indian Tribe, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said Contract the above obligation in the amount of not less than **ten percent (10%)** of the estimated Contract cost, shall hold good for a period of **one (1)** year after the completion acceptance of the said work, during which time if the above bound Principal, his/her or its heirs, executors, administrators, successors or assigns shall fail to make full complete and satisfactory repair and replacements or totally protect the said Chemehuevi Indian Tribe from loss or damage made evident during said period of one year from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligation in the amount of not less than **ten percent (10%)** of the total bid Proposal cost shall remain in full force and virtue, otherwise the above obligation shall be void. However, nothing in this paragraph to the contrary notwithstanding, the obligation of the Surety hereunder shall continue so long as any obligation of the Principal remains.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration and addition to the terms of the Contract or to the work to be performed there under or the Specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contractor or to the work or to the Specifications.

IN WITNESS WHEREOF the above bond parties have executed this instrument under their seals this _____ day of _____ 2026, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative; pursuant to authority of its governing body.

Principal Name: _____

Address: _____

(Attach Notary Acknowledgment)

By: _____
(Signature, in blue ink.)

By: _____
(Signature, in blue ink.)

Surety Name: _____

Address: _____

(Attach Notary Acknowledgment)

By: _____
(Signature, in blue ink.)

By: _____
(Signature, in blue ink.)

LABOR AND MATERIAL BOND

(To be completed and submitted for project award)

KNOW ALL MEN BY THESE PRESENTS, that WHEREAS, the Chemehuevi Indian Tribe, Havasu Lake, State of California, by Resolution No. _____ (N.C.S.) passed _____, 2026, has been awarded to _____ hereinafter designated as "Principal," a Contract for constructing

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WHEREAS, said Principal is required to furnish a bond in connection and with said Contract, providing that if said Principal, or any of his/her or its Subcontractors, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for or about the performance of the work Contracted to be done, or for any work or labor done thereon of any kind, the Surety of this bond will pay the same to the extend hereinafter set forth;

NOW, THEREFORE, WE, the Principal and
_____ as Surety, are held as firmly bound
unto the Chemehuevi Indian Tribe, Havasu Lake, California, in the penal sum of
_____ (\$ _____) Dollars, lawful
money of the United States, being not less than *fifty percent (50%)* of the estimated Contract cost of
the work, for the payment of which sum well and truly to be made, we bind ourselves, our heirs,
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal, his/her or its heirs, executors or administrators, successors or assigns, shall fail to pay for any materials, provisions, provender, or other supplies or teams used in, upon, for or about the performance of the work Contracted to be done, or for any work or labor thereon of any respect to such work or labor, and provided that the persons, companies or other supplies, teams, appliances or power used in, upon, for or about the performance of the work contracted to be executed or performed, or any person, company or corporation renting or hiring teams or implements or machinery of power for or contributing to said work to be done, or any person who performs work or labor upon same, or any person who supplies both work and materials therefore, shall have complied with the provisions of said Government Code, then said Surety will pay the same in or to an amount not exceeding the amount hereinabove set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fee as shall be fixed by the court, awarded and taxed as in the above-mentioned Code provided.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under said Government Code, so as to give a right to action to them or their assigns in any suit brought upon this bond.

LABOR AND MATERIAL BOND – cont.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed there under or the Specifications accompanying the same shall in anyway affect its obligations of this bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this _____ day of _____, 2026, the name and corporate seal of each corporate party being hereto affixed and these present duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal Name: _____

Address: _____

(Attach Notary Acknowledgment)

By: _____
(Signature, in blue ink.)

By: _____
(Signature, in blue ink.)

Surety Name: _____

Address: _____

(Attach Notary Acknowledgment)

By: _____
(Signature, in blue ink.)

By: _____
(Signature, in blue ink.)

AGREEMENT

(To be completed and submitted for project award)

THIS AGREEMENT, made and entered into this _____ day of _____, 2026, by and between CHEMEHUEVI INDIAN TRIBE, hereinafter called "Tribe", and _____ or hereinafter called "Contractor",

W I T N E S S E T H

FIRST: Contractor hereby covenants and agrees to furnish and provide all labor, materials, tools, appliances, equipment, plants and transportation, and all other things required or necessary to be furnished, provided or done, and build, erect, construct and complete the work at the time and in the manner provided, and in strict accordance with, the Plans and Specifications therefore, for

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adopted by the Council of the Chemehuevi Indian Tribe on _____, 2026, and identified by the signature of Contractor and the signature of the Mayor of the Chemehuevi Indian Tribe.

SECOND: It is expressly understood and agreed that this Contract consists of the following documents, all of which are incorporated into this agreement and made a part hereof as fully and completely as if set forth herein verbatim, to wit:

- a. Notice Inviting Sealed Proposals;
- b. Signed and executed Bid and Proposal of Contractor, and if any signed Addendum, as accepted by Tribe;
- c. Bid Schedule;
- d. Bidder's Statement of Technical Ability and Experience;
- e. Bidder's Statement Financial Responsibility,
- f. Bidder's Statement of Subcontractors;
- h. Insurance Certification;
- h. Completely executed and signed all required Federal and Chemehuevi Indian Tribe forms;
- i. Instructions to Successful Bidder and General Conditions;
- j. Bond of Faithful Performance;
- k. Bond of Labor and Materials;
- l. Certificate of Insurance;
- m. The aforesaid Plans and Specifications;
- n. FAA General Provisions;
- o. Federal Contract Provisions
- p. Chemehuevi Indian Tribe General Conditions;
- q. And this Agreement.

THIRD: That said Contractor agrees to receive and accept the following prices as full compensation for furnishing all materials and for doing all the work embraced and contemplated in this Agreement and as set forth in the Proposal adopted by the Chemehuevi Indian Tribe, a true copy thereof hereto attached; also, for all loss or damage arising out of the nature of said work or from the action of the elements or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until the acceptance thereof by the Chemehuevi Indian Tribe and for all risk connected with the work, and for well and faithfully completing the work, and the whole thereof, in the manner and according to the said Plans and Specifications and the provisions of this agreement, and the requirements of the Tribal Planner under them, to wit: The prices as set forth in the Proposal of said Contractor for the work to be constructed and completed under this Agreement, which prices shall be considered as though repeated herein.

The Contractor and Tribe hereby agree that the Contractor shall perform the work, and be paid the amount of bid items as specified in the Proposal of the Contractor, for the total price of _____ (\$)
Dollars.

The undersigned Contractor further agrees to so plan the work and to prosecute it with such diligence that said work, and all of it, shall be completed on or before the expiration of the time specified in the Proposal after execution of the Contract on behalf of the Chemehuevi Indian Tribe and the receipt from the Chemehuevi Indian Tribe of a notice to proceed with the work.

FOURTH: The Chemehuevi Indian Tribe hereby promise and agrees with said Contractor to employ, and does hereby employ, said Contractor to provide the materials and to do the work according to the terms and conditions herein contained and referred to, for the price aforesaid, and hereby Contracts to pay the same at the time, in the manner and upon the conditions set forth in the Specifications and the said parties, for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to the full performance of the covenants herein contained.

FIFTH: The Contractor shall transfer no interest in this agreement to any other party, and any such transfer shall cause the annulment of this Contract, so far as the Chemehuevi Indian Tribe is concerned. All rights of action, however, for any breach of this Contract are reserved to Tribe.

SIXTH: The Contractor shall keep harmless and indemnify the Chemehuevi Indian Tribe, its officers and employees and agents, from all loss, damage, cost or expense that arises or is set up for infringement of patent rights of anyone for use by the Chemehuevi Indian Tribe, its officers, employees or agents, or articles supplied by the Contractor under this Contract of which he/she is not entitled to use or sell. Contractor agrees to, at his/her own cost and expense, defend in court the Tribe, its officers, agents and employees, in any action which may be commenced or maintained against them or any of the, on account of any claimed infringement of patent rights, arising out of this agreement.

Contractor shall indemnify and save the Chemehuevi Indian Tribe and its officers, agents, and employees harmless against all claims for damages to person or property arising out of

Contractor's execution of the work, or otherwise by the conduct of the Contractor or its employees, agents, Subcontractors, or others (including the active and passive negligence of the Tribe, its officers, agents, and employees) in connection with the execution of the work covered by this Contract and any and all costs, expenses, attorney's fees and liability incurred by the Tribe, its officers, agents, and employees) in connection with the execution of the work covered by this Contract and any and all costs, expenses, attorneys' fees and liability incurred by the Tribe, its officers, agents, or employees in defending against such claims, whether the same proceed to judgment or not, except only those claims arising from the sole negligence or willful conduct of the Tribe, its officers, agents, or employees. Further, Contractor at its own expense shall, upon written request by the Tribe, defend any such suit or action brought against the Tribe, its officers, agents, or employees.

Contractor shall reimburse the Chemehuevi Indian Tribe for all costs and expense (including but not limited to fees and charge of architects, engineers, attorneys, and other professional and court costs) incurred by the Tribe in enforcing the provisions of this Section.

SEVENTH: The Contractor agrees to immediately repair and replace all defective material and workmanship discovered within *one (1) year* after acceptance of final payment by Contractor and to indemnify said Chemehuevi Indian Tribe against all loss and damage occasioned by any such defect, discovered within said year, even though the damage or loss may not be ascertained until after the expiration thereof. Provided, however, that if such failure of the Contractor to perform should not, by reasonable diligence, be discoverable or discovered within said *one (1) year*, then the obligation of the Contractor to repair and replace said defective material or workmanship shall continue until *one (1) year* after the actual discovery thereof.

EIGHTH: The Contractor agrees to procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property, which may arise from or in connection with the performance of the work under this contract by the Contractor, his agents, representatives, employees or subcontractors.

The form and extent of the insurance coverage shall be in accordance with the requirements of Section 5 of the Tribal Special Provisions.

NINTH: Contractor agrees to comply with all applicable federal tribal laws and regulations.

IN WITNESS WHEREOF, Tribe has caused this instrument to be executed and its corporate name and seal to be hereunto attached by its Mayor, pursuant to resolution theretofore duly adopted by the Council of the Chemehuevi Indian Tribe, and Contractor has caused this instrument to be executed, the day and year first herein above written.

CHEMEHUEVI INDIAN TRIBE

ATTEST:

BY _____

Tribal Clerk _____

(Attach Notary Acknowledgment)

(Attach Notary Acknowledgment)

Contractor
(Signature in blue ink)

NOTE: Please refer to the "General Instructions to Low Bidder" for specific signature requirements.

I hereby approved the form of the foregoing Contract this _____ day of _____, 2026.

Tribe

Attorney for the Chemehuevi Indian

Checked by the Tribal Planner

on _____

Tribal Planner

ALL SIGNATURES SHALL BE NOTARIZED EXCEPT THOSE OF THE TRIBAL OFFICIALS'

NOTICE OF AWARD

To: _____

PROJECT Description: _____.

The Owner has considered the BID submitted by you for the above described WORK. You are hereby notified that your BID has been accepted in the amount of \$_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of receipt of this Notice.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of receipt of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2026.

Chemehuevi Indian Tribe
Owner

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged this the _____ day of _____, 2026

by _____

Title _____

NOTICE TO PROCEED

To: _____ Date: _____, 20__

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20__, no earlier than _____, 20__, and you are to complete the WORK within ____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 20__.

Chemehuevi Indian Tribe
Owner

By _____

Title: Tribal Planner

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED

is hereby acknowledged by:

(Contractor)

this the _____ day,

of _____, 20__.

By _____

Title _____

CHANGE ORDER

Agreement Date: _____

Order No. _____ Date: _____

NAME OF PROJECT: _____

OWNER: **Chemehuevi Indian Tribe**

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Reason for Change Order:

Change to CONTRACT PRICE:

Original CONTRACT PRICE \$ _____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ _____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (decreased) by: \$ _____

The new CONTRACT PRICE including this CHANGE ORDER will be: \$ _____

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be (Date).

Ordered by: _____
Owner *Date*

Accepted by: _____
Contractor *Date*

CHANGE ORDER

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer or Owner's representative normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Owner's representative has completed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Owner should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

WORK CHANGE DIRECTIVE

NO. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

NAME OF PROJECT: _____

OWNER: **Chemehuevi Indian Tribe**

CONTRACTOR: _____

You are hereby directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in Contract Price:

Unit Prices

Lump Sum

Cost of the Work

Estimated increase (decrease) in Contract Price:

\$ _____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in

Contract Times:

Substantial Completion: _____ days:

Ready for final payment: _____ days.

RECOMMENDED:

AUTHORIZED:

Engineer

Owner

ACCEPTED:

Contractor

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times a Field Order should be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor.

A Change Order shall be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

SECTION D
TRIBAL GENERAL CONDITIONS

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CHEMEHUEVI INDIAN TRIBE
Chemehuevi Indian Reservation, California

GENERAL CONDITIONS

SECTION 1. BID REQUIREMENTS AND GENERAL CONDITIONS

1-01. Examination of Plans, Specifications, and Site of Work. The bidder shall examine carefully the Site of the Work contemplated and the proposal, plans, specifications, and contract forms therefore. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, and as to the character, quality and requirements of all drawings and specifications involved. The Contractor specifically excludes from its bid and shall not be responsible for costs incurred as a result of: (1) hazardous materials encountered at the Site; (2) archeological artifacts encountered at the Site and (3) subsurface conditions that differ from those shown in any geotechnical reports supplied to the Contractor prior to the date of Contractors bid or which are substantially materially different from those encountered on the Chemehuevi Indian Reservation.

1-02. Proposal. Bids shall be made on the blank form prepared by Chemehuevi Indian Tribe ("Tribe") without removal from the bound specifications. All bids shall give the prices bid, both in writing and in figures, and shall be signed by the bidder or his authorized representative, with his address. If the bid is made by an individual or partner, his name and the post office address of his business or partnership, along with his signature or the signature of one or more partners must be shown; if made by a corporation, the bid shall show the name of the state under the laws of which the corporation is chartered, the name of the corporation, and the title of the person who signs on behalf of the corporation. As used herein the term corporation shall include limited liability companies.

Each proposal shall be enclosed in a sealed envelope, endorsed as specified in the notice to bidders. Bidders are warned against making erasures or alterations of any kind, and proposals which contain omissions, erasures, conditions, alterations or additions not called for, additional proposals or irregularities of any kind may be rejected.

1-03. Withdrawal of Bids. Any bid may be withdrawn at any time prior to the hour fixed in the notice to bidders for the openings of bids, provided that a request in writing, executed by the bidder or his duly authorized representative, for the withdrawal of such bid is filed with the Tribe. The withdrawal of a bid will not prejudice the right of a bidder to file a new bid.

1-04. Bid Guaranty. Each bid must be accompanied by a certified or cashier's check, or a bidder's bond executed by an admitted surety insurer, payable to the order of the Tribe in an amount not less than ten percent (10%) of the bid as a guarantee that the bidder will enter into a contract, if awarded the Work.

1-05. Qualification of Bidders. Each bidder shall be licensed under the provisions of Chapter 9, Division 3 of the California Business and Professions Code, and shall be skilled and regularly engaged in the general class or type of work called for under this Agreement. A statement setting forth this experience and business standing shall be submitted by each bidder on the form provided herewith. It is the intention of the Tribe to award a contract only to a bidder who furnishes satisfactory evidence that the Contractor has the requisite experience and ability and that the Contractor has sufficient capital, facilities, and equipment to enable the Contractor to prosecute the Work successfully and promptly within the time and in the manner agreed.

In determining the degree of responsibility to be credited to a bidder, the Tribe may weigh evidence that the bidder, or his personnel charged with the responsibility in the Work, has performed satisfactorily other contracts of like nature and magnitude or comparable difficulty at similar rates of progress.

1-06. Disqualification of Bidders. More than one bid from an individual business, partnership, corporation or association, under the same or different names, will not be considered. Reasonable grounds for believing that any bidder is financially interested in more than one bid for the Work will cause the rejection of all bids in which he is so interested. If there is reason to believe that collusion exists among the bidders, none of the participants in such collusion will be considered. Bids in which the prices obviously are unbalanced may be rejected.

1-07. Identification of Subcontractors. All bids shall set forth:

(a) The name of the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the Work, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the Work according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid.

(b) The portion of the Work which will be done by each such subcontractor. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in his bid.

SECTION 2. AWARD AND EXECUTION OF CONTRACT

2-01. Award of Contract. Award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the specified requirements. The award, if made, will be made within thirty (30) days after opening of the bids. The Tribe reserves the right to reject any and all bids.

2-02. Return of Proposal Guaranties. Within thirty (30) days after the bids are opened, the Tribe will return the bid guaranties accompanying such of the bids as are not to be considered in making the award. All other bid guaranties will be held until the contract has been fully executed, after which they will be returned to the respective bidders whose bids they accompany.

2-03. Execution of Contract. The contract shall be executed in duplicate by the successful bidder and returned, together with the contract bonds, within ten (10) days after written notice to the bidder that contract documents are ready for execution. After execution by the Tribe; one copy shall be filed with the Tribe, and one copy shall be returned to the Contractor. If the bidder fails or refuses to enter into a contract to do the Work, then the bid guaranty accompanying the bid shall be forfeited to the Tribe.

SECTION 3. SCOPE AND INTENT OF CONTRACT

3-01. Definitions. Whenever any word or expression defined in this section, or pronoun used in its stead, occurs in these contract documents, it shall have and is mutually understood to have the meaning given:

a. “Chemehuevi Indian Tribe” or “Tribe” shall mean the Chemehuevi Indian Tribe of the Chemehuevi Indian Reservation, California, acting through its Tribal Council or any other board, body, official or officials to which or to whom the power belonging to the Council shall by virtue of any act or acts, thereafter pass or held to apply.

b. “Engineer” shall mean the Engineer approved by the Tribe to supervise and direct the Work of construction under this contract, acting personally or through agents or assistants duly authorized by the Engineer, such agents or assistants acting within the scope of the particular duties entrusted to them.

c. “Inspector” shall mean the engineering or technical certified building inspector or inspectors duly authorized or appointed by the Engineer, limited to the particular duties entrusted to him or them.

d. “Contractor” shall mean the party entering into contract with the Tribe for the performance of work covered by this contract, and his authorized agents or legal representatives.

e. “Date of Signing of Contract”, or words equivalent thereto, shall mean the date upon which this contract, with the signature of the Contractor affixed, together with the prescribed bonds, shall be or shall have been delivered to the Tribe or its duly authorized representatives.

f. “Day” or “Days”, unless herein otherwise expressly defined, shall mean a calendar day or days of twenty-four hours each.

g. “The Work” shall mean the construction of new hotel and casino as described in the Contract Document on the Site. All Work to be included with this project is stated on the bid line item sheet attached hereto. Specifications are included with the plan sets attached as part of the contract. Contractor shall provide and furnish to the Tribe all detail and working drawings necessary to properly delineate the drawings and specifications, and the Work shall be done and the materials furnished in accordance with them, subject to the Tribe's approval.

h. “Contract Drawings” shall mean, and include all drawings which may have been prepared or procured by Contractor, as a basis for proposals, when duly signed and made a part of this contract by incorporation or reference; all drawings submitted in pursuance of the terms of this contract by the successful bidder with the Contractor's proposal and by the Contractor to the Tribe if and when approved by the Engineer; and all drawings submitted by the Engineer to the Contractor during the progress of the Work as provided for herein.

i. Where “as shown”, “as indicated” “as detailed”, or words of similar import are used, it shall be understood that reference to the drawings accompanying these specifications is made unless stated otherwise. Where “as directed”, “as permitted”, “approved” or words of similar import are used, it shall be understood that the direction, requirements, permission, approval, or acceptance of the Engineer is intended unless stated otherwise. As used herein, “provide” shall be understood to mean “provide complete in place”, that is, “furnish and install”. “Install” shall mean the installation complete in place of an item of equipment furnished by the Tribe. “Shall” is mandatory; “may” is permissive.

3-02. Effect of Inspection and Payments. Neither the inspection by the Engineer nor by an inspector, nor any order, measurement, approved modification, certificate, or payment of money, nor

acceptance of any part or whole of the Work, nor any extension of time, nor any possession by the Tribe or its agents, shall operate as a waiver of any provision of this contract or of any power reserved therein to the Tribe, or any right to damages thereunder; nor shall any breach of this contract be held to be a waiver of any subsequent breach. All remedies shall be construed as cumulative.

3-03. Effect of Extension of Time. The granting of any extension of time on account of delays which in the judgment of the Tribe are avoidable delays shall in no way operate as a waiver on the part of the Tribe of its rights under this contract.

3-04. Extra Work. If extra work orders are given in accordance with provisions of this contract, such work shall be considered a part hereof and subject to each and all of its terms and requirements.

3-05. Assignment of Contract. The contract may be assigned or sublet in whole or in part only upon the written consent of the Tribe acting through its authorized agents.

3-06. Subcontractors. The Contractor shall be as fully responsible for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by Contractor.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractor to the terms of this contract which are applicable to the Work of subcontractors. Nothing contained in this contract shall be construed to create or be relied upon to create any contractual relationship between any subcontractor and the Tribe, and no action may be brought by any subcontractor against the Tribe based on this contract.

3-07. Interpretation of Specifications and Drawings. The specifications and the contract drawings are intended to be explanatory of each other. Any work indicated in the contract drawings and not in the specifications, or vice versa, is to be executed as if indicated in both. In case of a discrepancy or conflict between the technical specifications and contract drawings, the technical specifications shall govern. All work shown on the contract drawings, the dimensions of which are not figured, shall be accurately followed to the scale to which the drawings are made, but figured dimensions are in all cases to be followed, where given, though they differ from scaled measurements. Large scale drawings shall be followed in preference to small scale drawings. Should it appear that the Work to be done, or any of the matters relative thereto, are not sufficiently detailed or explained in these contract documents, including the contract drawings, the Contractor shall apply to the Engineer for such further explanations as may be necessary, and shall conform thereto as part of this contract, so far as may be consistent with the terms of this contract. In the event of any doubt or questions arising respecting the true meaning of the specifications, reference shall be made to the Engineer and his decision thereon shall be final. If the Contractor believes that a clarification or interpretation justifies an increase in the contract price or contract time, the Contractor must comply with the written notice provisions of sections 9-05 and 10-07.

3-08. Liability of Tribal Officials. No Tribal official or member, nor the Engineer, nor any authorized assistant of any of them, nor any lender shall be personally responsible for any liability arising under this contract.

SECTION 4. BONDS

4-01. Faithful Performance Bond. As part of the execution of this contract, the Contractor shall furnish a bond of a surety company acceptable to the Tribe conditioned upon the faithful performance of

all covenants and stipulations under this contract. The amount of the bond shall be one hundred percent (100%) of the total contract price, as this sum is set forth in the Agreement.

4-02. Material and Labor Bond. As a part of the execution of this contract, the contractor shall furnish a bond of a surety company acceptable to the Tribe in a sum not less than fifty percent (50%) of the total contract price, as this sum is set forth in the agreement for the payment in full of all persons, companies, or corporations who perform labor upon or furnish materials to be used in the Work under this contract, in accordance with the provision of Sections 3247 through 3252 inclusive of the Civil Code of the State of California, and any acts amendatory thereof.

4-03. Defective Material and Workmanship Bond. As a condition precedent to be the completion of this contract, the Contractor shall furnish a bond of a surety company acceptable to the Tribe in an amount not less than five percent (5%) of the total contract price, to hold good for a period of one (1) year after the completion and acceptance of the Work, to protect the Tribe against the results of defective materials, workmanship and equipment during that time. This bond shall be delivered to the Tribe before the final payment under this contract will be made.

4-04. Notification of Surety Companies. The surety companies shall familiarize themselves with all of the conditions and provisions of this contract, and they waive the right of special notification of any change or increased work, or of the cancellation of the contract, or of any other act or acts by the Tribe or its authorized agents, under the terms of this contract; and failure to so notify the aforesaid surety companies of changes shall in no way relieve the surety companies of their obligation under this contract.

SECTION 5. INSURANCE

5-01. Public Liability and Property Damage Insurance. The Contractor shall take out and maintain during the life of the contract such public liability and property damage insurance as shall protect the Contractor and any subcontractor performing work covered by this contract from claims for property damages, which may arise because of the nature of the Work or from operations under this contract, whether such operations be by the Contractor or any subcontractor or anyone directly or indirectly employed by either of them, even though such damages be not caused by the negligence of the Contractor or any subcontractor, or anyone employed by either of them. The public liability and property damage insurance shall also directly protect the Tribe as well as the Contractor and his subcontractors, and all insurance policies issued hereunder shall so state. The amounts of such insurance shall be as follows:

The Contractor shall furnish the Tribe a policy or certificate of liability insurance with signed endorsement, including automobile liability insurance with signed endorsement, in which the Tribe is named as an additional insured with the contractor. Additional insured coverage shall apply as primary and not excess or contributing to any insurance issued in the name of the Tribe. The policy shall provide the following minimum limits:

Comprehensive General Liability (at least as broad as Insurance Services Office Form number CG0001 covering Comprehensive General Liability and Insurance Services Office form number GL 0404 covering Broad Form Comprehensive General Liability).

Bodily Injury.....Each person
Each occurrence
\$2,000,000 Combined single limit

Property DamageEach occurrence
Aggregate
\$1,000,000 Combined single limit

Comprehensive Automobile Liability with signed endorsements (at least as broad as Insurance Services Form number CA 0001 covering Automobile Liability, Code 1 “any auto”).

Bodily InjuryEach person
Each occurrence
\$2,000,000 Combined single limit

Property DamageEach accident
\$1,000,000 Combined single limit

All liability insurance policies shall contain the following coverages or conditions:

- Products and Completed Operations
- Cross Liability Clause (or equivalent wording)
- Personal Injury
- Broad Form Property Damage
- X, C, U Hazards Included
- Blanket Contractual Liability

All liability insurance policies or certificates shall bear an endorsement whereby it is provided that the policies will not be canceled, limited or allowed to expire without renewal until after 30 days written notice has been given the Tribe. All certificates of insurance and endorsements shall be on forms provided by the Tribe.

The Contractor shall include his subcontractors as additional insureds under the policy or shall furnish separate policies or certificates of insurance for subcontractors. All policies or certificates of insurance for subcontractors shall be subject to all of the requirements stated herein.

IMPORTANT. Before the execution of the contract, the successful bidder shall file with the Tribe a certificate or certificates of insurance, covering the specified insurance. Each such certificate shall name the Tribe as an additional insured and shall bear an endorsement precluding the cancellation, or reduction in coverage, of any policy evidence by such certificate, before the expiration of thirty days after the Tribe shall have received notification by registered mail from the insurance carrier.

5-02. Builders Risk Insurance. The Contractor shall take out and maintain during the life of the contract comprehensive builder's risk insurance providing coverage for the actual value of the Work at any time. The insurance shall protect the Tribe and the Contractor and shall assume liability for fire damage to the Work and to appurtenances, all materials, supplies, equipment, construction plant, and temporary structures. The policy or certificate of insurance shall be delivered to the Tribe before the first progress payment will be made.

5-03. Workmen's Compensation Insurance. Before beginning the Work, the Contractor shall furnish to the Tribe satisfactory proof that the Contractor has secured, for the period covered by the Work under this contract, full payment of compensation to all persons whom the Contractor may employ

directly or through subcontractors, in carrying out the Work contemplated under this contract, in accordance with the "Workmen's Compensation and Insurance Act," Division IV of the Labor Code of the State of California and any acts amendatory thereof. Such insurance shall be maintained in full force and effect, during the period covered by this contract.

The Contractor shall sign and file with the Tribe a Workmen's Compensation Certificate with signed endorsement prior to performing any work. This certificate is provided herein.

All contracts of insurance required by this Section shall be issued by companies with a BEST rating or better.

SECTION 6. RESPONSIBILITIES AND RIGHTS OF CONTRACTOR

6-01. Legal Address of Contractor. Both the address given in the proposal and the Contractor's office in the vicinity of the Work are hereby designated as places to either of which drawings, samples, notices, letters or other articles or communications to the Contractor may be mailed or delivered.

The delivery at either of these places of any such thing from the Tribe or its agents to the Contractor shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of such delivery. The address named in the proposal may be changed at any time by notice in writing from the Contractor to the Tribe. Nothing herein contained shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter or other article or communication to or upon the Contractor personally.

6-02. Office of Contractor at Site. During the performance of this contract the Contractor shall maintain a suitable office at the Site of the Work which shall be the headquarters of a representative authorized to receive drawings, and any such thing given to the said representatives or delivered at the Contractor's office at the Site of the Work in the Contractor's absence shall be deemed to have been given to the Contractor.

6-03. Attention to Work. The Contractor shall give his personal attention to and shall supervise the Work to the end that it shall be prosecuted faithfully, and when the Contractor is not personally present on the Work, the Contractor shall at all reasonable times be represented by a competent superintendent or foreman who shall receive and obey all instructions or orders given under this contract, and who shall have full authority to execute the same, and to supply materials, tools and labor without delay, and who shall be the legal representative of the Contractor. The Contractor shall be liable for the faithful observance of any instructions delivered to Contractor or to Contractor's authorized representative.

6-04. Liability of Contractor. The Contractor shall do all the Work and furnish all labor, materials, tools, and appliances, except as otherwise herein expressly stipulated necessary or proper for performing and completing the Work herein required in the manner and within the time herein specified. The mention of any specific duty or liability imposed upon the Contractor shall not be construed as a limitation or restriction of any general liability or duty imposed upon the Contractor by this contract, said reference to any specific duty or liability being made herein merely for the purpose of explanation.

The right of general supervision by the Tribe shall not make the Contractor an agent of the Tribe, and the liability of the Contractor for all damages to persons or to public or private property, arising from the Contractor's execution of the Work, shall not be lessened because of such general supervision.

Until the completion and final acceptance by the Tribe of all the Work under and implied by this contract, the Work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild repairs, occasioned or rendered necessary, by causes of any nature whatsoever, excepting only acts of God and none other, to all or any portions of the Work, except as otherwise stipulated.

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the Tribe and its officers, directors, agents and employees from and against all claims, damages, losses and expenses including but not limited to attorneys' fees, costs of suit, expert witness fees and expenses and fees and costs of any necessary private investigators arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is caused in whole or in part by any act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder, or by the negligence (except the sole negligence") or omission of a party indemnified herein.

In any and all claims against the Tribe or any of its agents or employees by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. The obligation to indemnify shall extend to and include acts of the indemnified party which may be negligent or omissions which may cause negligence.

The Tribe shall have the right to estimate the amount of such damage and to cause the Tribe to pay the same, and the amount so paid for such damage shall be deducted from the money due the Contractor under this contract; or the whole or so much of the money due or to become due the Contractor under this contract as may be considered necessary by the Tribe, shall be retained by the Tribe until such suits or claims for damages shall have been settled or otherwise disposed of, and satisfactory evidence to that effect furnished to the Tribe.

6-05. Protection of Persons and Property. The Contractor shall furnish such watchmen, guards, fences, warning signs, walks and lights as shall be necessary, and shall take all other necessary precautions to prevent damage or injury to persons or property.

All property line fences in the vicinity of the Work shall be protected by the Contractor, and if they are injured or destroyed they, and any other property injured by the Contractor, his employees or agents, shall be restored to a condition as good as when the Contractor entered upon the Work.

6-06. Protection of Tribe Against Patent Claims. All fees, royalties, or claims for any patented invention, article, or method that may be used upon or in any manner connected with the Work under this contract shall be included in the price bid for the Work, and the Contractor and the Contractor's sureties shall protect and hold the Tribe, together with all of its officers, agents, servants, and employees, harmless against any and all demands made for such fees or claims brought or made on account of this contract, the Contractor shall, if requested by the Engineer, furnish acceptable proof of a proper release from all such fees or classes.

Should the Contractor, the Contractor's agents, servants, or employees, or any of them be enjoined from furnishing or using any invention, article material or appliance supplied or required to be supplied or used

under this contract, the Contractor shall promptly substitute other articles, materials or appliance, in lieu thereof, of equal efficiency, quality, finish, suitability and market value and satisfactory in all respects to the Engineer. Or in the event that the Engineer elects, in lieu of such substitution, to have supplied, and to retain and use, any such invention, article, material or appliance, as may by this contract be required to be supplied, in that event the Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for the Tribe, its officers, agents, servants, and employees, or any of them to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the Contractor neglect or refuse to make the substitution promptly, or to pay such royalties and secure such licenses as may be necessary, then in that event the Engineer shall have the right to make such substitution, or the Tribe may pay such royalties and secure such licenses and charge the cost thereof against any money due to the contractor from the Tribe or recover the amount thereof from the Contractor and the Contractor's sureties notwithstanding final payment under this contract may have been made.

6-07. Protection of Contractor's Work Property. The Contractor shall protect their work, supplies, and materials from damage due to the nature of the Work, the effect of the elements, trespassers, or any cause whatsoever which is under the Contractor's control, until the completion and acceptance of the Work. Neither the Tribe nor any of its agents assumes any responsibility for collection indemnity from any person or persons causing damage to the Work of the Contractor.

6-08. Protection of Buried Utilities. Unless otherwise indicated on the plans or specified or unless otherwise cared for by the owner thereof, all buried utilities and structures of any nature that may be affected by the Work shall be maintained by the Contractor and shall not be disturbed or damaged by the Contractor during the progress of the Work, provided that should the Contractor disturb, disconnect, or damage any utility line or structure, all expenses of whatever nature arising from such disturbance or the replacement or repair thereof shall be borne by the Contractor.

6-09. Maintenance of Traffic. Throughout the performance of the Work or in connection with this contract, the Contractor shall construct and adequately maintain suitable and safe crossings over the trenches and such detours as are necessary to care for public and private pedestrian and vehicular traffic. The material excavated from trenches shall be compactly deposited along the sides of the trench in such a manner as shall give as little inconvenience as possible to the traveling public and to adjoining property owners.

6-10. Regulations and Permits. The Contractor shall secure and pay for all permits which are required by applicable law for the Contractor to secure for the Work and which were not specifically excluded from the Contractors bid; give all notices; and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, the Contractor shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the Work.

6-11. Construction Utilities. The Contractor shall be responsible for providing for and in behalf of the Contractor's work under this contract, all necessary utilities, such as special connection to water supply, telephones, power lines, fences, roads, watchmen, suitable storage places, etc.

6-12. Approval of Contractor's Plans. The approval by the Engineer of any drawing or any method of work proposed by the Contractor in accordance with paragraph 8-06 shall not relieve the Contractor of any of the Contractor's responsibility for the Contractor's errors therein and shall not be

regarded as any assumption of risk or liability by the Tribe or any officer or employee thereof, and the Contractor shall have no claim under this contract on account of the failure or partial failure or inefficiency of any plan or method so approved. Such approval shall be considered to mean merely that the Engineer has no objection to the Contractor's using, upon Contractor's own full responsibility the plan or method approved.

6-13. Suggestions to the Contractor. Any plan or method of work suggested by the Engineer to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the Tribe shall assume no responsibility thereof.

6-14. Termination of Unsatisfactory Subcontracts. Should any subcontractor fail to perform in a satisfactory manner the Work undertaken by him/her, such subcontract shall be terminated immediately by the Contractor upon notice from the Engineer, provided the subcontractor failed to cure any default after receiving notice thereof as required by any contract with the Contractor, consistent with this Contract.

6-15. Preservation of Stakes and Marks. The Contractor shall preserve carefully bench marks, reference points, and stakes, and in case of willful or careless destruction the Contractor will be charged with the resulting expense of replacement and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

6-16. Assistance to Engineer. At the request of the Engineer the Contractor shall provide men from Contractor's force and tools, stakes and other materials to assist the Engineer temporarily in making measurements and surveys and in establishing temporary or permanent reference marks. Payment for such materials and assistance will be made as provided for under the caption "Extra Work", provided, however, that the cost of setting stakes and marks carelessly lost or destroyed by the Contractor's employees will be assessed to the Contractor.

6-17. Removal of Condemned Materials and Structures. The Contractor shall remove from the site of the Work, without delay, all rejected and condemned materials or structures of any kind brought to or incorporated in the Work, and upon the Contractor's failure to do so, or to make satisfactory progress in so doing, within forty-eight (48) hours after the service of a written notice from the Engineer, the condemned material or work may be removed by the Tribe and the cost of such removal shall be taken out of the money that may be due or may become due the Contractor on account of or by virtue of this contract. No such rejected or condemned material shall again be offered for use by the Contractor under this Contract.

6-18. Proof of Compliance with Contract. In order that the Engineer may determine whether the Contractor has complied with the requirements of this contract, not readily enforceable through inspection and tests of the Work and materials, the Contractor shall, at any time when requested, submit to the Engineer properly authenticated documents or other satisfactory proofs as to the Contractor's compliance with such requirements.

6-19. Errors and Omissions. If the Contractor, in the course of the Work, finds any errors or omissions in plans or in the layout as given by survey points and instruction, or if the Contractor finds any discrepancy between the plans and the physical conditions of the locality, the Contractor shall immediately inform the Engineer, in writing, and the Engineer shall promptly verify the same. Any work done after such discovery until authorized, will be done at the Contractor's risk.

6-20. Cooperation. The Contractor shall cooperate with all other contractors who may be performing work on behalf of the Tribe and workmen who may be employed by the Tribe on any work in the vicinity of the Work to be done under this contract with the Work of such contractors or workmen. The Contractor shall make good promptly, at Contractor's own expense, any injury or damage that may be sustained by a contractor or workman of the Tribe, and the Contractor shall on that account have no claim against the Tribe other than for an extension of time.

6-21. Right of Contractor to Stop Work. Under the following conditions the Contractor shall have the right, if the Contractor so desires, to stop the Work and terminate the Contract upon ten (10) days written notice to the Engineer, and recover from the Tribe payment for all work actually performed and for all satisfactory materials actually delivered to the Site of the Work for permanent incorporation therein, all as may be shown by the estimate of the Engineer.

a. If the Work be stopped under an order of any court or other competent public authority for a period of time of three (3) months through no act or fault of the Contractor or of anyone employed by Contractor.

b. If the Engineer fails to issue the monthly certificate for payment in accordance with the terms of this Contract.

c. If the Tribe fails to pay the Contractor within thirty (30) days after it shall have become due, as provided by the terms of this Contract, any sum certified by the Engineer or awarded by the Tribe.

All provided that if such action to terminate the contract be not instituted by the Contractor within ten (10) days after the alleged existence of such condition and if written notice of such action be not at that time delivered to the Tribe and the Engineer, then such right shall lapse until another occasion arises according to this Section.

6-22. Hiring and Dismissal of Employees. The Contractor shall employ only such foremen, mechanics and laborers as are competent and skilled in their respective lines of work, and whenever the Engineer shall notify the Contractor that any person on the Work is, in the Contractor's opinion, incompetent, unfaithful, intemperate, or disorderly or refuses to carry out the provisions of this contract, or uses threatening or abusive language to any person on the Work representing the Tribe, or is otherwise unsatisfactory, such person shall be discharged immediately from the Work and shall not be reemployed upon it except with the consent of the Engineer.

6-23. Wage Rates. Contractor shall pay all mechanics and laborers employed or working upon the Site of the Work unconditionally and without subsequent deductions or rebate on any account the full amounts due at the time of payment at wage rates not less than those contained in the applicable prevailing wage determination, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractors and such laborers and mechanics.

a. Contractor shall comply with the California Labor Code Section 1775. In accordance with said Section 1775, Contractor shall forfeit as a penalty to the Tribe, \$200.00 for each calendar day or portion thereof, for each workman paid less than the stipulated prevailing rates for such work or craft in which such workman is employed for any work done under the Contract by the Contractor or by any subcontractor under the Contractor in violation of the provisions of the Labor Code,

and in particular, Labor Code Section 1770 to 1780, inclusive. In addition to said penalty and pursuant to Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.

b. According to the provisions of Section 1770 of the Labor Code of the State of California, Tribe has ascertained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension and similar purposes) applicable to the Work to be done, for straight time work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of workmen concerned. Copies of the General Prevailing Wage Determination is on file in the office of the Tribal Planner, and are available to Contractor on request. Contractor shall post the wage determination at the Site of the Work in a prominent place where it can easily be seen by the workers.

c. Tribe will not recognize any claim for additional compensation because Contractor has paid any rate in excess of the prevailing wage rate obtained by the Engineer. The possibility of wage increases is one of the elements to be considered by the Contractor in determining the Contractor's bid, and will not in any circumstances be considered as the basis for a claim against the Tribe.

d. Travel and Subsistence Payments. Contractor shall make travel and subsistence payments to each workman needed to execute the Work in accordance with the requirements in Section 1773.8 of the Labor Code.

e. Apprentices. Attention is directed to the provisions in Sections 1777.5 and 1777.6 of the California Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under the Contractor. Contractor and any subcontractor under Contractor shall comply with the requirements of said sections in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

6-24. Cleaning Up. The Contractor shall not allow the Site of the Work to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction period. The Engineer shall have the right to determine what is or is not waste material or rubbish and the place and manner of disposal.

On or before the completion of the Work, the Contractor shall without charge, therefore, carefully clean out all pits, pipes, chambers or conduits and shall tear down and remove all temporary structures built by the Contractor and shall remove rubbish of all kinds from the grounds which the Contractor has occupied and leave them in first class condition.

6-25. Guaranty. All work shall be guaranteed for a period of one year from the date of acceptance by the Tribe. The Contractor shall promptly make all needed repairs arising out of defective materials, workmanship and equipment.

The Tribe is hereby authorized to make such repairs if within ten days after the mailing of a notice in writing to the Contractor, or the Contractor's agent, the Contractor shall neglect to make or undertake

with due diligence the aforesaid repairs; provided, however, that in case of an emergency where, in the opinion of the Tribe delay would cause serious loss or damage, repairs may be made without notice being sent to the Contractor, and the Contractor shall pay the costs thereof.

SECTION 7. RESPONSIBILITIES AND RIGHTS OF TRIBE

7-01. Authority of the Engineer. All work done under this contract shall be done in a workmanlike manner and shall be performed to the reasonable satisfaction of the Engineer, who shall have general supervision of all work included hereunder. To prevent disputes and litigation, the Engineer shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract; shall decide all questions relative to the true construction, meaning, and intent of the specifications and drawing; shall decide all questions which may arise relative to the classifications and measurements of quantities and materials and the fulfillment of this contract; and shall have the power to reject or condemn all work or material which does not conform to the terms of this contract. His estimate and decision in all matters shall be a condition precedent to an appeal for arbitration, or the right of the Contractor to receive, demand, or claim any money or other compensation under this agreement and a condition precedent to any liability on the part of the Tribe to the Contractor on account of this contract. Whenever the Engineer shall be unable to act, in consequence of absence or other cause, then such engineer as the Engineer or the Tribe shall designate, shall perform any and all of the duties and be vested with any or all of the powers herein given to the Engineer.

7-02. Inspection. The Tribe and third party lenders will provide personnel for the inspection of the Work. The Engineer and his representatives, and representatives of third party lenders shall, at all times, have access to the Work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

If the specifications, the Engineer's instructions, the laws, ordinances, or any public authority require any Work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by another authority than the Engineer, of the date fixed for such inspection, inspections by the Engineer shall be promptly made, and where practicable at the source of supply. If any Work shall be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any Work may be ordered by the Engineer, and, if so ordered, the Work must be uncovered by the Contractor. If such Work is found to be in accordance with the contract documents, the Tribe shall pay the cost of re-examination and replacement. If such Work is not in accordance with the Contract Documents, the Contractor shall pay such cost.

Properly authorized and accredited or certified inspectors shall be considered to be the representatives of the Tribe limited to the duties and powers entrusted to them. It will be their duty to inspect materials and workmanship of those portions of the Work to which they are assigned, either individually or collectively, under instructions of the Engineer and to other contract provisions which may come to their notice. Any inspector may be considered to have the right to order the Work entrusted to the inspector's supervision stopped, if, in the inspector's opinion, such action becomes necessary, until the Engineer is notified and has determined and ordered that the Work may proceed in due fulfillment of all contract requirements.

The Work is financed in part with federal funds or a federal loan guarantee and shall be subject to inspection at all times by the appropriate federal officials.

7-03. Surveys. Unless otherwise specified, the Tribe will furnish all land surveys, establish all base lines, bench marks and make sufficient detailed surveys needed for working points, lines and elevations. The Contractor shall develop all slope stakes and batter boards. Contractor shall also develop all additional working points, lines and elevations as the Contractor may desire to facilitate the Contractor's methods and sequence of construction.

The Contractor shall carefully preserve bench marks, reference points and stakes and, in the case of willful or careless destruction, the Contractor's shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

7-04. Rights-of-Way. The Tribe will provide all rights-of-way and easements in or beneath which pipes and other structures will be constructed by the Contractor under this contract.

7-05. Retention of Imperfect Work. If any portion of the Work done or material furnished under this contract shall prove defective and not in accordance with the specifications and drawings, and if the imperfection in the same shall not be of sufficient magnitude or importance to make the Work dangerous or undesirable, the Engineer shall have the right and authority to retain such work instead of requiring the imperfect work to be removed and reconstructed, but the Engineer shall make such deductions therefore in the payments due or to become due the Contractor as may be just and reasonable.

7-06. Changes in the Work. The Engineer shall have the right, in writing, to order additions to, omissions from or corrections, alterations and modifications in the line, grade, form, dimensions, plan or kind or amount of work or materials herein contemplated, or any part thereof, either before or after the beginning of construction. However, the arithmetical sum of the cost to the Tribe of additions and subtractions from the Work under this contract shall not exceed five (5%) percent of the contract price, unless based upon a supplementary agreement to be made therefore.

