

CHICKASHA MUNICIPAL AIRPORT AUTHORITY

AGENDA
LOCATION OF MEETING
CITY HALL COUNCIL CHAMBERS
117 NORTH FOURTH STREET
CHICKASHA, OKLAHOMA 73018

TIME OF MEETING
6:30 PM

DATE OF MEETING
AUGUST 7, 2023

All items on this agenda, including but not limited to any agenda item concerning the adoption of any ordinance, resolution, contract, agreement, or any other item of business, are subject to amendment, including additions and/or deletions. This rule will apply to every individual agenda item without exception, and without providing this same amendment language with respect to each individual agenda item. Such amendments should be rationally related to the topic of the agenda item, or the governing body will be advised to continue the item.

The governing body may adopt, approve, ratify, deny, defer, recommend, amend, strike, or continue any agenda item. When more information is needed to act on an item, the governing body may refer the matter to its City/Trust Manager, staff, attorney or to the recommending board, commission or committee.

1. **Call to Order / Roll Call.**
2. **Consent Docket:**
 - a. Acceptance of the Minutes of the July 17, 2023 regular meeting.
 - b. Acceptance of the Claims List.
3. **Discussion/Approval of Items Removed from Consent Docket:**
4. **Consideration and Discussion Items:**
 - a. Discussion, consideration, and possible action to authorize Staff to solicit bids for Bid No. CAA-2302 - Aircraft T-Hangar project.

5. Motion for Adjournment.



City of
CHICKASHA

Meeting Type: CMAA Agenda 8-7-2023

Meeting Date: 8/7/2023

Department: City Clerk

Agenda Item No. 2.a.

AGENDA ITEM: Acceptance of the Minutes of the July 17, 2023 regular meeting.

I. BACKGROUND/DESCRIPTION:

II. RECOMMENDED ACTION:

Accept the Minutes of the July 17, 2023 regular meeting.

III. FISCAL INFORMATION -

IV. FUND INFORMATION:

Dept. Director: Susan M. McDaniel, City Clerk	Fund	Account	Amount
	(To)		
	FUND	ACCOUNT	AMOUNT
Meeting Date: August 7, 2023	(From)		

V. ATTACHMENTS:

1. CMAA 7-17-2023

July 17, 2023

The **REGULAR** meeting of the **CHICKASHA MUNICIPAL AIRPORT AUTHORITY** was held in the council chambers in city hall on the 17th day of July 2023 as specified by advance public notice with a properly prepared agenda stating the subject matter or matters to be discussed at said meeting. Vice Chairman Grayson called the meeting to order at 6:49 p.m.

ITEM 1.

Call to Order / Roll Call:

CHAIRMAN AND TRUSTEES

PRESENT:

Chris Mosley, Chairman
Zachary Grayson, Vice Chairman
Oscar Nelson
Kea Ginn
Georgianne Hebblethwaite
Rick Croslin
Brian Gerdes

ABSENT:

Kelly Boyd
R. P. Ashanti-Alexander

STAFF

PRESENT:

Keith Johnson, City Manager
Amanda Mullins, City Attorney
Rachel Bernish, Asst. City Manager
Susan M. McDaniel, City Clerk
G. G. Music, Police Chief
Tony Samaniego, Fire Chief
Robert Brooks, Staff Accountant+
Lillie Huckaby, Library Director
Spencer Winzenried, Parks & Rec Director
Shae Mortimer, Marketing and Civic Engagement Manager

ITEM 2.

Consent Docket: ITEM 2a – ITEM 2b.

ITEM 2a.

Acceptance of the Minutes of July 3, 2023, regular meeting.

ITEM 2b.

Acceptance of the Claims List.

*Motion by Trustee Hebblethwaite, second by Trustee Gerdes to approve Items 2a – 2b.

TIME 6:49 P.M.

Roll call vote:

Ayes:” Hebblethwaite, Grayson, Croslin, Gerdes, Nelson, Ginn, and Mosley.

“Nays:” None

“Abstain:” None

Motion carried. 7-0

ITEM 4. **Motion to Adjourn.**

*Motion by Trustee Hebblethwaite, second by Trustee Grayson to adjourn.

Meeting adjourned.