The order of such additions, omissions, corrections, alterations and modifications shall be in writing and signed by the Engineer, and in order shall then be binding upon the Contractor. The Contractor shall proceed with the Work as changed and the value of such change shall be determined as provided for in paragraph 10-07.

Such alterations shall in no way affect, vitiate or make void this contract or any part thereof, except that which is necessarily affected by such alterations and is clearly the evident intention of the parties to this contract.

7-07. Additional Drawings by Tribe. The drawings made a part of this contract at the time of its execution are intended to be fairly comprehensive and to indicate in more or less detail the scope of the Work. In addition to these drawings, however, the Engineer shall furnish such additional drawings from time to time during the progress of the Work as are necessary to make clear or to define in greater detail the intent of the specifications and the contract drawings, and the Contractor shall make his work conform to all such drawings.

7-08. Additional and Emergency Protection. Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precautions for the safety of the public or the protection of the Work to be constructed under this contract, or of adjacent structures or property which may be injured by the processes of construction on account of such neglect, and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect public or private, personal or property interest, then and in that event, the Engineer, with or without notice to the

Contractor may provide suitable protection to the said interests by causing such work to be done and such material to be furnished as shall provide such protection as the Engineer may consider necessary and adequate.

The cost and expense of such work and material so furnished shall be borne by the Contractor and if the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due the Contractor.

The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor from any damages which may occur during or after such precaution has been taken by the Engineer.

7-09. Suspension of Work. The Tribe may at any time suspend the Work or any part thereof by giving five (5) days written notice to the Contractor. The Work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the Tribe to the Contractor so to do. The Tribe shall reimburse the Contractor for expense incurred by the Contractor in connection with the Work under this contract as a result of such suspension.

If the Work, or any part thereof, shall be stopped by the notice in writing aforesaid, and if the Tribe does not give notice in writing to the Contractor to resume work at a date within ten (10) days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the Work so suspended and the Contractor will be entitled to the estimates and payment for all work done on the portions so abandoned, if any, plus five percent (5%) of the value of the Work so abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

7-10. Right of Tribe to Terminate Contract. If the Contractor should be adjudged a bankrupt, or if the Contractor should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency, or if the Contractor should refuse or should fail, except in cases for which extensions of time is provided, to supply enough properly skilled workmen or proper materials, or if the Contractor should fail to make prompt payments to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of this contract, and/or the Contract Documents, then the Tribe, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor ten (10) days written notice, and after said notice is given Contractor fails to remedy the default or commence the remedy of said default if the default cannot be cured in ten days, terminate the employment of the Contractor and take possession of the Site and of all materials, tools, and appliances and finish the Work by whatever method the Tribe may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the Work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Tribe. The expense incurred by the Tribe as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer.

7-11. Use of Completed Portions. The Tribe shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the time for completing the entire Work or such portions which may not have expired; but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such

prior use increases the cost of or delays the Work, the Contractor shall be entitled to such extra compensation, or extension of time or both, as the Engineer may determine.

SECTION 8. WORKMANSHIP, MATERIALS AND EQUIPMENT

8-01. General Quality. Materials and equipment shall be new and of a quality equal to that specified or approved. Work shall be done and completed in a thorough and workmanlike manner.

8-02. Quality in Absence of Detailed Specifications. Whenever under this contract it is provided that the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation, or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required, with due consideration of the use to which they are to be put. In general, the Work performed shall be in full conformity and harmony with the intent to secure the best standard of construction and equipment of the Work as a whole or in part.

8-03. Materials and Equipment Specified by Name. Whenever any material or equipment is indicated or specified by patent or proprietary name or by the name of the manufacturer, such specification shall be considered as used for the purpose of describing the material or equipment desired and shall be considered as followed by the words "or approved equal". The Contractor may offer any material or equipment which shall be equal in every respect to that specified; provided, that written approval first is obtained from the Engineer.

8-04. Source of Materials. Price, fitness and quality being equal, preference shall be given by Contractor for supplies grown, manufactured or produced by the Tribe or members of the Tribe and next to such products partially produced by the Tribe.

8-05. Storage of Materials. Materials shall be so stored to ensure the preservation of their quality and fitness for the Work. They shall be so located and disposed that prompt and proper inspection thereof may be made.

8-06. Drawings, Samples, and Test. As soon as possible after execution of the contract, the Contractor shall submit to the Engineer, in quintuplicate, sufficient information including, if necessary, assembly and detail drawings to demonstrate fully that the equipment and materials to be furnished comply with the provisions and intent of these specifications and drawings. If the information thus submitted indicates the equipment or materials is acceptable, the Engineer will return one copy stamped with his approval; otherwise one copy will be returned with an explanation of why the equipment or material is unsatisfactory. The Contractor shall have no claims for damages or extension of time on account of any delay due to the revision of drawings or refection of material. Fabrication or other work performed in advance of approval shall be done entirely at the Contractor's risk. After approval of equipment or material, the Contractor shall not deviate in any way from the design and specifications given without the written consent of the Engineer.

When requested by the Engineer, a sample or test specimens of the materials to be used or offered for use in connection with the Work shall be prepared at the expense of the Contractor and furnished by the Contractor in such quantities and sizes as may be required for proper examination and tests, with all freight charges prepaid and with information as to their sources. All samples shall be submitted before shipment and in ample time to permit the making of proper tests, analyses, or examination before the time

at which it is desired to incorporate the material into the Work. All tests of materials furnished by the Contractor shall be made by the Engineer. Samples shall be secured and tested whenever necessary to determine the quality of the material.

SECTION 9. PROSECUTION OF WORK

9-01. Equipment and Methods. The Work under this Agreement shall be prosecuted with all materials, tools, machinery, apparatus, and labor and by such methods as are necessary to the complete execution of everything described, shown or reasonable implied. If at any time before the beginning or during the progress of the Work, any part of the Contractor's plant, or equipment or any of the Contractor's methods of execution of the Work, appear to the Engineer to be unsafe, inefficient or inadequate to insure the required quality or the rate of progress of the Work, the Engineer may order the Contractor to increase or improve the Contractor's facilities or methods, and the Contractor shall comply promptly with such orders; but neither compliance with such orders nor failure of the Engineer to issue such orders shall relieve the Contractor from Contractor's obligation to secure the degree of safety, the quality of the Work, and the rate of progress required of the Contractor. The Contractor alone shall be responsible for the safety, adequacy and efficiency of the Contractor's plant, equipment, and methods.

9-02. Time of Completion. The Contractor shall promptly begin the Work under this contract and all portions of the Project made the subject of this contract shall be begun and so prosecuted that they shall be completed and ready for full use in the rate in the time set forth in the agreement form bound herewith.

9-03. Avoidable Delays. Avoidable delays in the prosecution or completion of the Work shall include all delays which might have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor.

Delays in the prosecution of parts of the Work, which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole work within the time herein specified, reasonable loss of time resulting from the necessity of submitting plans to the Engineer for approval and from the making of surveys, measurements and inspections, and such interruptions as may occur in the prosecution of the Work on account of the reasonable interference of other contractors employed by the Tribe which do not necessarily prevent the completion of the whole work within the time herein specified, will be considered by the Tribe as avoidable delays within the meaning of this contract.

9-04. Unavoidable Delays. Unavoidable delays in the prosecution or completion of the Work under this contract shall include all delays which may result, through cause beyond the control of the Contractor and which the Contractor could not have provided against by the exercise of care, prudence, foresight and diligence. Orders issued by the Tribe changing the amount of work to be done, the quantity of material to be furnished or the manner in which the Work of other contractors under contract with the Tribe will be considered unavoidable delays, so far as they necessarily interfere with the Contractor's completion of the whole of the Work. Delays due to normally adverse weather conditions will not be regarded as unavoidable delays. However, truly abnormal amounts of rainfall, temperatures or other weather conditions for the location of the Work and time of year may be considered as unavoidable delays if those conditions necessarily cause a delay in the completion of the Work.

9-05. Notice of Delays. Whenever the Contractor foresees any delay in the prosecution of the Work, and in any event immediately upon the occurrence of any delay which the Contractor regards as an

unavoidable delay, the Contractor shall notify the Engineer in writing of the probability of the occurrence of such delay and its cause, in order that the Engineer may take immediate steps to prevent, if possible, the occurrence of continuance of the delay, or, if this cannot be done, may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work are to be delayed thereby.

9-06. Extension of Time. Should any delays occur which the Engineer may consider unavoidable, as herein defined, the Contractor shall, pursuant to the Contractor's application, be allowed an extension of time, beyond the time herein set forth, proportional to said delay or delays, in which to complete this contract; and liquidated damages for delay shall not be charged against the Contractor by the Tribe during an extension of time granted because of unavoidable delay or delays.

Any claim by Contractor for a time extension based on unavoidable delays shall be based on written notice delivered to the Engineer within fifteen (15) days of the occurrence of the event giving rise to the claim. Failure to file said written notice within the time specified shall constitute a waiver of said claim. Notice of the full extent of the claim and all supporting data must be delivered to the Engineer within thirty (30) days of the occurrence unless the Engineer specifies in writing a longer period. All claims for a time extension must be approved by the Engineer and incorporated into a written change order.

9-07. Unfavorable Weather and Other Conditions. During unfavorable weather and other conditions, the Contractor shall pursue only such portions of the Work as shall not be damaged thereby. No portions of the Work whose satisfactory quality or efficiency will be affected by any unfavorable conditions shall be constructed while these conditions remain, unless by special means or precautions approved by the Engineer the Contractor shall be able to overcome them.

9-08. Saturday, Sunday, Holiday and Night Work. No Work shall be done between the hours of 6:00 p.m. and 7:00 a.m., nor on Saturdays, Sundays, or legal holidays except such Work as is necessary for the proper care and protection of the Work already performed, or except in cases of absolute necessity, and in any case only with the permission of the Engineer.

It is understood, however, that night work may be established as a regular procedure by the Contractor if the Contractor first obtains the written permission of the Engineer, and that such permission may be revoked at any time by the Engineer if the Contractor fails to maintain at night adequate force and equipment for reasonable prosecution and to justify inspection of the Work.

9-09. Hours of Labor. Eight (8) hours of labor shall constitute a legal day's work, and the Contractor or any subcontractor shall not require or permit more than eight hours of labor in a day from any person employed by Contractor in the performance of the Work under this contract, unless paying compensation for all hours worked in excess of eight (8) hours per day at not less than 1/2 times the basic rate of pay. The Contractor shall forfeit to the Tribe, as a penalty, the sum of Twenty-five Dollars (\$25.00) for each workman employed in the execution of the contract by the Contractor or by any subcontractor, for each calendar day during which such laborer, workman, or mechanic is required or permitted to labor more than eight hours in violation of the provisions of Section 1810 to 1816, inclusive, (Article 3, Chapter 1, Part 7, Division 2) of the Labor Code of the State of California and any acts amendatory thereof.

9-10. Safety Precautions and Programs:

9-10.1 Upon encountering any polychlorinated biphenyl ("PCB"), asbestos or other hazardous

material substance that is designated or described under any federal, state or other applicable law or regulation as a hazardous or toxic substance, material or compound (collectively, "Hazardous Material"), Contractor shall stop that portion of the Work related thereto immediately and notify Tribe of such material. Contractor will not resume such Work until such PCBs, asbestos or other Hazardous Material has been removed and disposed of by others in a method satisfactory to both Tribe and Contractor in accordance with all applicable laws.

9-10.2 Contractor shall comply, and shall ensure that all employees, agents and Subcontractors it retains shall comply, and shall use all reasonable efforts and practices to cause any other persons occupying or present on the Project during the Work to comply with all applicable laws, regulations, and good business practices with respect to any Hazardous Material located, used, deposited or brought on the Project, or released, disposed of, or transported on, to, under, from or about the Project by any of them.

9-10.3 If a Hazardous Material is spilled, released or disposed of at the Site, the Reservation, or any surrounding area by or in connection with the activities of Contractor, its subcontractors, employees, agents or any other party acting under any of them, then in any such event Contractor shall promptly notify Tribe and shall, upon demand by Tribe and at Contractor's sole expense, effect the removal of any such Hazardous Material to the reasonable satisfaction of Tribe and in accordance with all applicable legal and regulatory requirements.

9-10.4 If the Contractor and/or its subcontractors, employees or any other person acting under Contractor causes the spill and/or release of any Hazardous Material affecting persons or property off-Site, or resulting in any injury or damage to the environment or to any other real or personal property wherever situated, or if any such spill and/or release arises out of the performance of the Work, Contractor shall promptly notify Tribe and shall, upon demand by Tribe and at Contractor's sole expense, effect the removal of any such Hazardous Material to the reasonable satisfaction of Tribe and in accordance with all applicable legal and regulatory requirements. If any governmental entity reasonably suspects that any such spill, injury, or damage has occurred or is likely to occur and such party notifies Contractor of such fact, Contractor shall promptly notify Tribe and cooperate with Tribe to effect the removal of such Hazardous Material or prevent such spill, injury, or damage, as the case may be, the costs of which shall be borne by Tribe as a Cost of the Work, unless the Contractor and/or any of its subcontractors, employees or any other person acting under Contractor is the cause thereof.

9-10.5 Contractor shall promptly report in writing to Tribe and Engineer all accidents whatsoever arising out of the performance of the Work, whether on or off the Site, which cause death, personal injury or property damage, giving full details and statements of witnesses. If death or serious injuries or serious damages are caused, the accident shall be reported to Tribe and Construction Manager immediately by telephone or messenger, which report shall be followed as promptly as practicable by notice in writing to Tribe and Construction Manager.

9-10.6 Contractor shall provide Tribe with true, correct, complete and legible copies of all notices, complaints, orders, reports, citations, listings, disclosure forms and correspondence received or submitted by Contractor with respect to any Hazardous Material associated with the Project. Contractor shall be responsible for providing its employees, agents, subcontractors, governmental entities and the public with any notices of disclosures concerning Hazardous Materials associated with the Project required under any applicable laws. Contractor shall in all events furnish Tribe with a true, correct, complete and legible copy of any disclosure forms which Contractor is required to complete under applicable laws and regulations respecting Hazardous Materials.

9-10.7 Notwithstanding anything to the contrary contained in this Agreement, in no event will Contractor be liable or responsible for any condition affecting the Project which pre-existed the execution hereof, except that Contractor shall comply, and shall cause its employees, agents, subcontractors and all other persons acting under them to comply, with all applicable laws, regulations and other governmental requirements with respect to any such condition.

9-10.8 Without limiting any other indemnification obligations provided by law or specified in this contract, Contractor shall indemnify, defend (at Contractor's sole cost and expense and with legal counsel acceptable to Tribe), pay for and hold harmless Tribe and its officers, directors, agents, employees, representatives, shareholders, affiliates, successors and assigns from and against any and all claims demands, losses, damages, disbursements, liabilities, obligations, fines, penalties, actions, causes of actions, suits, costs and expenses, including, without limitation, reasonable attorneys' fees and costs, and all other professional or consultants' expenses incurred in investigating, preparing for, serving as a witness in or defending any action or proceedings, whether actually commenced or threatened, or in removing or remediating any Hazardous Materials, on, under, from or about the Site and Project, arising out of or relating to, directly or indirectly, Contractor's breach of any of the terms of this Paragraph 9-10.

9-10.9 The provisions of this Article 9-10 shall survive the termination or expiration of this Contract and shall not be limited in any way by the amount or type of insurance obtained by Tribe, Contractor or any subcontractor.

9-11. Discovery of Native American Cultural Items or Archeological Artifacts:

9-11.1 Notification. In the event that Contractor, or any of its agents, employees or subcontractors, discovers Native American cultural items or archeological artifacts during any phase of construction, it must immediately provide telephone notification of the discovery, followed by written confirmation thereof, to the Tribal Chairman of the Tribe. If written confirmation is provided by certified mail, the return receipt shall constitute evidence of Contractor's compliance with this provision.

9-11.2 Ceasing Activity. In addition to providing notification of the discovery of Native American cultural items or archeological artifacts, Contractor shall stop construction and cease all activity in the area of the discovery and make all reasonable efforts to protect the Native American cultural items or archeological artifacts. If Contractor cannot reasonably protect the Native American cultural items or archeological artifacts, it shall immediately notify the Tribal Chairman of such fact.

9-11.3 Resumption of Construction. Following discovery of Native American cultural items or archeological artifacts, construction may resume, if otherwise lawful, after thirty (30) days of the Tribe's receipt of notification of such discovery, unless prior thereto the Tribe notifies Contractor in writing that, in order to protect or excavate Native American cultural items or archeological artifacts, such construction cannot resume. In such case, construction may only resume following written notification of resumption from the Tribe.

9-11.4 Definitions.

a. "Cultural items" means human remains and -

1. "associated funerary objects," which shall mean objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, and both the human remains and associated funerary

objects are presently in the possession or control of a Federal agency or museum, except that other items exclusively made for burial purposes or to contain human remains shall be considered as associated funerary objects;

2. “unassociated funerary objects,” which shall mean objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, where the remains are not in the possession or control of the Federal agency or museum and the objects can be identified by a preponderance of the evidence as related to specific individuals or families or to known human remains or, by a preponderance of the evidence, as having been removed from a specific burial site of an individual culturally affiliated with a particular Indian tribe;

3. “sacred objects,” which shall mean specific ceremonial objects which are needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present day adherents; and

4. “cultural patrimony,” which shall mean an object having ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual regardless of whether or not the individual is a member of the Indian tribe or Native Hawaiian organization and such object shall have been considered inalienable by such Native American group at the time the object was separated from such group.

b. “Archaeological Artifacts” means any object having historical, traditional or cultural importance to a Native American group or culture regardless of whether such object was historically the property of an individual Native American and regardless of whether such object would be considered alienable by such group or individual.

SECTION 10. PAYMENT

10-01. Applications for Payment and Certification by Engineer.

a. Contractor shall submit Applications for Payment to the Tribe in the following manner:

1. At least 20 days before the date established in this Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the Tribe has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect the Tribe’s interest therein, all of which must be satisfactory to the Tribe. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to the Tribe no later than the time of payment free and clear of all liens.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the Tribe or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

4. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to the Tribe, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

(A) The Work has progressed to the point indicated;

(B) The quality of the Work is in accordance with the Contract Documents; and

(C) The conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

b. By recommending any such payment Engineer will not thereby be deemed to have represented that:

1. Inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

2. That there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by the Tribe or entitle the Tribe to withhold payment to Contractor.

c. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

1. To supervise, direct, or control the Work;

2. For the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

3. For Contractor's failure to comply with laws and regulations applicable to Contractor's performance of the Work;

4. To make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price; or

5. To determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

d. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to the Tribe stated in Section 4(a)(iv). Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect the Tribe from loss because:

1. The Work is defective, or completed Work has been damaged, requiring correction or replacement;

2. The Contract Price has been reduced by Change Orders; or

3. The Tribe has been required to correct defective Work or complete Work in accordance this Agreement.

10-02. Progress Estimates and Payment.

a. The Tribe shall make progress payments on the basis of Contractor's Applications for Payment on or about the 15th day of each month during performance of the Work as provided in this Section 10. All such payments will be measured by the schedule of values established or, in the event there is no schedule of values, as provided in these General Conditions.

b. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or the Tribe may withhold, including but not limited to liquidated damages, in accordance with Section 4(a):

1. 90 percent of Work completed (with the balance being retainage); and

2. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

c. When 50% of the Work has been completed and if the Contractor's Work and progress has been satisfactory, the Tribe may reduce the retainage percentage to 5%.

d. Fourteen days after presentation of the Application for Payment to the Tribe with Engineer's recommendation, the amount recommended will (subject to the provisions of Section 5(d)) become due, and when due will be paid by the Tribe to Contractor.

e. The Tribe may refuse to make payment of the full amount recommended by Engineer because:

1. Claims have been made against the Tribe on account of Contractor's performance or furnishing of the Work;

2. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to the Tribe to secure the satisfaction and discharge of such Liens;

3. The Contractor's performance or furnishing of the Work is inconsistent with funding requirements;

4. There are other items entitling the Tribe to a set-off against the amount recommended; or

5. The Tribe has actual knowledge of the occurrence of any of the events enumerated in Section 4(d)(i-iv).

f. If the Tribe refuses to make payment of the full amount recommended by Engineer, the Tribe will give Contractor written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. The Tribe shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by the Tribe and Contractor, when Contractor corrects to the Tribe's satisfaction the reasons for such action.

10-03. Substitution of Securities.

a. Contractor may propose the substitution of securities of at least equal market value for any moneys to be withheld to ensure performance under the Contract. Market value shall be determined as of the day prior to the date such substitution is to take place. Such substitution shall be made at the request and expense of the Contractor. The securities shall be one or more of the following types:

1. Bonds or interest-bearing notes or obligations of the United States, or those for which the faith and credit of the United States are pledged for the payment of principal and interest.

2. Bonds or interest-bearing notes on obligations that are guaranteed as to principal and interest by a federal agency of the United States.

3. Bonds of the State of California, or those for which the faith and credit of the State of California are pledged for the payment of principal and interest.

4. Bonds or warrants, including, but not limited to, revenue warrants, of any county, city, metropolitan water district, California water district, California water storage district, irrigation district in the State of California, municipal utility district, or school district of the State of California, which are rated by Moody's or Standard and Poor as A or better.

5. Bonds, consolidated bonds, collateral trust debentures, consolidated debentures, or other obligations issued by federal land banks or federal intermediate credit banks established under the Federal Farm Loan Act, as amended; debentures and consolidated debentures issued by the Central Bank for Cooperatives and banks for cooperatives established under the Farm Credit Act of 1933, as amended; bonds, or debentures of the Federal Home Loan Bank Board established under the

Federal Home Loan Bank Act; and stock, bonds, debentures and other obligations of the Federal National Mortgage Association established under the National Housing Act as amended, and bonds of any Federal Home Loan Mortgage Corporation.

6. Commercial paper of “prime” quality as defined by a nationally recognized organization which rates such securities. Eligible paper is further limited to issuing corporations: (i) organized and operating within the United States; (ii) having total assets of Five Hundred Million Dollars (\$500,000,000.00); and (iii) approved by the Pooled Money Investment Board of the State of California. Purchases of eligible commercial paper may not exceed 180 days' maturity, nor represent more than 10 percent of the outstanding paper of an issuing corporation.

7. Bills of exchange or time drafts on and accepted by a commercial bank, otherwise known as banker's acceptances, which are eligible for purchase by the Federal Reserve System.

8. Certificates of deposit issued by a nationally or state-chartered bank of savings and loan association.

9. The portion of bank loans and obligations guaranteed by the United States Small Business Administration, or the United States Farmers Home Administration.

10. Student loan notes insured under the Guaranteed Student Loan Program established pursuant to the Higher Education Act of 1965, as amended (20 U.S.C. 1001, et seq.) and eligible for resale to the Student Loan Marketing association established pursuant to Section 133 of the Education Amendments of 1972, as amended (20 U.S.C. 1087-2).

11. Obligations issued, assumed, or guaranteed by International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, or the Government Development Bank of Puerto Rico.

b. Bonds, debentures, and notes issued by corporations organized and operating within the United States. Such securities eligible for substitution shall be within the top three ratings of a nationally recognized rating service.

c. The securities shall be deposited with any commercial bank as escrow agent, who shall arrange for transfer of such securities to the Contractor upon satisfactory completion of the contract. Any interest accrued or paid on such securities shall belong to the Contractor and shall be paid upon satisfactory completion of the contract.

The market value of the securities deposited shall at all times be maintained in an amount at least equal, in the sole judgment of the Tribe, to the moneys to be withheld pursuant to the Contract Documents to ensure performance of the Contract. In order to comply with this condition, Contractor shall deposit additional securities as necessary upon request by the Tribe or the escrow agent.

d. Upon acceptance of any Proposal that includes substituting securities for amounts withheld to ensure performance, a separate escrow agreement satisfactory in form and substance to the Tribe shall be prepared and executed by the Tribe, the Contractor, and the escrow agent, which may be the Tribe. The escrow agreement shall specify, among other matters, value of securities to be deposited; procedures for valuing the securities and for adding or withdrawing securities to maintain the market value of the deposited securities at least equal to the amount of moneys which would otherwise be

withheld; the terms and conditions of conversion to cash in case of the default by the Contractor; and terms, conditions and procedure for termination of the escrow. The Tribe shall have no obligation to enter any such Agreement that does not provide the Tribe with the unilateral right to convert securities to cash and to gain immediate possession of the cash.

10-04. Acceptance and Substantial Completion.

a. When Contractor considers the entire Work ready for its intended use Contractor shall notify the Tribe and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

b. Promptly after Contractor's notification, the Tribe, Contractor, and Engineer shall make a pre-final inspection of the Work to determine the status of completion.

c. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefore. If Engineer considers the Work substantially complete, Engineer will deliver to the Tribe a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. The Tribe shall have 14 days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 21 days after submission of the tentative certificate to the Tribe notify Contractor in writing, stating the reasons therefor. If, after consideration of the Tribe's objections, Engineer considers the Work substantially complete, Engineer will within said 21 days execute and deliver to the Tribe and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from the Tribe.

d. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to the Tribe and Contractor a written recommendation as to division of responsibilities pending final payment between the Tribe and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless the Tribe and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on the Tribe and Contractor until final payment.

e. The Tribe shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

10-05. Final Inspection and Payment.

a. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with the Tribe and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

b. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents, and other documents, Contractor may make application for final payment following the procedure for progress payments.

c. The final Application for Payment shall be accompanied (except as previously delivered) by:

1. All documentation called for in the Agreement, including but not limited to the evidence of insurance required by this Agreement;

2. Consent of the surety, if any, to final payment;

3. A list of all claims against the Tribe that Contractor believes are unsettled; and

4. Complete and legally effective releases or waivers (satisfactory to the Tribe) of all lien rights arising out of or liens filed in connection with the Work. In lieu of such releases or waivers, and as approved by the Tribe, Contractor may furnish receipts or releases in full and an affidavit of Contractor that:

(A) the releases and receipts include all labor, services, material, and equipment for which a lien could be filed; and

(B) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which the Tribe or the Tribe's property might in any way be responsible have been paid or otherwise satisfied. If any subcontractor or supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to the Tribe to indemnify the Tribe against any lien.

d. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by this Agreement, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to the Tribe for payment. At the same time, Engineer will also give written notice to the Tribe and Contractor that the Work is acceptable. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

e. Forty-five days after the presentation to the Tribe of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum the Tribe is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by the Tribe to Contractor.

10-06. Extra Work and Work Omitted. Whenever corrections, alterations, or modifications of the Work under this contract are ordered by the Engineer and approved by the Tribe and increase the

amount of work to be done, such added work shall be known as extra work, and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as work omitted.

When the Contractor considers that any changes ordered involve extra work, he shall immediately notify the Engineer in writing and subsequently keep him informed as to when and where extra work is to be performed and shall make claim for compensation therefore each month not later than the first day of the month following that in which the Work claimed to be extra work was performed and he shall submit a daily complete statement of materials used and expenses incurred on account of extra work performed, showing allocation of all materials and expenses.

All such claims shall state the date of the Engineer's written order and the date of approval by the Tribe authorizing the Work on account of which claim is made.

Unless such notification is made in writing within the time specified and unless complete statements of materials used and incurred on account of such extra work are furnished as above required, the Contractor shall not be entitled to payment on account of extra work and Contractor shall be deemed to have waived the right to make any future claims for compensation for such extra work.

When changes decrease the amount of work to be done, they shall not constitute a claim for damages on account of anticipated profits on the Work that may be omitted.

10-07. Compensation for Extra Work or Work Omitted. Whenever corrections, additions or modifications in the Work under this Agreement change the amount of work to be done or the amount of compensation due the Contractor and such changes have been ordered in writing by the Engineer and approved by the Tribe prior to the Contractor performing the extra work, then a price may be agreed upon, or failing such an agreement in price, an amount equal to the sum of the following five items shall be used as the full and proper compensation therefore; and such amount shall be added to or subtracted from, as the case may be, the price fixed by the terms of this contract for the part of the Work affected.

a. The necessary reasonable cost to the Contractor of the material required for work as furnished by the Contractor and delivered by the Contractor at the Site of the Work.

b. The necessary cost to the Contractor of the labor (including foremen devoting their exclusive attention to the Work in question), required to incorporate all of said material into the Work and to finish the Work in accordance with directions.

c. The necessary reasonable cost to the Contractor of equipment used for the Work.

d. The cost of workmen's compensation insurance premiums, State Unemployment and Federal Social Security payment on the labor included in item (b).

e. Fifteen (15%) percent of the sums of items (a), (b), (c) and (d) which shall be considered as covering all other expenses and profit. In order that a proper estimate may be made by the Engineer of the net cost of labor and materials entering into extra work, in accordance with the procedure just stated, the Contractor shall furnish weekly an itemized statement of material and labor supplied together with the cost of such material and the wages paid, and shall furnish vouchers for quantities and prices of such labor, material or work. In case the Contractor fails to comply with the above provisions, the Contractor shall have no claim for compensation against the Tribe.

This method of determining the price of work shall not apply to the performance of any work which is required or reasonably implied to be performed or furnished under this contract.

10-08. Compensation to the Tribe for Extension of Time. In case the Work called for under this Agreement is not completed within the time limit stipulated herein, and the delay is proximately caused by the sole negligence of the Contractor, the Tribe shall have the right to extend the time of completion thereof. If the time be so extended, the Tribe shall have the right to charge the Contractor and to deduct from the final payment for the Work the actual cost to the Tribe of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the contract and which accrue during the period of such extension, except that the cost of final unavoidable delays shall not be included in such charges.

10-9. Liquidated Damages for Delay. It is agreed by the parties to the contract that time is of the essence and that in case all the Work is not completed before or upon the expiration of the time limit as set forth, damage, other than those cost items identified in section 10-07, will be sustained by the Tribe, and that it is and will be impracticable to determine the actual amount of damage by reason of such delay; and it is therefore agreed that the Contractor will pay to the Tribe a per day sum set forth in the Agreement for each and every working days delay beyond the time prescribed.

10-10. Waiver of Consequential Damages. In no event shall the Tribe be responsible or held liable to Contractor for any indirect, special, incidental, consequential or exemplary damages, except to the extent included in liquidated damages, howsoever arising, and whether such indirect, special, incidental, consequential or exemplary damages arise by way of or based upon any claim of indemnity, fault, breach of this agreement, contract, warranty, strict liability, tort, negligence, or otherwise, including the responsibility or liability for any loss of any future profit, investment, revenue, return, use, contract opportunity or good will, cost of capital, business interruption, or claims of customers or third parties.

SECTION 11. MISCELLANEOUS

11-01. Notice. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. If mailed, the notice shall be deemed received on the date of delivery stated in the return receipt.

11-02. Computation of Time. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

11-03. Litigation and Forum Selection. Contractor and Tribe stipulate and agree that any litigation relating to the enforcement or interpretation of this contract, arising out of Contractor's performance or relating in any way to the Work shall be brought in the United States District Court for the Central District of California. If, for any reason, the District Court fails to exercise jurisdiction over the case, then the action may be brought in the Chemehuevi Tribal Court. The parties waive any objection they might otherwise have to the propriety of venue in the federal and tribal courts.

The duties and obligations imposed by these General Conditions and the rights and

remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor and all of the right and remedies available to Tribe thereunder, shall be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by law or contract, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All warranties and guarantees made in the Contract Document shall survive final payment and termination or completion of this contract.

11-04. Waiver. Contractor shall strictly comply with all notice and other contract requirements. Waiver by the Tribe of any failure of the Contractor to comply with any term of the contract, including the notice provisions, shall not be deemed a waiver of a subsequent breach.

11-05. Toilets. The Contractor shall provide and maintain portable toilets on Site of the Work. These toilets shall be kept clean and supplied and shall be serviced at least once a week. The Engineer may require the number of toilets to be increased or that the service interval be decreased.

11-06. Grading. The Contractor shall confine all operations (including storage of materials) on planned and designated sites to receive the Work and areas to be graded, and all ungraded areas shall be left undisturbed with the natural vegetation and contours in tact. Additional graded area may be authorized or approved by the Engineer.

SECTION 12. DRUG AND ALCOHOL FREE WORKPLACE REQUIREMENT AND TOBACCO USE RESTRICTIONS

12-01. Workplace Defined. The term “workplace” refers to the Site and all locations where the Work is performed, and the Contractor’s and Tribe’s offices and vehicles.

12-02. Drug Prohibitions. The following drug related activities are prohibited within the workplace:

- a. Manufacturing of a controlled substance.
- b. Distribution of a controlled substance.
- c. Dispensing of a controlled substance.
- d. Possession of a controlled substance.
- e. Use of a controlled substance,
- f. Being under the influence of a controlled substance,

12-03. Maintenance of Drug-free Workplace. The Tribe requires the establishment and maintenance of a drug-free workplace:

- a. If the Contractor has not already done so, it must submit a proposed Drug-Free Workplace Policy (DFWP) to be implemented for the Work under this Agreement.

b. The Contractor's DFWP will be reviewed by the Tribe and, upon approval, shall be implemented by the Contractor.

c. The Contractor shall comply with the approved DFWP and shall require all Subcontractors to adopt and implement the approved DFWP.

d. A finding by the Tribe's Engineer or the Tribe that the Contractor is either not actively maintaining the DFWP or is not actively requiring the subcontractors to maintain the DFWP shall be grounds for termination of the Agreement or other remedies.

12-04. Minimum Requirements. The DFWP may include any provisions the Contractor deems appropriate, but shall include the following minimum requirements:

a. The Contractor and the subcontractors shall provide drug-free awareness programs that will inform their employees of the following:

1. The dangers of drug abuse.
2. The Tribe's policy of maintaining a drug-free workplace.
3. The availability of drug counseling, rehabilitation, and assistance programs.
4. The penalties to be imposed for drug violations.

b. Every employee shall submit to urinalysis testing for substance abuse:

1. Not more than 14 calendar days prior to the employee commencing the Work on this Project.
2. A negative test report must be obtained prior to the employee commencing Work under the Agreement.
3. If the employee refuses to submit to testing or the test results are positive, the employee shall not be allowed to perform the Work under the Agreement.

c. All employees shall be subject to random retesting and shall be retested annually. If an employee refuses to submit to retesting or if the test results are positive, the employee shall not be allowed to perform the Work under the Agreement.

d. Random retesting of one or more employees may be demanded by the Tribe at any time.

1. Testing shall be performed within 24 hours after the demand.
2. If an employee refuse to submit to retesting or if the test results are positive, the employee shall not be allowed to perform Work under the Agreement.

e. If an employee is convicted for violation of a criminal drug statute, the employee shall not be allowed to perform Work under the Agreement.

f. All drug testing of Contractor's or Subcontractor's employees shall be part of the Agreement amount. No extra amounts for drug testing will be considered:

1. Except that the cost of random retest demanded by the Tribe that have negative results may be added to the Agreement by Change Order.

12-05. Alcohol Prohibitions. The following alcohol related activities are prohibited within the workplace.

- a. Distribution of alcoholic beverages.
- b. Dispensing of alcoholic beverages.
- c. Possession of alcoholic beverages.
- d. Use of alcoholic beverages.
- e. Being under the influence of alcoholic beverages.

12-06. Maintenance of Alcohol-free Workplace. The Tribe requires an alcohol-free workplace.

a. A finding by the Tribe that the Contractor is either not actively maintaining an alcohol-free workplace or is not actively requiring the Subcontractors to maintain an alcohol-free workplace shall be grounds for termination of the Agreement or other remedies.

b. The Contractor shall:

- 1. Maintain a supply of breath analyzing alcohol detectors on the job Site.
- 2. Notify all employees about the alcohol-free workplace requirement.
- 3. Immediately test any employee who shows sign of alcohol usage.
- 4. Immediately remove from the job Site, for a period of not less than 24

hours, any employee whose test result shows more than a .02 percent alcohol or who refuses to be tested.

c. The Tribe may require immediate testing of any employee at any time.

12-07. Tobacco Use. Tobacco products shall be used only in designated areas. Tobacco usage areas shall:

- a. Be clearly posted.
- b. Outside all structures either permanent or temporary.
- c. Be at least 20 feet away from any area where the Work is performed.
- d. Cleaned daily.

Violations of this policy may result in the job site being declared a tobacco-free workplace.

SECTION 13. CALIFORNIA SALES TAX EXEMPTION AND PROCEDURES

13-01. Type of Contracts and Subcontracts. The Agreement and any subcontract, change orders or amendments thereto, shall state the total sales price of materials, exclusive of charges for installation and performance by the Contractor or any subcontractor.

13-02. California Sales Permit. The Contractor and any subcontractor shall possess and maintain a valid seller's permit received through an approved California Sales Permit Application, BOE-400-SPA, available from the Contractor's local Board of Equalization Office (California). It is the parties' intent that the Contractor and any subcontractor be deemed a "seller" of materials within the meaning of Cal. Reg. 1521(b)(2)(A)(2).

13-03. No State Tax and Title Passes to Tribe. The Contractor and any Subcontractor shall purchase all materials ex-tax and provide a resale certificate number to all vendors and suppliers. The Contractor and any subcontractor expressly agree that all materials shall be delivered to the Chemehuevi Reservation and that upon delivery title to the materials shall pass to the Tribe and become the sole property of the Tribe prior to the time materials are installed by the Contractor or Subcontractor.

13-04. Payment for Labor and Materials Separate. The Tribe shall pay the Contractor the price for labor and performance separate from that portion of the price which is the estimated cost of materials as provided in this Agreement.

13-05. Separate Invoices. Contractor's requests for payment under the Agreement, including progress payments and equitable adjustments for extra work under the Agreement, the Contractor shall furnish, in such detail as requested by the Engineer, a breakdown of the total contract price in two invoices for: (1) labor performance showing the amount included therein for each principal category of the Work exclusive of any costs for materials, and (2) for the sales price of the materials, exclusive of any amounts for installation.

END OF DOCUMENT

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SECTION E
FEDERAL CONTRACT PROVISIONS

AIRPORT IMPROVEMENT PROGRAM PROJECT. Work in this contract is being undertaken and accomplished by the owner, in accordance with the terms and conditions of a grant agreement between the owner and the United States, under the Airport and Airway Improvement Act of 1982 (84 Stat. 219) and Part 152 of the Federal Aviation Regulations (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs of the project that are determined to be allowable project costs under that Act. The United States is not a party to this contract and no reference in this contract to the Federal Aviation Administration hereinafter referred to as FAA, or any representative thereof, or to any rights granted to the FAA or any representative thereof, or the United States, by the contract, makes the United States a party to this contract.

1. CONSENT TO ASSIGNMENT. The contractor shall obtain the prior written consent of the owner to any proposed assignment of any interest in or part of this contract.
2. CONVICT LABOR. No convict labor may be employed under this contract.
3. FAA INSPECTION OF REVIEW. The contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.
4. SUBCONTRACTS. The contractor shall insert in each of his subcontracts the provisions contained herein in paragraph 6, and also a clause requiring the subcontractor to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.
5. PROVISIONS FOR ALL AIRPORT IMPROVEMENT PROGRAM CONSTRUCTION CONTRACTS.

a. Civil Rights Act of 1964, Title VI – Contractor Contractual Requirements

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) **Compliance with Regulations.** The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) **Nondiscrimination.** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports. The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to the contractor under the contract until the contractor complies, and/or

(b) Cancellation, termination, or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions. The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

b. Airport and Airway Improvement Act of 1982, Section 520 - General Civil Rights Provisions

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

the tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport a program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon. In these cases the provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property. In the case of contractors, this provision binds the contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

c. Lobbying and Influencing Federal Employees

(1) No Federal appropriated funds shall be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobby Activities," in accordance with its instructions.

d. Access to Records and Reports

The Contractor shall maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives' access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

e. Disadvantaged Business Enterprises

(1) **Contract Assurance (§26.13)** - The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

(2) **Prompt Payment (§26.29)** - The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than **30** days from the receipt of each payment the prime contractor receives from the **Chemehuevi Indian Tribe**. The prime contractor agrees further to return retainage payments to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the **Chemehuevi Indian Tribe**. This clause applies to both DBE and non-DBE subcontractors.

f. Energy Conservation Requirements

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163)

g. Breach of Contract Terms

Any violation or breach of terms of this contract on the part of the contractor or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

h. Rights to Inventions

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.

i. Trade Restriction Clause

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

(1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

(2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;

(3) has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

j. Veteran's Preference

In the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Veterans of the Vietnam era and disabled veterans as defined in Section 515(c)(1) and (2) of the Airport and Airway Improvement Act of 1982. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

k. Davis Bacon Requirements

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent

deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional

classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding.

The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and Basic Records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph 5.5(a)(3)(i) above. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be maintained under paragraph (3)(i) above and that such information is correct and complete;
- (2) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying or transcription by authorized representatives of the Sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered

program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

I. Equal Employment Opportunity - 41 CFR Part 60-1.4(B)**a. During the performance of this contract, the contractor agrees as follows:**

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which she/he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedure authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase

order as the administering agency may direct as a means of enforcing such provision, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

m. Certification of Nonsegregated Facilities – 41 CFR Part 60-1.8

Notice to Prospective Federally Assisted Construction Contractors

- 1) A Certification of Non-segregated Facilities shall be submitted prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
- 2) Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Notice to Prospective Subcontractors of Requirements for Certification of Non-Segregated Facilities

- 1) A Certification of Non-segregated Facilities shall be submitted prior to the award of a subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.
- 2) Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

CERTIFICATION OF NONSEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

n. Standard Federal Equal Employment Opportunity – 41 CFR Part 60.4.3

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);

2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the

applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 18.7a through 18.7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such a

superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (18.7a through 18.7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 18.7a through 18.7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 18.7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number,

construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

o. Termination of Contract

1. The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.

2. If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.

3. If the termination is due to failure to fulfill the contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the contractor shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.

4. If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.

5. The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

p. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

The bidder/offeror certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

q. Contract Workhours and Safety Standards Act Requirements 29 CFR Part 5

1. Overtime Requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; Liability for Unpaid Wages; Liquidated Damages. In the event of any violation of the clause set forth in paragraph (1) above, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 above, in the sum of \$100 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 above.

3. Withholding for Unpaid Wages and Liquidated Damages. The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 above.

4. Subcontractors. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section.

r. Clean Air and Water Pollution Control

Contractors and subcontractors agree:

1. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;

2. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;
3. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
4. To include or cause to be included in any construction contract or subcontract which exceeds \$ 100,000 the aforementioned criteria and requirements.
5. In addition, Contractor shall comply with the provisions of the Tribe's Water Code.

s. Buy American Requirement

- a. The Aviation Safety and Capacity Expansion Act of 1990 (49 USC s/s 50101) provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. An Airport Improvement Program grant is a substantial source of funds for this Project. The following terms and conditions apply to this Project:
 - (1) Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs b. (1) or (2) shall be treated as domestic.
 - (2) Components. As used in this clause, components mean those articles, materials, and supplies incorporated directly into steel and manufactured products.
 - (3) Cost of Components. This means the costs for production of the components, exclusive of final assembly labor costs.
- b. The successful Bidder will be required to assure that only domestic steel and manufactured products will be used by the Contractor, subcontractors, materialmen and suppliers in the performance of the Project Contract, except those:
 - (1) that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;

- (2) that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or
 - (3) that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.
- c. For the latest information on Buy American product requirements and list of equipment meeting Buy American requirements for AIP grant projects visit FAA web site at <http://www.faa.gov>

SECTION F
FAA GENERAL PROVISIONS

SECTION 10 DEFINITION OF TERMS

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

Paragraph Number	Term	Definition
10-11	Building Area	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	Calendar Day	Every day shown on the calendar.
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	Change Order	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	Contract	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	Contractor	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.

Paragraph Number	Term	Definition
10-20	Contractors Quality Control (QC) Facilities	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	Contractor Quality Control Program (CQCP)	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	Construction Safety and Phasing Plan (CSPP)	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
10-24	Drainage System	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	Engineer	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	Extra Work	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices

Paragraph Number	Term	Definition
		prepared and issued by the General Services Administration.
10-30	Force Account	<p>a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p>b. Owner Force Account - Work performed for the project by the Owner's employees.</p>
10-31	Intention of Terms	<p>Whenever, in these specifications or on the plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.</p>
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	Major and Minor Contract Items	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.

Paragraph Number	Term	Definition
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is Chemehuevi Indian Tribe (Tribe or CIT).
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in

Paragraph Number	Term	Definition
		accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR)	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	Runway	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	Runway Safety Area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	Specifications	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work

Paragraph Number	Term	Definition
		and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and

Paragraph Number	Term	Definition
		holidays on which the Contractor's forces engage in regular work will be considered as working days.

Refer to Section D - Tribal General Conditions, Paragraph 3-01 for additional definitions of terms.

END OF SECTION 10

SECTION 20 PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 ADVERTISEMENT (NOTICE TO BIDDERS). See Section A – Advertisement For Bids.

20-02 QUALIFICATION OF BIDDERS. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

For additional requirements see Section D – Tribal General Conditions, Paragraph 1-05.

20-03 CONTENTS OF PROPOSAL FORMS. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

For additional requirements see Section D – Tribal General Conditions, Paragraph 1-02.

20-04 ISSUANCE OF PROPOSAL FORMS. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

- a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
- b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.
- c. Documented record of Contractor default under previous contracts with the Owner.
- d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

20-06 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from their own examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

The Contractor understands and agrees that the Tribe makes no representation or warranty as to the suitability of the Project site for any purpose. Contractor expressly acknowledges that Contractor has personally inspected the Project site and accept the Project site "as is". Contractor expressly assumes any risk or danger that exists on or arises from performing the Work at the Project site. In addition, Contractor has been informed and understands that hazardous conditions exist on the Project site, including, but not limited to falling rocks, landslides and unstable soils, that could cause damage to personal property and injury, including death, to Contractor, its officers, agents, employees, and subcontractors from Contractor's use of the Project site. The Contractor, its officers, agents, employees, and subcontractors acknowledge that they have been fully advised of the potential risk that may result from coming onto and using the Project site and knowingly assumes that risk.