TIME: 6:50 PM

Approved this 7th day of August 2023.

Chris Mosley, Chairman

(ATTEST)

Susan M. McDaniel, CMC
City Clerk



City of
CHICKASHA

Meeting Type: CMAA Agenda 8-7-2023

Meeting Date: 8/7/2023

Department: Finance

Agenda Item No. 2.b.

AGENDA ITEM: Acceptance of the Claims List.

I. BACKGROUND/DESCRIPTION:

II. RECOMMENDED ACTION:

Accept Claims List

III. FISCAL INFORMATION -

IV. FUND INFORMATION:

Dept. Director:

	Fund	Account	Amount
	(To)		
	FUND	ACCOUNT	AMOUNT
Meeting Date: August 7, 2023	(From)		

V. ATTACHMENTS:



City of
CHICKASHA

Meeting Type: CMAA Agenda 8-7-2023

Meeting Date: 8/7/2023

Department: Administration

Agenda Item No. 4.a.

AGENDA ITEM: Discussion, consideration, and possible action to authorize Staff to solicit bids for Bid No. CAA-2302 - Aircraft T-Hangar project.

I. BACKGROUND/DESCRIPTION:

II. RECOMMENDED ACTION:

Authorize Staff to solicit bids for Bid No. CAA-2302 - Aircraft T-Hangar project.

III. FISCAL INFORMATION -

IV. FUND INFORMATION:

Dept. Director:

	Fund	Account	Amount
	(To)		
	FUND	ACCOUNT	AMOUNT
Meeting Date:	(From)		
August 7, 2023			

V. ATTACHMENTS:

1. AIP-3-40-0018-022-2023_Plans
2. AIP-3-40-0018-022-2023_Project Manual

FILE NAME: \\data1\Projects\2022\11929_2220_CHK_TO2_T-HANGAR\03_DSGN\01_DWG\010_GEN\G-001_Cover.dwg LAYOUT NAME: G-001 PRINTED: Wednesday, August 02, 2023 - 9:21am USER: jdevers

City of Chickasha, Oklahoma

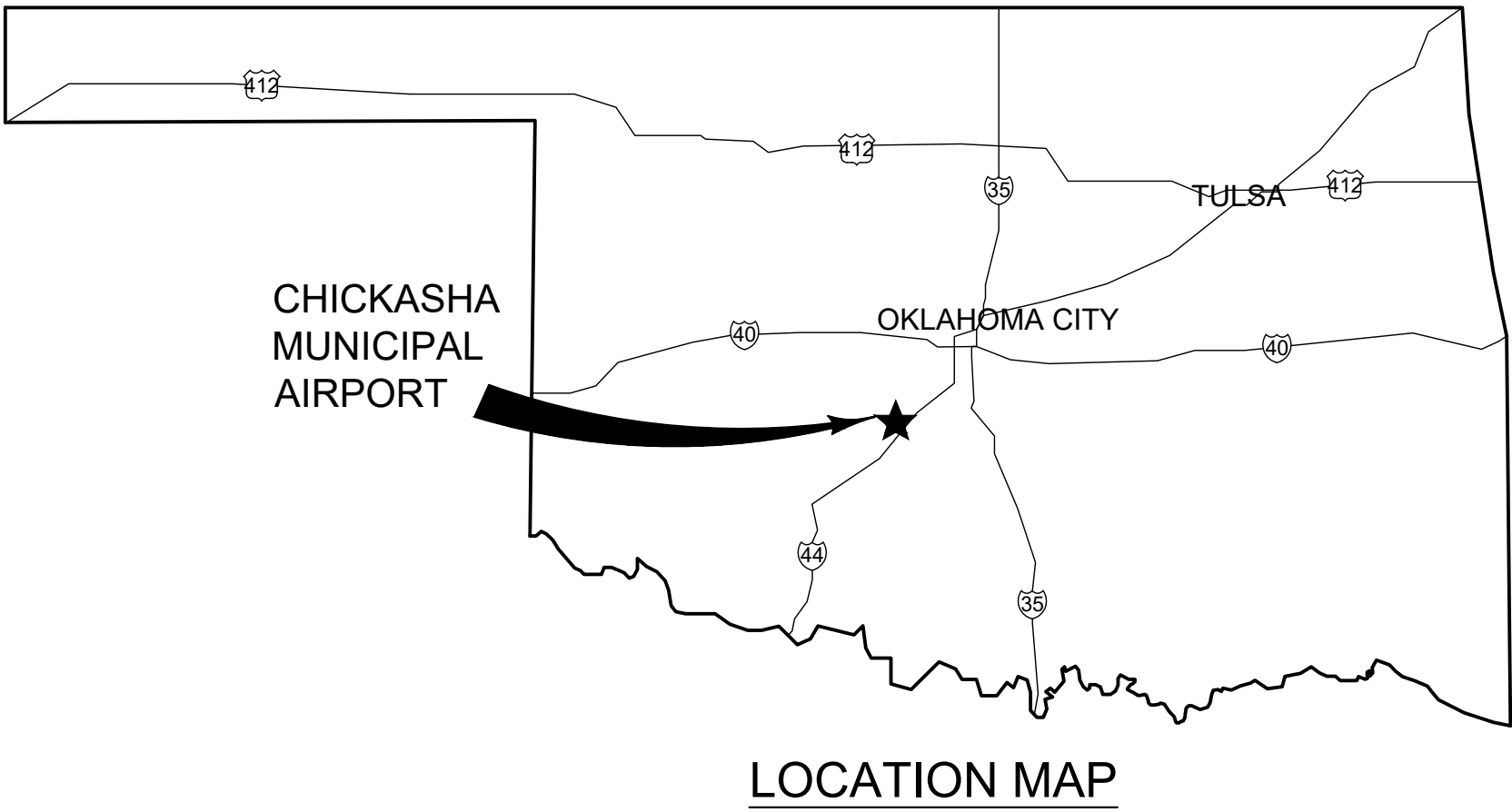
Chickasha Municipal Airport (CHK)