For additional requirements see Section D – Tribal General Conditions, Paragraph 1-01.

20-07 PREPARATION OF PROPOSAL. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals which they propose for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address

of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

20-08 RESPONSIVE AND RESPONSIBLE BIDDER. A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 IRREGULAR PROPOSALS. Proposals shall be considered irregular for the following reasons:

- a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.
- f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 BID GUARANTEE. Each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

For additional requirements see Section D – Tribal General Conditions, Paragraph 1-04.

20-11 DELIVERY OF PROPOSAL. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened

20-12 WITHDRAWAL OR REVISION OF PROPOSALS. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

For additional requirements see Section D – Tribal General Conditions, Paragraph 1-03.

20-13 PUBLIC OPENING OF PROPOSALS. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or email request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 DISQUALIFICATION OF BIDDERS. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in “default” for any reason specified in paragraph 20-04, *Issuance of Proposal Forms*, of this section.

20-15 DISCREPANCIES AND OMISSIONS. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner’s Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner’s Engineer a written request for interpretation no later than seven (7) days prior to bid opening.

Any interpretation of the project bid documents by the Owner’s Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

END OF SECTION 20

SECTION 30 AWARD AND EXECUTION OF CONTRACT

30-01 CONSIDERATION OF PROPOSALS. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

- a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.
- b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 AWARD OF CONTRACT. The award of a contract, if it is to be awarded, shall be made in accordance with Section D – Tribal General Conditions, Paragraph 2-01.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

30-03 CANCELLATION OF AWARD. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

30-04 RETURN OF PROPOSAL GUARANTY. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals*. Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds*.

For additional requirements see Section D – Tribal General Conditions, Paragraph 2-02.

30-05 REQUIREMENTS OF CONTRACT BONDS. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 EXECUTION OF CONTRACT. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in Section D - Tribal General Conditions, Paragraphs 4-01 through 4-04.

For additional requirements see Section D – Tribal General Conditions, Paragraph 2-03.

30-07 APPROVAL OF CONTRACT. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 FAILURE TO EXECUTE CONTRACT. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in Section D – Tribal General Conditions, Paragraph 2-03 shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

SECTION 40 SCOPE OF WORK

40-01 INTENT OF CONTRACT. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall 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.

40-02 ALTERATION OF WORK AND QUANTITIES. The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

For additional requirements see Section D – Tribal General Conditions, Paragraph 7-06.

40-03 OMITTED ITEMS. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 EXTRA WORK. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

For additional requirements see Section D – Tribal General Conditions, Paragraph 10-07 and 10-08.

40-05 MAINTENANCE OF TRAFFIC. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

40-06 REMOVAL OF EXISTING STRUCTURES. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

- a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,
- b. Remove such material from the site, upon written approval of the RPR; or
- c. Use such material for the Contractor's own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 FINAL CLEANUP. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

END OF SECTION 40

SECTION 50 CONTROL OF WORK

50-01 AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

50-02 CONFORMITY WITH PLANS AND SPECIFICATIONS. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 COORDINATION OF CONTRACT, PLANS, AND SPECIFICATIONS. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for

materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

For additional requirements see Section D – Tribal General Conditions, Paragraph 3-07 and 6-19.

50-04 LIST OF SPECIAL PROVISIONS.

ORDER OF PRECEDENCE

If there is a conflict between any of the Contract Documents, the document highest in precedence shall control. The precedence shall be as follows:

1. Permits issued by jurisdictional regulatory agencies.
2. Change Orders and/or Supplemental Agreements; whichever occurs last.
3. Contract/Agreement.
4. Addenda.
5. Bid/Proposal.
6. FAA Technical Provisions.
7. Tribal General Conditions.
8. FAA General Provisions.
9. Federal Contract Provisions.
10. Plans.
11. Standard Plans.

In the event that there is a conflict between the Tribe's General Conditions and any other provisions of these bid documents, the General Conditions shall control

50-05 COOPERATION OF CONTRACTOR. The Contractor shall be supplied with one (1) electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

For additional requirements see Section D – Tribal General Conditions, Paragraph 6-20.

50-06 COOPERATION BETWEEN CONTRACTORS. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 CONSTRUCTION LAYOUT AND STAKES. The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 AUTHORITY AND DUTIES OF QUALITY ASSURANCE (QA) INSPECTORS. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 INSPECTION OF THE WORK. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

For additional requirements see Section D – Tribal General Conditions, Paragraph 7-01 and 7-02.

50-10 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 LOAD RESTRICTIONS. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 MAINTENANCE DURING CONSTRUCTION. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 FAILURE TO MAINTAIN THE WORK. Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

50-14 PARTIAL ACCEPTANCE. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 FINAL ACCEPTANCE. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 CLAIMS FOR ADJUSTMENT AND DISPUTES. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

50-17 VALUE ENGINEERING COST PROPOSAL.

The provisions of this paragraph will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding.

On projects with original contract amounts in excess of \$100,000, the Contractor may submit to the RPR, in writing, proposals for modifying the plans, specifications or other requirements of the contract for the sole purpose of reducing the cost of construction. The value engineering cost proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, design and safety standards. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.

Not eligible for value engineering cost proposals are changes in the basic design of a pavement type, runway and taxiway lighting, visual aids, hydraulic capacity of drainage facilities, or changes in grade or alignment that reduce the geometric standards of the project.

As a minimum, the following information shall be submitted by the Contractor with each proposal:

- a. A description of both existing contract requirements for performing the work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each.
- b. An itemization of the contract requirements that must be changed if the proposal is adopted.
- c. A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes.
- d. A statement of the time by which a change order adopting the proposal must be issued.
- e. A statement of the effect adoption of the proposal will have on the time for completion of the contract.
- f. The contract items of work affected by the proposed changes, including any quantity variation attributable to them.

The Contractor may withdraw, in whole or in part, any value engineering cost proposal not accepted by the RPR, within the period specified in the proposal. The provisions of this subsection shall not be construed to require the RPR to consider any value engineering cost proposal that may be submitted.

The Contractor shall continue to perform the work in accordance with the requirements of the contract until a change order incorporating the value engineering cost proposal has been issued. If a change order has not been issued by the date upon which the Contractor's value engineering cost proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such value engineering cost proposal shall be deemed rejected.

The RPR shall be the sole judge of the acceptability of a value engineering cost proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the RPR may disregard the contract bid prices if, in the RPR's judgment such prices do not represent a fair measure of the value of the work to be performed or deleted.

The Owner may require the Contractor to share in the Owner's costs of investigating a value engineering cost proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Owner to deduct the cost of investigating a value engineering cost proposal from amounts payable to the Contractor under the contract.

If the Contractor's value engineering cost proposal is accepted in whole or in part, such acceptance will be by a contract change order that shall specifically state that it is executed pursuant to this paragraph. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the value engineering cost proposal or such part of it as has been accepted and shall include any conditions upon which the RPR's approval is based. The change order shall also set forth the estimated net savings attributable to the value engineering cost proposal. The net savings shall be determined as the difference in costs between the original contract costs for the involved work items and the costs occurring as a result of the proposed change. The change order shall also establish the net savings agreed upon and shall provide for adjustment in the contract price that will divide the net savings equally between the Contractor and the Owner.

The Contractor's 50% share of the net savings shall constitute full compensation to the Contractor for the value engineering cost proposal and the performance of the work.

Acceptance of the value engineering cost proposal and performance of the work shall not extend the time of completion of the contract unless specifically provided for in the contract change order.

Use of this subsection is subject to prior approval from the Chemehuevi Indian Tribe and in conformance with the Federal, State, County and local laws.

END OF SECTION 50

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SECTION 60 CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

60-02 SAMPLES, TESTS, AND CITED SPECIFICATIONS. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP).

The Contractor shall submit to the Engineer resumes on all testing organizations and individual persons who will be performing the tests. The Engineer will determine if such persons are qualified. All the test data shall be reported to the Engineer after the results are known. A legible, handwritten copy of all test data shall be given to the Engineer daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the Engineer showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 CERTIFICATION OF COMPLIANCE/ANALYSIS (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 PLANT INSPECTION. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

- a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 ENGINEER/ RESIDENT PROJECT REPRESENTATIVE (RPR) FIELD OFFICE. The Contractor shall provide dedicated space for the use of the engineer, RPR, and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity.

For additional requirements see Section D – Tribal General Conditions, Paragraph 6-02 for Contractor's field office.

60-06 STORAGE OF MATERIALS. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 UNACCEPTABLE MATERIALS. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

60-08 OWNER FURNISHED MATERIALS. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

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SECTION 70 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-01 LAWS TO BE OBSERVED. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 PERMITS, LICENSES, AND TAXES. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 PATENTED DEVICES, MATERIALS, AND PROCESSES. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

For additional requirements see Section D – Tribal General Conditions, Paragraph 6-06.

70-04 RESTORATION OF SURFACES DISTURBED BY OTHERS. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows:

None

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 FEDERAL PARTICIPATION. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 SANITARY, HEALTH, AND SAFETY PROVISIONS. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 PUBLIC CONVENIENCE AND SAFETY. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic*, and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 CONSTRUCTION SAFETY AND PHASING PLAN (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is in Appendix H of these project specifications.

70-09 USE OF EXPLOSIVES. The use of explosives is not permitted on this project.

70-10 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

For additional requirements see Section D – Tribal General Conditions, Paragraph 3-08.

70-12 THIRD PARTY BENEFICIARY CLAUSE. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 OPENING SECTIONS OF THE WORK TO TRAFFIC. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Refer to Construction Phasing Plans of drawings.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

None.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's

assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-15.1 FAA FACILITIES AND CABLE RUNS. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport Owner a minimum of seven (14) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.

d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.

e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 FURNISHING RIGHTS-OF-WAY. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 PERSONAL LIABILITY OF PUBLIC OFFICIALS. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 NO WAIVER OF LEGAL RIGHTS. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 ENVIRONMENTAL PROTECTION. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 ARCHAEOLOGICAL AND HISTORICAL FINDINGS. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

For additional requirements see Section D – Tribal General Conditions, Paragraph 9-11

70-21 INSURANCE REQUIREMENTS. Refer to Section D – Tribal General Conditions, Paragraph 5-01.

END OF SECTION 70

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SECTION 80 PROSECUTION AND PROGRESS

80-01 SUBLETTING OF CONTRACT. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

For additional requirements see Section D – Tribal General Conditions, Paragraph 3-06.

The Contractor shall perform, with his organization, an amount of work equal to at least 25% percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 NOTICE TO PROCEED (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within 10 days of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 EXECUTION AND PROGRESS. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

For scheduling requirements, see Specification C-100, Contractor's Quality Control Program.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 LIMITATION OF OPERATIONS. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hour prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

Refer to Construction Phasing Plans in the drawings.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

80-05 CHARACTER OF WORKERS, METHODS, AND EQUIPMENT. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

For additional requirements see Section D – Tribal General Conditions, Paragraph 9-01.

80-06 TEMPORARY SUSPENSION OF THE WORK. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the

work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

For additional requirements see Section D – Tribal General Conditions, Paragraph 9-03, 9-04, 9-05 and 9-07.

80-07 Determination and extension of contract time. The number of calendar days shall be stated in the proposal and contract and shall be known as the Contract Time.

80-07.1 CONTRACT TIME BASED ON CALENDAR DAYS. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

For additional requirements see Section D – Tribal General Conditions, Paragraph 9-06 and 11-02.

80-08 FAILURE TO COMPLETE ON TIME. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Liquidated damages will be assessed at \$300/day for each calendar day exceeding the construction time for completion of each individual phase and project completion is delayed.

The construction time allowed for each individual phase is indicated in the Construction Phasing Drawings and the CSPP. The total construction time is indicated in Section B-3 under "Contract Time"

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

80-09 DEFAULT AND TERMINATION OF CONTRACT. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

For additional requirements see Section D – Tribal General Conditions, Paragraph 7-10.

80-10 TERMINATION FOR NATIONAL EMERGENCIES. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 WORK AREA, STORAGE AREA AND SEQUENCE OF OPERATIONS. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

SECTION 90 MEASUREMENT AND PAYMENT

90-01 MEASUREMENT OF QUANTITIES. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term "ton" will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of

Term	Description
	delivery.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	<p>Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.</p> <p>Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p> <p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p>

Term	Description
	<p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.</p>
Rental Equipment	<p>Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i>.</p>
Pay Quantities	<p>When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.</p>

90-02 SCOPE OF PAYMENT. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 COMPENSATION FOR ALTERED QUANTITIES. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or

indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 PAYMENT FOR OMITTED ITEMS. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 PAYMENT FOR EXTRA WORK. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

For additional requirements see Section D – Tribal General Conditions, Paragraph 10-07.

90-06 PARTIAL PAYMENTS. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, 10% percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-03. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is

satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

For additional requirements see Section D – Tribal General Conditions, Paragraph 10-01, 10-02 and 10-06.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

To receive progress payments, the Contractor shall provide to the Owner interim lien releases from all subcontractors and suppliers.

90-07 PAYMENT FOR MATERIALS ON HAND. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.

b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

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

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

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

In any action brought by the Tribe against the Contractor to enforce the provisions of this Section 90-10, the Tribe shall be entitled, if it prevails in the action, to its court costs and reasonable attorney's fees at prevailing market rates.

90-08 PAYMENT OF WITHHELD FUNDS. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 ACCEPTANCE AND FINAL PAYMENT. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

For additional requirements see Section D – Tribal General Conditions, Paragraph 10-04 and 10-05.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 CONSTRUCTION WARRANTY.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 30 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

i. In any action brought by the Tribe against the Contractor to enforce the provisions of this Section 90-10, the Tribe shall be entitled, if it prevails in the action, to its court costs and reasonable attorney's fees at prevailing market rates.

90-11 CONTRACTOR FINAL PROJECT DOCUMENTATION. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

- c. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.
- d. Complete all punch list items identified during the Final Inspection.
- e. Provide complete release of all claims for labor and material arising out of the Contract.
- f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.
- g. When applicable per state requirements, return copies of sales tax completion forms.
- h. Manufacturer's certifications for all items incorporated in the work.
- i. All required record drawings, as-built drawings or as-constructed drawings.
- j. Project Operation and Maintenance (O&M) Manual(s).
- k. Security for Construction Warranty.
- l. Equipment commissioning documentation submitted, if required.

END OF SECTION 90

SECTION G
FAA TECHNICAL PROVISIONS

ITEM C-100 CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)

100-1 GENERAL. Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

- a. Provide qualified personnel to develop and implement the CQCP.
- b. Provide for the production of acceptable quality materials.
- c. Provide sufficient information to assure that the specification requirements can be met.
- d. Document the CQCP process.

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and approved by the Resident Project Representative (RPR). No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and approved.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing requirements. QA testing requirements are the responsibility of the RPR or Contractor as specified in the specifications.

A Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Resident Project Representative (RPR), Contractor, subcontractors, testing laboratories, and Owner's representative must be held prior to start of construction. The QC/QA workshop will be facilitated by the Contractor. The Contractor shall coordinate with the Airport and the RPR on time and location of the QC/QA workshop.

Items to be addressed, at a minimum, will include:

- a. Review of the CQCP including submittals, QC Testing, Action & Suspension Limits for Production, Corrective Action Plans, Distribution of QC reports, and Control Charts.
- b. Discussion of the QA program.
- c. Discussion of the QC and QA Organization and authority including coordination and information exchange between QC and QA.
- d. Establish regular meetings to discuss control of materials, methods and testing.
- e. Establishment of the overall QC culture.

100-1.1 SUBMITTALS. Prior to beginning work, the Contractor shall submit the following:

- a. Contractor's Quality Control Plan per Section 100-2
- b. Quality Control (QC)/Quality Assurance (QA) workshop
- c. Asphalt Laydown Plan
- d. Baseline Construction Schedule including weekly progress schedules

100-2 DESCRIPTION OF PROGRAM.

a. General description. The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

b. Contractor Quality Control Program (CQCP). The Contractor shall describe the CQCP in a written document that shall be reviewed and approved by the RPR prior to the start of any production, construction, or off-site fabrication. The written CQCP shall be submitted to the RPR for review and approval at least 14 calendar days before the CQCP Workshop. The Contractor's CQCP and QC testing laboratory must be approved in writing by the RPR prior to the Notice to Proceed (NTP).

The CQCP shall be organized to address, as a minimum, the following:

1. QC organization and resumes of key staff
2. Project progress schedule
3. Submittals schedule
4. Inspection requirements
5. QC testing plan
6. Documentation of QC activities and distribution of QC reports
7. Requirements for corrective action when QC and/or QA acceptance criteria are not met
8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor must add any additional elements to the CQCP that is necessary to adequately control all production and/or construction processes required by this contract.

100-3 CQCP ORGANIZATION. The CQCP shall be implemented by the establishment of a QC organization. An organizational chart shall be developed to show all QC personnel, their authority, and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all QC staff by name and function, and shall indicate the total staff required to implement all elements of the CQCP, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the CQCP, the personnel assigned shall be subject to the qualification requirements of paragraphs 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The QC organization shall, as a minimum, consist of the following personnel:

a. Program Administrator. The Contractor Quality Control Program Administrator (CQCPA) must be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA must have a minimum of five (5) years of experience in QC pavement construction with prior QC experience on a project of comparable size and scope as the contract.

Included in the five (5) years of paving/QC experience, the CQCPA must meet at least one of the following requirements:

- (1) Professional Engineer with one (1) year of airport paving experience.
- (2) Engineer-in-training with two (2) years of airport paving experience.
- (3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with three (3) years of airport paving experience.
- (4) An individual with four (4) years of airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

The CQCPA must have full authority to institute any and all actions necessary for the successful implementation of the CQCP to ensure compliance with the contract plans and technical specifications.

The CQCPA authority must include the ability to immediately stop production until materials and/or processes are in compliance with contract specifications. The CQCPA must report directly to a principal officer of the construction firm. The CQCPA may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

b. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians must report directly to the CQCPA and shall perform the following functions:

- (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.
- (2) Performance of all QC tests as required by the technical specifications and paragraph 100-8.
- (3) Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. Staffing levels. The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

100-4 PROJECT PROGRESS SCHEDULE. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*. Please also refer to Section 100-13.

100-5 SUBMITTALS SCHEDULE. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

- a. Specification item number
- b. Item description
- c. Description of submittal
- d. Specification paragraph requiring submittal
- e. Scheduled date of submittal

100-6 INSPECTION REQUIREMENTS. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and used.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and used.

100-7 CONTRACTOR QC TESTING FACILITY.

a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

- 8.1.3 Equipment Calibration and Checks;
- 8.1.9 Equipment Calibration, Standardization, and Check Records;
- 8.1.12 Test Methods and Procedures

b. For projects that include P-501, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM C1077, *Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation*:

- 7 Test Methods and Procedures
- 8 Facilities, Equipment, and Supplemental Procedures

100-8 QC TESTING PLAN. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

- a. Specification item number (e.g., P-401)
- b. Item description (e.g., Hot Mix Asphalt Pavements)
- c. Test type (e.g., gradation, grade, asphalt content)
- d. Test standard (e.g., ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)
- e. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated)
- f. Responsibility (e.g., plant technician)
- g. Control requirements (e.g., target, permissible deviations)

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

100-9 DOCUMENTATION. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

- (1) Technical specification item number and description
- (2) Compliance with approved submittals
- (3) Proper storage of materials and equipment
- (4) Proper operation of all equipment
- (5) Adherence to plans and technical specifications
- (6) Summary of any necessary corrective actions

- (7) Safety inspection.
- (8) Photographs

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

- (1) Technical specification item number and description
- (2) Test designation
- (3) Location
- (4) Date of test
- (5) Control requirements
- (6) Test results
- (7) Causes for rejection
- (8) Recommended remedial actions
- (9) Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

100-10 CORRECTIVE ACTION REQUIREMENTS. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 INSPECTION AND/OR OBSERVATIONS BY THE RPR. All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 NONCOMPLIANCE.

a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the RPR will recommend the Owner take the following actions:

- (1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or
- (2) Order the Contractor to stop operations until appropriate corrective actions are taken.

100-13 PROJECT SCHEDULING. The project shall be scheduled with Critical Path Method in the form of an activity on node Precedence Diagram Network (PDN) with capabilities of identifying the critical path. The principles and definitions of the terms used herein shall be as set forth in the Associated General Contractors of America's publication "The Use of CPM in Construction," latest edition. To the extent there are any conflicts between the Associated General Contractors of America's publication and the Contract Documents, the Contract Documents shall govern.

The Contractor shall submit to the Engineer for review, at the Pre-Construction Meeting the following:

- 1) Baseline Construction Schedule.
- 2) Shop drawing submittal and schedule.

100-14 CONTRACTOR'S BASELINE CONSTRUCTION SCHEDULE. The Baseline Construction Schedule shall show the sequence and interdependence of activities required for complete performance of the Work, beginning with the date of the Notice to Proceed and concluding with the Contract Completion Date shown in the Contract Documents. The schedule shall reflect the Contractor's true plans for progressing and performing the work. The Contractor shall be responsible for the means, methods, and duration and certifies that the schedule duration and contract period is achievable and Contractor estimate/bid is based upon sequences shown in the schedule.

The Engineer will review and make comments on the Baseline Construction Schedule, and meetings will be held between the Engineer and the Contractor to resolve any conflicts or discrepancies. Other Subcontractor or Supplier representatives whom the Contractor may desire to invite or whom the Engineer may request, shall attend.

Comments made by the Engineer on the Baseline Construction Schedule, during review, will not relieve the Contractor from compliance with requirements of the Contract Documents. To the extent that there are any conflicts between the approved schedule and the requirements of the Contract Documents, the Contract Documents shall govern.

The Baseline Construction Schedule submitted to the Engineer shall include at a minimum, all of the following:

- 1) Description of activities.
- 2) Predecessor and successor activities and descriptions.
- 3) Estimated start date (by calendar date).
- 4) Estimated finish date (by calendar date).
- 5) Float days within each activity.

100-15 APPROVAL OF BASELINE CONSTRUCTION SCHEDULE. The Engineer shall approve or disapprove, in writing, the Contractor's submission within 14 days after receipt of all required information. The Construction Schedule, once approved, becomes the Baseline Construction Schedule which shall be used for monitoring and evaluating all facets of Contract performance including but not limited to progress, changes, and delays including penalties for liquidated damages.

The Contractor shall revise the schedule, as required by the Engineer, to reflect Project construction. If any of the required submissions are returned to the Contractor for corrections or revisions, they shall be resubmitted. Review and response by the Engineer shall be given within seven (7) days after receipt of each new submission.

When resubmitting the Baseline Construction Schedule for approval, the Contract shall include in its letter of transmittal, any variances from the requirements of the Contract Documents. Otherwise, the Contractor will not be relieved of the responsibility for executing the Work in strict accordance with the requirements of the Contract Documents.

If the Contractor fails to submit the initial Baseline Construction Schedule within the time prescribed, or revisions thereof within the required time, it is within the Engineer's discretion to stop the Contractor's Work at no additional cost to the Tribe. Further, no mobilization progress payments shall be made until such time as the Contractor submits the required information and obtains approval of the Baseline Construction Schedule.

100-16 REVISIONS TO APPROVED BASELINE CONSTRUCTION SCHEDULE. The Contractor shall prosecute the Work in accordance with the approved Baseline Construction Schedule. Out of sequence construction, defined as a change in the Baseline Construction Schedule, requires prior approval of the Engineer as defined below.

Upon approval of a Change Order, the change shall be reflected in the next schedule submittal by the Contractor.

No change to the approved Baseline Construction Schedule shall be made without the prior written approval of the Engineer. If the Contractor desires to make a change to the approved Baseline Construction Schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change as well as the specifics, such as revisions to activities, logic, durations, etc. The Engineer will provide a response within seven (7) days.

If the Engineer considers a schedule change to be of a major nature, the Engineer may require the Contractor to revise and submit for acceptance all of the affected portion(s) of the Baseline Construction Schedule and an analysis to show the effect on the entire Project. The proposed revision and analysis shall be submitted to the Engineer within 15 days after the Engineer notifies the Contractor the revision is of a major nature. A change will be considered to be of a major nature if the time estimated for an activity or sequence of activities is varied from the original plan to the degree that there is reasonable doubt that the Contract Completion Date will be met, or if the change impacts the Work of other

contractors at the Site. Changes to activities having adequate float shall be considered as minor changes, except that an accumulation of minor changes may be considered a major change when such changes affect the Contract Completion Date. (Activities that have adequate float are activities that are not critical after the change is made.)

Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor.

100-17 **PROGRESS SCHEDULES.** During weekly project meetings, on a date established by the Engineer, the Contractor shall submit the following progress schedules:

1) The first shall be a progress schedule listing the activities completed and in progress for the previous week and the activities scheduled for the succeeding two (2) weeks. The activity designations shall be consistent with the activity designations in the Base Line Schedule.

2) The second shall be an updated base line schedule every other week reflecting actual completion dates and durations of activities during the previous two weeks and estimating the anticipated contract completion, including percentage of remaining duration for incomplete activities.

MEASUREMENT AND PAYMENT

100-18 Contractor's Quality Control Program will not be measured, but shall be paid for as a lump sum. This price shall be full compensation for the personnel, tests, facilities and documentation required to implement the CQCP. All material, labor, equipment and tools necessary to meet the requirements of Item C-100 including topographic surveys, on-site/off-site material testing and inspection, providing all documentation and reports required in these Project Specifications including and not limited to the Baseline Schedule, updates to the Baseline Schedule for the duration of the project, weekly look ahead schedule and shop drawing submittal schedule. The CQCP will be paid as a lump sum with the following schedule of partial payments:

- a. With first pay request, 25% with approval of CQCP and completion of the Quality Control (QC)/Quality Assurance (QA) workshop.
- b. When 25% or more of the original contract is earned, an additional 25%.
- c. When 50% or more of the original contract is earned, an additional 20%.
- d. When 75% or more of the original contract is earned, an additional 20%
- e. After final inspection and acceptance of project, the final 10%.

Payment will be made under:

Item C-100-1 Contractor's Quality Control Program (CQCP) --per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

ASTM C1077 Standard Practice for Agencies Testing Concrete and Concrete
Aggregates for Use in Construction and Criteria for Testing Agency
Evaluation

ASTM D3665 Standard Practice for Random Sampling of Construction Materials

ASTM D3666 Standard Specification for Minimum Requirements for Agencies Testing
and Inspecting Road and Paving Materials

END OF ITEM C-100

ITEM C-102 TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

DESCRIPTION

102-1 GENERAL. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods, and as required by the approved Storm Water Pollution Prevention Plan (SWPPP).

Temporary erosion control shall be in accordance with the approved erosion control plan (SWPPP); the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

The Contractor shall prepare and implement SWPPP in accordance with the Statewide General permit requirements during construction of this project.

156-1.2 SUBMITTAL. The Contractor shall submit the following:

- a. Storm Water Pollution Prevention Plan.

MATERIALS

102-2.1 GRASS. Grass that will not compete with the grasses sown later for permanent cover shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 MULCHES. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials. Mulches shall not create a wildlife attractant.

102-2.3 FERTILIZER. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 SLOPE DRAINS. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 SILT FENCE. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet

ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 OTHER. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 GENERAL. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 SCHEDULE. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 CONSTRUCTION DETAILS. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 **INSTALLATION, MAINTENANCE AND REMOVAL OF SILT FENCE.** When silt fences are necessary, silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

METHOD OF MEASUREMENT

156-4.1 Temporary air and water pollution, soil erosion and siltation control will not be measured but will be paid for as a lump sum.

BASIS OF PAYMENT

156-5.1 Temporary air and water pollution, soil erosion and siltation control will be paid for at the contract lump sum price. This price shall include full compensation for furnishing all labor, materials, equipment, tools, incidentals and for doing all the work of this item complete in place, including preparation, obtaining approval of, amending, updating and implementation of Storm Water Pollution Prevention Plan (SWPPP) and implementing the Best Management Practices (BMP's).

Payment will be made under:

Item C-102-1	Stormwater Pollution Prevent Control Plan--per lump sum
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33	<i>Hazardous Wildlife Attractants on or Near Airports</i>
AC 150/5370-2	<i>Operational Safety on Airports During Construction</i>

ASTM International (ASTM)

ASTM D6461	<i>Standard Specification for Silt Fence Materials</i>
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United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

ITEM C-105 MOBILIZATION**DESCRIPTION**

105-1 **DESCRIPTION.** This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

This item includes but is not limited to: Mobilization and demobilization; Preparatory work; Laydown/staging area set up and use and for operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to and from the Work site; furnishing and erecting field offices including providing the Engineer's field office, setup of facilities necessary for work on the project; obtaining electrical power and water, payment of bonds and insurance for the Work; obtaining all permits; demobilization and site restoration; and for all other work and operations which must be performed and costs that must be incurred incidental to the initiation of actual construction of the Work and for which payment is not otherwise provided for under the Contract.

105-2 **MOBILIZATION LIMIT.** Mobilization shall be limited to **5** percent of the total project cost.

105-3 **POSTED NOTICES.** Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 **ENGINEER/RPR FIELD OFFICE.** Not required.

105-5 **CONTRACTOR'S OPERATIONS AND STORAGE AREA**

During the course of the Work the Contractor will be afforded the use of the area designated on the drawings as the "Contractor's Staging and Laydown Area." This space shall be provided without charge to the Contractor for the Contractor's use throughout the contract period. This space may be used by the Contractor for storage of materials and equipment to be used in the Work, the Contractor's field office, the Contractor's laboratory facilities, and for parking of employee's personal automobiles. The Contractor shall not damage the existing pavements. Any damage to the asphalt pavement shall be repaired at the Contractor's expense.

As a part of the Contractor's Operations and Storage Area set-up activities, the Contractor shall investigate the availability of and adequate supply of water, power and communications utilities and make all arrangements, including permits, for the purchase of necessary utilities, at the Contractor's sole expense.

The location shown on the Plans is approximate. The Contractor shall coordinate with the Engineer to determine the precise location and limits of the Area.

The Contractor may install temporary 6-foot high chain link fencing and gates to enclose the Staging and Laydown Area to protect his area as required at his own expense. The fencing and gates shall remain the property of the Contractor and shall be removed at the completion of the Work.

The Contractor shall complete all clean up, restoration and repair, removal of equipment and materials, and removal of all temporary security fencing, gates and traffic control devices within the work site within thirty (30) calendar days after the date of substantial completion of the Work.

METHOD OF MEASUREMENT

105-6 BASIS OF MEASUREMENT AND PAYMENT. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

- a. With first pay request, 25%.
- b. When 25% or more of the original contract is earned, an additional 25%.
- c. When 50% or more of the original contract is earned, an additional 40%.
- d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation*, the final 10%.

BASIS OF PAYMENT

105-7 Payment will be made under:

Item C-105-1 Mobilization (5% max) -- per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

ITEM C-115 SPECIAL PROVISIONS**DESCRIPTION****115-1.1 DESCRIPTION OF THE WORK**

This project consists of the replacement of the lighting system of Runway 16-34 at the Chemehuevi Valley Airport which includes but is not limited to the following elements:

BASE BID

1. Clearing and grubbing of existing vegetation within the RSA
2. Remove existing runway edge lights, threshold lights, and cables
3. Construct new runway edge and threshold light cans, and install new LED fixtures
4. Construct new conduits and cables
5. Replacing existing primary wind cone
6. Replace existing airfield sign panels
7. Airfield lighting vault improvements including new CCR's and repair of the pilot lighting control system

115-1.2 SUBMITTALS. Prior to beginning work, the Contractor shall submit the following:

- a. Construction Safety Phasing and Plan (CSPP)
- b. Safety Plan Compliance Document (SPCD)

115-1.3 COMPLIANCE WITH ADVISORY CIRCULARS

All work shall be in accordance with FAA Advisory Circulars. The Contractor's attention is specifically directed to Advisory Circular 150/5370-2G, Operational Safety on Airports During Construction, current edition, which the Contractor shall adhere to.

115-1.4 PHASES OF WORK

Phases of work shall be as shown on the construction phasing plans or as directed by the Resident Project Representative (RPR).

115-1.4.1 General

All work within 75 feet of the centerline of Runway 16-34 require the closure of the runway and shall be accomplished at a time approved by the RPR.

All work within 39.5 feet of the centerline of any taxiway will require the closure of the taxiway. The work shall be coordinated with the RPR.

The Contractor shall schedule the Work such that the runway and taxiways can remain open with minimal closures. Prior to opening the runway and taxiway, the Contractor shall conduct a safety inspection to determine that all personnel, equipment and Foreign Object Debris (FOD) have been removed, and that the runway and taxiway are ready for air operations. This inspection shall be completed no later than 20 minutes prior to the opening of the runway and taxiway to provide an opportunity for RPR to conduct his own inspection. The Contractor shall cooperate with RPR staff at all times, and shall correct any deficiencies prior to opening the runway or taxiway.

Existing runway and taxiway lighting systems, manholes, pull boxes and other utility systems shall be protected and maintained at all times. Where required, the contractor shall provide temporary lighting systems to replace the existing airfield lighting systems during the construction period. The airport lighting systems must be operable as a condition for opening the runway and taxiway for operations.

115-1.5 CONSTRUCTION SAFETY AND PHASING PLAN

Aviation safety during construction is a significant concern at airports. Any construction work near and around the airport needs to consider the aircraft operational safety to minimize any potential safety hazards.

Therefore all work shall be performed in accordance with FAA AC 150/5370-2G, *Operational Safety on Airports During Construction* and the *Construction Safety and Phasing Plans (CSPP)*. Both documents are provided in Section H in the project specifications.

In addition, the Contractor shall be responsible to prepare and submit a Safety Plan Compliance Document (SPCD) for approval by the RPR. The SPCD shall supplement the CSPP construction, and shall include information not available during bidding, which includes specifics of proposed haul routes, lay down areas, emergency contact information, methods of construction and mitigation of risks the contractor will utilize on the project to ensure safety. The SPCD should not duplicate the information within the CSPP. The SPCD shall include a certified signed statement by an authorized officer of the company which states that he/she will abide by the FAA AC 150/5370-2G and CSPP, and has prepared the SPCD in accordance with the requirements. The SPCD shall be submitted and approved by the Engineer prior to beginning any work on the project.

The Contractor shall be responsible to prepare, update, revise and implement all requirements within the CSPP and SPCD, including furnishing, erecting, and maintaining all barricades, warning signs, and markings for hazards necessary to protect the public, airport users, and the Work. During periods of darkness, barricades, warning signs, and markings shall be suitably illuminated.

Unless otherwise noted, the Contractor shall delineate the working area with barricades as shown in the Construction Safety and Phasing Plan in Section H of the specifications.

115-1.6 HAUL ROADS

Haul roads are shown on the Plans and Construction Safety and Phasing Plan. Any damage to the pavements caused by the Contractor's operations shall be repaired by the Contractor at his expense.

Access to all active aprons shall be maintained at all times. Haul routes crossing active aircraft pavements shall be continuously swept to keep clean at all times.

The Contractor shall submit a detailed haul route traffic control plan to demonstrate the methods for providing access for aircraft operations and access for vehicular traffic at all times. This plan shall be submitted a minimum of 14 calendar days prior to the start of haul road use. This plan will require approval by the Airport prior to haul road use by the Contractor.

The Contractor shall obtain at the Contractor's own expense any haul permits needed from the Chemehuevi Indian Tribe for use of public streets for haul routes. Traffic control and cleaning shall comply with agency requirements. As a minimum, the Contractor shall provide sufficient traffic control measures to protect the public and the Contractor's personnel.

115-1.7 PRE-CONSTRUCTION CONFERENCE

Following award, and prior to the start of construction Work, the Contractor shall conduct a Pre-Construction Conference at a time and place designated by the RPR and have prepared a construction schedule for discussions with expected completion dates. The purpose of the Pre-Construction Conference shall be to discuss various items including operational safety, testing, quality control, security, safety, project scheduling, labor requirements and environmental factors. As a minimum, the following items will be discussed:

Introduction of Parties Attending

Award of the Contract

Construction Safety and Phasing Plan (CSPP)

Safety Plan Compliance Document (SPCD)

Description of the Work

Quality Assurance Plan

Submittals/RFI's

Permits

Utility Company Input

Assignment of Superintendent and Emergency Phone Numbers

Discussion of Construction Schedule (at this meeting the Contractor shall describe the proposed sequence of Work in detail)

Liquidated Damages

Safety and Security

Certified Payrolls, Progress Payment System, Prevailing Wage Rates

Lien releases

Concerns of FAA

Concerns of the Airport

Additional Comments

The Contractor shall be prepared to fully describe the proposed construction organization, operations and schedule at this meeting.

115-1.8 INTERIM GRADE REQUIREMENTS

The Contractor is advised that there can be no vertical grade changes greater than 3" within the Runway and Taxiway Safety Area, and no slopes greater than 5% in the Runway and Taxiway Safety Area, when the runway or taxiway is open for operations. The Runway Safety Area starts at the centerline of the runway and extends at a right angle for a distance of 75 feet each side. The Taxiway Safety Area begins at the centerline of the Taxiway and extends at a right angle for a distance of 39.5 feet each side.

Prior to opening the Runway or Taxiway at the assigned times, the Contractor shall ensure that the grade requirements described above are met. This can be done by backfilling and bringing compacted earthwork and/or compacted base material up to grade within the Safety Areas described in the paragraph above.

115-1.9 FOD PREVENTION

Aircraft and aircraft engines are subject to Foreign Object Damage (FOD) from debris and waste material lying on and adjacent to airfield pavements. The Contractor shall remove all such materials that may appear on operational aircraft pavements due to the Contractor's operations. The Contractor shall furnish and operate sufficient numbers of self-loading vacuum/motor sweepers with spray nozzles to continuously sweep and completely clean the work areas and haul routes during the construction shift.

The Contractor shall coordinate the use of the sweepers with the RPR to ensure that any necessary clearances are received.

Prior to opening the airport operations areas for use, the Contractor shall complete a FOD check to confirm that no FOD remains in any of the work areas. Any FOD discovered shall be completely removed by the Contractor prior to opening the airport for operations.

115-1.10 PORTABLE CONSTRUCTION LIGHTING

The Contractor is responsible for providing work area lighting of sufficient quality and quantity to construct the Work to the quality standards required in the Plans and Specifications.

As a minimum the construction lighting shall meet the following requirements:

a. For any Work to be performed during the night time hours the Contractor shall ensure that the work areas are adequately illuminated. A minimum of 10 foot-candles of illumination shall be provided in the work areas using maneuverable light plants with 1000-watt metal halide floodlights, mounted as high as practicality will allow. The Contractor shall determine the number of light plants and their required spacing to achieve the illumination levels specified herein. However, space between light plants shall not be greater than 100 feet.

b. The Contractor shall coordinate with RPR to ensure that light placements do not interfere with the visibility of pilots.

c. The Contractor shall not leave equipment on the airfield during non-working hours.

115-1.11 STANDBY EQUIPMENT

It is the contractor's responsibility to provide standby equipment for completion of the work to be performed in each shift, if required, in a timely manner.

115-1.12 SCHEDULING AND DAILY OPERATIONS

All work hours shall be subject to the written approval of the RPR, Owner and RPR, and shall be in accordance with the approved Work schedule. The Contractor shall also provide daily and weekly Work plans. The Contractor shall have personnel and equipment staged and ready to occupy the work site at the start times listed.

Prior to the end of the work shift the Contractor shall arrange to have RPR inspect the work site to confirm that it meets FAA Regulations Part 139 criteria and verify that the site is being left in a satisfactory condition. The Contractor shall allow sufficient time to make any corrections, or clean up items found to be deficient, before opening at the required times listed. All runway and taxiway safety areas that do not pass the operations inspection shall remain closed until corrective measures are complete and approved by RPR.

The Contractor shall attend daily briefings and weekly construction meetings with the RPR. Appropriate staff from the Airport and the Contractor shall attend as required. Topics shall include but not be limited to schedule updates, current issues, quality control, utility issues, submittal status, RFI status, coordination with other contracts, and potential disputes.

115-1.13 PRE-PHASE PLANNING MEETINGS

Prior to the start of Work, and prior to the start of any new phases or sub-phases of Work, the Contractor shall attend a Pre-Phase Planning Meeting. At these meetings the Contractor shall describe in detail the approach to be taken for the subject Work. The Contractor shall include any sketches required to describe the Work approach. The Contractor shall describe in detail the equipment to be used, security requirements, haul routes, traffic control, backup equipment and contingency planning should equipment or material delivery problems occur, etc.

Pre-Phase Planning Meetings will be held for the following phases of work at a minimum:

- Demolition of the existing runway lights and cables
- Construction of new runway lights cans, installation of new fixtures, and new conduits
- Installation of new CCR's and repair of the pilot lighting control at the airfield lighting vault

MEASUREMENT AND PAYMENT

115-2.1 Construction Safety and Phasing Plan will not be measured, but shall be paid for as a lump sum. This price shall be full compensation for the preparation, obtaining approval, and amending of the Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) including implementation and furnishing all labor, materials, incidentals and equipment, tools including installation, relocation and maintenance of barricades and traffic control throughout the duration of the project necessary to complete the work.

Payment will be made under:

Item C-115-1	Construction Safety and Phasing Plan--per lump sum
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END OF ITEM C-115

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ITEM P-151 CLEARING AND GRUBBING**DESCRIPTION**

151-1.1 GENERAL. This item shall consist of clearing or clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the plans or as required by the Resident Project Representative (RPR).

a. Clearing shall consist of the cutting and removal of all brush, logs, hedges, the removal of fences and other loose or projecting material from the designated areas. The grubbing of stumps and roots will not be required.

b. Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the RPR is unsuitable including the grubbing of roots, matted roots, and the disposal from the project of all spoil materials resulting from clearing and grubbing.

c. Tree Removal. Not used.

CONSTRUCTION METHODS

151-2.1 GENERAL. The areas denoted on the plans to be cleared and grubbed shall be staked on the ground by the Contractor as indicated on the plans.

The removal of existing structures and utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the plans. Whenever a telephone pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated, the Contractor shall advise the RPR who will notify the proper local authority or owner to secure prompt action.

151-2.1.1 DISPOSAL. All materials removed by clearing or by clearing and grubbing shall be disposed of outside the Airport's limits at the Contractor's responsibility, except when otherwise directed by the RPR. Burning of material is not permitted.

151-2.1.2 BLASTING. Blasting shall not be allowed.

151-2.2 CLEARING. The Contractor shall clear the staked or indicated area of all materials as indicated on the plans.

151-2.3 CLEARING AND GRUBBING. In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials as indicated on the plans, shall be removed, except where embankments exceeding 3-1/2 feet (105 cm) in depth will be constructed outside of paved areas. For embankments constructed outside of paved areas, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off flush with the original ground and allowed to remain. Tap roots and other projections over 1-1/2 inches (38 mm) in diameter shall be grubbed out to a depth of at least 18 inches (0.5 m) below the finished subgrade or slope elevation.

Any buildings and miscellaneous structures that are shown on the plans to be removed shall be demolished or removed, and all materials shall be disposed of by removal from the site. The cost of removal is incidental to this item. The remaining or existing foundations, wells, cesspools, and like structures shall be destroyed by breaking down the materials of which the foundations, wells, cesspools,

etc., are built to a depth at least 2 feet (60 cm) below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material that cannot be used in backfill shall be removed and disposed of at the Contractor's expense. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes in embankment areas remaining after the grubbing operation shall have the sides of the holes flattened to facilitate filling with acceptable material and compacting as required in Item P-152. The same procedure shall be applied to all holes remaining after grubbing in areas where the depth of holes exceeds the depth of the proposed excavation.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

151-3.1 Clearing and Grubbing Existing Vegetation Within the Runway Safety Area will not be measured, but shall be paid for as a lump sum. This price shall be full compensation for all labor, materials, incidentals and equipment, and tools necessary to complete the work.

Payment will be made under:

Item P-151-1	Clearing and Grubbing Existing Vegetation Within the Runway Safety Area --per lump sum
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END OF ITEM P-151

ITEM P-152 EXCAVATION, SUBGRADE, AND EMBANKMENT**DESCRIPTION**

152-1.1 GENERAL. This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.1A SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit the following:

a. The contractor shall provide quality control plan to include all testing procedures and frequency in accordance with the requirements of Item P-152.

b. Contractor shall submit all copies of soil density test results to Engineer. This shall include areas which were re-tested due to failure during initial testing.

152-1.2 CLASSIFICATION. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature which is not otherwise classified and paid for elsewhere.

b. Rock Excavation. Not Used.

c. Muck Excavation. Not Used.

d. Drainage Excavation. Not Used.

e. Borrow Excavation. Not Used.

152-1.3 UNSUITABLE EXCAVATION. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction or trench backfill. Unsuitable excavation shall be considered as unclassified excavation.

CONSTRUCTION METHODS

152-2.1 GENERAL. The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas at the airport on-site material stockpile area shown on the plans or as directed by the RPR. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to

loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

- a. Blasting. Blasting shall not be allowed.

152-2.2 EXCAVATION. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

All areas to be excavated shall be stripped of vegetation. All suitable excavated material shall be used in the formation of trench backfill, embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of as shown on the plans at the material stockpile area.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

- a. Selective grading. When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

- b. Undercutting. Material deemed unsatisfactory by the RPR shall be excavated to a minimum depth of 12 inches (300 mm) below the subgrade or to the depth specified by the RPR or as shown on the Plans. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of at the airport material stockpile area or as directed by the RPR. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be considered incidental.

- c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

d. Removal of utilities. The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by the Contractor as indicated on the plan. All existing foundations shall be excavated at least 2 feet (60 cm) below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. All foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans.

152-2.3 BORROW EXCAVATION. Borrow areas are not required.

152-2.4 DRAINAGE EXCAVATION. Not used.

152-2.5 PREPARATION OF CUT AREAS OR AREAS WHERE EXISTING PAVEMENT HAS BEEN REMOVED. In those areas on which a subbase or base course is to be placed, the top 6 inches of subgrade shall be compacted to not less than 95% of maximum density for non-cohesive soils, and 90% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 PREPARATION OF EMBANKMENT AREA. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 CONTROL STRIP. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 FORMATION OF EMBANKMENTS. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within $\pm 2\%$ of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The Contractor shall take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be developed for each soil type based on visual classification.

Density tests shall be taken by the Contractor for every 600 linear feet of compacted trench backfill for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 95% of maximum density for non-cohesive soils, and 90% of maximum density for cohesive soils as determined by ASTM D698. Under all areas to be paved, the embankments shall be compacted to a depth of 6-inches and to a density of not less than 95% percent of the maximum density as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compact and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for other items.

152-2.9 PROOF ROLLING. Not used.

152-2.10 COMPACTION REQUIREMENTS. The subgrade or existing base course under areas to be paved shall be compacted to a depth of as indicated on the Plans and to a density of not less than 95 percent of the maximum dry density as determined by ASTM D698. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of as indicated on the Plans and to a density of not less than 90 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within $\pm 2\%$ of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the $\frac{3}{4}$ inch (19.0 mm) sieve, follow the methods in ASTM D698. Tests for moisture content and compaction will be taken at a minimum of 600 square-yard of subgrade. All quality assurance testing shall be done by the RPR.

The in-place field density shall be determined in accordance with ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 FINISHING AND PROTECTION OF SUBGRADE. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 HAUL. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 SURFACE TOLERANCES. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- ½ inch (12 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. Grade. The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +/-0.05 feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to be placed, grade shall not vary more than 0.10 feet (30 mm) from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 TOPSOIL. Not used.

METHOD OF MEASUREMENT

152-3.1 MEASUREMENT. No separate measurement shall be made for excavation, embankments, or trench backfill.

BASIS OF PAYMENT

152-4.1 PAYMENT. No separate payment will be made for excavation, embankments, or trench backfills. Its cost shall be considered incidental and included in the contract unit price of associated bid items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180 Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))

ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2700 kN-m/m³))

ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2 Operational Safety on Airports During Construction Software
Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66 Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

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ITEM P-153 CONTROLLED LOW-STRENGTH MATERIAL (CLSM)**DESCRIPTION**

153-1.1 GENERAL. This item shall consist of furnishing, transporting, and placing a controlled low-strength material (CLSM) as flowable backfill in trenches or at other locations shown on the plans or as directed by the Resident Project Representative (RPR).

153-1.2 SUBMITTALS. Prior to commencing work in this item and delivery of materials to the job site, the Contractor shall submit the following:

a. Mix design including test reports and/or certificates of compliance for each required mix for aggregates, water, cement and admixtures.

MATERIALS

153-2.1 MATERIALS.

a. Cement. Cement shall conform to the requirements of ASTM 150 Type II.

b. Fly ash. Fly ash shall conform to ASTM C618, Class C or F.

c. Fine aggregate (sand). Fine aggregate shall conform to the requirements of ASTM C33 except for aggregate gradation. Any aggregate gradation which produces the specified performance characteristics of the CLSM and meets the following requirements, will be accepted.

Sieve Size	Percent Passing by weight
3/4 inch (19.0 mm)	100
No. 200 (75 μ m)	0 - 12

d. Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

MIX DESIGN

153-3.1 PROPORTIONS. The Contractor shall submit, to the RPR, a mix design including the proportions and source of aggregate, fly ash, cement, water, and approved admixtures. No CLSM mixture shall be produced for payment until the RPR has given written approval of the proportions. The proportions shall be prepared by a laboratory and shall remain in effect for the duration of the project. The proportions shall establish a single percentage or weight for aggregate, fly ash, cement, water, and any admixtures proposed. Laboratory costs are incidental to this item.

a. Compressive strength. Unless otherwise indicated on the plans or specified in these specifications, CLSM shall be designed to achieve a 28-day compressive strength of 100 to 200 psi, when tested in accordance with ASTM D4832, with no significant strength gain after 28 days.

b. Consistency. Design CLSM to achieve a consistency that will produce an approximate 8-inch (200 mm) diameter circular-type spread without segregation. CLSM consistency shall be determined per ASTM D6103.

CONSTRUCTION METHODS

153-4.1 PLACEMENT.

a. Placement. CLSM may be placed by any reasonable means from the mixing unit into the space to be filled. Agitation is required during transportation and waiting time. Placement shall be performed so structures or pipes are not displaced from their final position and intrusion of CLSM into unwanted areas is avoided. The material shall be brought up uniformly to the fill line shown on the plans or as directed by the RPR. Each placement of CLSM shall be as continuous an operation as possible. If CLSM is placed in more than one lift, the base lift shall be free of surface water and loose foreign material prior to placement of the next lift.

b. Contractor Quality Control. The Contractor shall collect all batch tickets to verify the CLSM delivered to the project conforms to the mix design. The Contractor shall verify daily that the CLSM is consistent with 153-3.1a and 153-3.1b. Adjustments shall be made as necessary to the proportions and materials as needed. The Contractor shall provide all batch tickets to the RPR.

c. Limitations of placement. CLSM shall not be placed on frozen ground. Mixing and placing may begin when the air or ground temperature is at least 35°F (2°C) and rising. Mixing and placement shall stop when the air temperature is 40°F (4°C) and falling or when the anticipated air or ground temperature will be 35°F (2°C) or less in the 24-hour period following proposed placement. At the time of placement, CLSM shall have a temperature of at least 40°F (4°C).

153-4.2 CURING AND PROTECTION

a. Curing. The air in contact with the CLSM shall be maintained at temperatures above freezing for a minimum of 72 hours. If the CLSM is subjected to temperatures below 32°F (0°C), the material may be rejected by the RPR if damage to the material is observed.

b. Protection. The CLSM shall not be subject to loads and shall remain undisturbed by construction activities for a period of 48 hours or until a compressive strength of 15 psi (105 kPa) is obtained. The Contractor shall be responsible for providing evidence to the RPR that the material has reached the desired strength. Acceptable evidence shall be based upon compressive tests made in accordance with paragraph 153-3.1a.

153-4.3 Quality Assurance (QA) Acceptance. CLSM QA acceptance shall be based upon batch tickets provided by the Contractor to the RPR to confirm that the delivered material conforms to the mix design.

METHOD OF MEASUREMENT

153-5.1 MEASUREMENT. No separate measurement shall be made for controlled low strength material (CLSM).

BASIS OF PAYMENT

153-6.1 PAYMENT. No separate payment will be made for controlled low strength material (CLSM). Its cost shall be considered incidental and included in the contract unit price of associated bid items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C33	Standard Specification for Concrete Aggregates
ASTM C150	Standard Specification for Portland Cement
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D4832	Standard Test Method for Preparation and Testing of Controlled Low-Strength Material (CLSM) Test Cylinders
ASTM D6103	Flow Consistency of Controlled Low Strength Material (CLSM)

END OF ITEM P-153

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ITEM P-610 CONCRETE FOR MISCELLANEOUS STRUCTURES**DESCRIPTION**

610-1.1 GENERAL. This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

610-1.2 SUBMITTALS. Prior to commencing work in this item and delivery of materials to the job site, the Contractor shall submit the following:

- a. Test Results: The Contractor shall submit all copies of certified test results on aggregates, cement, flyash, admixtures, joint material, steel reinforcement and curing material to the RPR for review. These shall include retests for items that failed initial testing.
- b. The contractor shall submit, to the RPR, a concrete mix design including the proportions and source of materials, admixtures, and compressive strength.

MATERIALS

610-2.1 GENERAL. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix.

If the expansion is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.

610-2.2 COARSE AGGREGATE. The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

Coarse Aggregate Grading Requirements

Maximum Aggregate Size	ASTM C33, Table 3 Grading Requirements (Size No.)
1 1/2 inch (37.5 mm)	467 or 4 and 67
1 inch (25 mm)	57
3/4 inch (19 mm)	67
1/2 inch (12.5 mm)	7

610-2.2.1 COARSE AGGREGATE susceptibility to durability (D) cracking. Not used.

610-2.3 FINE AGGREGATE. The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

610-2.4 CEMENT. Cement shall conform to the requirements of ASTM C150 Type II or V.

610-2.4.1 Cement for High Early Strength (HES) cement concrete. Portland Cement conforming to requirements of ASTM C150-Type III or Rapid Set cement may be used when High Early Strength cement concrete of the required strength is required for opening the area for traffic per construction phasing plans.

610-2.5 CEMENTITIOUS MATERIALS.

a. Fly ash. Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

b. Slag cement (ground granulated blast furnace (GGBF)). Slag cement shall conform to ASTM C989, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

610-2.6 WATER. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 ADMIXTURES. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-entraining admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

c. Other chemical admixtures. The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 **PREMOLDED JOINT MATERIAL.** Premolded joint material for expansion joints shall meet the requirements of ASTM D1751.

610-2.9 **JOINT FILLER.** The filler for joints shall meet the requirements of Item P-605, unless otherwise specified.

610-2.10 **STEEL REINFORCEMENT.** Reinforcing shall be as indicated on the plans and conforming to the requirements of the following:

Steel Reinforcement

Reinforcing Steel	ASTM A615, ASTM A706, ASTM A775, ASTM A934
Welded Steel Wire Fabric	ASTM A1064, ASTM A884
Welded Deformed Steel Fabric	ASTM A1064
Bar Mats	ASTM A184 or ASTM A704

610-2.11 **MATERIALS FOR CURING CONCRETE.** Curing materials shall conform to White-pigmented Liquid Membrane-Forming Compound, Type 2, Class B ASTM C309.

CONSTRUCTION METHODS

610-3.1 **GENERAL.** The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

610-3.2 **CONCRETE MIXTURE.** Unless otherwise noted, the concrete shall develop a compressive strength of 4,000 psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard (280 kg per cubic meter). The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% +/- 1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches (100 mm) as determined by ASTM C143.

Unless otherwise specified on the phasing plans, the concrete shall achieve a minimum compressive strength of 3,250 psi prior to opening of the area to aircraft traffic and 4,000 psi in 28 days as specified above.

610-3.3 MIXING. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 FORMS. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 PLACING REINFORCEMENT. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.6 EMBEDDED ITEMS. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 CONCRETE CONSISTENCY. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

610-3.8 PLACING CONCRETE. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet (1.5 m). Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject

concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 VIBRATION. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 JOINTS. Joints shall be constructed as indicated on the plans.

610-3.11 FINISHING. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 CURING AND PROTECTION. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 COLD WEATHER PLACING. When concrete is placed at temperatures below 40°F (4°C), follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 HOT WEATHER PLACING. When concrete is placed in hot weather greater than 85°F (30°C), follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

QUALITY ASSURANCE (QA)

610-4.1 QUALITY ASSURANCE SAMPLING AND TESTING. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The RPR will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; test air content in accordance with ASTM C231; make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 DEFECTIVE WORK. Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 MEASUREMENT. No separate measurement shall be made for Portland cement concrete.

BASIS OF PAYMENT

610-6.1 PAYMENT. No separate payment will be made for Portland cement concrete. Its cost shall be considered incidental and included in the contract unit price of associated bid items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934 Bars	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete

ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

American Concrete Institute (ACI)

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

END OF ITEM P-610

ITEM L-100 GENERAL ELECTRICAL REQUIREMENTS**DESCRIPTION**

100-1.1 GENERAL. Item L-100 is a general specification covering electrical work. Only those portions of this section that pertain to the work in this project will govern.

The electrical work to be performed under this section shall include the furnishing of all supervision, labor, materials, tools, equipment, and incidentals necessary to furnish, install, remove, and modify cabling, electrical conduit, ducts, pull boxes, and all other electrical work as shown on the plans.

Work shall be in accordance with Federal Aviation Administration Advisory Circular No. 150/5370-10E, "Standards for Specifying Construction of Airports," as modified herein, other FAA Advisory Circulars and Specifications referred to herein, and other requirements as specified herein. The electrical work shall comply with latest adopted editions, codes and standards applicable to this section as follows:

- ANSI C2, National Electrical Safety Code
- California Administrative Codes
- California Electrical Code
- FAA, Advisory Circulars
- FAA, Orders
- NEC, National Electrical Code (NFPA No. 70)
- NECA, Standard for Installation
- NEMA, Standard for Materials and Products
- NFPA No. 101, Life Safety Code
- UL, Underwriters' Laboratories
- Occupational Safety and Health Act (OSHA)
- Uniform Building Code (latest edition)
- Local Codes, if applicable

Airport lighting equipment and materials covered by FAA Specifications shall have the prior approval of the Office of Airports, Federal Aviation Administration's Advisory Circular Number 150/5345-53, (Latest Edition) "Airport Lighting Equipment Certification Program."

All other airport equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specifications, when so requested by the Engineer

All work shall be performed in strict accordance with these specifications, plans, and any instructions that may be furnished by the Engineer during execution of the work to aid in interpretation of said plans and specifications. Installation details, material and equipment specifications shall be in conformance with all applicable FAA Advisory Circulars.

The specifications indicate desired materials as to type and quality. Wherever proprietary names are listed in these specifications, it shall be interpreted that the words "or equal" follow. "Or equal" shall be interpreted as meaning equal in every respect as determined and approved by the Engineer.

Nothing in these plans and specifications is to be construed as permitting work not conforming with governing codes and regulations. Where two or more codes conflict, the most restrictive shall apply.

100-1.2 SUMMARY OF WORK. The work to be performed includes furnishing all labor, supplies, materials, equipment, transportation, and services required to augment, move, install, and complete electrical work as specified herein and as shown on the plans.

100-1.2.1 The work includes, but is not limited to the following:

a. Maintain, in operation, all existing electrical facilities and circuits required for active areas while this improvement work is in progress, furnish and maintain temporary power. This shall include the temporary relocation of electrical equipment.

b. Furnish and install underground cable of the size and type specified in accordance with specifications, at the locations shown on the plans. Test all circuits after installation of new cables.

c. Furnish and install all raceways and duct lines at the locations indicated and in accordance with specifications, ready for installation of cables.

d. Provide power and control for airfield lights

e. Installation of new runway edge lighting system, including fixtures, base can and isolation transformers.

f. Grounding of all equipment, enclosures, regulators, and conduits installed under this section as shown in the plans or as called for by the authority having jurisdiction.

g. Other items required to complete foregoing. The omission of expressed reference to any parts necessary for or reasonable incidental to the complete installation shall not be construed as releasing the Contractor from furnishing such parts.

100-1.3.2 All items of general work required, such as excavation, cutting, patching, etc., shall be included. The general work requirements are as follows:

a. Deactivation of power, security and telephone circuits for extended periods shall be by schedule established by the Owner. All work shall be scheduled to minimize the impact and duration of shutdowns. The Contractor shall keep the Engineer informed of scheduled work which will affect existing equipment and operations. A minimum of 3 working days advance notice shall be given to the Engineer and approval received for any disconnections or shutdowns. Any interruptions of power for active systems must be scheduled with and approved by the Engineer. Penalties for unscheduled interruptions of active systems shall be assessed at a rate of \$50.00 per hour or fraction of an hour.

b. The plans are diagrammatic. Locations of equipment to be installed are shown in the plans, but the actual installation will depend on field conditions and the nature of the equipment furnished. When conditions which will adversely affect the installation become apparent, the Engineer shall be notified in writing.

The Contractor shall at all times keep the construction areas free from accumulations of waste material and rubbish, and prior to completion of work, shall remove any rubbish from and about the project, and all tools, reels, equipment, and materials not a part of the project. Upon completion of the construction, the Contractor shall leave the work and premises in a clean, neat, and safe condition satisfactory to the Engineer. The Contractor shall be responsible for the proper performance in all respects, in whole and in part, of the electrical equipment and for the mechanical installation of electrical equipment until acceptance of the entire work by the Engineer.

The Contractor shall protect all work, materials, and equipment from damage of any cause whatever, and shall provide adequate and proper storage facilities during progress of the work. The Contractor shall provide for safety and good condition of all work until final acceptance of the work by the Engineer, and replace all damaged or defective work, materials and equipment before requesting final acceptance.

All equipment shall be thoroughly cleaned of dirt, cement, bituminous materials, etc., and all corners scraped out and free of debris prior to installation.

100-1.3 SUBMITTALS.

a. The specifications indicated the desired equipment and materials as to type and quality. Wherever proprietary names are listed in these specifications, it shall be interpreted that the words "or approved equal" follow, unless otherwise specified. The words "or approved equal" shall be interpreted as meaning equal in every respect as determined and approved by the Engineer.

b. Within five (5) working days after the notice to proceed, the Contractor shall submit to the Engineer for approval a complete list of all equipment and materials intended to be used on the job. The list shall include the following information for each item.

- (1) Name of Item
- (2) FAA Specification Number (If Any)
- (3) Manufacturer's Name
- (4) Manufacturer's Catalog Number
- (5) Size, Type and Rating

c. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be provided in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

d. Before any orders are placed, and within five (5) calendar days after Engineer's approval of the equipment and materials list, the Contractor shall submit to the Engineer for written approval three (3) copies of shop drawings for all electrical and lighting equipment and for all equipment and materials submittals. The shop drawings and equipment/materials submittals shall be complete showing all details.

e. The Contractor shall review, approve and sign all shop drawings prior to submitting same for Engineer's approval. All shop drawings received without the Contractor's signature will be subject to return without comment.

f. It shall be the responsibility of the Contractor to specifically point out any variation or discrepancy between the shop drawings or manufacturer's instructions he submits and the contract documents. Failure by the Contractor to identify in his letter of transmittal any variation, discrepancy, or conflict with the contract documents may result in the shop drawing or submittal to be returned to the Contractor for resubmittal.

g. The shop drawings shall show completely the work to be done, but approval by the Engineer shall not be construed as waiving any of the requirements of the contract and particularly shall not be construed as relieving the Contractor of full responsibility for fitting his equipment in the spaces provided; or from responsibility to fulfill the contract at no extra cost to the Owner within the completion time.

h. The Engineer will review all submittals and shop drawings and return them to the Contractor. If the Contractor's submittal or shop drawings are incomplete or the product submitted does not meet

specification requirements, the Engineer will reject the submittal or shop drawing and the Contractor will be required to resubmit. Resubmittals shall address all comments from the Engineer. Partial resubmittals may be returned without action.

100-1.3.1 SUBMITTAL FORMAT. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

Samples of conduit, duct, fixtures, fittings, cables, tapes, etc., may be required by the Engineer or required in these specifications. After they have been reviewed, samples will be returned in tested condition to the Contractor. In the event any items of material or equipment contained in the list fail to comply with specification requirements, such items will be rejected. All rejected items shall be amended to meet the criteria and then resubmitted for approval by the Engineer.

Substitutions of materials referenced herein is allowed provided it meets or exceeds all specification requirements and is equal to or better than specified item. Any substitution shall be included in the submittal package. Manufacturer's part numbers are provided for reference only.

100-1.4 PERMITS. Not Used

100-1.5 DRAWINGS. The drawings, which constitute an integral part of this Contract, shall serve as the working drawings. They indicate the extent and general layout of the lighting and signing system, arrangement of circuits, cables through ducts, connections to existing circuit cables, and other work. Field verification of scale dimensions is required to determine actual locations, distances, and levels. The Contractor shall research in the field the exact routing and identification of all circuits which extend through, serve or are affected by the area where work is to commence.

No extra compensation will be allowed because of minor differences between work shown on the plans and field conditions. The Contractor shall check the plans and specifications and, if any portion of the work is found to be omitted, unclear, or in error, the Contractor shall immediately notify the Engineer. The directions of the Engineer shall be followed and the work completed accordingly.

a. The design drawings may be utilized in the preparation of the shop or working drawings showing the permanent construction.

b. The plans and specifications are complementary and what is called for in either one shall be as binding as if called for in both.

c. Any discrepancies between the drawings and field conditions must be resolved with the Engineer before proceeding. All agreements shall be verified in writing.

d. "As-built" drawings covering equipment installed under previous contracts and which relate to this contract will be available for the Contractor. The airport cannot, however, guarantee the availability or accuracy of drawings to be provided. Those conditions which will affect the work under this contract should be verified prior to any design/fabrication/installation commitment.

e. Detail dimensions shown on the plans are approximate and shall be field verified before construction. All differences shall be submitted to the Engineer in writing before Construction begins.

100-1.6 RECORD DRAWINGS. The Contractor shall mark up a set of prints to show the as-built conditions which differ from the plans. All changes shall be recorded by a skilled draftsman with at least three years experience. The Engineer will furnish a newly printed set of drawings to be used for this purpose. As-built drawings will be checked monthly by the Engineer for accurateness and partial payments will be withheld until the record drawings are completely updated. The mark-up set shall be kept at the site, and any changes or deviations shall be recorded within one week. The Contractor shall furnish one as-built drawing set to the Engineer upon completion. This work shall be completed and accepted by the Engineer before approval of final payment.

100-1.7 MAINTENANCE AND OPERATING INSTRUCTIONS. The Contractor shall provide the Owner with complete instructions in the proper care and operation of the equipment installed under this contract. As part of the final inspection, and final acceptance will not be given until the Owner's representative is made knowledgeable about the system.

The Contractor shall also collect and assemble into each of four hardcover books the installation details, instructions, parts list, source of local supply, schematics of actual equipment and operations, and directions supplied by the manufacturer with all equipment. A complete set of approved submittal documentation shall be included in the final Maintenance and Operating Instructions. If cut sheets are included showing various models and features of the equipment supplied, the specific model and features shall be clearly indicated to show only the options of the equipment that are actually provided and installed. Final acceptance of the work will be withheld until such data has been presented complete to the Engineer for transmission to the Owner. The submittal checklist shall serve as an index and checklist for these books. The O&M Manuals must be delivered to Owner prior to final acceptance.

100-1.8 SAFETY RULES. The Electrical Safety Rules shall be observed and complied with in every detail, and any violation thereof shall be cause for immediate termination of the Contractor's authority to proceed with the work and recourse to his Surety for completion of the Project. The Electrical Safety Rules are as follows:

- a. The Contractor shall be responsible for conforming with the safety requirements of the airport.
- b. Electrical circuits, operating over 300 volts, phase-to-ground, shall be de-energized before work is accomplished thereon. Work on energized systems shall be accomplished by trained personnel, properly insulated, and done with extreme caution.
- c. Electrical circuits shall be considered de-energized only when one of the following conditions exist:
 - (1) Switches connecting subject circuit to the energy supply are observed in the OPEN position, with an air break, and safety-tagged and padlocked in the OPEN position;
 - (2) Electrically operated switches are visibly OPEN, blocked or racked in the OPEN position, and safety-tagged and padlocked OPEN;
 - (3) Whenever the supply circuit breaker is not visible and clearly identified, the circuit shall be grounded using bolted clamps and connectors capable of withstanding bolted fault conditions. The

ground connection shall be safety-tagged before work thereon, when the ground connection is not within sight of the work area.

d. Use of Red Safety Tags:

(1) Safety tags shall be filled out and connected to any switch or equipment opened for protection of personnel working upon circuits connected thereto.

(2) Safety tags shall be removed only by the employee who placed the tag, or by another employee designated in writing by the employee who placed the tag, to remove the tag. Removal of a safety tag placed by an employee not available at the time of need to remove may be authorized by the Electrical Superintendent or his designated representative, only after carefully checking that the circuit is ready to be energized.

(3) Equipment with a safety tag attached shall not be operated, and connections with a safety tag attached shall not be changed.

(4) Insulated cables, operated at over 300 volts to ground, shall be handled when energized only with rubber gloves tested to 15,000 volts.

(5) Insulated cables, which have been in operation, shall be cut only with a grounded cable shears, or shall be grounded by driving a grounded sharp tool through the shielding and the conductors before cutting.

(6) Ladders used in any electrical work shall be of wood or fiberglass construction.

100-1.9 CONSTRUCTION SEQUENCING. The Contractor shall notify the Engineer within 24 hours of completion of each task completed as described below:

a. The Contractor shall install all lights and fixtures, and test them in the presence of the Engineer. Any and all lights which fail to light correctly shall have new lamps installed, or work as required to correct the problem.

EQUIPMENT AND MATERIALS

100-2.1 GENERAL.

a. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the Engineer. Whenever Underwriters' Laboratories has a published standard applicable to the equipment furnished for this contract, the furnished equipment shall be listed by UL.

b. Materials and equipment shall be as specified herein. When materials are used that are not specifically designated herein, they shall be in accordance with the best industry standards and practices for equipment of this type. All components and parts shall be suitable for operation under the environmental conditions specified herein. Metal parts shall be either inherently corrosion-resistant or shall be suitably protected to resist corrosion or oxidation during extended service life.

c. The Contractor shall supply material for electrical and lighting systems such that all components of a given system are of the same manufacturer; for example, all transformers shall be from one manufacturer. All lights and series isolation transformers shall be from one manufacturer.

This shall minimize the number and types of spare parts required.

100-2.2 PARTS RATING. All parts shall be of adequate rating for the application and shall not be operated beyond the parts manufacturer's recommended ratings.

100-2.3 ENVIRONMENTAL CONDITIONS. The equipment installed outdoors shall be designated for continuous outdoor operation under the following environmental conditions unless specified elsewhere:

- a. Temperature: Any ambient temperature from minus 20°F to plus 115°F.
- b. Altitude: 700 Mean Sea Level (MSL).
- c. Humidity: Up to 100 percent.
- d. Sand and Dust: Exposure to windblown sand and dust particles.
- e. Wind: Operation at wind velocities up to 100 miles per hour.
- f. Water: Components provided for underground installation, or installed in underground housing, shall be suitable for continuous operation, continuously or intermittently submerged in water.

100-2.4 SALVAGE. Except as otherwise specified or indicated on the plans, all electrical materials and equipment to be salvaged or stored shall become the property of the Airport, and shall be moved by the Contractor to a site at the Airport designated by the Engineer at no additional cost to the Airport. All wastes such as excess dirt shall be disposed of off-site.

100-2.5 TESTING. All materials and finishes are subject to testing. Material inspection and testing will be performed by the Airport at no expense to the Contractor other than material used. The Contractor shall assist the Engineer in obtaining samples during the course of construction work. The testing of electrical equipment shall conform to the description of the individual specification sections.

It shall be the Contractor's responsibility to demonstrate to the satisfaction of the Engineer that the lighting circuits are continuous and free from short circuits and unspecified grounds, that circuits are properly connected and operable. The Contractor shall megger all existing taxiway field cables and shall record and report all readings to the Engineer for cable megger readings both before modification and after. The Contractor shall provide all labor, equipment and materials.

100-2.6 INSPECTION. The Contractor shall allow for electrical inspections by the authority having jurisdiction. No work shall be concealed or enclosed until after inspections. If work is concealed or enclosed without inspection and approval, the Contractor shall be responsible for all expense and work required to open and restore the concealed area in addition to all required modifications.

100-2.7 WARRANTY. The Contractor shall provide a written 1-year warranty guaranteeing all work installed under this contract. It shall cover all parts and labor against defective parts or workmanship necessary to repair or bring into proper operation any equipment including, but not limited to, fixtures, transformers, regulators, panelboards, transformers, circuit breakers, conduit system, pull boxes and light bases. The regulators shall be guaranteed under the terms of the manufacturer's and dealer's standard warranty for a period of two years and shall cover full parts and labor. The warranty shall begin upon the

acceptance of all work by the Engineer. Final payment will be withheld until receipt of the warranty by the Engineer.

100-2.8 **HARDWARE CORROSION PROTECTION.** In order to prevent deterioration due to corrosion, all bolts, nuts, studs, washers, pins, terminals, springs, hangers, and similar fastenings and fittings shall be of an approved corrosion-resisting material and/or be treated in an approved manner to render it adequately resistant to corrosion. All hardware such as cap screws, set screws, tap bolts, nuts, washers, etc., shall be of the type recommended by the manufacturer, or if a manufacturer's recommendation is not available, shall be stainless steel type 304, SAE grade 2, if they are used outdoors unless specified otherwise on the plans. Brass, bronze, or hot-dip galvanized ferrous hardware will be considered for indoor use. All bolts, screws, nuts, etc., used on units where vibration from aircraft operations could loosen the bolts, as directed by the Engineer, shall be coated with a layer of "Locktight #242" or approved equal. All other bolts, screws, nuts, etc., used on edge lights, signs or other units shall be coated with a layer of "Neversieze" compound or approved equal as directed by the Engineer. Locktight #242 and Neversieze can be obtained from most electrical supply houses and from many automotive shops.

CONSTRUCTION METHODS

100-3.1 **GENERAL.** Installation shall be performed by experienced and skilled persons to obtain only the best workmanship. All equipment shall be set square and true with construction. The work shall be under constant supervision by the Contractor, or by an authorized and competent foreman with a minimum of five years experience, until completion. The Contractor shall be licensed, with at least five years experience in airfield electrical systems.

All existing and new pull boxes and other electrical equipment within the boundary limits of this Contract shall be adjusted and leveled to the final finished grade required on this project. The Contractor shall review plans and coordinate with the civil plans.

100-3.2 **INSTALLATION METHOD.** The methods used for the installation of electrical system and equipment shall conform to the National Electric Contractors Association (NECA) published "Standard of Installation" except where specifically specified or shown otherwise, and to the requirements of the National Electrical Code and its revisions as adopted by the local agency having jurisdiction.

All electrical materials, construction methods, and installation shall be in accordance with applicable Federal Aviation Administration's Advisory Circulars including amendments, the National Electrical Code, and the American National Standards Institute Standard C2.

Workmanship shall be consistent with the best commercial practices for installations of this type.

The workmanship shall be first class and in accordance with the highest standards for the electrical industry. The installations and adjustments shall be by competent electricians. The responsibility for the correct and satisfactory installation and operation of all materials and equipment required herein shall rest with the Contractor. Before any equipment is ordered, a complete schedule of materials and detailed shop drawings covering all items of equipment and brochures of the materials proposed for installation shall be submitted for approval by the Engineer as described in this section.

Minor changes in the locations of fixtures and equipment shall be made prior to rough-in at the direction of the Engineer and at no additional cost to the Owner.

The equipment shall be installed with ample space allowed for removal, repair or changes to equipment. Ready accessibility to removable parts of equipment and to wiring shall be provided without moving other equipment which is to be installed or which is in place.

100-3.3 SITE CONDITIONS. At least five working days prior to commencing construction operations in an area which may involve underground utility facilities, the Contractor shall notify the Engineer and the owners of each underground utility facility shown on the plans.

The existence of any known buried wires, conduits, pull boxes, ducts, or other facilities is shown in a general way only. It will be the responsibility of the Contractor to visit the site and make exact determination of the existence and location of any facilities prior to commencing any work. The Contractor will be responsible for making the exact determination of the location and condition of such facilities. A toll-free number for Underground Service Alert (USA) is (800) 227-2600. The Contractor is required to call this number 48 hours in advance before performing excavation work within the project site. Any and all costs shall be paid for by the Contractor.

All items damaged by the Contractor's workers or equipment shall be replaced immediately at the Contractor's expense.

100-3.4 INTERRUPTIONS. Interruptions of existing circuits may be necessary during construction. The Contractor shall provide a reliable shunt cable to provide temporary continuity of service during construction where required. The Contractor shall not interrupt any circuit or perform any work that might endanger any circuit until approval of the Engineer has been received. Temporary cables shall be protected and identified as a hazard. All interruptions of work on active circuits shall be approved by and coordinated with the Engineer. All active circuits that have been interrupted or worked upon shall be tested by the Contractor prior to leaving for the day.

The Contractor shall coordinate with and obtain approval from the Engineer before any portion of the existing airfield lighting system is disconnected or rendered inoperative in order to commence construction.

The Contractor shall be responsible for installing, maintaining, protecting, and removing all required temporary jumper cables used to maintain power to electrical circuits.

For the permanent installation, all temporary connections and re-routing of circuits shall be replaced with new materials installed in accordance with the specifications and as shown on the plans.

100-3.5 CODES. The Contractor shall comply with all ordinances, laws, regulations, and codes applicable to the work involved and as referenced in these specifications. This does not relieve the Contractor from furnishing and installing work shown or specified which may be beyond the requirements of such ordinances, laws, regulations, and codes.

METHOD OF MEASUREMENT

100-1 Electrical Demolition and General Requirements will not be measured but will be paid for as a lump sum.

BASIS OF PAYMENT

100-4.1 Electrical Demolition and General Requirements will be paid for at the contract lump sum price. This price shall include full compensation for furnishing all labor, materials, equipment, tools, incidentals and for doing all the work of this item complete in place.

Payment will be made under:

Item L-100-1 Electrical Demolition and General Requirements -- per lump sum

END OF ITEM L-100

ITEM L-107 AIRPORT WIND CONES

DESCRIPTION

107-1.1 This item shall consist of removal of existing airport wind cone ; furnishing and installing an airport wind cone per these specifications and per the dimensions, design, and details shown in the plans. The work shall include the furnishing and installation of a support for mounting the wind cone, the specified interconnecting wire, on a concrete foundation. The item shall also include all cable connections, conduit and conduit fittings, the furnishing and installation of all lamps, ground rod and ground connection, the testing of the installation, and all incidentals necessary to place the wind cone in operation (as a completed unit) to the satisfaction of the RPR.

107-1.2 SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, in accordance with 107-2.1 to include, but not limited to the following:

- a. FAA type wind cone and pole
- b. Foundation anchor bolts
- c. Paint for segmented circle marker refurbishment
- d. Concrete for segmented circle marker foundation

EQUIPMENT AND MATERIALS

107-2.1 GENERAL.

a. Airport lighting equipment and materials covered by advisory circulars (ACs) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications, at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project.

Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable).

Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures, that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

107-2.2 WIND CONES. The primary wind cone assembly shall be Type L-807, Style I-B, Size 2.

107-2.3 ELECTRICAL WIRE AND CABLE. Cable rated up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

107-2.4 CONDUIT. Rigid steel conduit and fittings shall conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242.

107-2.5 PLASTIC CONDUIT (for use below grade only). Plastic conduit and fittings shall be per the following:

- UL 514B covers W-C-1094 - Conduit fittings all types, Classes 1 thru 3 and 6 thru 10
- UL 514C covers W-C-1094 - all types, Class 5 junction box and cover in plastic (polyvinyl chloride (PVC))
- UL 651 covers W-C-1094 - Rigid PVC Conduit, types I and II, Class 4
- UL 651A covers W-C-1094 - Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4

Underwriters Laboratories Standard UL-651 shall be one of the following, as shown in the plans:

- a. Type I—Schedule 40 PVC suitable for underground use either direct-buried or encased in concrete.
- b. Type II—Schedule 40 PVC suitable for either above ground or underground use.

Plastic conduit adhesive shall be a solvent cement manufactured specifically for the purpose of gluing the type of plastic conduit and fitting.

107-2.6 CONCRETE. The concrete for foundations shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures.

107-2.7 PAINT.

a. Priming paint for non-galvanized metal surfaces shall be a high solids alkyd primer compatible with the manufacturer's recommendations for the intermediate or topcoat.

b. Priming paint for galvanized metal surfaces shall be zinc dust-zinc oxide primer paint conforming to MIL-DTL-24441C/19B. Use MIL-24441 thinner per paint manufacturer's recommendations.

c. Orange paint for the body and the finish coats on metal and wood surfaces shall consist of a ready-mixed non-fading paint per Master Painter's Institute (MPI) Reference #9 (gloss). The color shall be per Federal Standards 595, International Orange, Number 12197.

d. White paint for body and finish coats on metal and wood surfaces shall be ready-mixed paint conforming to the MPI, Reference #9, Exterior Alkyd, Gloss.

e. Priming paint for wood surfaces shall be mixed on the job by thinning the above specified aviation-orange or white paint by adding 1/2 pint of raw linseed oil to each gallon.

CONSTRUCTION METHODS

107-3.1 INSTALLATION. The hinged support or hinged pole shall be installed on existing concrete foundation per the plans.

107-3.2 SUPPORT POLE ERECTION. The Contractor shall erect the pole on the existing foundation following the manufacturer's requirements and erection details. The pole shall be level and secure.

107-3.3 ELECTRICAL CONNECTION. The Contractor shall furnish all labor and materials and shall make complete electrical connections per the wiring diagram furnished with the project plans. The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electric Code (NEC).

Underground cable and duct for cable installation shall be installed in accordance with Item L-108, Underground Power Cables for Airports, and Item L-110, Airport Underground Electrical Duct Banks and Conduits in locations as shown on the plans.

107-3.4 BOOSTER TRANSFORMER. Not used.

107-3.5 GROUND CONNECTION AND GROUND ROD. The Contractor shall furnish and install a ground rod, grounding cable, and ground clamps for grounding the "A" frame of the 12-foot assembly support near the base. The ground rod shall be of the type, diameter and length specified in Item L-108, Underground Power Cable for Airports. The ground rod shall be driven into the ground adjacent to the concrete foundation (minimum distance from foundation of 2 feet so that the top is at least 6 inches below grade. The grounding cable shall consist of No. 6 American wire gauge (AWG) minimum stranded copper wire or larger and shall be firmly attached to the ground rod by exothermic welding. If an exothermic weld is not possible, connections to the grounding bus shall be made by using connectors approved for direct burial in soil or concrete per UL 467. The other end of the grounding cable shall be securely attached to a leg of the frame or to the base of the pipe support with non-corrosive metal and shall be of substantial construction. The resistance to ground shall not exceed 25 ohms. If a single rod grounding electrode has a resistance to earth of over 25 ohms, then install one supplemental rod not less than 10 feet from the first rod. If desired resistance to ground levels are still not achieved, see FAA-STD-019 for guidance on the application of coke breeze.

107-3.6 PAINTING. Three coats of paint shall be applied (one prime, one body, and one finish) to all exposed material installed under this item except the fabric cone, obstruction light globe, and lamp reflectors. The wind cone assembly, if already painted upon receipt, shall be given one finish coat of paint in lieu of the three coats specified above. The paint shall be per MPI Reference #9 (gloss). The color shall be per Federal Standard 595, International Orange, Number 12197.

107-3.7 LIGHT SOURCES. The Contractor shall furnish and install LED lamps per the manufacturer's instruction book.

107-3.8 CHAIN AND PADLOCK. The Contractor shall furnish and install a suitable operating chain for lowering and raising the hinged top section. The chain shall be attached to the pole support in a manner to prevent the light fixture assembly from striking the ground in the lowered position. A padlock shall also be furnished by the Contractor on the 12-foot wind cone for securing the hinged top section to the fixed lower section. Keys for the padlock shall be delivered to the RPR.

107-3.9 SEGMENTED CIRCLE. The segmented circle panel shall be repaired as shown on the Plans.

METHOD OF MEASUREMENT

107-4.1 The quantity of L-107(L) Primary Windcone on Existing Foundation to be paid for shall be the number of wind cones installed as complete-in-place, accepted, and ready for operation.

107-4.2 Repair Segmented Circle Marker will not be measured, but will be paid for as a lump sum.

BASIS OF PAYMENT

107-5.1 Payment for L-807(L) Primary Windcone on Existing Foundation will be made at the contract unit price for each wind cone installed, completed-in-place, and accepted. This price shall be full compensation for removal of existing airport wind cones; installing the new windcone with new anchors into the existing foundation; furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

107-5.2 Payment for Repair Segmented Circle Marker will be paid for at the contract lump sum price. This price shall be full compensation for installation, complete-in-place, and ready for operations including cleaning, painting, and new concrete foundation and furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-107-1	L-807(L) Primary Windcone on Existing Foundation -- per each
Item L-107-2	Repair Segmented Circle Marker -- per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-5	Segmented Circle Airport Marker System
AC 150/5340-30	Design and Installation Details for airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-27	Specification for Wind Cone Assemblies
AC 150/5345-53	Airport Lighting Equipment Certification Program
Commercial Item Description	
A-A-59544	Cable and Wire, Electrical (Power, Fixed Installation)
Federal Standard (FED STD)	
FED STD 595	Colors Used in Government Procurement
Master Painter's Institute (MPI)	
MPI Reference #9	Alkyd, Exterior, Gloss (MPI Gloss Level 6)
Mil Standard	
MIL-DTL-24441C/19B Paint, Epoxy-Polyamide, Zinc Primer, Formula 159, Type III	
Underwriters Laboratories (UL)	
UL Standard 6	Electrical Rigid Metal Conduit – Steel
UL Standard 514B	Conduit, Tubing, and Cable Fittings
UL Standard 514C	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL Standard 651	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit
UL Standard 1242	Electrical Intermediate Metal Conduit - Steel
National Fire Protection Association (NFPA)	
NFPA-70	National Electric Code (NEC)

END OF ITEM L-107

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ITEM L-108 UNDERGROUND POWER CABLES FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

108-1.2 SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, to include, in accordance with 108-2.1 to include, but not limited to the following:

- a. FAA type L-824 (5kV) airfield lighting cable
- b. FAA type L-824 (600V) airfield lighting cable
- c. Bare copper counterpoise cable
- d. Ground rods
- e. FAA L-823 connectors
- f. Cable splicer qualifications
- g. Mechanical and Exothermic bonding
- h. Cable ID tags
- i. Cable pulling tension values
- j. Testing equipment

EQUIPMENT AND MATERIALS

108-2.1 GENERAL.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original.

Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, *Maintenance Airport Visual Aid Facilities*, paragraph 5.1.3.1, Insulation Resistance Test.

108-2.2 CABLE. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG),

L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced.

The minimum power circuit wire size shall be #12 AWG. Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 BARE COPPER WIRE (counterpoise, bare copper wire ground and ground rods). Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be bare copper wire. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper or copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 8 feet long and 5/8 inch in diameter.

108-2.4 CABLE CONNECTIONS. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal is acceptable.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

108-2.5 SPLICER QUALIFICATIONS. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 CONCRETE. Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures.

108-2.7 FLOWABLE BACKFILL. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 CABLE IDENTIFICATION TAGS. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 TAPE. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2 inch wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 ELECTRICAL COATING. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 EXISTING CIRCUITS. Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.

108-2.12 DETECTABLE WARNING TAPE. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 GENERAL. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The

Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans. In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 INSTALLATION IN DUCT BANKS OR CONDUITS. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, pull boxes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a

dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations.

During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 INSTALLATION OF DIRECT-BURIED CABLE IN TRENCHES. Not Used.

108-3.4 CABLE MARKERS FOR DIRECT-BURIED CABLE. Not Used

108-3.5 SPLICING. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPR.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods:

(1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint.

(2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint.

(3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

d. Taped or heat-shrink splices. A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use

emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminants prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 BARE COUNTERPOISE WIRE INSTALLATION FOR LIGHTNING PROTECTION AND GROUNDING. If shown on the plans or included in the job specifications, bare solid #6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

a. Equipotential. The counterpoise size is as shown on the plans. The equipotential method is applicable to all airfield lighting systems; i.e. runway, taxiway, apron – touchdown zone, centerline, edge, threshold and approach lighting systems. The equipotential method is also successfully applied to provide lightning protection for power, signal and communication systems. The light bases, counterpoise, etc – all components - are bonded together and bonded to the vault power system ground loop/electrode.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. The counterpoise is centered over the cable/conduit/duct to be protected.

The counterpoise conductor shall be installed no less than 8 inches minimum or 12 inches maximum above the raceway or cable to be protected, except as permitted below:

(1) The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

(2) The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection, (45 degrees on each side of vertical creating a 90 degree angle).

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

All components rise and fall at the same potential; with no potential difference, no damaging arcing and no damaging current flow.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Equipotential Method of lightning protection.

Reference FAA STD-019E, Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment, Part 4.1.1.7.

b. Isolation. Not Used.

c. Common Installation requirements. When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

d. Parallel Voltage Systems. Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

108-3.7 COUNTERPOISE INSTALLATION ABOVE MULTIPLE CONDUITS AND DUCT BANKS. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees on each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 COUNTERPOISE INSTALLATION AT EXISTING DUCT BANKS. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 EXOTHERMIC BONDING. Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 TESTING. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

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

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than 500 megohms. Verify continuity of all series airfield lighting circuits prior to energization.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed 25 ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as

described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit. There are no approved "repair" procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurements shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item shall include additional quantities required for slack.

108-4.2 Ground rods shall be measured by each 8-foot section installed complete and accepted.

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price per linear feet for cable and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the RPR. This price shall be full compensation for furnishing all materials including connectors, trench marking tape, and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

108-5.2 Payment for ground rods shall be made at contract unit price per each ground rod installed and accepted in place. This price shall be full compensation for furnishing all materials and for all preparation, and for all labor including bonding of ground rod, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-108-1	No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Conduit - per linear feet
Item L-108-2	No. 2 AWG, 600V, THW-2 Cable, Installed in Conduit - per linear feet
Item L-108-3	No. 2 AWG, LV ground, THW-2 Cable, Installed in Conduit - per linear feet
Item L-108-4	No. 6 AWG, Bare, Stranded Equipment Ground, Installed in Conduit – per linear feet
Item L-108-5	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed Above the Duct Bank or Conduit, Including Connections/Terminations - per linear feet
Item L-108-6	5/8" Dia x 8' Ground Rod - per each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
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Federal Aviation Administration Standard

FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment
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END OF ITEM L-108

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ITEM L-109 AIRPORT TRANSFORMER VAULT AND VAULT EQUIPMENT

DESCRIPTION

109-1.1 This item shall consist of removing an existing airport transformer vault equipment and its replacement as shown in the Plans. This work shall include the furnishing of all vault equipment, wiring, cable, conduit, and grounding systems. This work shall also include the painting of equipment and conduit; the marking and labeling of equipment and the labeling or tagging of wires; the testing of the installation; and the furnishing of all incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the RPR. Additional requirements for work on existing circuits shall be per Safety Rules in Specification L-100.