Construct T-Hangar

AIP 3-40-0018-022-2023

CAA-2302

August 2023

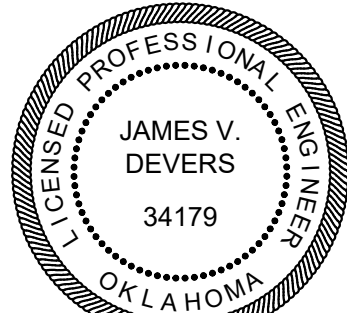


Parkhill

14101 Wireless Way
Suite 350
Oklahoma City, OK 73134
405.832.9900

Sheet List Table	
Sheet Number	Sheet Title
General	
G-001	Cover Sheet
G-002	Bid Items & Notes
G-003	Construction Safety & Phasing Plan
Civil	
C-101	Site Plan
Architectural	
A-111	Floor Plan and Elevations

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James V. Devers
8-2-2023

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Parkhill
14101 Wireless Way, Suite 350
Oklahoma City, OK 73134
405.832.9900
CA 4935

Construct T-Hangar
AIP 3-40-0018-022-2023 | CAA-2302

CLIENT

Chickasha Municipal Airport
City of Chickasha
117 N. 4th Street
Chickasha, OK 73018

PROJECT NO.

40186.22

1 8/2/2023 BID SET

DATE DESCRIPTION

Cover Sheet

G-001

FILE NAME: \\data1\Projects\2022\11929-22\20_CHK_TO2_T-HANGAR\03_DSGN\01_DWG\010_GEN\G-002_PRINTED Wednesday, August 02, 2023 - 9:21am USER: jdevers

SUMMARY OF BID QUANTITIES					
BASE BID - CONSTRUCT 8-UNIT NESTED T-HANGAR					
BID ITEM	SPEC No.	DESCRIPTION	NOTE REF #	PLAN	QUANTITY UNIT
1	C-105-6.1	MOBILIZATION	[1]	1	LS
2	Special	LOW PROFILE FLAG AND FLASHER BARRICADES	[2]	1	LS
3	13 34 19	CONSTRUCT 8-UNIT NESTED T-HANGAR	[3-6]	1	LS
4	Special	THIRD PARTY INSURANCE	[7]	1	LS

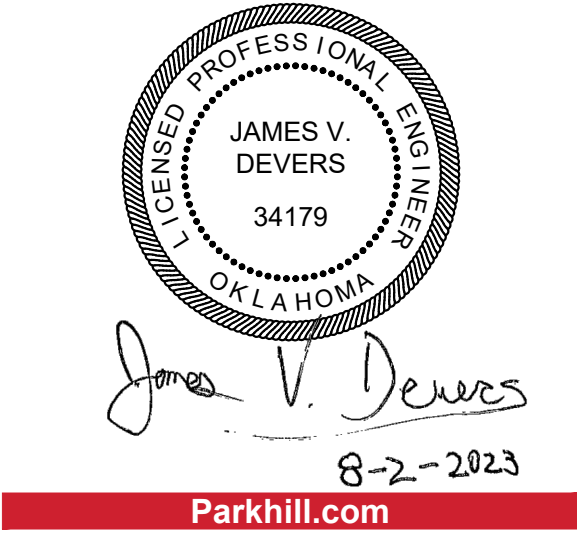
SUMMARY OF BID QUANTITIES					
ALTERNATE NO. 1 - ADDITIONAL 1-UNIT HANGAR					
BID ITEM	SPEC No.	DESCRIPTION	NOTE REF #	PLAN	QUANTITY UNIT
1	13 34 19	CONSTRUCT ADDITIONAL T-HANGAR UNIT (UNIT 9)	[3-6, 8]	1	LS

SUMMARY OF BID QUANTITIES					
ALTERNATE NO. 2 - ADDITIONAL 1-UNIT HANGAR					
BID ITEM	SPEC No.	DESCRIPTION	NOTE REF #	PLAN	QUANTITY UNIT
1	13 34 19	CONSTRUCT ADDITIONAL T-HANGAR UNIT (UNIT 10)	[3-6]	1	LS

BID ITEM NOTES:

- PRICE BID SHALL INCLUDE THE COST OF ALL CONSTRUCTION PREPARATION OPERATIONS, MOVEMENT OF PERSONNEL AND EQUIPMENT AS NECESSARY TO COMPLETE THE PROJECT AS SHOWN ON THE PLANS AND SPECIFICATIONS.
- PRICE BID SHALL INCLUDE ALL MATERIAL, HARDWARE, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT, INSTALL, RELOCATE AS NECESSARY THROUGHOUT THE PROJECT, AND REMOVE LOW PROFILE FLAG AND FLASHER BARRICADES AS SHOWN ON THE PLANS.
- EXCESS EARTH CAN BE WASTED ON AIRPORT PROPERTY IN MANNER AND LOCATION AS DETERMINED BY ENGINEER.
- PRICE BID SHALL INCLUDE THE FURNISHING AND ERECTION OF A PRE-ENGINEERED METAL BUILDING, CONCRETE TO TIE INTO EXISTING APRON, P-209 CRUSHED AGGREGATE BASE COURSE, GRADING, TOPSOILING, SODDING, SLAB AND FOUNDATIONS, COMPLETE WITH ALL FEATURES SHOWN IN THE ARCHITECTURAL PLANS AND SPECIFICATIONS. CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL STRUCTURAL AND FOUNDATION PLANS, SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF OKLAHOMA, AND ELECTRICAL PLANS PRIOR TO BEGINNING WORK. A GEOTECHNICAL REPORT HAS BEEN INCLUDED IN THE SPECIFICATIONS FOR USE BY THE CONTRACTOR'S ENGINEER.
- ALL WORK SHALL COMPLY WITH THE NATION ELECTRICAL CODE.
- LONG LEAD TIME FOR PEMB IS ANTICIPATED. ISSUANCE OF NOTICE TO PROCEED FOR PROJECT SHALL BE COORDINATED BASED ON EXPECTED DELIVERY DATE OF A BUILDING, SUCH THAT BUILDING SLAB CAN BE CONSTRUCTED AND CURED PRIOR TO BUILDING DELIVERY, AND A STOP ORDER ISSUED IF REQUIRED, UNTIL BUILDING ARRIVES. CONTRACT TIME IS NOT INTENDED TO INCLUDE LEAD TIME FOR BUILDING.
- PRICE BID INCLUDES ADDING THE CITY AND ENGINEER AS ADDITIONAL INSURED ON THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY. PRICE DOES NOT INCLUDE OTHER INSURANCE COSTS, MOBILIZATION, OR BONDS.
- IF ALTERNATE NO. 1 IS AWARDED WITHOUT ALTERNATE NO. 2, STORAGE ROOM 2 WILL BE ON SAME SIDE OF BUILDING AS STORAGE ROOM 1.