109-1.2 SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, in accordance with 109-2.1 to include, but not limited to the following:

- a. 4kW Constant Current Regulator
- b. 7.5kW Constant Current Regulator
- c. Type L-854 Radio Controller
- d. Control Cables
- e. Series circuit cutout switch
- f. Timer
- g. Circuit Breakers
- h. Lighting Control Wiring Diagram
- i. Raceways
- j. Supporting devices

EQUIPMENT AND MATERIALS

109-2.1 GENERAL.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog

sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be provided in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING

109-3.1 ELECTRICAL VAULT BUILDING. Not Used.

109-3.2 CONCRETE. Not Used.

109-3.3 PRECAST CONCRETE STRUCTURES. Not Used.

109-3.4 REINFORCING STEEL. Not Used.

109-3.5 BRICK. Not Used.

109-3.6 RIGID STEEL CONDUIT. Rigid steel conduit and fittings shall be per Underwriters Laboratories Standards 6 and 514B.

109-3.7 PLASTIC CONDUIT AND FITTINGS. Plastic Conduit and fittings shall conform to the requirements of UL-651 and UL-654 schedule 40 polyvinyl chloride (PVC) suitable for use above or below ground.

109-3.8 LIGHTING. Not Used.

109-3.9 OUTLETS. Not Used.

109-3.10 SWITCHES. Not Used.

109-3.11 PAINT. Not Used..

109-3.12 GROUND BUS. Not Used.

109-3.13 SQUARE DUCT. Not Used.

109-3.14 GROUND RODS. Not Used.

109-3.15 VAULT PREFABRICATED METAL HOUSING. Not Used.

109-3.16 FAA-APPROVED EQUIPMENT. Certain items of airport lighting equipment installed in vaults are covered by individual ACs listed below:

AC 150/5345-3	Specification for L-821, Panels for Remote Control of Airport Lighting
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-10	Specification for Constant Current Regulators and Regulator Monitors
AC 150/5345-13	Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits.
AC 150/5345-49	Specification for L-854, Radio Control Equipment

109-3.17 OTHER ELECTRICAL EQUIPMENT. Distribution transformers, oil switches, cutouts, relays, terminal blocks, transfer relays, circuit breakers, and all other regularly used commercial items of electrical equipment not covered by FAA equipment specifications and ACs shall conform to the applicable rulings and standards of the Institute of Electrical and Electronic Engineers (IEEE) or the National Electrical Manufacturers Association (NEMA). When specified, test reports from a testing laboratory indicating that the equipment meets the specifications shall be supplied. In all cases, equipment shall be new and a first-grade product. This equipment shall be supplied in the quantities required for the specific project and shall incorporate the electrical characteristics specified in the proposal and plans. Equipment selected and installed by the Contractor shall maintain the interrupting current rating of the existing systems or specified rating whichever is greater.

109-3.18 WIRE. Wire (in conduit) rated up to 5,000 volts shall be per AC 150/5345-7, Specification for L-824 Underground Electrical Cables for Airport Lighting Circuits. For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

a. Control circuits. Unless otherwise indicated on the plans, wire shall be not less than No. 12 American wire gauge (AWG) and shall be insulated for 600 volts. If telephone control cable is specified, No. 19 AWG telephone cable per ANSI/Insulated Cable Engineers Association (ICEA) S-85-625 specifications shall be used.

b. Power circuits.

- (1) 600 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 600 volts.
- (2) 3,000 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 3,000 volts.
- (3) Over 3,000 volts-Wire shall be No. 6 AWG or larger and insulated for at least the circuit voltage.

109-3.19 SHORT CIRCUIT / COORDINATION / DEVICE EVALUATION / ARC FLASH ANALYSIS. Not Used.

CONSTRUCTION METHODS**CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING**

- 109-4.1 GENERAL. Not Used.
- 109-4.2 FOUNDATION AND WALLS.
 - a. Reinforced concrete construction. Not Used.
 - b. Brick and concrete construction. Not Used.
 - c. Concrete masonry construction. Not Used.
- 109-4.3 ROOF. Not Used.
- 109-4.4 FLOOR. Not Used.
- 109-4.5 FLOOR DRAIN. Not Used.
- 109-4.6 CONDUITS IN FLOOR AND FOUNDATION. Not Used.
- 109-4.7 DOORS. Not Used.
- 109-4.8 PAINTING. Not Used.
- 109-4.9 LIGHTS AND SWITCHES. Not Used.

INSTALLATION OF EQUIPMENT IN VAULT OR PREFABRICATED METAL HOUSING

109-5.1 GENERAL. The Contractor shall furnish, install, and connect all equipment, equipment accessories, conduit, cables, wires, buses, grounds, and support necessary to ensure a complete and operable electrical distribution center for the airport lighting system as specified herein and shown in the plans. The equipment installation and mounting shall comply with the requirements of the National Electrical Code and local code agency having jurisdiction. All electrical work shall comply with the NEC and local code agency having jurisdiction including the separation of under 600V work from 5,000V work.”

109-5.2 POWER SUPPLY EQUIPMENT. Constant current regulators, and other power supply equipment items shall be furnished and installed at the location shown in the plans or as directed by the RPR. The equipment shall be placed so as not to obstruct the oil-sampling plugs of the oil-filled units; and nameplates shall, so far as possible, not be obscured.

109-5.2.1 SERIES CIRCUIT CUT OUT. Series circuit cut out kit option shall be provided, installed internal to the constant current regulator.

109-5.3 SWITCHGEAR AND PANELS. Not Used.

109-5.4 DUCT AND CONDUIT. When the equipment is not designed for conduit connection, conductors shall enter the square-type control duct through insulating bushings in the duct or on the conduit risers.

109-5.5 WIRING AND CONNECTIONS. The Contractor shall make all necessary electrical connections in the vault per the wiring diagrams furnished and as directed by the RPR. In wiring to the terminal blocks, the Contractor shall leave sufficient extra length on each control lead to make future changes in connections at the terminal block. This shall be accomplished by running each control lead the longest way around the box to the proper terminal. Leads shall be neatly laced in place.

109-5.6 MARKING AND LABELING. All equipment, control wires, terminal blocks, etc., shall be tagged, marked, or labeled as specified below:

a. Wire identification. The Contractor shall furnish and install self-sticking wire labels or identifying tags on all control wires at the point where they connect to the control equipment or to the terminal blocks. Wire labels, if used, shall be of the self-sticking preprinted type and of the manufacturer's recommended size for the wire involved. Identification -markings designated in the plans shall be followed. Tags, if used, shall be of fiber not less than 3/4 inch in diameter and not less than 1/32 inch thick.

Identification markings designated in the plans shall be stamped on tags by means of small tool dies. Each tag shall be securely tied to the proper wire by a nonmetallic cord.

b. Labels. The Contractor shall stencil identifying labels on the cases of regulators, breakers, and distribution and control relay cases with white oil paint as designated by the RPR. The letters and numerals shall be not less than one inch in height and shall be of proportionate width. The Contractor shall also mark the correct circuit designations per the wiring diagram on the terminal marking strips, which are a part of each terminal block.

METHOD OF MEASUREMENT

109-6.1 The quantity of equipment will be measured by each type of equipment installed, connected and accepted as a complete unit ready for operation.

109-6.2 Airfield Lighting Vault Improvements will not be measured but will be paid for as a lump sum.

BASIS OF PAYMENT

109-7.1 Payment will be made at the contract unit price for each equipment type and size installed, completed, and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

109-7.2 Payment for Airfield Lighting Vault Improvements will be paid for at the contract lump sum price. This price shall include full compensation for furnishing all labor, materials, equipment, tools, incidentals and for doing all the work of this item complete in place.

Payment will be made under:

Item L-109-1 4KW Constant Current Regulator, 3-step - per each

Item L-109-2	7.5KW Constant Current Regulator, 3-step - per each
Item L-109-3	L-821 Lighting Controller Panel Repair - per each
Item L-109-4	L-854 Radio Controller - per each
Item L-109-5	6.6A Series Circuit Cut Out - per each
Item L-109-6	Airfield Lighting Vault Improvements - per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-3	Specification for L-821, Panels for Remote Control of Airport Lighting
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-10	Specification for Constant Current Regulators and Regulator Monitors
AC 150/5345-13	Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits
AC 150/5345-49	Specification L-854, Radio Control Equipment;
AC 150/5345-53	Airport Lighting Equipment Certification Program

American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/ICEA S-85-625	Standard for Telecommunications Cable Aircore, Polyolefin Insulated, Copper Conductor Technical Requirements
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ASTM International (ASTM)

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C62	Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)
ASTM C90	Standard Specification for Loadbearing Concrete Masonry Units
ASTM D2823	Standard Specification for Asphalt Roof Coatings, Asbestos Containing
ASTM D4479	Standard Specification for Asphalt Roof Coatings – Asbestos-Free

Commercial Item Description (CID)

A-A 59544	Cable and Wire, Electrical (Power, Fixed Installation) Institute of Electrical and Electronic Engineers (IEEE)
IEEE 1584	Guide for Performing Arc-Flash Hazard Calculations

Master Painter's Institute (MPI)

MPI Reference #9	Alkyd, Exterior, Gloss (MPI Gloss Level 6)
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Underwriters Laboratories (UL)

UL Standard 6	Electrical Rigid Metal Conduit – Steel
UL Standard 514B	Conduit, Tubing, and Cable Fittings
UL Standard 514C	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL Standard 651	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-70E	Standard for Electrical Safety in the Workplace
NFPA-780	Standard for the Installation of Lightning Protection Systems

END OF ITEM L-109

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ITEM L-110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits (single or multiple conduits buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical individual and multiple underground conduits and removal of existing, as indicated on Plans. It shall also include all turfing trenching, backfilling, removal, and restoration of any paved or turfed areas; mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

110-1.2 **SUBMITTALS.** Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, in accordance with 110-2.1 to include, but not limited to the following:

- a. Plastic conduits
- b. Steel conduits, if used
- c. Detectable warning tape
- d. Concrete mix design for encasement, if used
- e. Mix design for CLSM, if used

EQUIPMENT AND MATERIALS

110-2.1 **GENERAL.**

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, that comply with these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely

responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 STEEL CONDUIT. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

110-2.3 PLASTIC CONDUIT. Plastic conduit and fittings shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10.
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

a. Type I–Schedule 40 and Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.

b. Type II–Schedule 40 PVC suitable for either above ground or underground use.

c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.

d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

110-2.4 SPLIT CONDUIT. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 CONDUIT SPACERS. Not Used.

110-2.6 CONCRETE. Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures.

110-2.7 PRECAST CONCRETE STRUCTURES. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

110-2.8 FLOWABLE BACKFILL. Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

110-2.9 DETECTABLE WARNING TAPE. Plastic, detectable, American Public Works Association (APWA) red (electrical power lines, cables, conduit and lighting cable), orange (telephone/fiber optic cabling) with continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item.

CONSTRUCTION METHODS

110-3.1 GENERAL. The Contractor shall install underground conduits at the approximate locations indicated on the plans. The RPR shall indicate specific locations as the work progresses, if required to differ from the plans. Conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches per 100 feet. On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. Under pavement, the top of the conduit shall not be less than 18 inches below the subgrade; in other locations, the top of underground conduit shall be not less than 18 inches below finished grade. The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits and clean base can, manhole, pull boxes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes, etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be resealed at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing conduits.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200-pound test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed.

Unless otherwise shown on the plans, concrete encased conduit shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, ramps and aprons. When under paved shoulders and other paved areas, conduit shall be encased using flowable fill for protection. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches below the required conduit depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. Flowable backfill may alternatively be used. Underground electrical warning (Caution) tape shall be installed in the trench above all underground conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, joints in the conduit shall be staggered a minimum of 2 feet. Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the RPR, the unsuitable material shall be removed per depth and densities shown on the Plan and replaced with suitable material.

All excavation shall be unclassified and shall be considered incidental to Item L-110. Dewatering necessary for duct installation, and erosion per federal, state, and local requirements is incidental to Item L-110.

Unless otherwise specified, excavated materials that are deemed by the RPR to be unsuitable for use in backfill or embankments shall be removed and disposed of offsite. Any excess excavation shall be filled with suitable material approved by the RPR and compacted per depth and densities shown on the Plan.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

a. Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

b. Trenching, etc., in cable areas shall then proceed with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

110-3.2 DUCT BANKS. Not Used.

110-3.3 CONDUITS WITHOUT CONCRETE ENCASUREMENT. Trenches for single-conduit lines shall be not less than 6 inches nor more than 12 inches wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

110-3.4 MARKERS. The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet square and 4 - 6 inches thick extending approximately one inch above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every

200 feet along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. Impression of letters shall be done in a manner, approved by the RPR, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the RPR. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the RPR. The letters shall be 4 inches high and 3 inches wide with width of stroke 1/2 inch and 1/4 inch deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 BACKFILLING FOR CONDUITS. For conduits, 8 inches of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted per depth and densities shown on the Plan except that material used for back fill shall be select material not larger than 4 inches in diameter.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.6 BACKFILLING FOR DUCT BANKS. Not Used.

110-3.7 RESTORATION. Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall include fertilizing and seeding as required. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

110-3.8 OWNERSHIP OF REMOVED CABLE. Contractor shall become the owner of any removed cables.

METHOD OF MEASUREMENT

110-4.1 Underground conduits and duct banks shall be measured by the linear feet of conduits and duct banks installed, including encasement, locator tape, trenching and backfill with designated material, and restoration, and for drain lines, the termination at the drainage structure, all measured in place, completed, and accepted. Separate measurements shall be made for the various types and sizes.

BASIS OF PAYMENT

110-5.1 Payment will be made at the contract unit price per linear feet for each type and size of conduit and duct bank completed and accepted; including trench, backfill, and compaction with the designated material and as shown on Plan; trench marking tape; and termination at structures. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item per the provisions and intent of the plans and specifications.

Payment will be made under:

Item L-110-1 2" Conduit PVC Sch 80 Direct Buried - per linear feet

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circular (AC)

AC 150/5340-30 Design and Installation Details for Airport Visual Aids
AC 150/5345-53 Airport Lighting Equipment Certification Program

ASTM International (ASTM)

ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for
Concrete Reinforcement

National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit - Steel
UL Standard 514B Conduit, Tubing, and Cable Fittings
UL Standard 514C Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL Standard 1242 Electrical Intermediate Metal Conduit Steel
UL Standard 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL Standard 651A Type EB and A Rigid PVC Conduit and HDPE Conduit

END OF ITEM L-110

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ITEM L-115 ELECTRICAL MANHOLES AND JUNCTION STRUCTURES

DESCRIPTION

115-1.1 This item shall consist of electrical junction structures (hand holes, pull boxes, junction cans, etc.) installed per this specification, at the indicated locations and conforming to the lines, grades and dimensions shown on the plans or as required by the RPR. This item shall include the installation of each electrical junction structures with all associated excavation, backfilling, sheeting and bracing, concrete, reinforcing steel, appurtenances, testing, dewatering and restoration of surfaces to the satisfaction of the RPR including removal of existing junction structures as shown on the plans.

115-1.2 SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, in accordance with 115-2.1 to include, but not limited to the following:

- a. FAA Type L-867 junction cans and light bases
- b. Steel reinforcement for light base cans
- c. Concrete mix design for light base can encasement
- d. Pull boxes, Handholes and covers
- e. Ground rods
- f. Base can extension rings

EQUIPMENT AND MATERIALS

115-2.1 GENERAL.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

115-2.2 CONCRETE STRUCTURES. Cast-in-place concrete structures shall be as shown on the plans.

115-2.3 PRECAST CONCRETE STRUCTURES. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another engineer approved third party certification program. Provide precast concrete structures where shown on the plans. Precast concrete structures shall be an approved standard design of the manufacturer. Precast units shall have mortar or bitumastic sealer placed between all joints to make them watertight. The structure shall be designed to withstand AASHTO H-20 loading, unless otherwise shown on the plans. Openings or knockouts shall be provided in the structure as detailed on the plans.

Threaded inserts and pulling eyes shall be cast in as shown on the plans.

If the Contractor chooses to propose a different structural design, signed and sealed shop drawings, design calculations, and other information requested by the RPR shall be submitted by the Contractor to allow for a full evaluation by the RPR. The RPR shall review per the process defined in the General Provisions.

115-2.4 JUNCTION BOXES. Junction boxes shall be L-867 Class 1 (non-load bearing) or L-868 Class 1 (load bearing) airport light bases that are encased in concrete. The light bases shall have a L-894 blank cover, gasket, and stainless steel hardware. All bolts, studs, nuts, lock washers, and other similar fasteners used for the light fixture assemblies must be fabricated from 316L (equivalent to EN 1.4404), 18-8, 410, or 416 stainless steel. If 18-8, 410, or 416 stainless steel is utilized it shall be passivated and be free from an discoloration. Covers shall be 3/8-inch thickness for L-867 and 3/4-inch thickness for L-868. All junction boxes shall be provided with both internal and external ground lugs.

115-2.5 MORTAR. The mortar shall be composed of one part of cement and two parts of mortar sand, by volume. The cement shall be per the requirements in ASTM C150, Type I. The sand shall be per the requirements in ASTM C144. Hydrated lime may be added to the mixture of sand and cement in an amount not to exceed 15% of the weight of cement used. The hydrated lime shall meet the requirements of ASTM C206. Water shall be potable, reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product.

115-2.6 CONCRETE. Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures.

115-2.7 FRAMES AND COVERS. The frames shall conform to one of the following requirements:

- a. ASTM A48 Gray iron castings
- b. ASTM A47 Malleable iron castings
- c. ASTM A27 Steel castings
- d. ASTM A283, Grade D Structural steel for grates and frames

- e. ASTM A536 Ductile iron castings
- f. ASTM A897 Austempered ductile iron castings

All castings specified shall be rated for AASHTO H20 loads, unless otherwise shown on the plans. All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings specified.

Each frame and cover unit shall be provided with fastening members to prevent it from being dislodged by traffic, but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

Each cover shall have the word "ELECTRIC" or other approved designation cast on it. Each frame and cover shall be as shown on the plans or approved equivalent. No cable notches are required. Each manhole shall be provided with a "DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" safety warning sign as detailed in the Contract Documents and in accordance with OSHA 1910.146 (c)(2).

115-2.8 LADDERS. Not Used.

115-2.9 REINFORCING STEEL. All reinforcing steel shall be deformed bars of new billet steel meeting the requirements of ASTM A615, Grade 60.

115-2.10 BEDDING/SPECIAL BACKFILL. Bedding or special backfill shall be as shown on the plans.

115-2.11 FLOWABLE BACKFILL. Flowable material used to backfill shall conform to the requirements of Item P-153, Controlled Low Strength Material.

115-2.12 CABLE TRAYS. Not Used

115-2.13 PLASTIC CONDUIT. Plastic conduit shall comply with Item L-110, Airport Underground Electrical Duct Banks and Conduits.

115-2.14 CONDUIT TERMINATORS. Conduit terminators shall be pre-manufactured for the specific purpose and sized as required or as shown on the plans.

115-2.15 PULLING-IN IRONS. Not Used.

115-2.16 GROUND RODS. Ground rods shall be one piece, copper or copper clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case shall they be less than 8 feet long nor less than 5/8 inch in diameter.

CONSTRUCTION METHODS

115-3.1 UNCLASSIFIED EXCAVATION. It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Damage to utility lines, through lack of care in

excavating, shall be repaired or replaced to the satisfaction of the RPR without additional expense to the Owner.

The Contractor shall perform excavation for structures and structure footings to the lines and grades or elevations shown on the plans or as staked by the RPR. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown.

All excavation shall be unclassified and shall be considered incidental to Item L-115. Dewatering necessary for structure installation and erosion per federal, state, and local requirements is incidental to Item L-115.

Boulders, logs and all other objectionable material encountered in excavation shall be removed. All rock and other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped or serrated, as directed by the RPR. All seams, crevices, disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb the bottom of the excavation. Excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

The Contractor shall provide all bracing, sheeting and shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheeting and shoring shall be included in the unit price bid for the structure.

Unless otherwise provided, bracing, sheeting and shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be affected in a manner that will not disturb or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

After each excavation is completed, the Contractor shall notify the RPR. Structures shall be placed after the RPR has approved the depth of the excavation and the suitability of the foundation material.

Prior to installation the Contractor shall provide a minimum of 6 inches of sand or a material approved by the RPR as a suitable base to receive the structure. The base material shall be compacted and graded level and at proper elevation to receive the structure in proper relation to the conduit grade or ground cover requirements, as indicated on the plans.

115-3.2 CONCRETE STRUCTURES. Concrete structures shall be built on prepared foundations conforming to the dimensions and form indicated on the plans. The concrete and construction methods shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the RPR before the concrete is placed.

115-3.3 PRECAST UNIT INSTALLATIONS. Precast units shall be installed plumb and true. Joints shall be made watertight by use of sealant at each tongue-and-groove joint and at roof of manhole. Excess sealant shall be removed and severe surface projections on exterior of neck shall be removed.

115-3.4 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES AND FITTINGS. All castings, frames and fittings shall be placed in the positions indicated on the Plans or as directed by the RPR and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

Field connections shall be made with bolts, unless indicated otherwise. Welding will not be permitted unless shown otherwise on the approved shop drawings and written approval is granted by the casting manufacturer. Erection equipment shall be suitable and safe for the workman. Errors in shop fabrication

or deformation resulting from handling and transportation that prevent the proper assembly and fitting of parts shall be reported immediately to the RPR and approval of the method of correction shall be obtained. Approved corrections shall be made at Contractor's expense.

Anchor bolts and anchors shall be properly located and built into connection work. Bolts and anchors shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately.

Pulling-in irons shall be located opposite all conduit entrances into structures to provide a strong, convenient attachment for pulling-in blocks when installing cables. Pulling-in irons shall be set directly into the concrete walls of the structure.

115-3.5 INSTALLATION OF LADDERS. Not Used.

115-3.6 REMOVAL OF SHEETING AND BRACING. In general, all sheeting and bracing used to support the sides of trenches or other open excavations shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a structure shall be withdrawn, unless otherwise directed, before more than 6 inches of material is placed above the top of the structure and before any bracing is removed. Voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

The RPR may direct the Contractor to delay the removal of sheeting and bracing if, in his judgment, the installed work has not attained the necessary strength to permit placing of backfill.

115-3.7 BACKFILLING. After a structure has been completed, the area around it shall be backfilled in horizontal layers not to exceed 6 inches in thickness measured after compaction to the density requirements shown on the Plan. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the RPR.

Backfill shall not be placed against any structure until approval is given by the RPR. In the case of concrete, such approval shall not be given until tests made by the laboratory under supervision of the RPR establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.

Where required, the RPR may direct the Contractor to add, at his own expense, sufficient water during compaction to assure a complete consolidation of the backfill. The Contractor shall be responsible for all damage or injury done to conduits, duct banks, structures, property or persons due to improper placing or compacting of backfill.

115-3.8 CONNECTION OF DUCT BANKS. To relieve stress of joint between concrete-encased duct banks and structure walls, reinforcement rods shall be placed in the structure wall and shall be formed and tied into duct bank reinforcement at the time the duct bank is installed.

115-3.9 GROUNDING. A ground rod shall be installed in the floor of all concrete structures so that the top of rod extends 6 inches above the floor. The ground rod shall be installed within one foot of a corner of the concrete structure. Ground rods shall be installed prior to casting the bottom slab. Where the soil condition does not permit driving the ground rod into the earth without damage to the ground rod, the Contractor shall drill a 4-inch diameter hole into the earth to receive the ground rod. The hole around the ground rod shall be filled throughout its length, below slab, with Portland cement grout. Ground rods

shall be installed in precast bottom slab of structures by drilling a hole through bottom slab and installing the ground rod. Bottom slab penetration shall be sealed watertight with Portland cement grout around the ground rods.

115-3.10 CLEANUP AND REPAIR. After erection of all galvanized items, damaged areas shall be repaired by applying a liquid cold-galvanizing compound per MIL-P-21035. Surfaces shall be prepared and compound applied per the manufacturer's recommendations.

Prior to acceptance, the entire structure shall be cleaned of all dirt and debris.

115-3.11 RESTORATION. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt and rubbish from the site. The Contractor shall restore all disturbed areas equivalent to or better than their original condition. All sodding, grading and restoration shall be considered incidental to the respective Item L-115 pay item.

The Contractor shall grade around structures as required to provide positive drainage away from the structure.

Areas with special surface treatment, such as roads, sidewalks, or other paved areas shall have backfill compacted to match surrounding areas, and surfaces shall be repaired using materials comparable to original materials.

Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

After all work is completed, the Contractor shall remove all tools and other equipment, leaving the entire site free, clear and in good condition.

115-3.12 INSPECTION. Prior to final approval, the electrical structures shall be thoroughly inspected for conformance with the plans and this specification. Any indication of defects in materials or workmanship shall be further investigated and corrected. The earth resistance to ground of each ground rod shall not exceed 25 ohms. Each ground rod shall be tested using the fall-of-potential ground impedance test per American National Standards Institute / Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81. This test shall be performed prior to establishing connections to other ground electrodes.

115-3.13 MANHOLE ELEVATION ADJUSTMENTS. Not Used

115-3.14 DUCT EXTENSION TO EXISTING DUCTS. Where existing concrete encased ducts are to be extended, the duct extension shall be concrete encased plastic conduit. The fittings to connect the ducts together shall be standard manufactured connectors designed and approved for the purpose. The duct extensions shall be installed according to the concrete encased duct detail and as shown on the plans.

METHOD OF MEASUREMENT

115-4.1 Electrical junction structures shall be measured by each unit completed in place and accepted. The following items shall be included in the price of each unit: All required excavation and dewatering; sheeting and bracing; concrete apron, concrete encasement, all required backfilling with on-site materials;

restoration of all surfaces and finished grading and turfing; all required connections; temporary cables and connections; and ground rod testing

BASIS OF PAYMENT

115-5.1 The accepted quantity of electrical junction structures will be paid for at the Contract unit price per each, complete and in place. This price shall be full compensation for furnishing all materials and for all preparation, excavation, concrete apron, concrete encasement, backfilling and placing of the materials, furnishing and installation of appurtenances and connections to duct banks and other structures as may be required to complete the item as shown on the plans and for all labor, equipment, tools and incidentals necessary to complete the structure.

Payment will be made under:

Item L-115-1	L-867 Class 1A, Size B, Light Base Can with Concrete Apron - per each
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REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
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Advisory Circular (AC)

AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
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AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
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AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
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AC 150/5340-30	Design and Installation Details for Airport Visual Aids
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AC 150/5345-53	Airport Lighting Equipment Certification Program
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Commercial Item Description (CID)

A-A 59544	Cable and Wire, Electrical (Power, Fixed Installation)
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ASTM International (ASTM)

ASTM A27	Standard Specification for Steel Castings, Carbon, for General Application
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ASTM A47	Standard Specification for Ferritic Malleable Iron Castings
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ASTM A48	Standard Specification for Gray Iron Castings
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ASTM A123	Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products
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ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
-----------	--

ASTM A536	Standard Specification for Ductile Iron Castings
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ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A897	Standard Specification for Austempered Ductile Iron Castings
ASTM C144	Standard Specification for Aggregate for Masonry Mortar
ASTM C150	Standard Specification for Portland Cement
ASTM C206	Standard Specification for Finishing Hydrated Lime
FAA Engineering Brief (EB)	
EB #83	In Pavement Light Fixture Bolts
Mil Spec	
MIL-P-21035	Paint High Zinc Dust Content, Galvanizing Repair
National Fire Protection Association (NFPA)	
NFPA-70	National Electrical Code (NEC)

END OF ITEM L-115

ITEM L-125 INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1 This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

125-1.2 SUBMITTALS. Prior to beginning work in this section, the Contractor shall submit product information, manufacturer's specification, certificate of compliance, for all materials and equipment including applicable testing data required by this section, to include, but not limited to the following:

- a. FAA Type L-861(L) elevated medium intensity runway edge lights
- b. FAA Type L-861E(L) elevated medium intensity runway threshold lights
- c. FAA Type L-830 isolation transformer
- d. Airfield sign panels

EQUIPMENT AND MATERIALS

125-2.1 GENERAL.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not perform as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

b. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in electronic PDF format, tabbed by specification section. The RPR reserves the right to reject any or all equipment, materials or procedures, which, in the RPR's opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

EQUIPMENT AND MATERIALS

125-2.2 CONDUIT/DUCT. Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

125-2.3 CABLE AND COUNTERPOISE. Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

125-2.4 TAPE. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

125-2.5 CABLE CONNECTIONS. Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

125-2.6 RETROREFLECTIVE MARKERS. Not required.

125-2.7 RUNWAY LIGHTS. Runway lights shall conform to the requirements of AC 150/5345-46. Lamps shall be of size and type indicated, or as required by fixture manufacturer for each lighting fixture required under this contract. Filters shall be of colors conforming to the specification for the light concerned or to the standard referenced.

Lights

Type	Class	Mode	Base	Filter	Transformer	Height
L-861(L)	1A	1	L-867	W/W	L-830	14"
L-861E(L)	1A	1	L-867	R/G	L-830	14"

125-2.8 RUNWAY AND TAXIWAY SIGNS. Runway and Taxiway Guidance Signs panels should conform to the requirements of AC 150/5345-44.

Signs

Type	Size	Style	Class	Mode	Notes
L-858	2	2	2	2	Legend Panel Only

125-2.9 RUNWAY END IDENTIFIER LIGHT (REIL). Not Used.

125-2.10 PRECISION APPROACH PATH INDICATOR (PAPI). Not Used.

125-2.11 CIRCUIT SELECTOR CABINET. Not Used.

125-2.12 **LIGHT BASE AND TRANSFORMER HOUSINGS.** Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type L-867, Class 1A, Size B shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures.

125-2.13 **ISOLATION TRANSFORMERS.** Isolation Transformers shall be Type L-830, size as required for each installation. Transformer shall conform to AC 150/5345-47.

INSTALLATION

125-3.1 **INSTALLATION.** Airfield lighting shall be installed as indicated on plans conforming to AC 150/5340-30.

125-3.2 **TESTING.** All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

125-3.3 **SHIPPING AND STORAGE.** Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

125-3.4 **ELEVATED AND IN-PAVEMENT LIGHTS.** Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

METHOD OF MEASUREMENT

125-4.1 Runway edge and threshold lights will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR.

125-4.2 Airfield guidance signs replacement panels will be measured by the number of each type and size installed as completed units, in place, ready for operation, and accepted by the RPR.

BASIS OF PAYMENT

125-5.1 Payment will be made at the Contract unit price for each complete runway edge/threshold light installed by the Contractor and accepted by the RPR. This payment will be full compensation for

furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

125-5.2 Payment will be made at the Contract unit price for each airfield guidance sign panel furnished, replaced, and installed by the Contractor, and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

Item L-125-1	Elevated LED Runway Edge Light with Isolation Transformer, L-861 (L) -- per each
Item L-125-2	Elevated LED Threshold/End Light with Isolation Transformer, L-861E (L) -- per each
Item L-125-3	Replace Airfield Sign Panels-- per each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Runway and Taxiway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program

Engineering Brief (EB)

EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures
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END OF ITEM L-125

SECTION H APPENDICES

**SECTION H
CONSTRUCTION SAFETY AND
PHASING PLANS**

Chemehuevi Valley Airport

RUNWAY 16-34 LIGHTING SYSTEM REPLACEMENT

FOR

CHEMEHUEVI INDIAN TRIBE

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

January 2026

Prepared by:

AECOM

Construction Safety and Phasing Plan at Chemehuevi Valley Airport
Runway 16-34 Lighting System Replacement

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C-031	Construction Phasing Details

SECTION 1 INTRODUCTION

This document provides general information to Contractors on the requirements and procedures for accident prevention, safety, and security, at the Chemehuevi Valley Airport.

The following are general safety objectives that shall be achieved to maximize safety and to minimize time and economic loss to the aviation community, and others directly or indirectly affected by the project. The Contractor shall be responsible for controlling his/her operations with the requirements of this section as listed below:

- Maximize safety of aircraft operations
- Keep the airport operational for users
- Prevent any delays or conflicts to aircraft operations
- Prevent any delays or conflicts to other on-going construction operations

1.1 Safety Plan Compliance Document

The Contractor shall submit a Safety Plan Compliance Document (SPCD) to the airport operator prior to the Notice to Proceed (NTP). It shall conform to requirements found in AC 150/5370-2 (latest edition) and project specifications.

1.2 Airport Contact Numbers

EMERGENCY TELEPHONE NUMBER

911

FOR

POLICE

FIRE

RESCUE

INFORMATION, COMPLIANCE, AND ASSISTANCE

TRIBAL AIRPORT PLANNER (STEVEN ESCOBAR)

OFFICE: 760-858-1116

8:00 AM – 5:00 PM MON THROUGH FRI

CELL: 760-284-3795

ADDITIONAL CONTACT NUMBERS

[In this section, list the names and telephone numbers of points of contact for all parties affected by the construction project. Include a single list that includes all telephone numbers required under this section. Include emergency notification procedures for all representatives of all parties potentially impacted by the construction. Identify individual representatives – and at least one alternate – for each party. List both on-duty and off-duty contact information for each individual, including individuals responsible for emergency maintenance of airport construction hazard lighting and barricades.]

End of Section 1

SECTION 2 COORDINATION

2.1 Planning Meetings

Prior to the start of the project and/or each major phase of the work, the Contractor shall schedule meetings with the Construction Manager (CM), and the Chemehuevi Indian CIT (CIT) regarding the scheduled construction activities, and other airport stakeholders to discuss project planning. Meetings should be scheduled in advance and coordinated to give adequate time and participation of all parties. The topics of discussion shall include preferred access point; vehicle routes; other on-going construction projects within the vicinity; additional notifications/communications requirements prior to entering each area; setting up work area barricades, lighting, backup equipment, and materials; emergency notification procedures and emergency contacts; temporary stockpile locations; procedures that must be followed should the Contractor be unable to open a phase at the end of scheduled work hours; and other topics as appropriate.

2.2 Coordination and Progress Meetings

Progress meetings will be coordinated with Construction Manager (CM) to discuss the progress of the project as a whole. Coordination of airfield activities is an important component of a safe operating environment. During the project the following coordination meetings will be held to discuss airfield activities:

- Pre-construction meeting
- Weekly Contractor progress meetings
- Pre-activity meeting and contingency planning meetings
- Daily coordination will take place between all involved parties

Prior to starting any work shift (day or night work), a daily meeting will be held by the construction crew. The meeting shall be led by the Superintendent, Foreman, and/or On-Site Supervisor, and shall discuss the work to be performed that day, any safety issues, the approved barricade plan, closed AOA sections, AOA hauling routes, and construction goals.

Prior to the scheduled weekly progress meetings, the Contractor shall submit an updated two-week work schedule to the CM and CIT. The two-week schedule shall include the construction activity for each day, runway closures, taxiway closures, AOA hauling route, alternate aircraft route, etc... All parties involved with the weekly meeting (CM, CIT) will be able to voice any concerns to the construction activity and/or proposed closures. The two-week schedule will be approved at the weekly meetings, and reflected in the meeting minutes. If there are any changes to the two-week schedule, the Contractor will update and resubmit it for approval.

2.3 Additional Coordination

The Contractor shall conduct all his operations in such a manner so as to maintain a smooth, safe, and uninterrupted flow of aircraft and vehicular traffic around the airport.

FAA Form 7460-1 shall be filed with the FAA for this project along with all crane activity associated with construction.

Prior to excavation in the vicinity of existing underground facilities, the Contractor shall notify the CM and CIT, and the respective authorities representing the owners and agencies responsible for such facilities, not less than five (5) working days, prior to excavation so that a representative of the owners or agencies can be present if they so desire.

End of Section 2

SECTION 3 PHASING

3.1 General Description – Scope of Work

The scope of work for this project includes the following:

1. Remove and replace runway edge lights on new concrete encased base can
2. Remove and replace runway threshold lights on new concrete encased base can
3. Remove existing vegetation around runway lights and with the RSA
4. Install new underground PVC conduits and cables
5. Remove and replace wind cone and restore segmented circle
6. Remove and replace two (2) constant current regulators
7. Remove and replace pilot lighting control system
8. Miscellaneous electrical vault improvements

3.2 Construction Phases

The Contractor shall perform each phase of the work within the closure times and duration specified. The Contractor shall provide all labor, material, and equipment, including standby equipment necessary to guarantee construction and completion of the work within the constraints and timeframes specified for the individual phases and the overall project, and within the requirements of the contract documents. The terms “work area,” “zone,” and “phase” may be used hereafter to describe either the period of time and/or the area in which certain work is to be done.

Each construction phase shall be completed within the work hours and duration shown in Table 1 and 2.

Once a phase is started, it shall be completed in the total number of continuous calendar days in Table 1.

Table 1 – Construction Phase Duration				
Phase Name	Description	Work Hours	Phase Duration (Calendar Days)	Contract Duration (Calendar Days)
0	Mobilization	N/A	90	90
1	Replace runway lights, install conduits and cables	7:00am to 4:00pm	42	132
2	Electrical Vault Improvements	7:00am to 4:00pm	14	146
3	Project Close-out	N/A	60	206

3.3 Construction Safety Drawings (CSD's)

The limits of each work area for construction are shown on the construction phasing plans, indicating offset distances from adjacent active runways and taxiways. For each work area, these lines show the limit of the work area in which the Contractor may have workers, equipment, and materials, and in which he/she may conduct work for that area.

No construction activity is permitted within the designated runway safety area (RSA) or taxiway object free area (TOFA) while that surface is open to aircraft operations. Work within the RSA or TOFA shall only be accomplished when the runway or taxiway is closed. Prior to reopening a runway or taxiway that was closed for construction for any period, all equipment and materials shall be moved outside of the RSA or TOFA, all barricades and lighting shall be established per plan requirements, no stockpiles shall remain within ROFA or TOFA, grade shall be covered in a manner to prevent dust, rock movement due to jet blast, or other objectionable movement of material onto the open runway or taxiway/taxilane, and the adjacent pavement shall be cleaned of all construction debris and swept. The CM shall retain the right to shut down contractor operations in any work area if these conditions are not being met. Prior to re-opening of the runways and taxiways, the CM and contractor shall both inspect to determine if the above criteria is met at least 60 minutes prior to re-opening.

End of Section 3

SECTION 4 AREAS AND OPERATIONS AFFECTED BY CONSTRUCTION ACTIVITIES

4.1 General Description

The locations at Chemehuevi Valley Airport affected by the construction activities are described in Table 2 with associated airfield impacts and closures. Work activities associated will necessitate the airfield closure or restriction:

Table 2 – Airfield Operational Impacts				
Phase Name	Description	Airfield Closures / NOTAMS	Work Hours	Mitigation of Impacts / Additional Description
0	Mobilization	None	N/A	N/A
1	Replace runway lights, install conduits and cables	Close Runway 16-34	7:00am to 4:00pm	None
2	Electrical Vault Improvements	Runway 16-34 edge and threshold lights - Out of Service	7:00am to 4:00pm	None
3	Project Close-out	None	N/A	NA

4.2 Identification of Affected Areas

Refer to Table 2 above for the airfield restrictions, closures, and impacts for each phase.

4.3 Mitigations of Effects

Refer to Table 2 and the Phasing Drawings in the Appendices for mitigation of impacts for each phase.

End of Section 4

SECTION 5 PROTECTION OF NAVAIDS

5.1 Summary

The construction will not occur near any FAA NAVAIDS, and there are no anticipated impacts.

The Contractor will be required to protect all FAA utility lines and any above ground structures.

End of Section 5

SECTION 6 AIRFIELD ACCESS

6.1 Site Security

The Contractor shall only use the designated access gates for vehicle ingress and egress through the airport perimeter security fences. The Contractor shall stop any unauthorized person entering the airport through these gates and prevent piggy-backing of any unauthorized vehicles. Airfield security shall be maintained at all times.

- Gate guards are not required. However, the Contractor shall reasonably control all incoming individuals and vehicles, prevent unauthorized entrance, and prevent ingress of wildlife onto the airfield through gates.
- Gates shall be opened to allow authorized vehicular passage and Contractor shall physically block the gate until it has closed.
- When not actively in use, the gate will be kept closed and locked. During periods of operation, the gate must be pulled shut or an approved barricade must be placed in front of the gate to require a vehicle to stop so that an inadvertent entry into the secure area is prevented.
- All vehicles must have an approved logo or company name displayed on both sides of the vehicle.

6.2 Contractor Staging Area

Contractor staging areas as depicted on the contract drawings shall be used to store all idle equipment, supplies and construction materials. Storage shall not interfere with operations areas. When not in use during working hours, and at all other times, all material and equipment shall be stored at the storage site indicated on the drawings unless prior approval is provided by the Engineer.

6.2.1 Equipment Storage Area

Storage of equipment and materials shall be in the Contractor's staging area as shown in Drawing C-020 and C-021. The Contractor shall be solely responsible for the security of the lay-down area and shall be liable for any damage caused to such premises. The Contractor shall restore the staging and storage areas and adjacent areas to their original condition prior to final acceptance of the work.

When required, Best Management Practices (BMP's) will be installed around the staging/stockpile areas as approved by the CIT. Barricades will be installed around the stockpile area.

6.2.2 Location of Stockpiled or Construction Material

- The stockpile and staging area(s) shall not be permitted within the RSA, ROFA, and TOFA for active or closed runways and taxiways. Stockpiling materials and/or parking equipment near electronic NAVAIDs or within five (5) feet of the AOA fence line shall not be permitted.
- No materials may be stored on the AOA unless authorized by the CM or CIT.
- Any approved storage of equipment shall not present a line of sight problem with FAA ATCT, flagman operations, vehicle traffic, or aircraft.
- Stockpiling of material will only be allowed at the Contractor's staging area or other locations if approved in advanced by the CM or CIT. The Contractor shall be responsible for any blown debris or dust from stockpiles. The stockpile height is restricted to 14 feet or less and shall remain below the Title 14 FAR Part 77 imaginary surface contours. However, barricades with red flashing lights shall be installed where potential conflicts with aircraft or ground vehicular traffic exists.

6.3 Haul Routes

1. Haul route for vehicles delivering materials to, or hauling material from, the work sites shall use the gates and haul routes as shown on the plans. Contractor Staging, Laydown area, and Access Plan Drawing C-020 delineates how the Contractor will access the airfield including preferred haul and travel routes.
2. Roads designated as contractor haul routes may be used by other airport vehicles, contractors, and the general public (along public roads). The contractor shall not interfere with other vehicle traffic and shall yield to emergency vehicles and aircraft along any of the airport or public roads. The contractor shall provide all flagging, signing, lighting, etc. required by the city, airport, county, and state to provide all reasonable safety measures to protect all persons utilizing the AOA service road, the haul road, and all public roads used by the Contractor. The Contractor shall obey all vehicular weight and speed limits established as posted on airport property and public streets.
3. All vehicles and equipment shall be kept within the work areas established for that work shift unless traveling to or from the site. Under no circumstances shall vehicles be parked or equipment stored outside of the work areas.
4. Any equipment temporarily parked at a work site for use during the current work shift shall be properly marked, parked outside all safety areas, and within the barricaded work site. Equipment shall not exceed 14 feet in height and shall be left in the lowest possible profile position.
5. All airfield markings along haul routes and areas adjacent to the work area shall be maintained by the Contractor to the satisfaction of the CM for the duration of the project.
6. Trucks delivering asphalt pavement or concrete shall not wash out chutes, beds, mixers, etc. on the AOA.
7. Locations of access roads are approximate. Exact locations shall be coordinated with the CM or CIT to avoid surface utilities, navigational equipment, TOFAs, RSA, etc. Access roads must be constructed and operational before any other work can begin. All vehicles and equipment must access the work area along designated access roads.
8. Contractor's vehicles shall not deviate from approved haul routes specified on the plans or as directed by the Engineer.
9. Contractor shall monitor and control FOD on the haul route at all times.
10. When driving from dirt areas to paved areas, the Contractor shall implement FOD checkpoints for vehicle operators to check and remove FOD on the tires to prevent tracking of FOD to aircraft operational areas.

6.4 Requirements and Regulations Relating to the Operation of Motor Vehicles

During the duration of the work, the Contractor shall recognize and abide by all rules, regulations, and controls, as modified by federal regulations.

In addition to the federal regulations, the CM is empowered to issue such other instructions as may be deemed necessary for the safety and well-being of airport users or otherwise in the best interest of the public.

Vehicles entering the AOA must comply with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport (latest edition).

6.4.1 Operation of Motor Vehicles within the AOA

Motor vehicle operations within and on the airport premises shall be governed by the provisions of the California state motor vehicle codes and traffic direction procedures and signs and signals for turns. Lights and safe-driving precaution shall be in conformity therewith. In addition, motor vehicles shall conform to all special regulations prescribed by the airport.

Construction Safety and Phasing Plan at Chemehuevi Valley Airport
Runway 16-34 Lighting System Replacement

Traffic on perimeter roads, enplaning and deplaning areas, public thoroughfares, and parking areas of the airport is limited to those vehicles properly licensed to operate on public streets and highways.