Parkhill



Construct T-Hangar

AIP 3-40-0018-022-2023 | CAA-2302

CLIENT		
Chickasha Municipal Airport		
City of Chickasha		
117 N. 4th Street		
Chickasha, OK 73018		
PROJECT NO.		
40186.22		
1	8/2/2023	BID SET
#	DATE	DESCRIPTION

Bid Items & Notes

G-002

FILE NAME: \\data1\Projects\2022\11929.22\20_CHK_TO2_T-HANGAR\03_DSGN\01_DWG\010_GEN\G-003_CSP.dwg LAYOUT NAME: G-003 PRINTED: Wednesday, August 02, 2023 - 9:21am USER: jdeviers

CONSTRUCTION SAFETY PLAN NARRATIVE:

1. GENERAL SAFETY REQUIREMENTS:

DURING PERFORMANCE OF THIS CONTRACT, THE AIRPORT RUNWAYS, TAXIWAYS, AND AIRCRAFT PARKING APRONS SHALL REMAIN IN USE BY AIRCRAFT TO THE MAXIMUM EXTENT POSSIBLE. AIRCRAFT USE OF AREAS NEAR THE CONTRACTOR'S WORK WILL BE CONTROLLED TO MINIMIZE DISTURBANCE TO THE CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL NOT ALLOW HIS/HER EMPLOYEES, SUBCONTRACTOR, SUPPLIERS, OR ANY PERSON OVER WHOM HE/SHE HAS CONTROL TO ENTER OR REMAIN IN ANY PART OF THE AIRPORT WHICH WOULD BE HAZARDOUS TO PERSONS OR TO AIRCRAFT OPERATIONS. WHENEVER AIRCRAFT OPERATIONS REQUIRE, THE OWNER, INSPECTOR, ENGINEER, ETC. MAY ORDER THE CONTRACTOR TO SUSPEND OPERATIONS, MOVE PLANT, PERSONNEL, EQUIPMENT, AND MATERIALS TO A SAFE LOCATION AND STAND BY UNTIL AIRCRAFT USE IS COMPLETED.

2. CONSTRUCTION MAINTENANCE AND FACILITIES MAINTENANCE:

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR MUST, THROUGH THE AIRPORT OPERATOR, GIVE NOTICE [USING THE NOTICE TO AIRMEN (NOTAM) SYSTEM] OF PROPOSED LOCATION, TIME, AND DATE OF COMMENCEMENT OF CONSTRUCTION. UPON COMPLETION OF WORK AND RETURN OF ALL SUCH AREAS TO STANDARD CONDITIONS, THE CONTRACTOR MUST, THROUGH THE AIRPORT OPERATOR, VERIFY THE CANCELLATION OF ALL NOTICES ISSUED VIA THE NOTAM SYSTEM. THROUGHOUT THE DURATION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR MUST--

- A. INSPECT ALL CONSTRUCTION AND STORAGE AREAS AS OFTEN AS NECESSARY TO BE AWARE OF CONDITIONS.
- B. PROMPTLY TAKE ALL ACTIONS NECESSARY TO PREVENT OR REMEDY ANY UNSAFE OR POTENTIALLY UNSAFE CONDITIONS AS SOON AS THEY ARE DISCOVERED.

3. APPROACH CLEARANCE TO RUNWAYS:

RUNWAY APPROACH SURFACES WILL BE UNOBSTRUCTED.

4. RUNWAY AND TAXIWAY SAFETY AREA:

THIS PROJECT WILL REQUIRE CONSTRUCTION IN THE TAXILANE SAFETY AREA AND DURING THAT TIME THE TAXILANE WILL BE CLOSED.

5. MARKING AND LIGHTING FOR TEMPORARY THRESHOLDS:

TEMPORARY THRESHOLD MARKING AND LIGHTING ARE NOT REQUIRED.

6. CLOSED RUNWAY MARKING AND LIGHTING:

CLOSED RUNWAY MARKING IS NOT REQUIRED.

7. HAZARDOUS AREA MARKING AND LIGHTING:

LOW PROFILE AIRCRAFT BARRICADES AS SHOWN ON THE PLANS.

8. TEMPORARY LIGHTING AND MARKING:

NO TEMPORARY LIGHTING OR MARKING ARE REQUIRED.

9. NAVIGATIONAL AIDS:

THIS PROJECT WILL NOT TAKE PLACE IN THE VICINITY OF ANY NAVIGATIONAL AIDS.

10. LIMITATIONS ON CONSTRUCTION:

ALL OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS SHALL BE PROMINENTLY MARKED AND LIGHTED AS HAZARDOUS.

ALL STOCKPILED MATERIAL SHALL BE CONSTRAINED TO PREVENT MOVEMENT AS A RESULT OF THE MAXIMUM ANTICIPATED AIRCRAFT BLAST AND FORECAST WIND CONDITIONS.

11. RADIO COMMUNICATIONS:

NONE REQUIRED.

12. DEBRIS:

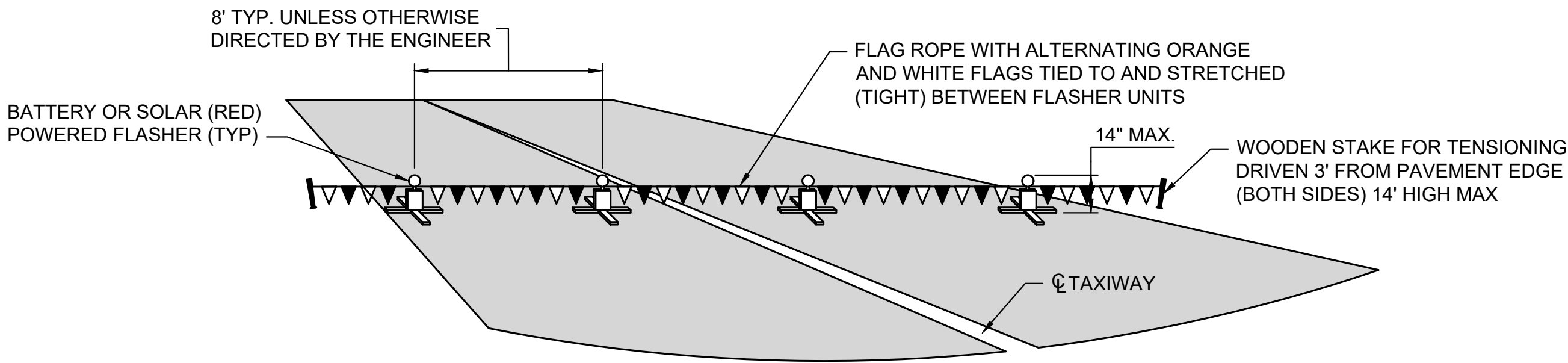
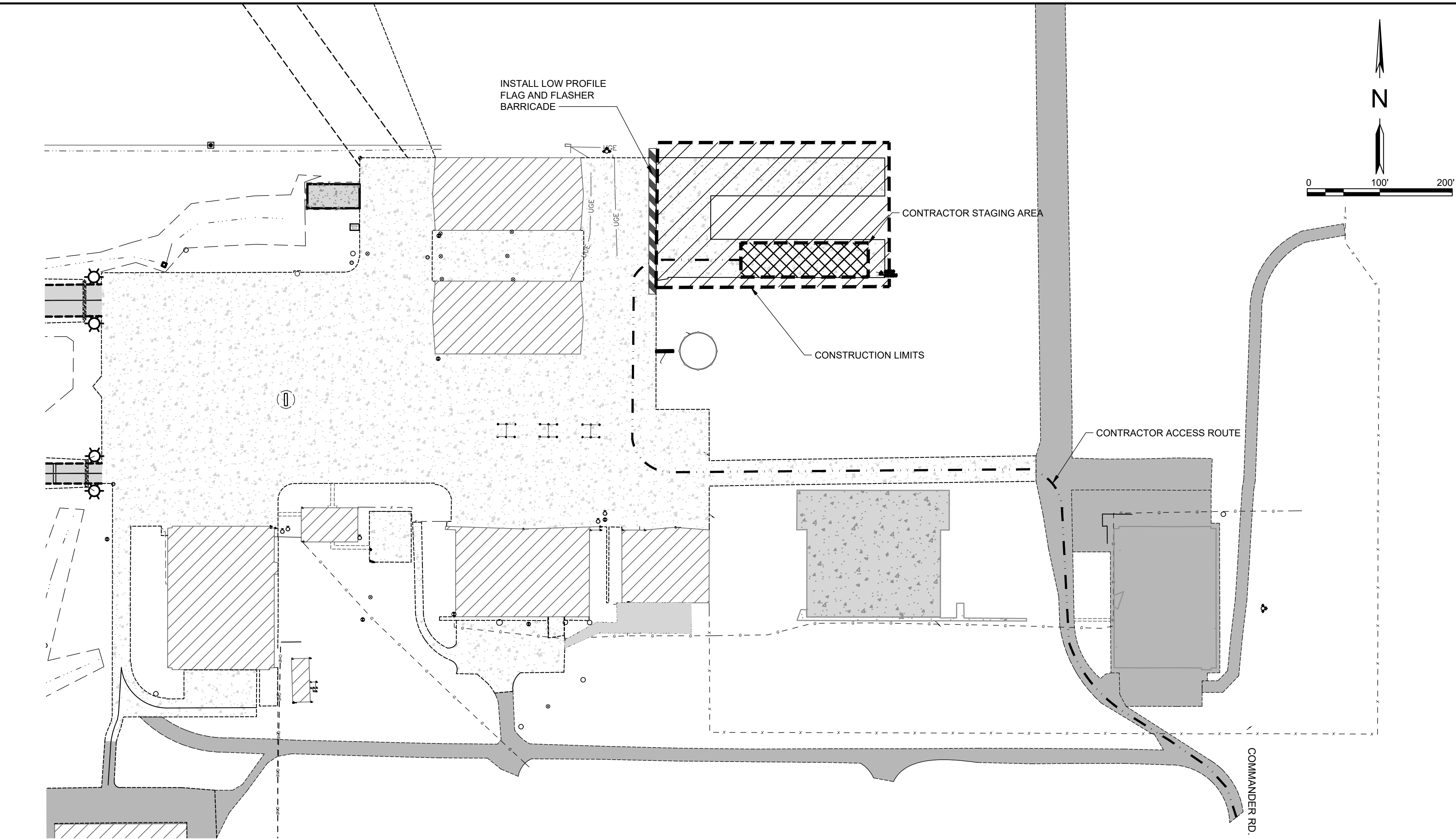
WASTE AND LOOSE MATERIALS MUST NOT BE PLACED IN ACTIVE AIRCRAFT MOVEMENT AREAS. MATERIALS TRACKED ONTO THESE AREAS MUST BE REMOVED CONTINUOUSLY DURING THE PROJECT.