Every person operating motorized equipment of any character on any area shall operate the same in a careful and prudent manner and at a speed posted or fixed by this section or the general provisions and at no time greater than is reasonable and proper under the conditions existing at the point of operating, taking into account weather, traffic and road conditions, view and obstructions, and shall be consistent with all conditions so as not to endanger the life, limb or property, or the rights others entitled to the use thereof.

The Contractor shall be aware that operations of aircraft in an adjacent area will result in jet blast occurring in the work area. Contractor vehicles, equipment, and supplies must remain inside the work area established for the work shift unless in transit to or from the site. All vehicles and equipment must access the work area along designated access roads/haul routes.

All motor vehicles that enter the AOA shall possess exhaust system that are protected with screens, mufflers, or other devices adequate to prevent the escape of sparks of the propagation of flame.

All vehicles within the AOA shall be equipped with reflectors or lights on both front and rear ends and on the sides.

All vehicles and equipment used on the AOA must display an orange and white checkered flag or a flashing yellow beacon during daytime work, and a yellow flashing beacon during nighttime work.

No person shall operate any motor vehicle or motorized equipment in the AOA of the airport unless such motor vehicle or motorized equipment is in a safe and mechanically reliable condition for such operation.

Any person operating equipment within the AOA shall, in addition to this section, abide by all existing FAA and other governmental rules and regulations and shall at all times comply with any lawful signals or direction of the CIT's employees. All traffic signs, lights, and signals shall be obeyed.

No person shall operate any motor vehicle or motorized equipment on the aircraft movement or non-movement areas of the airport at a speed in excess of the posted (established) speed limit of 15 mph unless otherwise noted or when conditions require a reduction in speed. Designated motor vehicle drive lanes shall be utilized where provided unless specific direction is given by the CM.

No person operating a motor vehicle or motorized equipment within the AOA shall in any way hinder, stop, slow, or otherwise interfere with the operation of any aircraft. Aircraft shall have the right-of-way at all times.

All aircraft and emergency vehicles have priority over Contractor vehicles. Contractor vehicles shall yield right-of-way to aircraft and emergency vehicles. Contractor shall ensure that under no circumstances will any Contractor or other vehicle associated with the project pass beneath any part of an aircraft, or block the access to any aircraft parking, or delay any aircraft movement.

Vehicles shall remain within established drive lanes. It is prohibited to use runways or taxiways or adjacent field areas unless specifically indicated on the plans. It is emphasized that the Contractor's authority to operate does not extend to active aircraft movement areas. The Contractor shall operate along established access roads/haul routes with prior approval of the Engineer.

6.4.2 Parking

- No parking is permitted on the airport roadway as the primary purpose of the airport roadways is for motor vehicle traffic.
- No person shall park any motor vehicle, other equipment, or materials within the AOA, except in a neat and orderly manner and at such locations prescribed or as directed by the CIT or CM.
- No person shall park any motor vehicle or other equipment or place materials within the AOA within 15 feet of any fire hydrant or standpipe.
- Parking of construction workers' private vehicles shall also be in a public parking or private parking facility outside the AOA unless otherwise approved by the Engineer.
- Under no circumstances shall vehicles or equipment be parked within five (5) feet of the airport perimeter security fence line.

6.4.3 Vehicle Identification including Lighting and Markings

Each vehicle or unit of equipment that travels or operates on any part of the AOA shall have an approved decal or painted company name applied to both sides of the vehicles in a location opposite the driver's seat. The identification should be applied to the front door panels. Magnetic or temporary signs are acceptable.

Any person operating equipment in the AOA shall, in addition to this section, abide by all existing FAA and other governmental rules and regulations.

6.4.4 Load Limits

When using airport pavements and roadways, the Contractor shall restrict the gross weight as required by local codes. For heavier vehicle loads, permits shall be obtained through the agency having jurisdiction. All vehicle weights are subject to verification.

6.4.5 Requirements and Regulations Relating to Vehicle Drivers

All drivers operating vehicles on airport property must carry a valid United States driver's license on his/her person, appropriately endorsed for the type of equipment being operated.

Use of tall equipment (cranes, concrete pumps, etc.) will not be allowed unless the FAA 7460-1 determination letter is issued and approved for such equipment.

End of Section 6

SECTION 7 WILDLIFE MANAGEMENT

7.1 Summary

Personnel shall take immediate action to eliminate wildlife hazards whenever they are detected. Hazards include, but are not limited to:

- Trash (food scraps and miscellaneous waste), standing water, or tall grass and seeds which may attract unwanted wildlife to the airport. All personnel shall take immediate action to eliminate wildlife hazards and shall be promptly removed to prevent attracting birds and animals.
- Poorly maintained or damaged security and wildlife fencing and gates, which may allow animals to enter the AOA.
- Contractor shall maintain the integrity of the existing perimeter fence by not leaving gates open or immediately repairing damaged fences or gates.
- Any unusual wildlife activity shall be communicated immediately to the CIT or CM.

Contractor shall notify the Tribe's Conservation Officer prior to eliminating wildlife hazards and shall follow any directives of the Officer pertaining to eliminating the wildlife hazard.

End of Section 7

SECTION 8 FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

8.1 Summary

All aircraft movement areas will be under surveillance by all parties to ensure they are acceptable for aircraft operations. The Contractor shall maintain FOD control of all haul routes to and from the construction site.

No loose material or waste (FOD), capable of causing damage to aircraft or capable of being ingested into jet engines, may be left in the working area on or next to runways, taxiways, ramps, or aprons. The Contractor shall direct special attention to all areas that are operational to aircraft during construction. These shall be kept clean and clear of all materials or debris at all times.

Common sources of FOD during construction include during trucking or hauling operations of constructions material to and from the construction site, demolition and removal of items (i.e. cold-milling or PCC demolition), and during placement and construction of improvements (i.e. placement of aggregate base).

All loose material or waste (FOD) located on aircraft movement areas shall be reported to the inspectors immediately; the inspectors shall coordinate with CIT and CM to close the area to aircraft traffic if required until cleanup is accomplished.

Trucks and equipment shall have all accumulated dirt, mud, rocks, and debris removed before accessing the AOA, and when leaving the work area. Loads shall be struck flush and secured to prohibit loss of material. If spillage occurs, such roadways shall be swept clean immediately after such spillage to allow for safe operation of vehicles as determined by the CM.

End of Section 8

SECTION 9 HAZARDOUS MATERIAL (HAZMAT) MANAGEMENT

9.1 Summary

All lubricating liquids and solids (oils and greases) shall be secured and contained in dry areas until used by trained personnel or mechanics. All waste materials shall be properly disposed of in accordance with all applicable environmental laws.

In any event of a hazardous material spill, the local Fire Department must be contacted. The Contractor must take appropriate measures to seal off the spill area and keep persons and equipment away from the site. Once the spill has been contained, the Contractor will take the appropriate measures to have the material removed from the site.

Construction equipment fuel may be kept at the Contractor's yard and made available to Contractor's employees only. All fuel will be stored in a manner that prevents leakage, and provides secondary containment.

No hazardous material shall be stored or used near any of the airport's storm water drain inlets.

End of Section 9

SECTION 10 NOTIFICATION OF CONSTRUCTION ACTIVITIES

The CIT will make notifications to airport users.

During weekly construction meetings, construction activities for the next two (2) weeks shall be discussed. Specific items should include, but are not limited to, phase beginning or ending, construction activities requiring closure of runways and taxiways, modification to the vehicle service road, and construction activities requiring FAA Form 7460-1 submittal.

10.1 NOTAM Issuance

No ramp, apron, taxiway, or runway area shall be closed to aircraft without approval of the CIT and CM. This will enable NOTAMs, or other advisory communications, to be issued. The Contractor shall provide notification to CIT or CM a minimum of five (5) working days in advance.

10.2 CIT Coordination

Contractor is to work with CIT to maintain a list of the responsible representatives/points of contact for all parties and procedures for contacting them 24 hours a day, seven days a week.

In the event of an aircraft emergency that may affect construction activities; the Contractor's personnel and/or equipment may be required to immediately vacate the area.

10.3 FAA Coordination

10.3.1 Marking of Equipment and Restrictions on Cranes

If cranes or other equipment exceeding 14 feet in height are to be used, Contractor will be required to submit for approval the FAA's application Form 7460-1 electronically to

<https://oeaaa.faa.gov/>

The airport has no control over the FAA's review and approval time. Contractor is encouraged to submit any required applications well in advance (at least three (3) months) of the need for the use of the equipment or crane.

Contractor to Submit:

- Latitude
- Longitude
- Existing ground elevation including vertical datum
- Height of crane, structure, stockpile, etc.
- Exhibit indicating operating area of the equipment or crane

FAA Form 7460-1 will be filed for this project along with all crane activity associated with construction.

End of Section 10

SECTION 11 INSPECTION REQUIREMENTS

11.1 Summary

The CM and CIT will conduct continual inspections of the construction site to ensure that areas surrounding the sites are safe for aircraft operations.

Any aircraft movement surface or adjoining runway, taxiway, or taxilane safety area that does not pass inspection must remain closed until such time cleanup is performed and approved.

Frequent inspections will be made by the CM and CIT, or his authorized representative during the critical phases of the work to insure that the Contractor is following the recommended safety procedures. The inspector shall report any violations or potential safety hazards to the CM who will in turn advise the Contractor of the concern for immediate correction by the Contractor.

11.2 Daily (or More Frequent) Inspections

At the end of each work shift or work phase, the area will be cleaned to remove all FOD created by the construction activity from all runways, taxiways, and apron areas. Prior to opening of a closed area, the Contractor shall perform a FOD check of the work area and the haul route used for the shift or phase, and will not remove any low-profile barricades and/or lighted X's until the area has been cleared by the CM or CIT. The Contractor will inspect and clean the haul route outside of the barricaded area, and ensure there is no FOD on the active airport areas.

11.3 Final Inspections

The Contractor will request a FOD inspection from the CM and CIT when the FOD check and cleaning is completed. Once the FOD inspection has been completed and cleared for opening, the CM or CIT will cancel the issued NOTAMs. The Contractor's request for inspection shall be at least 60 minutes prior to reopening the area to allow adequate time for inspection and final approval.

End of Section 11

SECTION 12 UNDERGROUND UTILITIES

12.1 Summary

All utilities within the project site shall be protected in place and less identified in the plans for removal or relocation.

12.2 Procedures for Locating and Protecting Existing Underground Utilities/Facilities in Excavation Area

All existing utilities within the construction areas or the staging area that are designated to remain in place shall be maintained, accessible, and protected at all times (i.e., waterlines, fire hydrants, valves, drainage structures, electrical and FAA cables/equipment, etc.). Refer to the specifications, phasing plans, and demolition plans for additional requirements that are associated with this project.

The existence, location, and characteristics of underground utility information shown on these plans were obtained from available record data. No representation is made as to the accuracy or completeness of utility lines shown or any unknown utilities. Contractor shall make reasonable inferences as to existing underground utilities from observation of visible conditions and take appropriate measures to protect all utilities, including underground communication installation, which are owned and operated by CIT, FAA, or other third parties.

Contractor shall perform site investigation to verify location and depth of all utilities. Investigate by means of vacuum or air pressure pot-holing or other means as approved by the CM. Contractor shall accurately record and stake the location of all utilities.

The Contractor shall be responsible for and repair, at Contractor's own expense, any damages resulting from his/her failure to locate utilities as specified.

Exercise extreme care when using any equipment to prevent contact with any nearby power lines and power sources. Safe working clearances shall conform to the national electrical code.

All structures shall be designed to support aircraft loads specified unless otherwise noted. The Contractor may make certain temporary connections to the existing airfield lighting system only if it is associated with keeping the required lighting systems operational and approved by the CM or CIT. The Contractor shall provide a separate power source for other construction related power needs.

When power and control cables for airfield lighting and navigational aids are located in the construction areas, the Contractor's personnel shall be familiar with these cable locations and keep vehicles and equipment clear of any cables at all times. Mark/delineate the surface for each utility in a manner acceptable to the CM or CIT. As indicated on the plans and the specifications, the Contractor shall locate all utilities (operational and abandoned) prior to starting any excavation, demolition, or earthwork.

All utilities encountered along the line of the work shall be maintained in service during all operations under the contract, unless other arrangements satisfactory to the utility owner, the affected agency, and the CM or CIT are made in advance. Utilities shall include, all above or below ground conduit, pipes, wet wells, ducts, cables, and appurtenances associated with oil, gas, water, steam, irrigation, sewer, storm drain, wastewater, air, electrical, power, instrumentation, communication, telephone, TV, and lighting systems, whether or not owned by the CIT. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.

Any utility that is damaged by the Contractor shall be immediately reported to the CM and CIT and immediately repaired to a condition equal to, or better than, the condition they were in prior to such damage. Repair work shall be continuous until the utility or improvement is back in service.

12.3 Underground Service Alert

The Contractor shall mark all utility lines prior to any work in a given area. Additionally, the Contractor shall expose and verify the depth and alignment of all underground utilities in the construction site. The Contractor shall pot-hole and survey all utilities within a five (5)-foot distance of any footing, work, utilities, etc. prior to excavation.

The Contractor shall contact utility owners after the ID number is obtained from the underground service alert USA, but not less than fourteen (14) days before excavation work is started, to mark or identify existing utilities.

End of Section 12

SECTION 13 PENALTIES

13.1 Summary

Failure of the Contractor and/or Subcontractors to adhere to prescribed requirements may have consequences that jeopardize the health, safety, or lives of customers and employees at the airport. Therefore, if any Contractor is found to be in violation of safety, security, and/or badging/licensing requirements, the individual may be issued a citation.

Violations may be deemed as just and sufficient cause to require the employee to be permanently removed from the job site. The Contractor shall be responsible for all costs and delays caused by safety violation.

Penalties for violations may include a warning citation, a fine, project shutdown, retraining, and/or other corrective measures.

Project shutdown or fined citation may be issued on the first offense.

When an individual is found in violation of the rules and regulations outlined for airport security, the general following steps will be taken:

1. First Offense:
 - a. Issuance of a security violation notice which will be sent to the individual's employer, who must describe actions that will be taken, such a training, to prevent future incidents, and follow-up with documentation of completed training and submit to the CIT.
2. Second Offense:
 - a. Issuance of a security violation notice, which will be sent to the individual's employer.
 - b. Three-day suspension from access to project site.
 - c. Meeting with employee, employee's supervisor and the CIT (or designee).
 - d. Assessment of a \$500 fine, which must be paid to the CIT prior to the employee obtaining access to the project site.
3. Third Offense:
 - a. Issuance of a violation notice, which will be sent to the individual's employer.
 - b. Meeting is held with employee, employee's supervisor, and the CIT (or designee).
 - c. Permanent revocation of the employee's access privileges.

End of Section 13

SECTION 14 SPECIAL CONDITIONS

14.1 Summary

Airport emergencies may arise during the progress of the work, such as in-flight emergencies that may develop. In the event of a construction or airport emergency, the CIT will be notified immediately, informing them of the situation. The CIT will decide on the appropriate remedial actions that are needed to stabilize the situation. Please refer to emergency contacts within the CSPP detail the points of contact flow chart during non-emergency and emergency situations.

Air Ambulance

During life safety incidents, the Contractor may be required to temporarily stop and vacate the AOA to allow operations of air ambulance or other life threatening medical emergency.

End of Section 14

SECTION 15 RUNWAY AND TAXIWAY VISUAL AIDS – MARKING, LIGHTING, AND SIGNS

15.1 Marking Removal

All existing pavement markings requiring removal shall be permanently obliterated or temporarily blacked-out in a manner that will not leave marking shadows at the direction of the CM or CIT. All permanent pavement markings shall be restored at project completion.

15.2 AOA Closures (Runways, Taxiways, Ramps)

All lights and equipment designated to remain within the work areas, safety areas, and on the AOA shall be protected at all times. The Contractor shall protect these lights and equipment from damage while working at the work site. When a taxiway or taxilane is closed, the lights shall be de-energized or cover/masked. The Contractor shall place barricades around any elevated lights and equipment that may be in the work area to delineate and protect them. Damage due to the Contractor's operations shall be repaired immediately at the Contractors' expense.

For temporary closures of taxiways or taxilanes, the Contractor shall de-energize or cover/mask centerline lights, edge lights, and signage around the work areas during the work shift. The Contractor shall protect these lights from damage at all times while working at the work site. All centerline and edge lights designated to remain shall be operational at the end of the closure.

15.3 Temporary Lighting

When existing edge lighting is rendered inoperable on an active runway or taxiway, the Contractor must install temporary edge lights as directed by the CM.

Every effort possible shall be made to construct temporary taxiway lighting to conform to the runway or taxiway safety area frangibility and height restrictions as specified in the FAA Advisory Circular 150/5370-2 (latest edition), Operational Safety on Airports during Construction.

Temporary edge lights or solar powered edge lights shall be securely anchored and the electrical power cable shall not be driven across. Airfield lighting cables operate at high voltage; They have the potential of 5,000 volts and should have only qualified personnel handling them.

Temporary light plants used in conjunction with nighttime work will not be located in such a manner as to be an obstruction or hazard. In addition, these light plants will not be located where the glare of the light will cause visual or physical interference to operating aircraft.

15.4 Permanent Signage

All permanent signs affected by construction shall be completely covered or replaced by temporary signs acceptable to CM and CIT. The Contractor shall submit a sign relocation plan to the CM and CIT for approval prior to any relocation of any existing signs.

End of Section 15

SECTION 16 MARKING AND SIGNS FOR ACCESS ROUTES

16.1 Summary

All haul route markings and signage shall be reviewed and approved by the CM or CIT.

Please refer to Contractor Staging, Laydown area, and Access Plan Drawing C-020 regarding the proposed hauling routes.

End of Section 16

SECTION 17 HAZARD MARKING AND LIGHTING

17.1 Summary

Every excavation or hazard on or adjacent to the airfield or other areas shall be marked.

The Contractor shall completely fence or barricade all excavations, to the satisfaction of CM to provide protection against anyone falling into the excavation. The fencing and or barricades shall be in place at all times except when workers are present and actual construction operations are in progress.

Red barricade lights and/or other red lighted hazard devices stipulated on the phasing plans shall be operative at all times while in place. It shall be the Contractor's responsibility to immediately repair or replace any light or flasher that is not operating.

Barricades shall be in place prior to commencing construction operations and shall be maintained for the life of the contract.

Every excavation or hazard on or adjacent to runways, taxiways, ramps, or other areas on the airfield shall be marked. The Contractor shall obtain the approval of CM or CIT on the condition of the work site, including barricades and lighting before leaving the work site.

Beacons and flags required on all contractor vehicles/equipment must be maintained in good working condition, and flags shall be replaced if they become faded, discolored, or ragged.

Limits of the various phases of work shall be clearly delineated with barricades, warning signs with attached steady or flashing red lights; "standing red" barricade lights and other markings as shown on the plans specified herein, in order to deter aircraft and vehicles from entering the construction areas.

Contractor shall continually inspect and maintain all construction barriers, fencing, and gates in good condition, see Construction Phasing Detail Drawing C-031.

Portable lighting provided for any night work shall not interfere with air navigation. Lights shall be transported to the work areas pointed down and turned off to avoid affecting airport operations.

17.2 Equipment

Please refer to Construction Phasing Detail Drawing C-031 regarding the requirements for the low profile barricades and traffic cones to be used on this project:

- 1 Low Profile Barricades:
Low profile barricades shall be used to identify the closed areas due to construction activities. These low profile barricades shall be orange or white, and shall have at least one (1) red 360 degree light mounted to each barricade. Low profile barricades shall be placed continuously with no gaps when installed in the aircraft movement area and shall provide a 15' wide nested opening to allow ground vehicle access (including ARFF vehicles) to the closed portions of the airfield while blocking aircraft access. Barricades when installed in the non-movement or to delineate temporary VSR's area may be spaced approximately 6' apart. The orange and white barricades shall be placed in alternating colors (orange base and white base), and shall be located and secured to prevent displacement from jet blast or other surface wind conditions. Please refer to Construction Phasing Detail Drawing C-031 for the type and features for the low profile barricade. The barricades will be filled with water to weigh them down, and prevent FOD or movement from jet blast and/or high wind conditions.
- 2 Reflective Cones and Post Tube Delineators:

Construction Safety and Phasing Plan at Chemehuevi Valley Airport
Runway 16-34 Lighting System Replacement

Reflective cones and post tube delineators shall be used to demarcate non-movement area travel route(s), and shall be adequately anchored from jet blast.

3 Construction Lighting

For night working hours, temporary light plants shall be used to provide enough lighting to perform the scheduled work. The light plants shall be located away from any obstruction or hazard, and positioned and point away such that it does not cause visual or physical interference to operating aircraft. The light plants shall be taken down at the end of the work shift, and stored at the equipment staging area. All Contractor personnel and subcontractors working on the AOA shall wear high visibility vests with reflective markings and orange/visible hard hats at all times.

End of Section 17

SECTION 18 PROTECTION OF RUNWAY AND TAXIWAY SAFETY AREAS AND SURFACES

18.1 Summary

Contractor will be required to coordinate the construction work to accommodate clearance requirements for arrival and departure of scheduled aircraft, and maintain compliance with AC 150/5370-2, Operational Safety on Airports During Construction, current edition. The AC sets forth guidelines for maintaining desired levels of operational safety during construction.

18.2 Airport Operations Area (AOA)

The Air Operations Area (AOA) is the controlled, restricted environment at an airport designed for the safe and secure flow of aircraft traffic and related ground activities. The AOA is subject to federal oversight and regulations established to maintain order, prevent accidents, and deter security breaches within the airfield perimeter.

18.3 Runway Safety Area (RSA)

The RSA is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot or excursion from the runway. No construction may occur within the RSA while the runway is open for aircraft operations. The RSA is 150' wide and 300' from the runway ends according to FAA Advisory Circular 150/5300-13.

18.4 Runway Object Free Area (ROFA)

An area on the ground centered on a runway centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes.

Construction, including excavations, may be permitted in the ROFA. Equipment must be removed from the ROFA when not in use, and material shall not be stockpiled in the ROFA if not necessary. The ROFA is 300' wide and 500' from the runway ends according to FAA Advisory Circular 150/5300-13.

18.5 Taxiway Safety Area (TSA)

The TSA is defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. No construction may occur within the TSA while the taxiway is open for aircraft operations. The TSA for ADG II aircraft is 39.5 feet from the taxiway centerline according to AC 150/5300-13.

18.6 Taxiway Object Free Area (TOFA)

An area on the ground centered on a taxiway centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the TOFA for air navigation or aircraft ground maneuvering purposes.

The TOFA for ADG II aircraft is 65.5 feet from the taxiway centerline according to AC 150/5300-13. At taxiway intersections, the TOFA will also increase accordingly with the widened taxiway edge of pavement. No construction may occur within the TOFA while the taxiway is open for aircraft operations.

18.7 Obstacle Free Zone (OFZ)

The OFZ is the airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for

frangible visual NAVIDS that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway, and for missed approaches.

18.8 Runway Approach/Departure Surfaces

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect approach procedures. Should construction work occur on the runway approach and/or departure surfaces, a runway closure may be required. All work near the active runway approach and/or departure surfaces shall be coordinated with the CIT, FAA, and CM.

18.9 Procedures and Equipment to Delineate Closed Construction Areas from Airport Operational Areas

No ramp, apron, taxiway, or runway area shall be closed to aircraft without approval of CIT and CM.

The Contractor shall place low-profile barricades with steady burning or flashing red lights placed at all locations to prevent aircraft from entering the construction area.

All pertinent airfield edge lights and signage will be removed, covered, and de-energized where appropriate.

End of Section 18

SECTION 19 OTHER LIMITATIONS ON CONSTRUCTION

19.1 Additional Restrictions

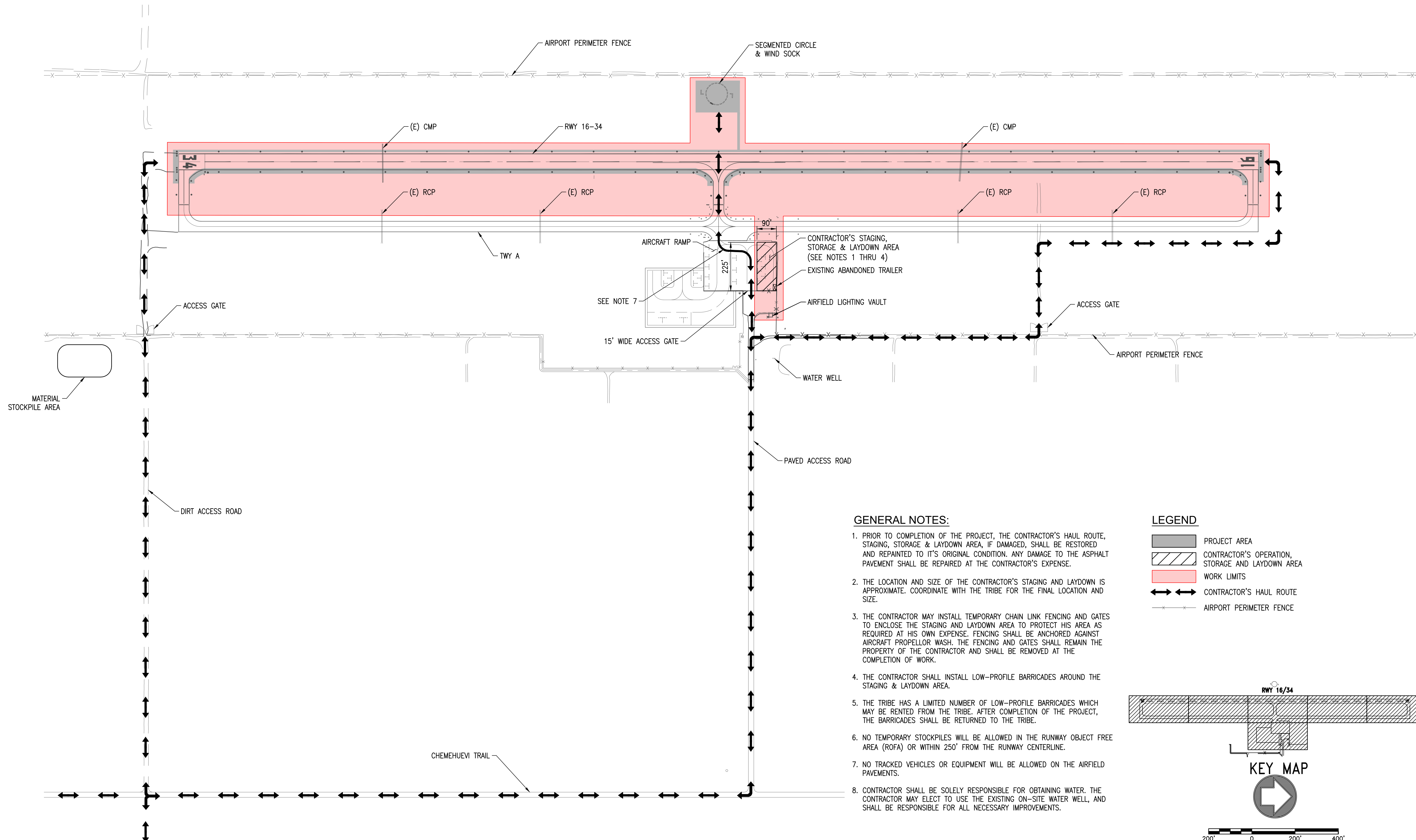
1. Jet blast considerations – Equipment, small tools, construction material, stockpile material, and excavation trenches shall be constrained in a manner to prevent movement resulting from aircraft jet blast or high wind conditions. Equipment and materials will not be stored near areas susceptible to jet blast.
2. Contractor shall maintain a safe operating area, free of FOD, at all times. Clean and sweep as outlined in the specifications and on the plans, shall be utilized to maintain the work site and haul routes.
3. The existing condition of the project may be altered due to construction currently being performed at the Airport. It is the Contractor's responsibility to work with the ultimate existing condition of the project at the time of construction.
4. Other contracts adjacent to the project may be ongoing at the time of construction. The Contractor shall coordinate his/her efforts with adjacent contracts to the satisfaction of the CM and CIT at no additional cost to the owner.
5. The Contractor shall be solely responsible for the safety and security of the site, including during nonworking hours.
6. All site preparation as indicated shall be made under the continuous inspection of the CM. Secure the required permit for the construction of trenches or excavations that are five (5) feet or deeper or work that may jeopardize the workers.
7. The Contractor shall at all times maintain positive drainage within the work site. The Contractor shall be responsible for installation, maintenance, and removal of temporary haul routes to support his/her operations within the work area. The Contractor shall maintain work area free of FOD at all times and dust control measures shall be implemented to the satisfaction of the CM.
8. No lantern, flare pots, or open-flame welding or other devices shall be used. Blasting is not allowed.
9. Open flame welding or torch cutting operations are prohibited within the AOA unless adequate precautions have been taken and the written procedure approved by the CM and CIT.
10. Electrical blasting caps or flare pots are prohibited within the AOA.
11. No smoking by employees while within the AOA.
12. Use of tall equipment (cranes, concrete pumps, etc.) will not be allowed unless the FAA 7460-1 determination letter is issued and approved for such equipment.
13. The Contractor must, at all times, conduct the work in conformance with requirements of the Airport and the FAA.
14. If aircraft traffic will continue to use existing runways, aprons, and taxiways of the airport during the time that work under a contract is being performed. The Contractor shall at all times so conduct the work as to create no hindrance, hazard, or obstacle to aircraft using the Airport.

Construction Safety and Phasing Plan at Chemehuevi Valley Airport
Runway 16-34 Lighting System Replacement

15. The Contractor will schedule and organize the work so that a minimum of closings or crossings of runways and taxiways will be required during the project.
16. The Contractor may be working on an active AOA in which jet takeoff noise can be as high as 120 decibels. All Contractor personnel shall comply with industry standards for personal hearing protection when working within these areas.
17. The Airport environment requires a high degree of care to control debris and dust. Spilled material on active roadways, taxiways, runways, and aprons shall be swept up immediately. The Contractor shall be aware that the AOA is subject to jet blasts, which are equivalent to wind velocities of 75 to 90 miles per hour; therefore, constant dust control measures will be required to prevent loose material from blowing across the airfield.
18. Sanitary facilities shall be provided at appropriate locations for the Contractor's employees. There are no public facilities at the Airport.
19. The speed limit on all airside roadways is 15 miles per hour unless otherwise posted.
20. Peak hours for the AOA are from 7:00 am to 8:00 am and 5:00 pm to 6:00 pm.
21. Use of audio earphones and headsets are prohibited on the AOA unless directly related to job requirements.
22. Manholes, drain inlets and junction boxes must have approved covers in place at all times or they must be barricaded to clearly denote the uncovered opening.

End of Section 19

APPENDIX A

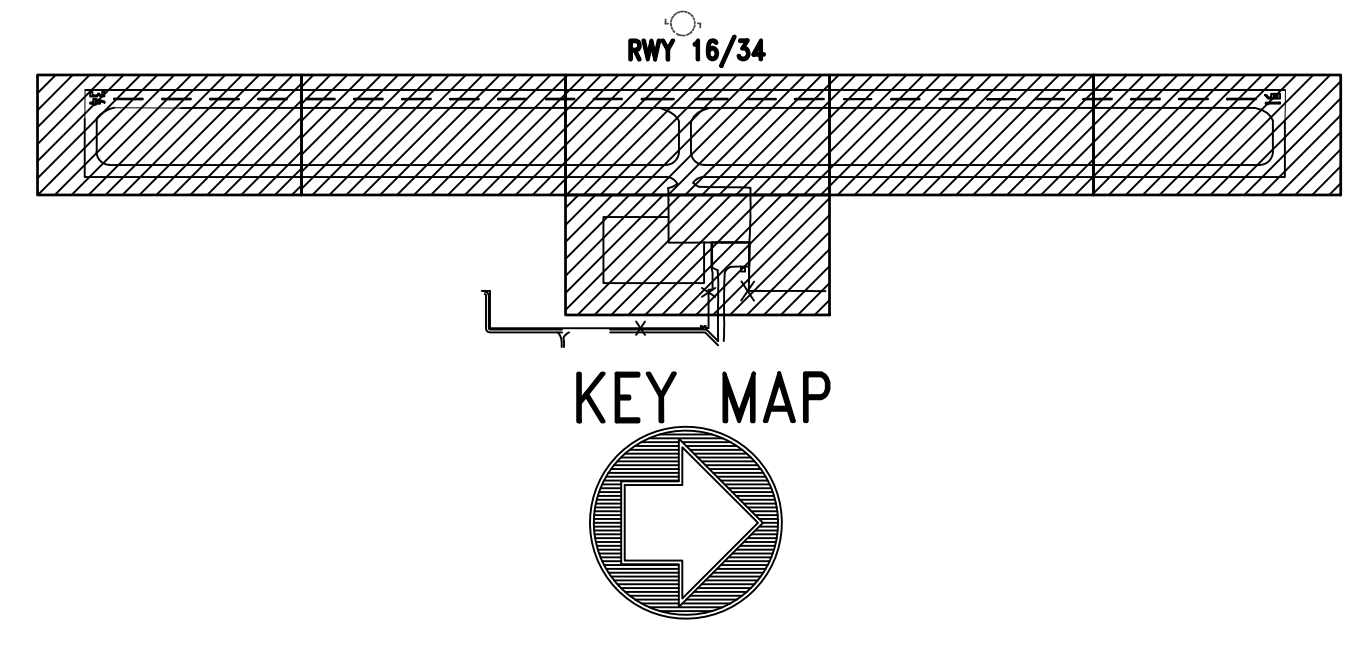


GENERAL NOTES:

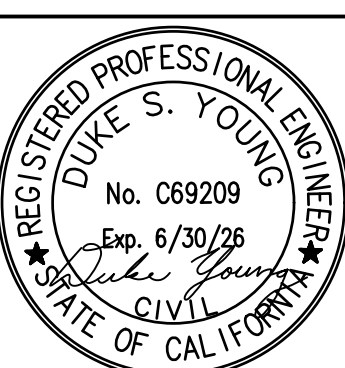
1. PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR'S HAUL ROUTE, STAGING, STORAGE & LAYDOWN AREA, IF DAMAGED, SHALL BE RESTORED AND REPAINTED TO IT'S ORIGINAL CONDITION. ANY DAMAGE TO THE ASPHALT PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. THE LOCATION AND SIZE OF THE CONTRACTOR'S STAGING AND LAYDOWN IS APPROXIMATE. COORDINATE WITH THE TRIBE FOR THE FINAL LOCATION AND SIZE.
3. THE CONTRACTOR MAY INSTALL TEMPORARY CHAIN LINK FENCING AND GATES TO ENCLOSE THE STAGING AND LAYDOWN AREA TO PROTECT HIS AREA AS REQUIRED AT HIS OWN EXPENSE. FENCING SHALL BE ANCHORED AGAINST AIRCRAFT PROPELLOR WASH. THE FENCING AND GATES SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED AT THE COMPLETION OF WORK.
4. THE CONTRACTOR SHALL INSTALL LOW-PROFILE BARRICADES AROUND THE STAGING & LAYDOWN AREA.
5. THE TRIBE HAS A LIMITED NUMBER OF LOW-PROFILE BARRICADES WHICH MAY BE RENTED FROM THE TRIBE. AFTER COMPLETION OF THE PROJECT, THE BARRICADES SHALL BE RETURNED TO THE TRIBE.
6. NO TEMPORARY STOCKPILES WILL BE ALLOWED IN THE RUNWAY OBJECT FREE AREA (ROFA) OR WITHIN 250' FROM THE RUNWAY CENTERLINE.
7. NO TRACKED VEHICLES OR EQUIPMENT WILL BE ALLOWED ON THE AIRFIELD PAVEMENTS.
8. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING WATER. THE CONTRACTOR MAY ELECT TO USE THE EXISTING ON-SITE WATER WELL, AND SHALL BE RESPONSIBLE FOR ALL NECESSARY IMPROVEMENTS.

LEGEND

- PROJECT AREA
- CONTRACTOR'S OPERATION, STORAGE AND LAYDOWN AREA
- WORK LIMITS
- CONTRACTOR'S HAUL ROUTE
- AIRPORT PERIMETER FENCE



MARK	REVISIONS	BY	APPR.	DATE



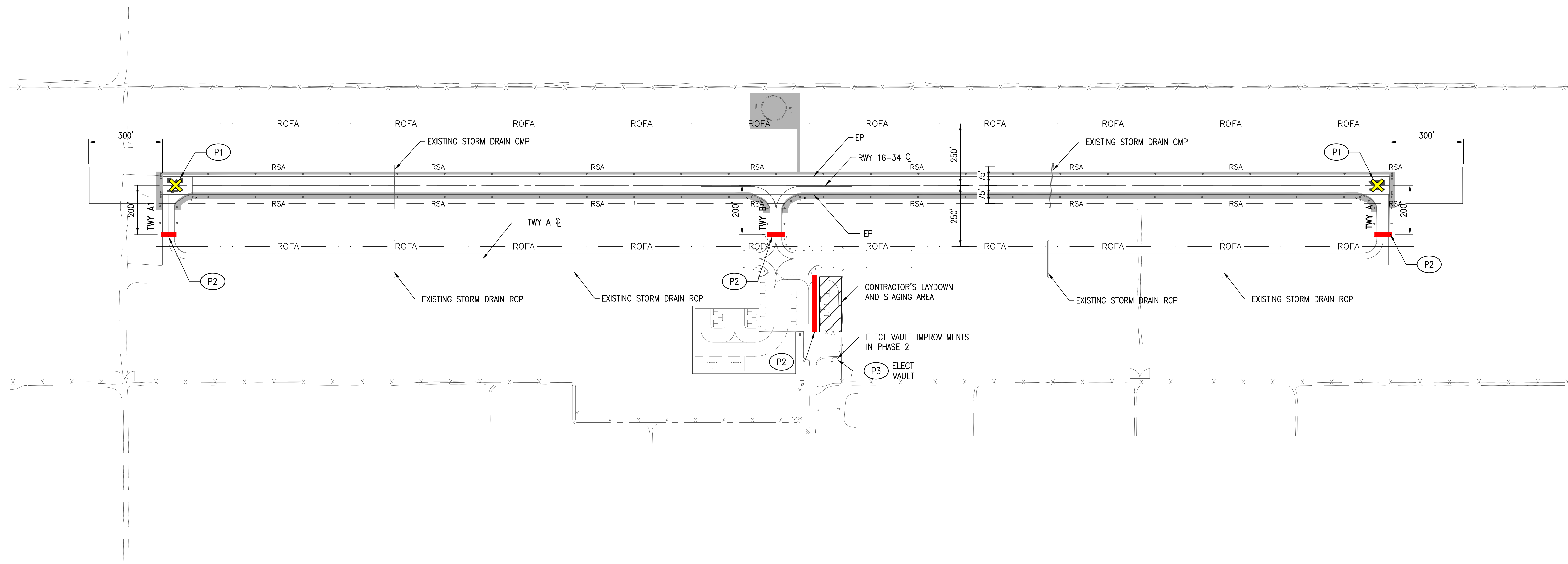
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**CHEMEHUEVI VALLEY AIRPORT
 RUNWAY 16-34 LIGHTING
 SYSTEM REPLACEMENT
 CONTRACTOR STAGING, LAYDOWN AREA & ACCESS PLAN**

DATE
01-30-2026
 DRAWING NUMBER
C-020
 SHEET NUMBER
02 OF 25



PHASING CONSTRUCTION NOTES:

- (P1) INSTALL RUNWAY CLOSURE LIGHTED X PER DETAIL 5 SHEET C-031.
- (P2) INSTALL LOW PROFILE BARRICADE PER DETAIL 2 SHEET C-031.
- (P3) DE-ENERGIZED RUNWAY & TAXIWAY EDGE LIGHTING INCLUDING PILOT LIGHTING CONTROL SYSTEM.

LEGEND

- PROJECT AREA
- CONTRACTOR'S OPERATION, STORAGE AND LAYDOWN AREA
- AIRPORT PERIMETER FENCE
- LOW PROFILE BARRICADES
- RSA - RUNWAY SAFETY AREA
- ROFA - RUNWAY OBJECT FREE AREA
- RUNWAY CLOSURE MARKER

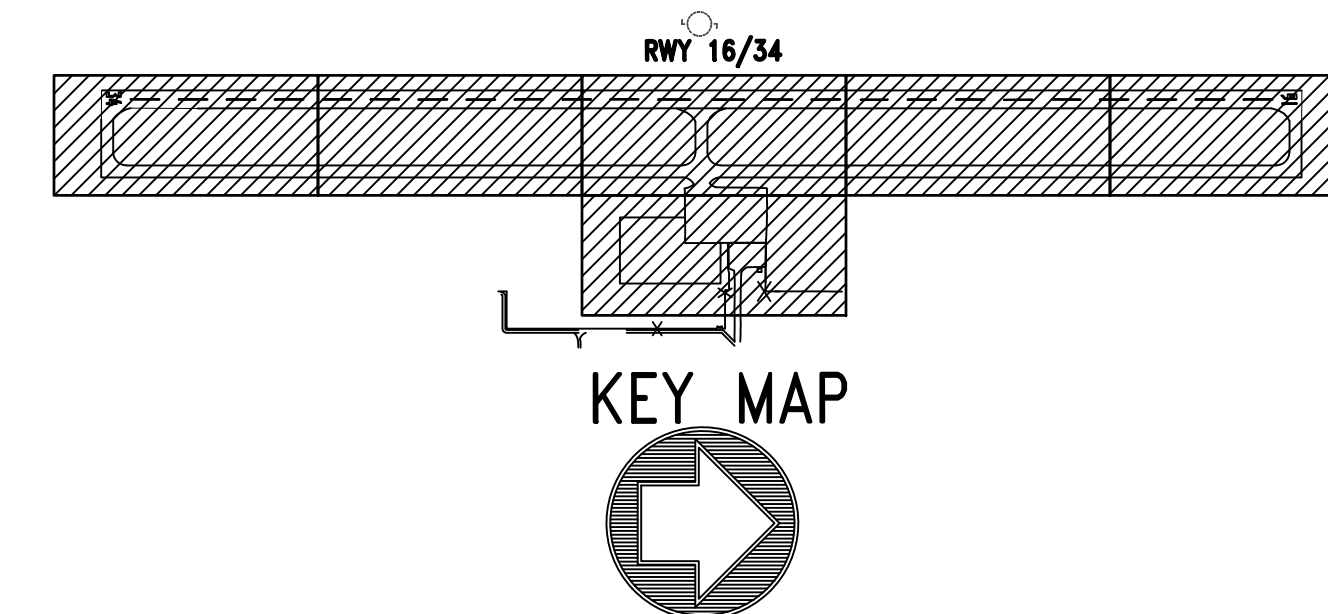
PHASE	AIRFIELD CLOSURES/NOTAMS	DURATION	CONSTRUCTION ACTIVITY
0	N/A	90 CALENDAR DAYS	MOBILIZATION AND PROCURE ELECTRICAL EQUIPMENT
1	CLOSE RUNWAY 16-34	42 CALENDAR DAYS	INSTALL BARRICADES AND RUNWAY CLOSURE LIGHTED X
			INSTALL SWPPP CONTROL MEASURES, AS REQUIRED
			SHUT-DOWN RUNWAY & TAXIWAY EDGE LIGHT CIRCUIT
			DEMOLISH EXISTING RUNWAY EDGE LIGHTS, CONDUITS, AND CABLES
			CONSTRUCT NEW BASE CANS AND CONDUITS
			INSTALL NEW RUNWAY EDGE & THRESHOLD LIGHT FIXTURES AND CABLES
			REMOVE EXISTING WIND CONE
			INSTALL NEW WIND CONE AND REPAIR SEGMENTED CIRCLE
			CLEAR AND GRUB EXISTING VEGETATION WITHIN THE RSA
			REPLACE SIGN PANELS
2	RUNWAY EDGE AND THRESHOLD LIGHTS OUT OF SERVICE	14 CALENDAR DAYS	ELECTRICAL VAULT IMPROVEMENTS

PHASING GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL LOW-PROFILE BARRICADES AND OTHER TRAFFIC CONTROL DEVICES WITH THE TRIBE PRIOR TO THE START OF CONSTRUCTION.
2. PRIOR TO REOPENING THE RUNWAY AND TAXIWAYS AFTER CLOSURES, THE PAVEMENTS AND SAFETY AREAS SHALL BE:
 - A. NO POTENTIALLY HAZARDOUS RUTS, HUMPS, DEPRESSIONS, OR OTHER SURFACE VARIATIONS.
 - B. NO ABRUPT CHANGES IN GRADE SUCH AS DROPS OR LIPS GREATER THAN 3-INCHES.
 - C. DRAINED BY GRADING TO PREVENT WATER ACCUMULATION.
 - D. CAPABLE, UNDER DRY CONDITIONS, OF SUPPORTING AIRCRAFT RESCUE AND FIRE FIGHTING EQUIPMENT, AND THE OCCASIONAL PASSAGE OF AIRCRAFT WITHOUT CAUSING STRUCTURAL DAMAGE TO THE AIRCRAFT.
 - E. FREE OF FOREIGN OBJECTS, WHICH CAN DAMAGE AIRCRAFT.
3. PRIOR TO THE START OF WORK, COORDINATE WITH THE TRIBE TO FILE THE NECESSARY FAA 7460, NOTAMS, AND NAVAID SHUTDOWNS.
4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO ADVISORY CIRCULAR 150/5370-2G OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION AND SBIAA CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) TO WHICH THE CONTRACTOR SHALL ADHERE.
5. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING IN AREAS OF EXISTING UTILITIES. EXISTING UTILITIES SHALL BE LOCATED AND MARKED IN ADVANCE OF EXCAVATION IN ALL AREAS. ANY DAMAGE DONE TO UTILITIES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT HIS EXPENSE.
6. THE LOCATION OF ANY UTILITIES SHOWN ON THE PLANS IS APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING ALL DAMAGE TO UTILITIES AND AIRPORT PROPERTY.
7. PARKED EQUIPMENT AND STOCKPILE OF MATERIALS ARE NOT ALLOWED WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) OR WITHIN 250' FROM THE RUNWAY CENTERLINE.
8. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING PAVEMENTS AND STRIPING CAUSED BY THEIR OPERATIONS AT THEIR OWN EXPENSE.