PHASE 1A NOTES:

- 1. PHASE 1A SHALL INCLUDE ALL FLAT WORK AS SHOWN IN THE PLAN, TO INCLUDE GRADING, DRAINAGE, NEW CONSTRUCTION OF ADDITIONAL CONCRETE APRON, HANGAR SLABS AND ASSOCIATED ITEMS.
- 2. PHASE 1A SHALL BE COMPLETED IN 30 CALENDAR DAYS. LIQUIDATED DAMAGES OF \$1,250/CALENDAR DAY SHALL BE CHARGED AFTER TOTAL CONTRACT DAYS FOR THIS PHASE HAVE EXPIRED.

GENERAL PHASING NOTES:

- 1. ENTIRE PROJECT SHALL BE COMPLETED IN 120 CALENDAR DAYS. LIQUIDATED DAMAGES OF \$1,250/CALENDAR DAY SHALL BE CHARGED AFTER TOTAL CONTRACT CALENDAR DAYS FOR THIS PHASE HAVE EXPIRED. THE DAYS ALLOCATED REMAIN THE SAME REGARDLESS OF IF ANY ALTERNATES ARE AWARDED OR NOT.
- 2. THE CALENDAR DAYS THAT ARE ASSIGNED ASSUME THAT BOTH ALTERNATES WILL BE AWARDED. IF ALTERNATES (ONE OR BOTH) ARE NOT AWARDED, THE CALENDAR DAYS FOR THIS PROJECT WILL REMAIN THE SAME.