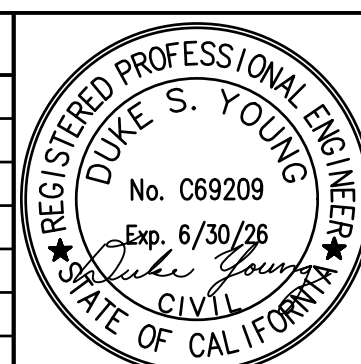
GENERAL NOTES:

1. THIS DRAWING SHALL BE VIEWED AND PRINTED IN COLOR.



SCALE: 1" = 200'

MARK	REVISIONS	BY	APPR.	DATE



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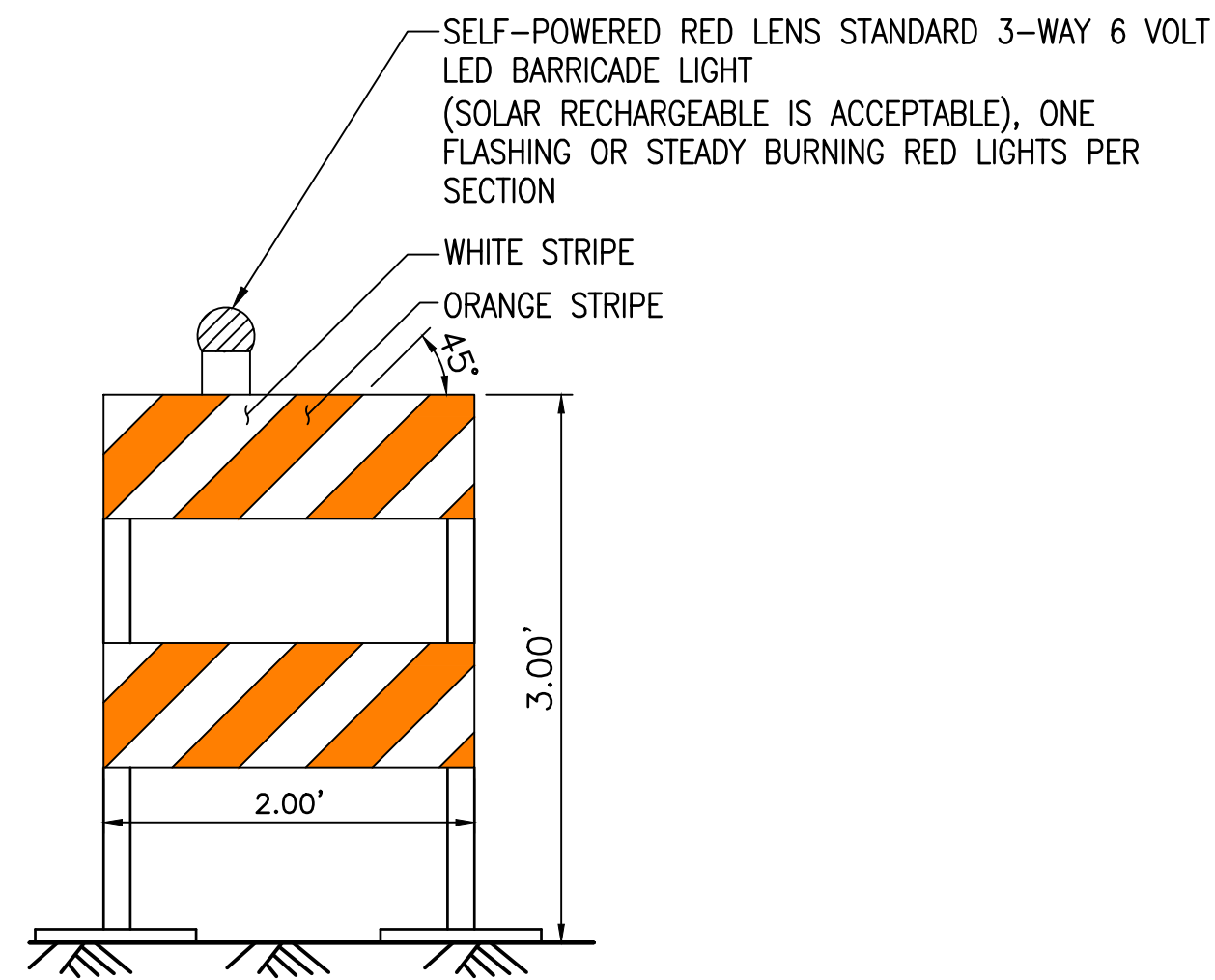
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CHEMEHUEVI VALLEY AIRPORT
RUNWAY 16-34 LIGHTING
SYSTEM REPLACEMENT
CONSTRUCTION PHASING PLAN

DATE
01-30-2026

DRAWING NUMBER
C-021

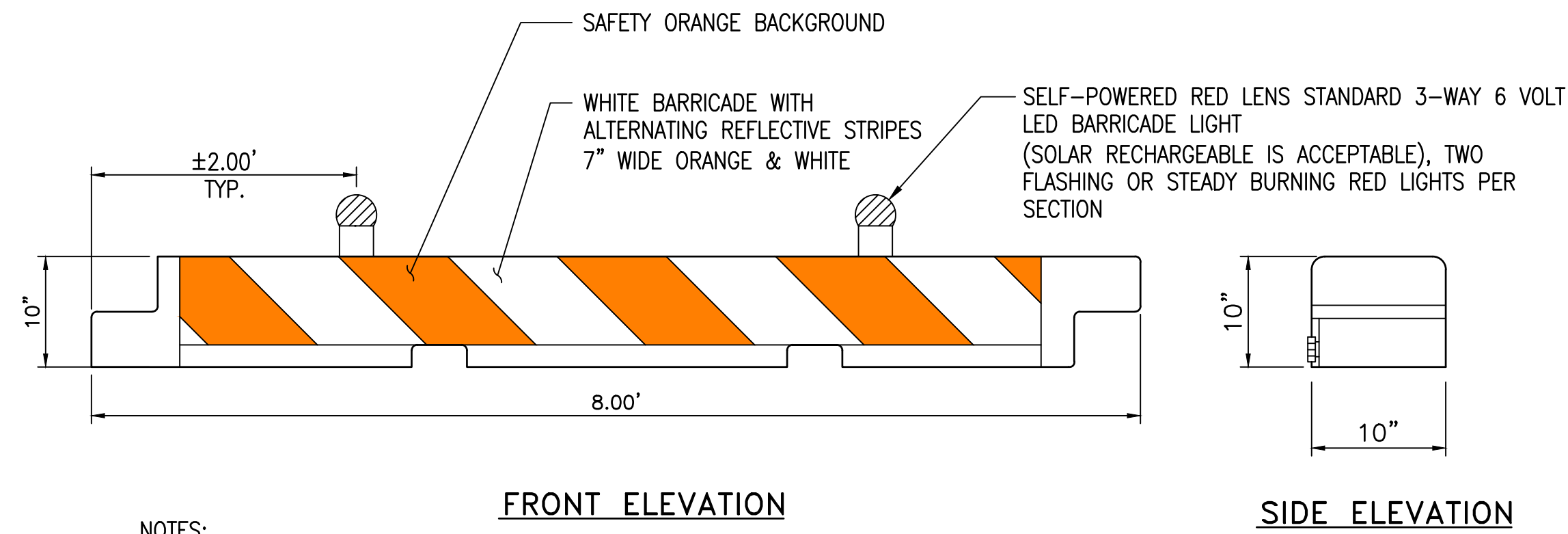
SHEET NUMBER
03 OF 25



NOTES:

1. BARRICADES SHALL BE PLACED 10' OFF THE WORK AREA LIMITS, UNLESS NOTED OTHERWISE.
2. BARRICADES SHALL BE TYPE II MEETING THE REQUIREMENTS OF CALIFORNIA MUTCD.
3. BARRICADES SHALL BE SECURED BY APPROVED WEIGHTED MATERIAL.

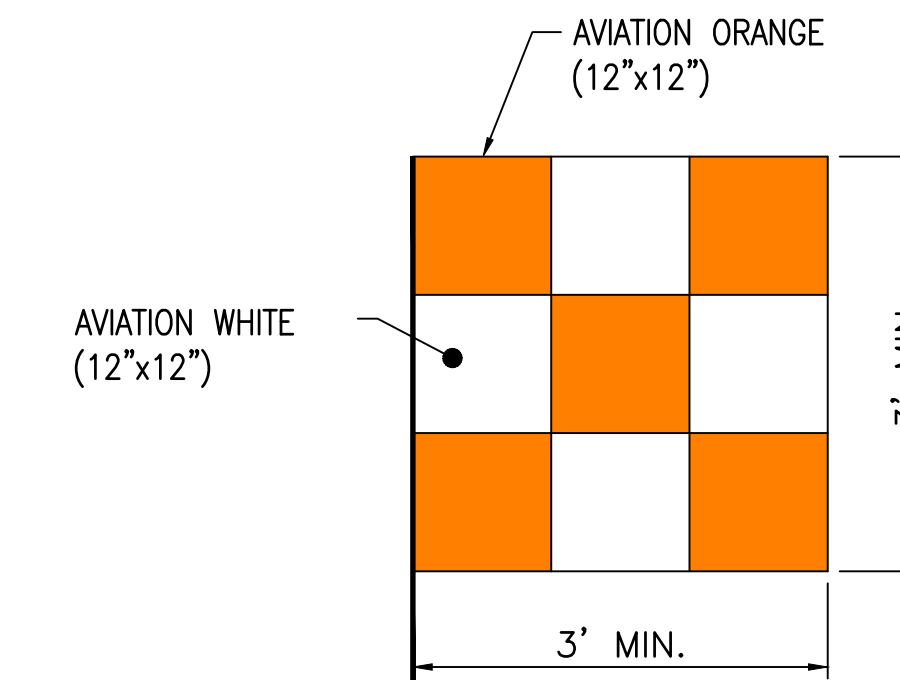
1 TYPE II BARRICADE
- NOT TO SCALE



NOTES:

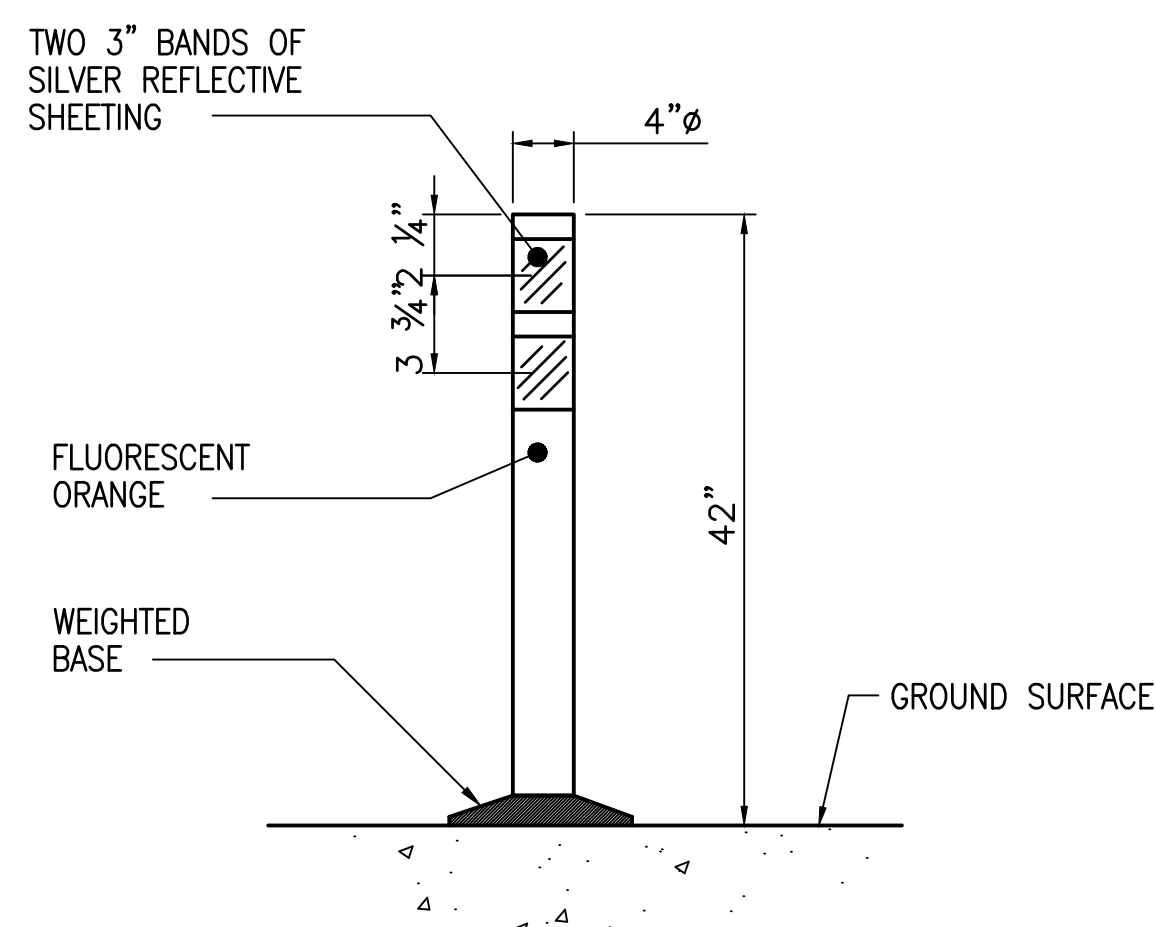
1. BARRICADES SHALL BE PLACED 10' OFF THE WORK AREA LIMITS, UNLESS NOTED OTHERWISE.
2. SPACE BARRICADES WITH NO GAP.
3. BARRICADES SHALL BE CONSTRUCTED OF HIGH DENSITY POLYETHYLENE PLASTIC COLLAPSIBLE AS MANUFACTURED BY SHERWIN INDUSTRIES. (TYPE AR10X96 HDPE BARRICADE ORANGE BACKGROUND) OR SIMILAR APPROVED EQUAL.
4. BARRICADES SHALL BE SECURED IN A MANNER TO PREVENT POSSIBLE DAMAGE OR INJURY DUE TO JET BLAST.
5. PROVIDE SUFFICIENT NUMBER SAND BAGS TO ANCHOR THE LOW PROFILE BARRICADES. CONTRACTOR SHALL MONITOR THAT SAND BAGS ARE IN GOOD CONDITION AND REPLACE DAMAGED SAND BAGS SUCH THAT THEY DO NOT GENERATE FOD.

2 LOW-PROFILE TEMPORARY BARRICADE DETAIL
- NOT TO SCALE



NOTE: SAFETY FLAG SHALL BE PROMINENTLY DISPLAYED ON ALL CONSTRUCTION EQUIPMENT.

3 CONSTRUCTION SAFETY FLAG
- NOT TO SCALE



NOTES:

1. TUBE DELINEATOR SHALL MEET THE REQUIREMENTS OF CALIFORNIA MUTCD.
2. UNLESS OTHERWISE NOTED, USE THIS POST TUBE DELINEATOR FOR TRUCK ACCESS ROUTE CROSSING TAXIWAY, TAXILANE OR APRON AREA AND INFIELD RUNWAY SAFETY AREAS.

4 POST TUBE DELINEATOR
- NOT TO SCALE

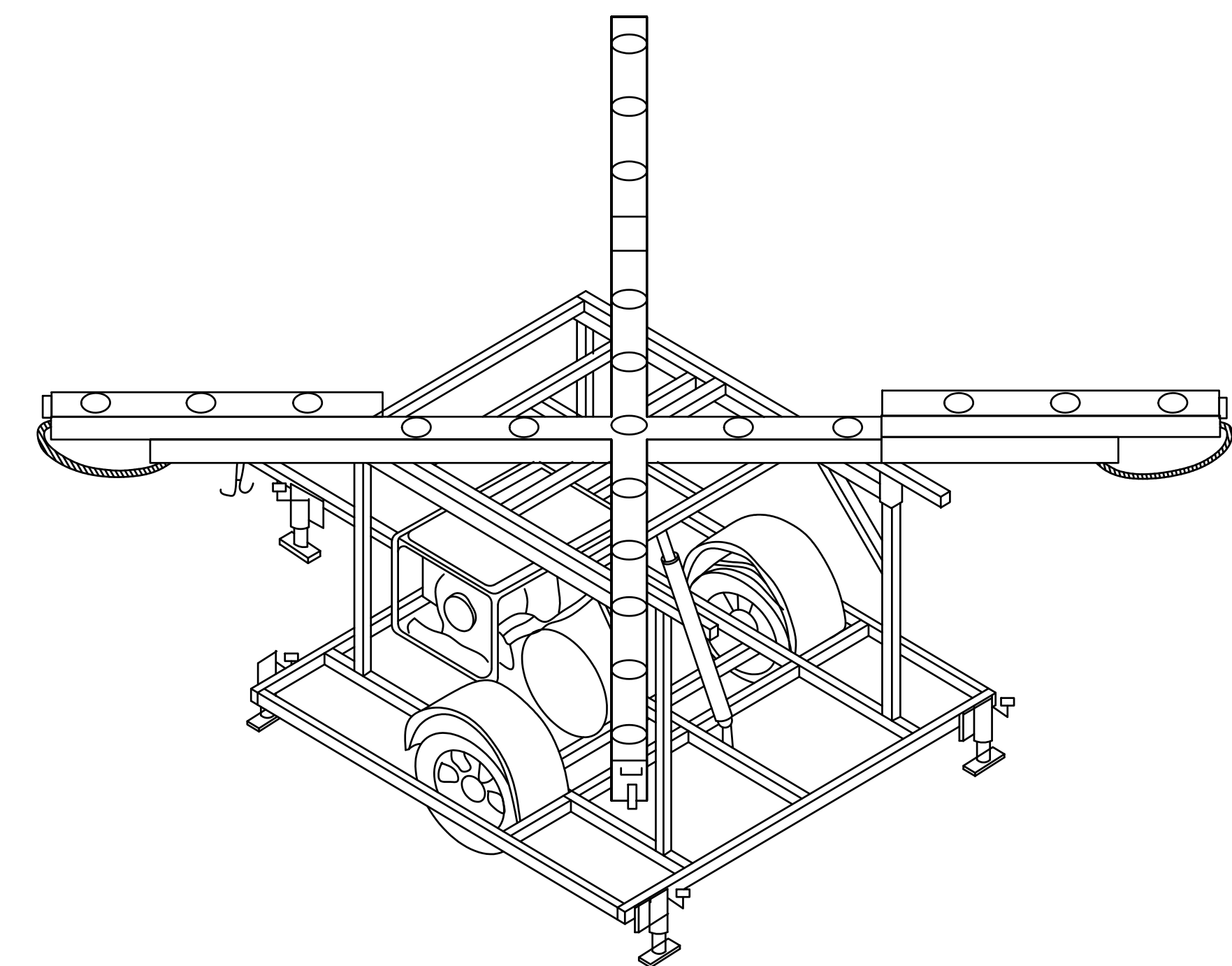
RUNWAY CLOSURE NOTES

THE RUNWAY SHALL BE CLOSED DURING WORK INSIDE OF THE RUNWAY SAFETY AREA (RSA). THE CONTRACTOR SHALL ALERT AND COORDINATE WITH THE TRIBAL PLANNER 10 WORKING DAYS PRIOR TO CLOSING OR RE-OPENING THE RUNWAY.

DURING RUNWAY CLOSURE PERIODS, LIGHTED "X"s SHALL BE PLACED AT EACH END OF THE RUNWAY ON TOP OF THE RUNWAY DESIGNATION NUMBER MARKINGS, AND THE LIGHTED X MUST BE ILLUMINATED AT ALL TIMES.

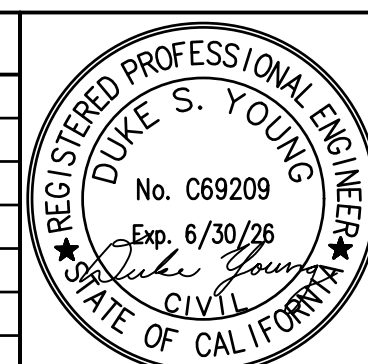
NOTES:

1. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE LIGHTED RUNWAY CLOSURE MARKER FOR THE PROJECT. INSTALL ONE AT EACH END OF RUNWAY AND AIMED TOWARDS THE APPROACH WHEN THE RUNWAY IS TO BE CLOSED TEMPORARILY.
2. CONTRACTOR SHALL INSTALL, MAINTAIN, FUEL AND REMOVE THE LIGHTED RUNWAY CLOSURE MARKER AS REQUIRED FOR THE DURATION OF THE PROJECT.
3. THE LIGHTED X SHALL HAVE A SPAN OF 21' MINIMUM FOR VISIBILITY.



5 PORTABLE RUNWAY CLOSURE LIGHTED X
- NOT TO SCALE

MARK	REVISIONS	BY	APPR.	DATE



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CHEMEHUEVI VALLEY AIRPORT
RUNWAY 16-34 LIGHTING
SYSTEM REPLACEMENT
CONSTRUCTION PHASING DETAILS

DATE	01-30-2026
DRAWING NUMBER	C-031
SHEET NUMBER	04 of 25

SECTION H
AC 150/5370-2G



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

Advisory Circular

Subject: Operational Safety on
Airports During Construction

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

AC No: 150/5370-2G
Change:

1 **Purpose.**

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

2 **Cancellation.**

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

3 **Application.**

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

4 **Related Documents.**

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

5 **Principal Changes.**

The AC incorporates the following principal changes:

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

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

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

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

6 **Use of Metrics.**

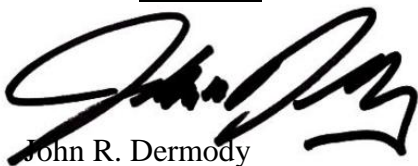
Throughout this AC, U.S. customary units are used followed with “soft” (rounded) conversion to metric units. The U.S. customary units govern.

7 **Where to Find this AC.**

You can view a list of all ACs at http://www.faa.gov/regulations_policies/advisory_circulars/. You can view the Federal Aviation Regulations at http://www.faa.gov/regulations_policies/faa_regulations/.

8 **Feedback on this AC.**

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



John R. Dermody
Director of Airport Safety and Standards

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CHAPTER 1. PLANNING AN AIRFIELD CONSTRUCTION PROJECT

1.1 Overview.

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

1.2 Plan for Safety.

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

1.2.1 Identify Affected Areas.

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

1.2.2 Describe Current Operations.

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

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

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

1.2.3 Allow for Temporary Changes to Operations.

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

1.2.4 Take Required Measures to Revise Operations.

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

1.2.5 Manage Safety Risk.

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

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

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

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

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

1.3.1 List Requirements.

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

1.3.2 Prepare a Safety Plan Compliance Document (SPCD).

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

1.3.3 Assume Responsibility for the CSPP.

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

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

1.4.1 Establish a Safety Culture.

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

1.4.2 Assess Airport Operator's Responsibilities.

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

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

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

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

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

1.4.4 Define Tenant's Responsibilities.

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

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

CHAPTER 2. CONSTRUCTION SAFETY AND PHASING PLANS

2.1 **Overview.**

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

2.2 **Assume Responsibility.**

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

2.3 **Submit the CSPP.**

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

2.3.1 Submit an Outline/Draft.

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

2.3.2 Submit a CSPP.

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

2.3.3 Submit an SPCD.

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

2.3.4 Submit CSPP Revisions.

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

2.4 **Meet CSPP Requirements.**

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

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

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

b. Restrictions.

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

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

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

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

2.5 **Coordination.**

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

2.5.1 Progress Meetings.

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

2.5.2 Scope or Schedule Changes.

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

2.5.3 FAA ATO Coordination.

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

2.6 **Phasing.**

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

2.6.1 Phase Elements.

For each phase the CSPP should detail:

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

2.6.2 Construction Safety Drawings.

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

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

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

2.7.1 Identification of Affected Areas.

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

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

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

2.7.1.1.1 Partially Closed Runways.

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

2.7.1.1.2 Displaced Thresholds.

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

2.7.1.2 Closing of aircraft rescue and fire fighting access routes.

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

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

2.7.1.5 Approach/departure surfaces affected by heights of objects.

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

Figure 2-1. Temporary Partially Closed Runway

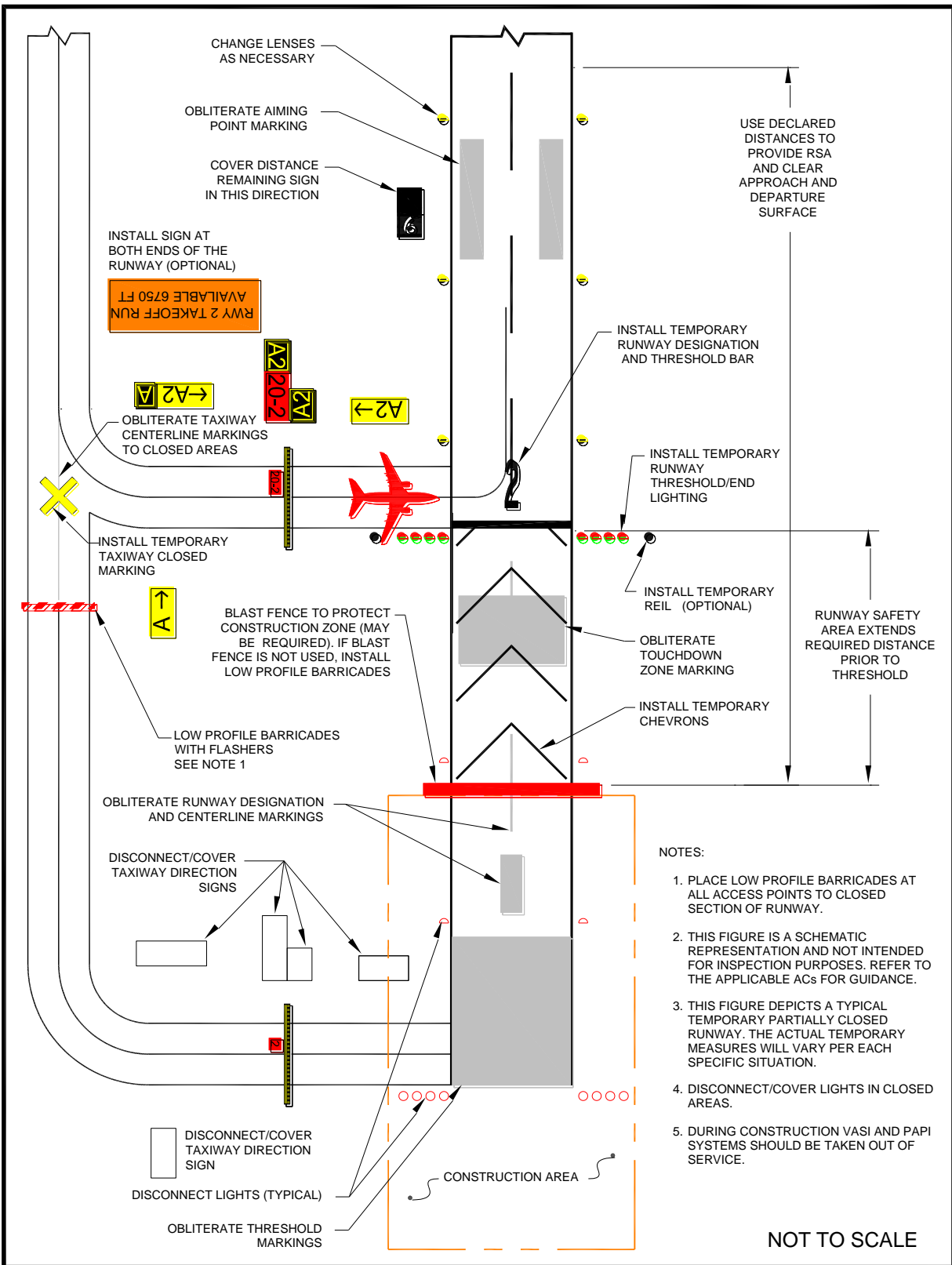
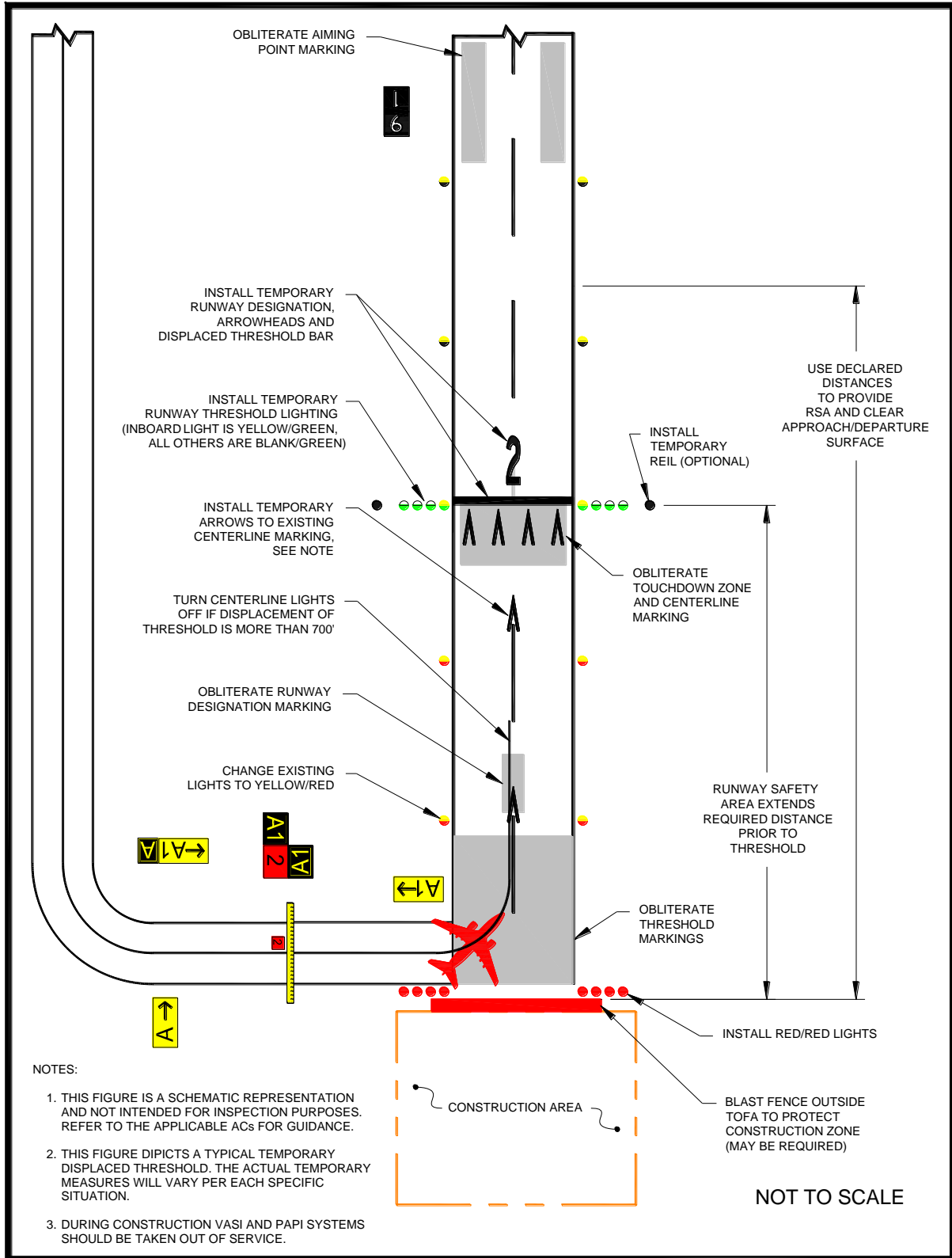


Figure 2-2. Temporary Displaced Threshold



Note: See paragraph 2.18.2.5.

2.7.2 Mitigation of Effects.

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

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

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

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

2.9 **Contractor Access.**

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

2.9.1 Location of Stockpiled Construction Materials.

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

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

2.9.2 Vehicle and Pedestrian Operations.

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

2.9.2.1 **Construction Site Parking.**

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

2.9.2.2 **Construction Equipment Parking.**

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

2.9.2.3 **Access and Haul Roads.**

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

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

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

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

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

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

2.9.2.9.3 Frequencies to be Used.

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

2.9.2.9.4 Proper radio usage, including read back requirements.

2.9.2.9.5 Proper phraseology, including the International Phonetic Alphabet.

2.9.2.9.6 Light Gun Signals.

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

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

2.9.2.10.1 Fencing and Gates.

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

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

2.9.2.10.2 Badging Requirements.

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

2.10 **Wildlife Management.**

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

2.10.1 Trash.

Food scraps must be collected from construction personnel activity.

2.10.2 Standing Water.

2.10.3 Tall Grass and Seeds.

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

2.10.4 Poorly Maintained Fencing and Gates.

See paragraph 2.9.2.10.1.

2.10.5 Disruption of Existing Wildlife Habitat.

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

2.11 Foreign Object Debris (FOD) Management.

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

2.12 Hazardous Materials (HAZMAT) Management.

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

2.13 Notification of Construction Activities.

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

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

2.13.2 NOTAMs.

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

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

2.13.4 Coordination with ARFF.

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

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

2.13.5 Notification to the FAA.

2.13.5.1 **Part 77.**

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

2.13.5.2 **Part 157.**

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

2.13.5.3 **NAVAIDs.**

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

2.13.5.3.1 Airport Owned/FAA Maintained.

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

2.13.5.3.2 FAA Owned.

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

2.14 **Inspection Requirements.**

2.14.1 Daily Inspections.

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

2.14.2 Interim Inspections.

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

2.14.3 Final Inspections.

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

2.15 Underground Utilities.

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

2.16 Penalties.

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

2.17 Special Conditions.

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

2.18 Runway and Taxiway Visual Aids.

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

2.18.1 General.

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

2.18.2 Markings.

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

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

2.18.2.1 **Closed Runways and Taxiways.**

2.18.2.1.1 Permanently Closed Runways.

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

2.18.2.1.2 Temporarily Closed Runways.

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

2.18.2.1.3 Partially Closed Runways and Displaced Thresholds.

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

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

Figure 2-3. Markings for a Temporarily Closed Runway

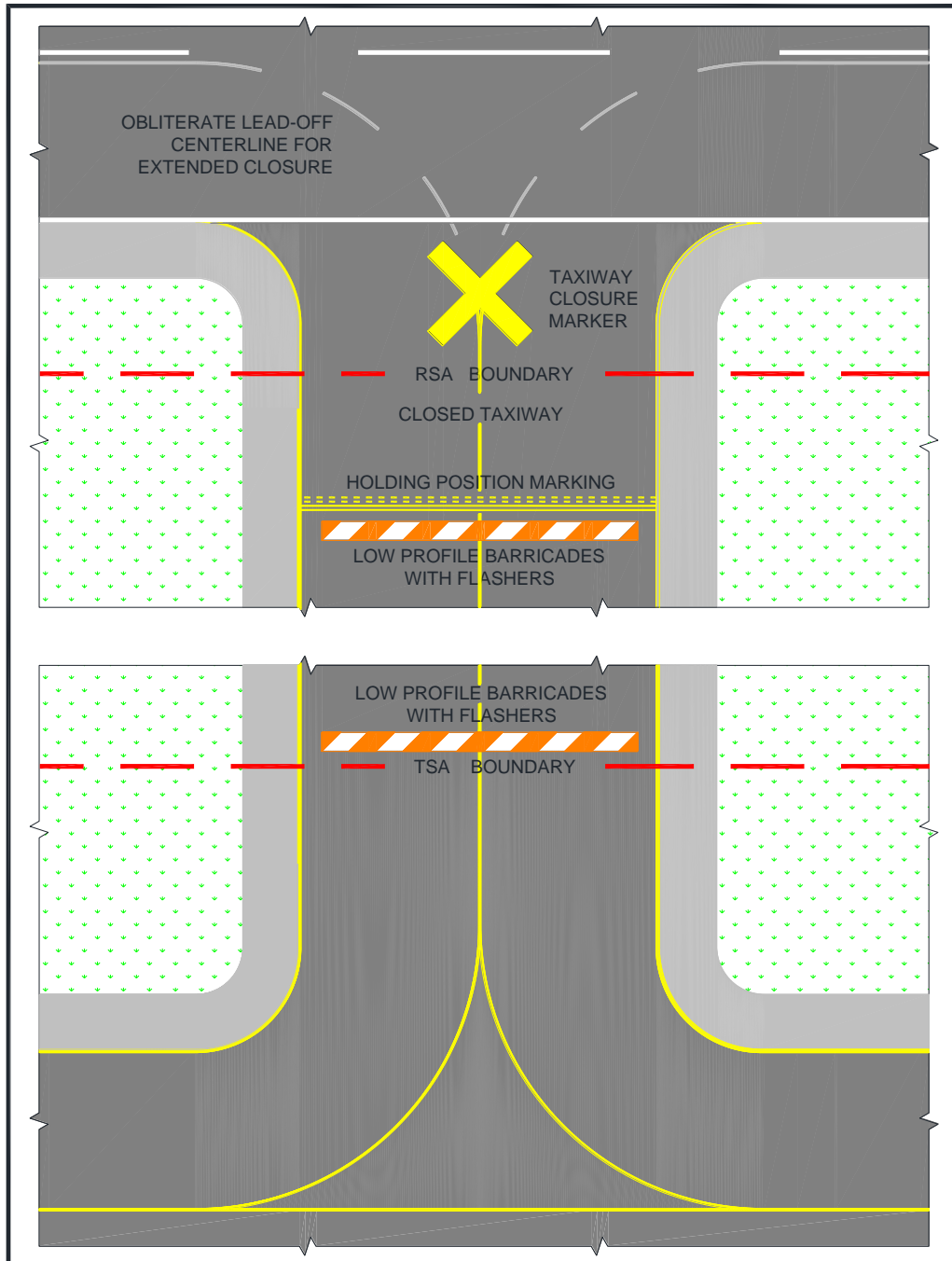


1. **Partially Closed Runways.** Pavement markings for temporary closed portions of the runway consist of a runway threshold bar, runway designation, and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing (see [AC 150/5340-1](#)). Obliterate or cover markings prior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

2.18.2.1.4 Taxiways.

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

Figure 2-4. Temporary Taxiway Closure



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

2.18.2.1.5 Temporarily Closed Airport.

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

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

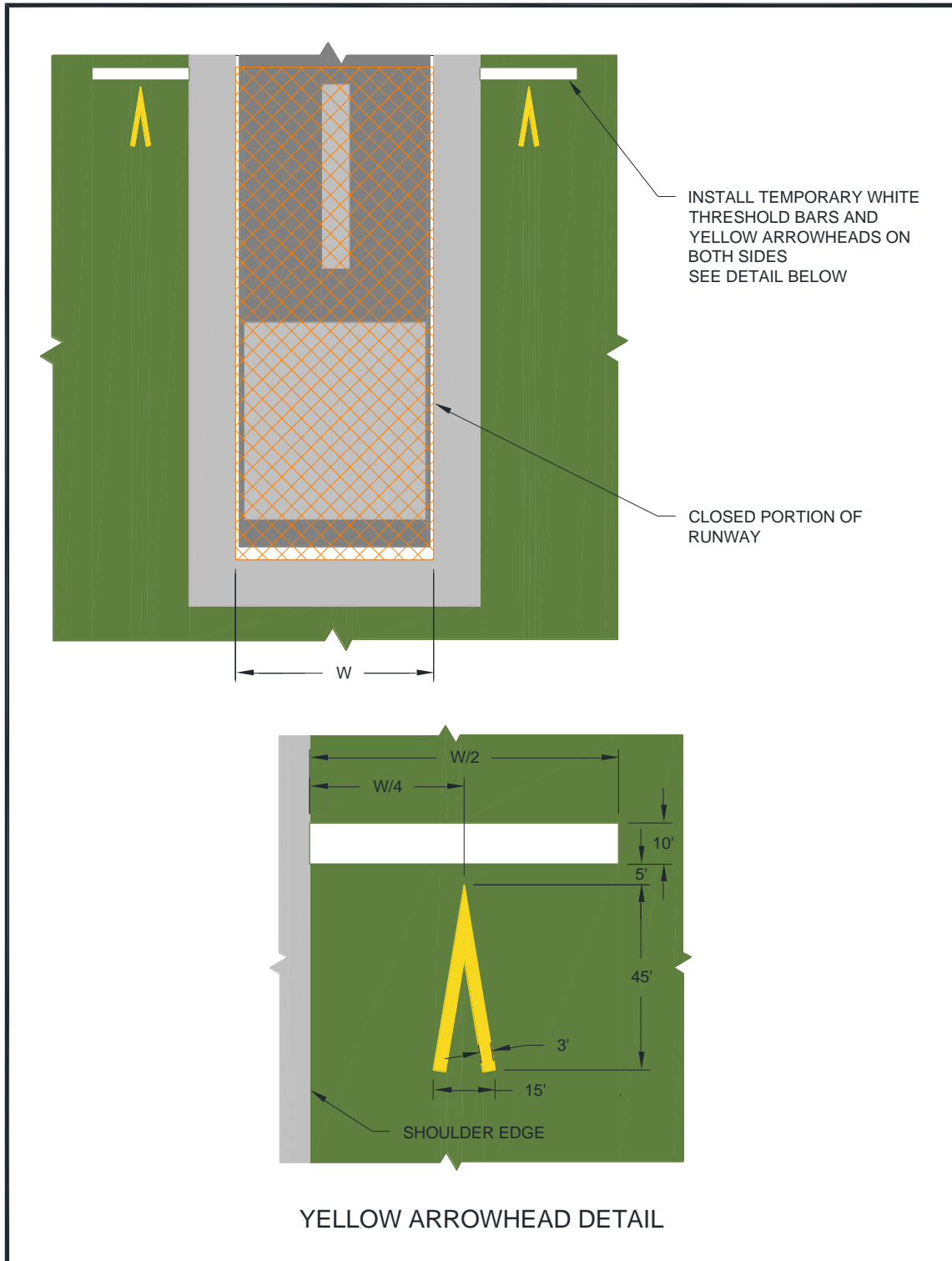
- 2.18.2.3 It may be necessary to remove or cover runway markings, including but not limited to, runway designation markings, threshold markings, centerline markings, edge stripes, touchdown zone markings and aiming point markings, depending on the length of construction and type of activity at the airport.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

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

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

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

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



2.18.3 Lighting and Visual NAVAIDs.

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

2.18.3.1 **Permanently Closed Runways and Taxiways.**

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

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

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

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

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

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

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

- 2.18.3.3.1 Partially Closed Runways.
Disconnect edge and threshold lights on that part of the runway at and behind the threshold (that is, the portion of the runway that is closed). Alternately, cover the light fixtures in such a way as to prevent light leakage. See Figure 2-1.
- 2.18.3.3.2 Temporary Displaced Thresholds.
Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light (white for visual runways) in the opposite direction. If the displacement is 700 feet or less, blank out centerline lights in the direction of approach or place the centerline lights out of service. If the displacement is over 700 feet, place the centerline lights out of service. See AC 150/5340-30 for details on lighting displaced thresholds. See Figure 2-2.
- 2.18.3.3.3 Temporary runway thresholds and runway ends must be lighted if the runway is lighted and it is the intended threshold for night landings or instrument meteorological conditions.
- 2.18.3.3.4 A temporary threshold on an unlighted runway may be marked by retroreflective, elevated markers in addition to markings noted in paragraph 2.18.2.1.3. Markers seen by aircraft on approach are green. Markers at the rollout end of the runway are red. At certificated airports, temporary elevated threshold markers must be mounted with a frangible fitting (see 14 CFR Part 139.309). At non-certificated airports, the temporary elevated threshold markings may either be mounted with a frangible fitting or be flexible. See AC 150/5345-39, *Specification for L-853, Runway and Taxiway Retroreflective Markers*.
- 2.18.3.3.5 Temporary threshold lights and runway end lights and related visual NAVAIDs are installed outboard of the edges of the full-strength pavement only when they cannot be installed on the pavement. They are installed with bases at grade level or as low as possible, but not more than 3 inch (7.6 cm) above ground. (The standard above ground height for airport lighting fixtures is 14 inches (35 cm)). When any portion of a base is above grade, place properly compacted fill around the base to minimize the rate of gradient change so aircraft can, in an emergency, cross at normal landing or takeoff speeds without incurring significant damage. See AC 150/5370-10.
- 2.18.3.3.6 Maintain threshold and edge lighting color and spacing standards as described in AC 150/5340-30. Battery powered, solar, or portable lights that meet the criteria in AC 150/5345-50 may be used. These systems are intended primarily for visual flight rules (VFR) aircraft operations but may

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

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

2.18.3.4 **Temporarily Closed Taxiways.**

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

2.18.4 Signs.

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

2.18.4.1 **Existing Signs.**

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

2.18.4.2 **Temporary Signs.**

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

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

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

2.18.4.2.1 Takeoff Run Available (TORA) signs.

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

2.18.4.2.2 Sign legends are shown in Figure F-1.

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

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

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

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

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

2.20.2 Equipment.

2.20.2.1 **Barricades.**

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

2.20.2.2 **Lights.**

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

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

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

2.20.2.4 **Air Operations Area – General.**

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

Figure 2-8. Interlocking Barricades



Figure 2-9. Low Profile Barricades**2.20.2.5 Air Operations Area – Runway/Taxiway Intersections.**

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

2.20.2.6 Air Operations Area – Other.

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

2.20.2.7 Maintenance.

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

2.21 Work Zone Lighting for Nighttime Construction.

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

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

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

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

2.22.1 Runway Safety Area (RSA).

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

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

2.22.1.4 **Excavations.**

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

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

2.22.1.5 **Erosion Control.**

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

2.22.2 Runway Object Free Area (ROFA).

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

2.22.3 Taxiway Safety Area (TSA).

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

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

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

2.22.3.4 **Excavations.**

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

2.22.3.5 **Erosion control.**

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

2.22.4 Taxiway Object Free Area (TOFA).

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

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

2.22.5 Obstacle Free Zone (OFZ).

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

2.22.6 Runway Approach/Departure Areas and Clearways.

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

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

2.22.6.2 **Caution About Partial Runway Closures.**

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

2.22.6.3 **Caution About Displaced Thresholds.**

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

2.23 **Other Limitations on Construction.**

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

2.23.1 Prohibitions.

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

2.23.2 Restrictions.

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

CHAPTER 3. GUIDELINES FOR WRITING A CSPP

3.1 **General Requirements.**

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

3.2 **Applicability of Subjects.**

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

3.3 **Graphical Representations.**

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

3.4 **Reference Documents.**

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

3.5 **Restrictions.**

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

3.6 **Coordination.**

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

3.7 **Phasing.**

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

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

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

3.9 **NAVAID Protection.**

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

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

3.10 **Contractor Access.**

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

3.10.1 Location of Stockpiled Construction Materials.

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

3.10.2 Vehicle and Pedestrian Operations.

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

3.10.3 Two-Way Radio Communications.

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

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

3.10.4 Airport Security.

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

3.11 **Wildlife Management.**

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

3.12 **FOD Management.**

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

3.13 **HAZMAT Management.**

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

3.14 **Notification of Construction Activities.**

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

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

3.15 Inspection Requirements.

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

3.16 Underground Utilities.

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

3.17 Penalties.

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

3.18 Special Conditions.

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

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

3.19 Runway and Taxiway Visual Aids.

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

3.20 Marking and Signs for Access Routes.

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

3.21 Hazard Marking and Lighting.

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

3.22 Work Zone Lighting for Nighttime Construction.

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

3.23 Protection of Runway and Taxiway Safety Areas.

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

3.24 Other Limitations on Construction.

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

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APPENDIX A. RELATED READING MATERIAL

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

Table A-1. FAA Publications

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

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

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

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

Table A-2. Code of Federal Regulation

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

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

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

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

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

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

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

APPENDIX C. SAFETY AND PHASING PLAN CHECKLIST

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

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

Table C-1. CSPP Checklist

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

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

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

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

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

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

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

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

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

APPENDIX D. CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST

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

Table D-1. Potentially Hazardous Conditions

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

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

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

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

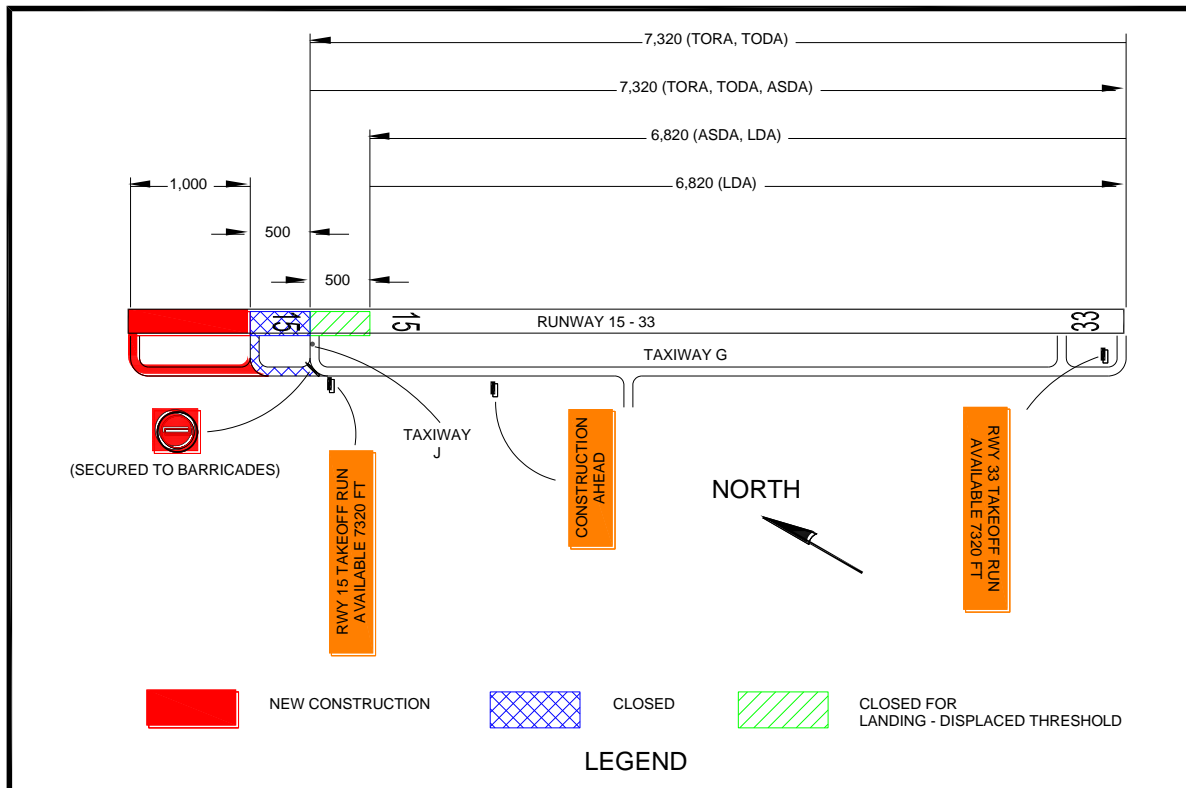
APPENDIX E. SAMPLE OPERATIONAL EFFECTS TABLE

E.1 Project Description.

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

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

Figure E-1. Phase I Example

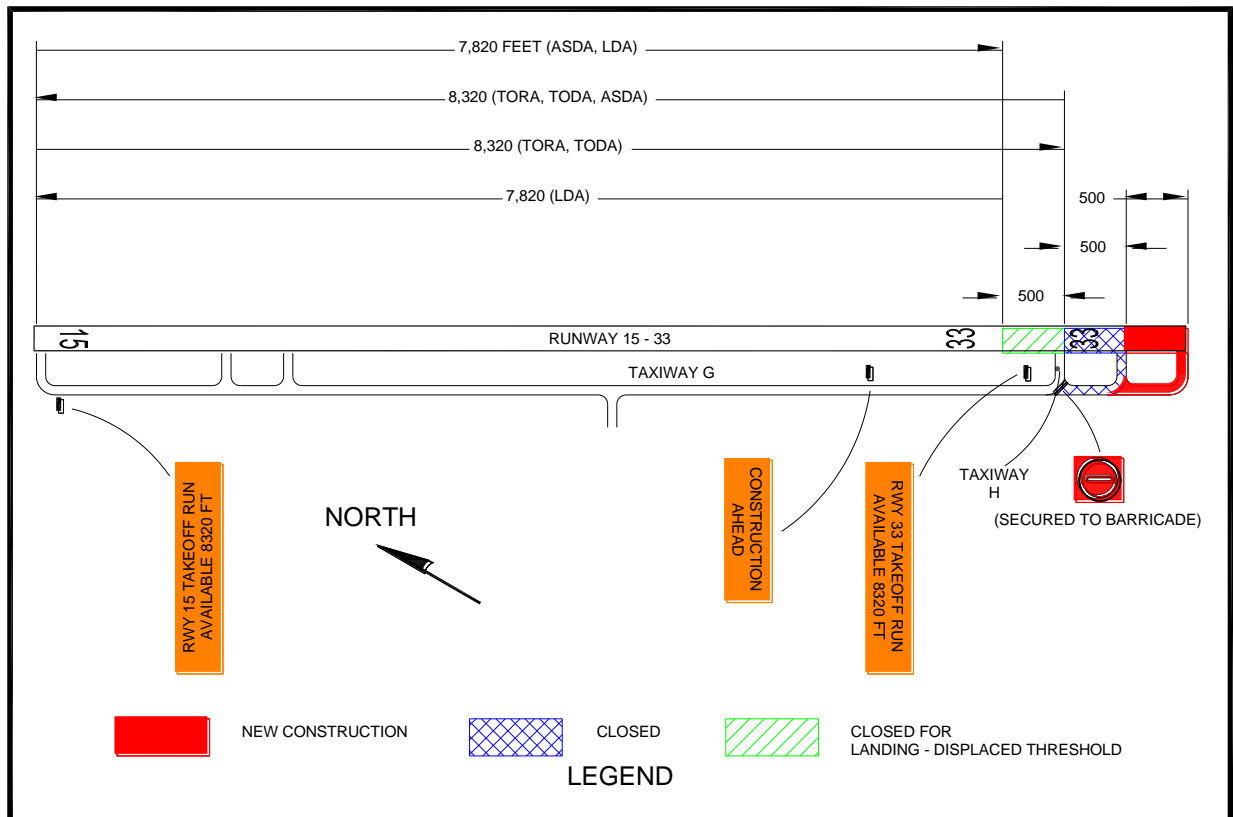


Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

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

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

Figure E-2. Phase II Example



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

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

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

Figure E-3. Phase III Example

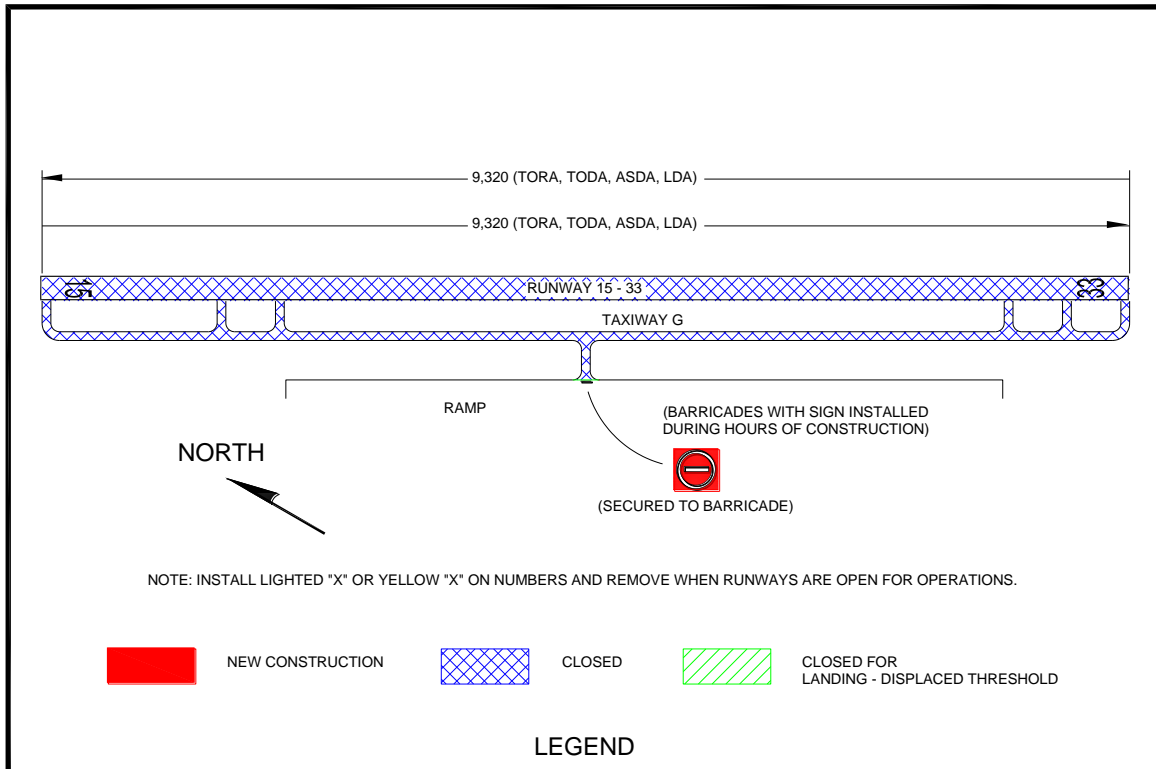


Table E-1. Operational Effects Table

Project	Runway 15-33 Extension and Repaving			
Phase	Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Scope of Work	N/A	Extend Runway 15-33 1,000 ft on north end with Hot Mix Asphaltic Concrete (HMA).	Extend Runway 15-33 500 ft on south end with Hot Mix Asphaltic Concrete (HMA).	Repave existing runway with HMA Relocate Runway 33 Glide Slope
Effects of Construction Operations	N/A	Existing North 500 ft closed	Existing South 500 ft closed	Runway closed between 8:00 pm and 5:00 am Edge lighting out of service
Construction Phase	N/A	Phase I (Anticipated)	Phase II (Anticipated)	Phase III (Anticipated)
Runway 15 Average Aircraft Operations	Carrier: 52 /day GA: 26 /day Military: 11 /day	Carrier: 40 /day GA: 26 /day Military: 0 /day	Carrier: 45 /day GA: 26 /day Military: 5 /day	Carrier: 45 / day GA: 20 / day Military: 0 /day
Runway 33 Average Aircraft Operations	Carrier: 40 /day GA: 18 /day Military: 10 /day	Carrier: 30 /day GA: 18 /day Military: 0 /day	Carrier: 25 /day GA: 18 /day Military: 5 /day	Carrier: 20 /day GA: 5 /day Military: 0 /day
Runway 15-33 Aircraft Category	C-IV	C-IV	C-IV	C-IV
Runway 15 Approach Visibility Minimums	1 mile	1 mile	1 mile	1 mile
Runway 33 Approach Visibility Minimums	$\frac{3}{4}$ mile	$\frac{3}{4}$ mile	$\frac{3}{4}$ mile	1 mile

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

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

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

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

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

Table E-2. Runway and Taxiway Edge Protection

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

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

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

Table E-3. Protection Prior to Runway Threshold

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

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

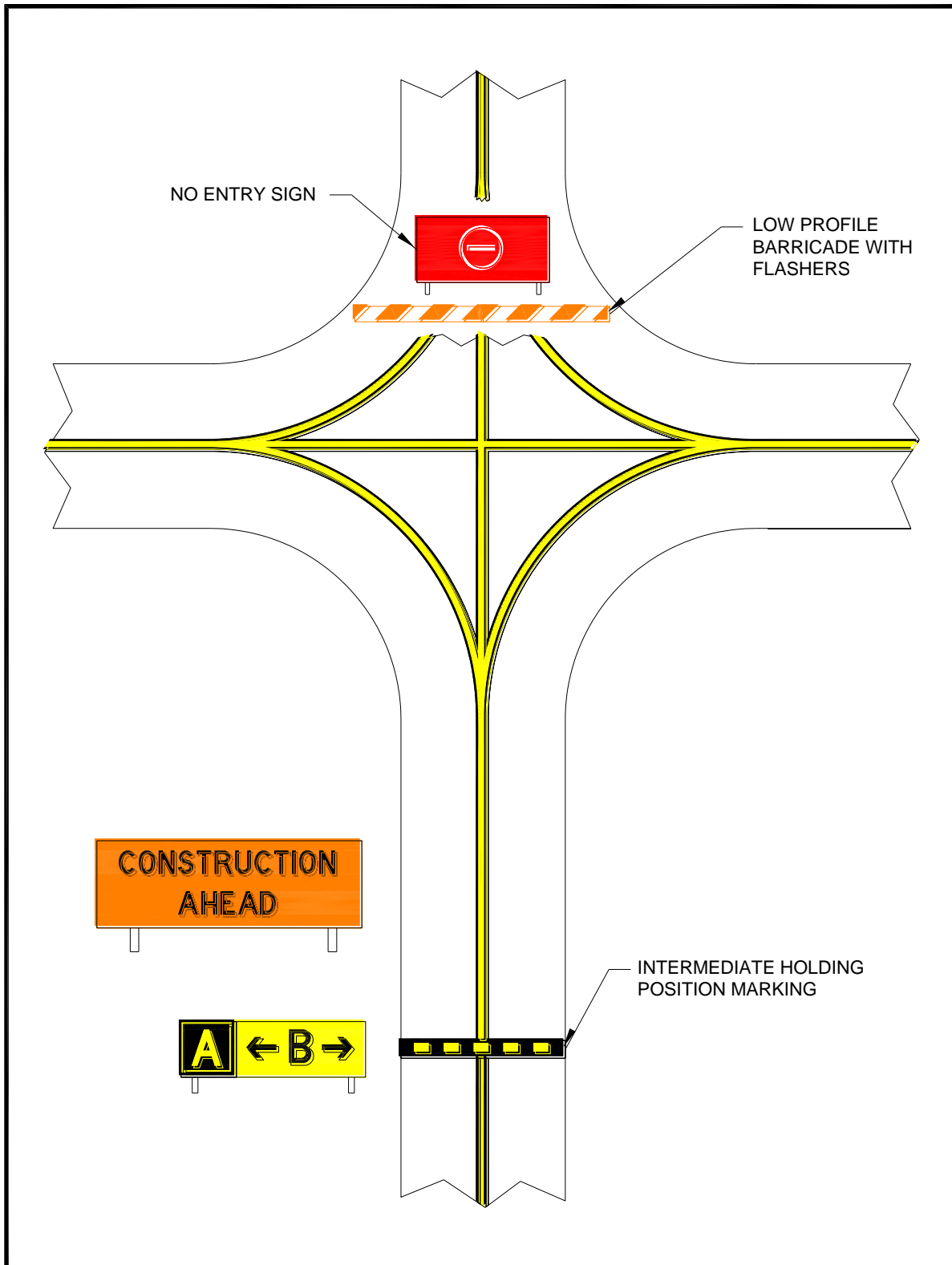
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APPENDIX F. ORANGE CONSTRUCTION SIGNS

Figure F-1. Approved Sign Legends

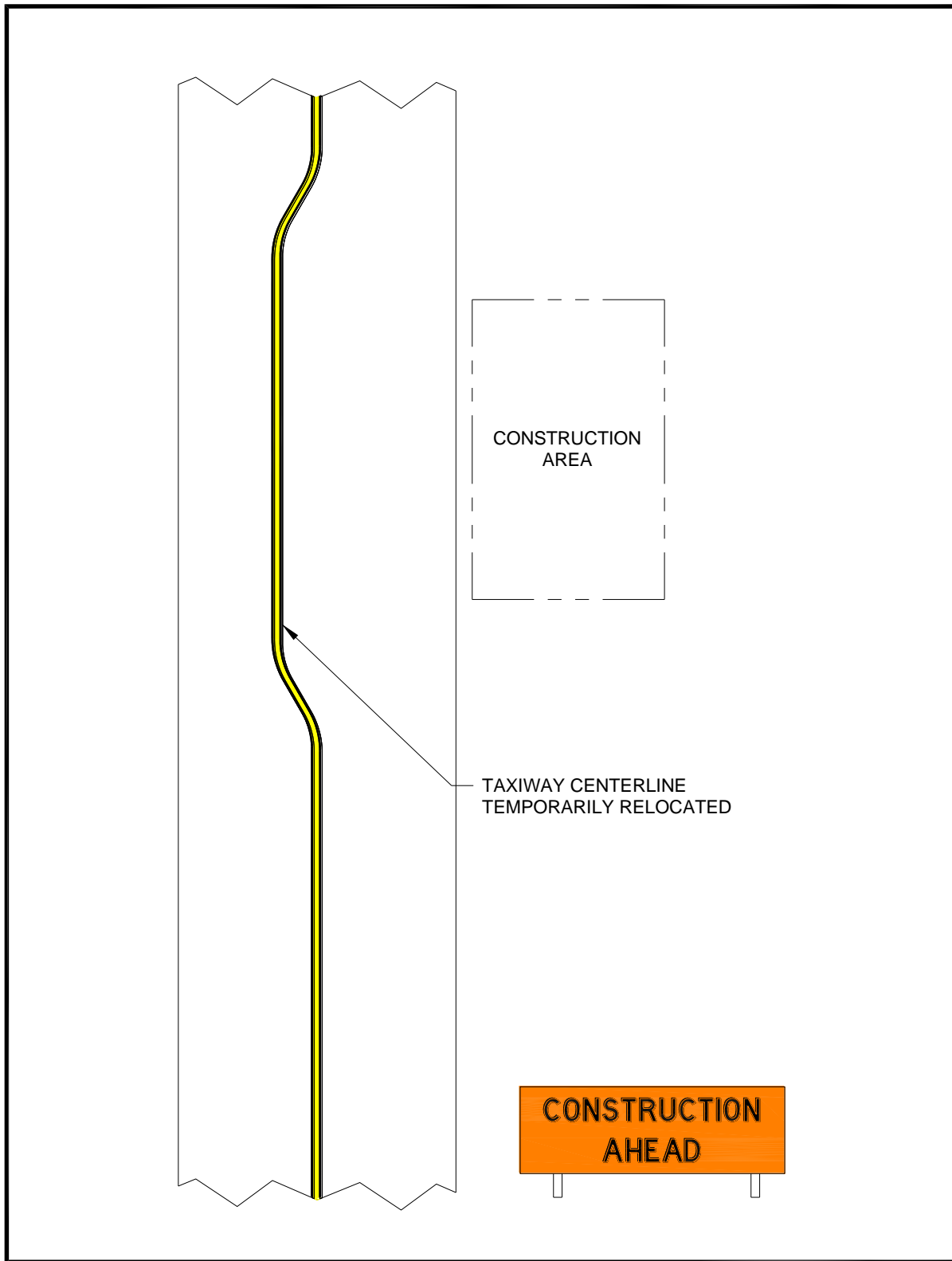


Figure F-2. Orange Construction Sign Example 1



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

Figure F-3. Orange Construction Sign Example 2



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

SECTION H
DAVIS-BACON PREVAILING WAGES

"General Decision Number: CA20260026 01/23/2026

Superseded General Decision Number: CA20250026

State: California

Construction Types: Building, Heavy (Heavy and Dredging) and Highway

County: San Bernardino County in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/02/2026
1	01/16/2026
2	01/23/2026

ASBE0005-002 09/01/2024

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 56.32	26.52
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls).....	\$ 39.94	20.65

ASBE0005-004 07/04/2022

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all		

insulation materials from mechanical systems, whether they contain asbestos or not).... \$ 23.52 13.37

 BOIL0092-003 01/01/2024

	Rates	Fringes
BOILERMAKER.....	\$ 51.98	42.11

 * BRCA0004-011 05/01/2024

	Rates	Fringes
BRICKLAYER; MARBLE SETTER.....	\$ 45.53	20.29

*The wage scale for prevailing wage projects performed in Blythe, China Lake, Death Valley, Fort Irwin, Twenty-Nine Palms, Needles and 1-15 corridor (Barstow to the Nevada State Line) will be Three Dollars (\$3.00) above the standard San Bernardino/Riverside County hourly wage rate

 BRCA0018-004 06/01/2024

	Rates	Fringes
MARBLE FINISHER.....	\$ 43.38	15.36
TILE FINISHER.....	\$ 37.96	13.77
TILE LAYER.....	\$ 51.82	19.32

 BRCA0018-010 09/01/2024

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 42.11	14.67
TERRAZZO WORKER/SETTER.....	\$ 49.62	15.26

 CARP0213-001 07/01/2025

	Rates	Fringes
CARPENTER		
(1) Carpenter, Cabinet Installer, Insulation Installer, Hardwood Floor Worker and acoustical installer.....	\$ 52.24	26.18
(2) Millwright.....	\$ 52.24	26.68
(3) Piledrivers/Derrick		

Bargeman, Bridge or Dock Carpenter, Heavy Framers, Rock Bargeman or Scowman, Rockslinger, Shingler (Commercial).....	\$ 52.37	26.18
(4) Pneumatic Nailer, Power Stapler.....	\$ 52.37	26.18
(5) Sawfiler.....	\$ 52.34	26.18
(6) Scaffold Builder.....	\$ 45.37	25.43
(7) Table Power Saw Operator.....	\$ 52.34	26.18

FOOTNOTE: Work of forming in the construction of open cut sewers or storm drains, on operations in which horizontal lagging is used in conjunction with steel H-Beams driven or placed in pre-drilled holes, for that portion of a lagged trench against which concrete is poured, namely, as a substitute for back forms (which work is performed by piledrivers): \$0.13 per hour additional.

CARP0213-002 07/01/2025

	Rates	Fringes
Diver		
(1) Wet.....	\$ 901.92	26.18
(2) Standby.....	\$ 450.96	26.18
(3) Tender.....	\$ 442.96	26.18
(4) Assistant Tender.....	\$ 418.96	26.18

Amounts in "'Rates' column are per day

CARP0213-004 07/01/2025

	Rates	Fringes
Drywall		
DRYWALL INSTALLER/LATHER....	\$ 52.24	26.18
STOCKER/SCRAPPER.....	\$ 21.45	11.27

CARP0721-001 07/01/2025

	Rates	Fringes
Modular Furniture Installer.....	\$ 25.00	13.06

ELEC0440-004 12/31/2024

COMMUNICATIONS AND SYSTEMS WORK

	Rates	Fringes
Communications System		
Installer.....	\$ 45.23	3%+19.11
Technician.....	\$ 33.09	15.89

SCOPE OF WORK:

Installation, testing, service and maintenance of systems utilizing the transmission and/or transference of voice, sound, vision and digital for commercial, educational, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, fire alarms, and low voltage master clock systems in commercial buildings. Communication Systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding all other data systems or multiple systems which include control function or power supply; excluding installation of raceway systems, conduit systems, line voltage work, and energy management systems. Does not cover work performed at China Lake Naval Ordnance Test Station.

 ELEC0477-002 06/01/2024

	Rates	Fringes
Electricians:.....	\$ 53.15	3%+27.48

CABLE SPLICER: \$1.50 per hour above Electrician rate.

TUNNEL WORK: 10% above Electrician rate.

ZONE PAY:

Zone A - 80 road miles from Post Office, 455 Orange Show Lane, San Bernardino, will be a free zone for all contractors

Zone B - Any work performed outside Zone A's 80 road miles, shall add \$12.00 per hour to the current wage scale.

 ELEC1245-001 01/01/2025

	Rates	Fringes
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LINE CONSTRUCTION

(1) Lineman; Cable splicer..	\$ 70.16	24.71
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....	\$ 53.30	22.26
(3) Groundman.....	\$ 40.76	21.76
(4) Powderman.....	\$ 51.87	18.79

HOLIDAYS: New Year's Day, M. L. King Day, Memorial Day,
Independence Day, Labor Day, Veterans Day, Thanksgivi ng Day
and day after Thanksgivi ng, Christmas Day

ELEV0018-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 69.43	38.435+a+b

FOOTNOTE:

a. PAID VACATION: Employer contributes 8% of regular hourly
rate as vacation pay credit for employees with more than 5
years of service, and 6% for 6 months to 5 years of service.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence
Day, Labor Day, Veterans' Day, Thanksgivi ng Day, Friday
after Thanksgivi ng, and Christmas Day.

ENGI 0012-004 08/01/2025

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman.....	\$ 67.90	40.95
(2) Dredge dozer.....	\$ 61.93	40.95
(3) Deckmate.....	\$ 61.82	40.95
(4) Winch operator (stern winch on dredge).....	\$ 61.27	40.95
(5) Fireman-Oiler, Deckhand, Bargeman, Leveehand.....	\$ 60.73	40.95
(6) Barge Mate.....	\$ 61.34	40.95

* ENGI 0012-024 07/01/2025

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1.....	\$ 63.40	33.20
GROUP 2.....	\$ 64.18	33.20
GROUP 3.....	\$ 64.67	33.20
GROUP 4.....	\$ 65.96	33.20
GROUP 6.....	\$ 66.18	33.20
GROUP 8.....	\$ 66.29	33.20
GROUP 10.....	\$ 66.41	33.20
GROUP 12.....	\$ 66.58	33.20
GROUP 13.....	\$ 66.68	33.20
GROUP 14.....	\$ 66.71	33.20
GROUP 15.....	\$ 66.79	33.20
GROUP 16.....	\$ 66.91	33.20
GROUP 17.....	\$ 67.08	33.20
GROUP 18.....	\$ 67.18	33.20
GROUP 19.....	\$ 67.29	33.20
GROUP 20.....	\$ 67.41	33.20
GROUP 21.....	\$ 67.58	33.20
GROUP 22.....	\$ 67.68	33.20
GROUP 23.....	\$ 67.79	33.20
GROUP 24.....	\$ 67.91	33.20
GROUP 25.....	\$ 68.08	33.20
OPERATOR: Power Equipment (Cranes, Piledriving & Hoisting)		
GROUP 1.....	\$ 64.75	33.20
GROUP 2.....	\$ 65.53	33.20
GROUP 3.....	\$ 65.82	33.20
GROUP 4.....	\$ 65.96	33.20
GROUP 5.....	\$ 66.18	33.20
GROUP 6.....	\$ 66.29	33.20
GROUP 7.....	\$ 66.41	33.20
GROUP 8.....	\$ 66.58	33.20
GROUP 9.....	\$ 66.75	33.20
GROUP 10.....	\$ 67.75	33.20
GROUP 11.....	\$ 68.75	33.20
GROUP 12.....	\$ 69.75	33.20
GROUP 13.....	\$ 70.75	33.20
OPERATOR: Power Equipment (Tunnel Work)		
GROUP 1.....	\$ 65.25	33.20
GROUP 2.....	\$ 66.03	33.20
GROUP 3.....	\$ 66.32	33.20
GROUP 4.....	\$ 66.46	33.20
GROUP 5.....	\$ 66.68	33.20

GROUP 6.....	\$ 66.79	33.20
GROUP 7.....	\$ 66.91	33.20

PREMIUM PAY:

\$10.00 per hour shall be paid on all Power Equipment Operator work on the following Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton

Workers required to suit up and work in a hazardous material environment: \$2.00 per hour additional. Combination mixer and compressor operator on guniting work shall be classified as a concrete mobile mixer operator.

SEE ZONE DEFINITIONS AFTER CLASSIFICATIONS

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes load, full or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Coil Tubing Rig Operator, Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes load, full or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dump jack; Screening and conveyor machine operator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (Skid steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator (small portable); Direct Push Operator (Geoprobe or similar types) Drilling machine operator, small auger types (Texoma super economic or

similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Rock Wheel Saw/Trencher; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 6: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator; Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter (concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 8: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar types; Cable Bundling Machine Operator (excluding handheld); Cable Trenching Machine Operator (Spider Plow or similar types) Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled);

Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Mobark Chipper or similar; Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; RCM Cementing Unit Operator, Rail/Switch Grinder Operator (Harsco or similar types) Rock Drill or similar types; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator (single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skil loader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bending machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); trenching Machine with Road Miner attachment (over 6 ft depth capacity); Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 10: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator;

Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 12: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less than 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth-moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self-loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 13: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 14: Canal liner operator; Canal trimmer operator; Remote-control earth-moving equipment operator (operating a second piece of equipment: \$1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in

tandem - Quad 9 and similar type)

GROUP 18: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 24: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired

earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25: Concrete pump operator-truck mounted; Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Spyder Excavator Operator, with all attachments

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes load, full or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type

(over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.);

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc) ; Tower crane operator and tower gantry

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo formsetter operator

GROUP 3: Dinkie locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson;

Loader operator (Athey, Euclid, Sierra and similar types);
Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

ENGINEERS ZONES

\$1.00 additional per hour for all of IMPERIAL County and the portions of KERN, RIVERSIDE & SAN BERNARDINO Counties as defined below:

That area within the following Boundary: Begin in San Bernardino County, approximately 3 miles NE of the intersection of I-15 and the California State line at that point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Continue W in a straight line to that point which is the SW corner of the northwest quarter of Section 6, T27S, R42E, Mt. Diablo Meridian. Continue North to the intersection with the Inyo County Boundary at that point which is the NE corner of the western half of the northern quarter of Section 6, T25S, R42E, MDM. Continue W along the Inyo and San Bernardino County boundary until the intersection with Kern County, as that point which is the SE corner of Section 34, T24S, R40E, MDM. Continue W along the Inyo and Kern County boundary until the intersection with Tulare County, at that point which is the SW corner of the SE quarter of Section 32, T24S, R37E, MDM. Continue W along the Kern and Tulare County boundary, until that point which is the NW corner of T25S, R32E, MDM. Continue S following R32E lines to the NW corner of T31S, R32E, MDM. Continue W to the NW corner of T31S, R31E, MDM. Continue S to the SW corner of T32S, R31E, MDM. Continue W to SW corner of SE quarter of Section 34, T32S, R30E, MDM. Continue S to SW corner of T11N, R17W, SBM. Continue E along south boundary of T11N, SBM to SW corner of T11N, R7W, SBM. Continue S to SW corner of T9N, R7W, SBM. Continue E along south boundary of T9N, SBM to SW corner of T9N, R1E, SBM. Continue S along west boundary of R1E, SBM to Riverside County line at the SW corner of T1S, R1E, SBM. Continue E along south boundary of T1S, SBM (Riverside County line) to SW corner of T1S, R10E, SBM. Continue S along west boundary of R10E, SBM to Imperial County line at the SW corner of T8S, R10E, SBM. Continue W along Imperial and Riverside county line to NW corner of T9S, R9E, SBM. Continue S along the boundary between

Imperial and San Diego Counties, along the west edge of R9E, SBM to the south boundary of Imperial County/California state line. Follow the California state line west to Arizona state line, then north to Nevada state line, then continuing NW back to start at the point which is the NW corner of Section 1, T17N, R14E, SBM

\$1.00 additional per hour for portions of SAN LUIS OBISPO, KERN, SANTA BARBARA & VENTURA as defined below:

That area within the following Boundary: Begin approximately 5 miles north of the community of Cholame, on the Monterey County and San Luis Obispo County boundary at the NW corner of T25S, R16E, Mt. Diablo Meridian. Continue south along the west side of R16E to the SW corner of T30S, R16E, MDM. Continue E to SW corner of T30S, R17E, MDM. Continue S to SW corner of T31S, R17E, MDM. Continue E to SW corner of T31S, R18E, MDM. Continue S along West side of R18E, MDM as it crosses into San Bernardino Meridian numbering area and becomes R30W. Follow the west side of R30W, SBM to the SW corner of T9N, R30W, SBM. Continue E along the south edge of T9N, SBM to the Santa Barbara County and Ventura County boundary at that point which is the SW corner of Section 34. T9N, R24W, SBM, continue S along the Ventura County line to that point which is the SW corner of the SE quarter of Section 32, T7N, R24W, SBM. Continue E along the south edge of T7N, SBM to the SE corner to T7N, R21W, SBM. Continue N along East side of R21W, SBM to Ventura County and Kern County boundary at the NE corner of T8N, R21W. Continue W along the Ventura County and Kern County boundary to the SE corner of T9N, R21W. Continue North along the East edge of R21W, SBM to the NE corner of T12N, R21W, SBM. Continue West along the north edge of T12N, SBM to the SE corner of T32S, R21E, MDM. [T12N SBM is a thin strip between T11N SBM and T32S MDM]. Continue North along the East side of R21E, MDM to the Kings County and Kern County border at the NE corner of T25S, R21E, MDM, continue West along the Kings County and Kern County Boundary until the intersection of San Luis Obispo County. Continue west along the Kings County and San Luis Obispo County boundary until the intersection with Monterey County. Continue West along the Monterey County and San Luis Obispo County boundary to the beginning point at the NW corner of T25S, R16E, MDM.

\$2.00 additional per hour for INYO and MONO Counties and the Northern portion of SAN BERNARDINO County as defined below:

That area within the following Boundary: Begin at the intersection of the northern boundary of Mono County and the California state line at the point which is the center of

Section 17, T10N, R22E, Mt. Diablo Meridian. Continue S then SE along the entire western boundary of Mono County, until it reaches Inyo County at the point which is the NE corner of the Western half of the NW quarter of Section 2, T8S, R29E, MDM. Continue SSE along the entire western boundary of Inyo County, until the intersection with Kern County at the point which is the SW corner of the SE 1/4 of Section 32, T24S, R37E, MDM. Continue E along the Inyo and Kern County boundary until the intersection with San Bernardino County at that point which is the SE corner of section 34, T24S, R40E, MDM. Continue E along the Inyo and San Bernardino County boundary until the point which is the NE corner of the Western half of the NW quarter of Section 6, T25S, R42E, MDM. Continue S to that point which is the SW corner of the NW quarter of Section 6, T27S, R42E, MDM. Continue E in a straight line to the California and Nevada state border at the point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Then continue NW along the state line to the starting point, which is the center of Section 18, T10N, R22E, MDM.

REMAINING AREA NOT DEFINED ABOVE RECEIVES BASE RATE

 IRON0433-006 01/01/2025

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 45.78	26.51
Ornamental, Reinforcing and Structural.....	\$ 50.70	35.15

PREMIUM PAY:

\$9.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland,
 Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island,
 Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB
 Army Defense Language Institute - Monterey, Fallon Air Base,
 Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center
 Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LAB00300-005 07/01/2025

	Rates	Fringes
Asbestos Removal Laborer.....	\$ 46.48	25.93

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos-containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

LAB00345-001 07/01/2025

	Rates	Fringes
LABORER (GUNITE)		
GROUP 1.....	\$ 55.88	23.77
GROUP 2.....	\$ 54.93	23.77
GROUP 3.....	\$ 51.39	23.77

FOOTNOTE: GUNITE PREMIUM PAY: Workers working from a Bosn' n' s Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates. Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis. Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75' -0"" above base level and which work must be performed in whole or in part more than 75' -0"" above base level, that work performed above the 75' -0"" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Rodmen, Nozzlemen

GROUP 2: Gunmen

GROUP 3: Reboundmen

LAB00783-002 07/01/2025

	Rates	Fringes
LABORER (TUNNEL)		
GROUP 1.....	\$ 53.60	25.74
GROUP 2.....	\$ 53.92	25.74
GROUP 3.....	\$ 54.38	25.74
GROUP 4.....	\$ 55.07	25.74
LABORER		
GROUP 1.....	\$ 46.48	25.95
GROUP 2.....	\$ 47.03	25.95
GROUP 3.....	\$ 47.58	25.95
GROUP 4.....	\$ 49.13	25.95
GROUP 5.....	\$ 49.48	25.95

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; Fire watcher, limber, brush loader, piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; Railroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt; Laborer, packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer(lead); Tank scaler and cleaner; Tree climber, faller, chain saw

operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellow

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter; Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled

GROUP 4: Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt- rubber distributor boot person; Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast

GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all

other types of mechanical drills without regard to the form of motive power; Toxic waste removal

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Changehouse person; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.)

GROUP 2: Chucktender, cable tender; Loading and unloading agitator cars; Vibrator person, jack hammer, pneumatic tools (except driller); Bull gang mucker, track person; Concrete crew, including rodder and spreader

GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner, tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher

GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

LAB00783-005 11/01/2025

	Rates	Fringes
Brick Tender.....	\$ 42.60	22.13

LAB01184-001 07/01/2025

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	\$ 47.94	20.86
(2) Vehicle Operator/Hauler.	\$ 48.11	20.86
(3) Horizontal Directional Drill Operator.....	\$ 49.96	20.86
(4) Electronic Tracking Locator.....	\$ 51.96	20.86
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	\$ 49.30	23.97

GROUP 2.....	\$ 50.60	23.97
GROUP 3.....	\$ 52.61	23.97
GROUP 4.....	\$ 54.35	23.97

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

LAB01414-003 08/06/2025

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER....	\$ 46.17	25.97
PLASTER TENDER.....	\$ 48.72	25.97

Work on a swing stage scaffold: \$1.00 per hour additional.

Work at Military Bases - \$3.00 additional per hour:

Coronado Naval Amphibious Base, Fort Irwin, Marine Corps Air Station-29 Palms, Imperial Beach Naval Air Station, Marine Corps Logistics Supply Base, Marine Corps Pickle Meadows, Mountain Warfare Training Center, Naval Air Facility-Seeley, North Island Naval Air Station, Vandenberg AFB.

 PAIN0036-001 07/01/2023

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County).....	\$ 29.59	17.12
(2) All Other Work.....	\$ 38.52	18.64

REPAINT of any previously painted structure. Exceptions: work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities.

 PAIN0036-008 09/01/2024

	Rates	Fringes
DRYWALL FINISHER/TAPER.....	\$ 49.33	26.82

 PAIN0036-015 01/01/2025

	Rates	Fringes
GLAZIER.....	\$ 53.05	30.64

FOOTNOTE: Additional \$1.25 per hour for work in a condor, from the third (3rd) floor and up Additional \$1.25 per hour for work on the outside of the building from a swing stage or any suspended contrivance, from the ground up

 PAIN1247-002 01/01/2025

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 45.15	19.43

 PLAS0200-008 08/03/2022

	Rates	Fringes
PLASTERER.....	\$ 47.37	19.64

FORT IRWIN; MARINE CORPS AIR STATION 29 PALMS, AND MARINE CORPS LOGISTICS SUPPLY BASE: \$3.00 additional per hour.

 PLAS0500-002 07/01/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER... \$	47.70	27.07

 PLUM0016-002 09/01/2025

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Work at Edwards AFB..... \$	68.73	26.81
Work at Fort Irwin Army Base..... \$	72.23	26.81
Work at Marine Corps Logistic Base at Nebo, Marine Corps Logistic Base at Yermo and Twenty-Nine Palms Marine Base..... \$	68.73	26.81
Work ONLY on new additions and remodeling of bars, restaurants, stores and commercial buildings, not to exceed 5,000 sq. ft. of floor space..... \$	59.85	25.83
Work ONLY on strip malls, light commercial, tenant improvement and remodel work..... \$	44.29	24.16
All other work except work on new additions and remodeling of bars, restaurant, stores and commercial buildings not to exceed 5,000 sq. ft. of floor space and work on strip malls, light commercial, tenant improvement and remodel work..... \$	61.73	26.81

PLUM0345-001 09/01/2025

	Rates	Fringes
PLUMBER		
Landscape/Irrigation Fitter. \$	44.75	26.20
Sewer & Storm Drain Work. . . . \$	48.84	23.58

R00F0036-002 08/01/2025

	Rates	Fringes
ROOFER.	\$ 52.63	20.73

FOOTNOTE: Pitch premium: Work on which employees are exposed to pitch fumes or required to handle pitch, pitch base or pitch impregnated products, or any material containing coal tar pitch, the entire roofing crew shall receive \$1.75 per hour "pitch premium" pay.

SFCA0669-009 01/01/2026

Does not include the northern part of the City of Chino, or the Cities of Montclair and Ontario

	Rates	Fringes
SPRINKLER FITTER.	\$ 50.79	29.80

SFCA0709-004 09/01/2025

THE NORTHERN PART OF THE CITY OF CHINO, AND THE CITIES OF MONTCLAIR AND ONTARIO:

	Rates	Fringes
SPRINKLER FITTER (Fire).	\$ 58.60	33.65

SHEE0105-003 01/01/2025

LOS ANGELES (South of a straight line drawn between Gorman and Big Pines)and Catalina Island, INYO, KERN (Northeast part, East of Hwy 395), MONO ORANGE, RIVERSIDE, AND SAN BERNARDINO COUNTIES

	Rates	Fringes
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SHEET METAL WORKER

(1) Commercial - New Construction and Remodel work.....	\$ 59.31	30.43
(2) Industrial work including air pollution control systems, noise abatement, hand rails, guard rails, excluding architectural sheet metal work, excluding A-C, heating, ventilating systems for human comfort...	\$ 56.95	30.04

TEAM0011-002 07/01/2025

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 41.59	35.69
GROUP 2.....	\$ 41.74	35.69
GROUP 3.....	\$ 41.87	35.69
GROUP 4.....	\$ 42.06	35.69
GROUP 5.....	\$ 42.09	35.69
GROUP 6.....	\$ 42.12	35.69
GROUP 7.....	\$ 42.37	35.69
GROUP 8.....	\$ 42.62	35.69
GROUP 9.....	\$ 42.82	35.69
GROUP 10.....	\$ 43.12	35.69
GROUP 11.....	\$ 43.62	35.69
GROUP 12.....	\$ 44.05	35.69

WORK ON ALL MILITARY BASES:

PREMIUM PAY: \$3.00 per hour additional.

[29 palms Marine Base, Camp Roberts, China Lake, Edwards AFB,
El Centro Naval Facility, Fort Irwin, Marine Corps
Logistics Base at Nebo & Yermo, Mountain Warfare Training
Center, Bridgeport, Point Arguello, Point Conception,
Vandenberg AFB]

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Truck driver

GROUP 2: Driver of vehicle or combination of vehicles - 2
axles; Traffic control pilot car excluding moving heavy
equipment permit load; Truck mounted broom

GROUP 3: Driver of vehicle or combination of vehicles - 3 axles; Boot person; Cement mason distribution truck; Fuel truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver

GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level

GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person (\$0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver

GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vehicles - 4 or more axles; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level

GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver

GROUP 8: Dump truck, 25 yds. to 49 yds. water level; Truck repair person; Water pull - single engine; Welder

GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over

GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment

GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - \$1.25 additional when operating winch or similar special attachments

GROUP 12: Boom Truck 17K and above

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide

employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than

""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, DC 20210.

END OF GENERAL DECISION"