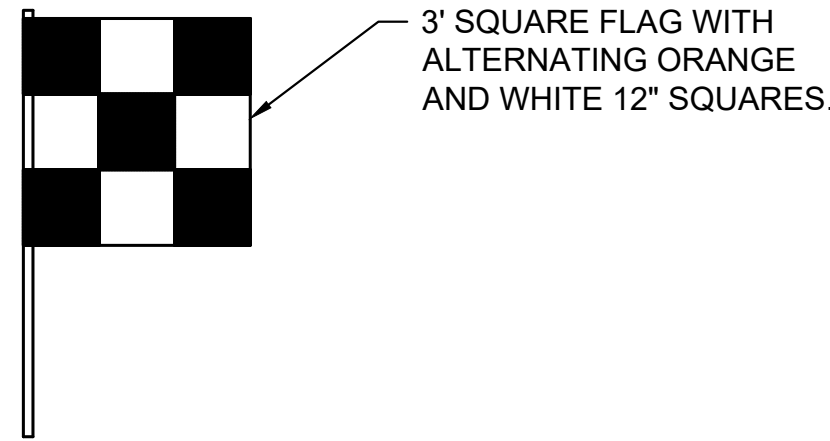
NOTES:

- 1. FLAG AND FLASHER BARRICADES, AS SHOWN ABOVE, SHALL BE FURNISHED, INSTALLED, MAINTAINED, RELOCATED WHEN NECESSARY AND REMOVED BY THE CONTRACTOR ONLY AFTER CONSTRUCTION AREA IS ACCEPTED BY THE ENGINEER AND IS OPEN TO AIRCRAFT TRAFFIC.
- 2. BARRICADES SHALL BE LOCATED AS SHOWN ON THE CONSTRUCTION SAFETY PLANS.
- 3. BARRICADE SHALL BE CHECKED DAILY TO CONFIRM THEY ARE PROPERLY ALIGNED AND IN WORKING ORDER.
- 4. STRIPE SHOWN ON THIS DETAIL FOR REFERENCE ONLY.
- 5. BARRICADES SHALL BE INSTALLED PRIOR TO BEGINNING, AND REMOVED AT THE CONCLUSION OF EACH WORK PERIOD.

1

LOW PROFILE FLAG AND FLASHER BARRICADE

NOT TO SCALE



NOTES:

- 1. FLAGS SHALL BE CONSTRUCTED OF FABRIC AND SHALL BE MOUNTED ON A POLE SUITABLE FOR VEHICLE MOUNTING OR HANDLING BY PERSONNEL.
- 2. ALL VEHICLES AND EQUIPMENT SHALL DISPLAY FLAG OR AMBER FLASHING LIGHTS WHILE ON PROJECT.

2

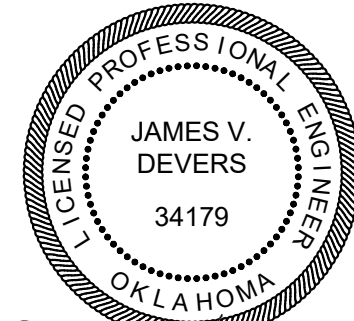
CHECKERED VEHICLE FLAG

NOT TO SCALE

LEGEND

	EXISTING AIRPORT ASPHALT
	EXISTING CONCRETE
	EXISTING BUILDING
	CONTRACTOR ACCESS ROUTE
	CONTRACTOR STAGING AREA
	CONSTRUCTION LIMITS
	LOW PROFILE FLAG AND FLASHER BARRICADE

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James V. Devers
8-2-2023

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Construct T-Hangar

AIP 3-40-0018-022-2023 | CAA-2302

CLIENT

Chickasha Municipal Airport
City of Chickasha
117 N. 4th Street
Chickasha, OK 73018

PROJECT NO.

40186.22

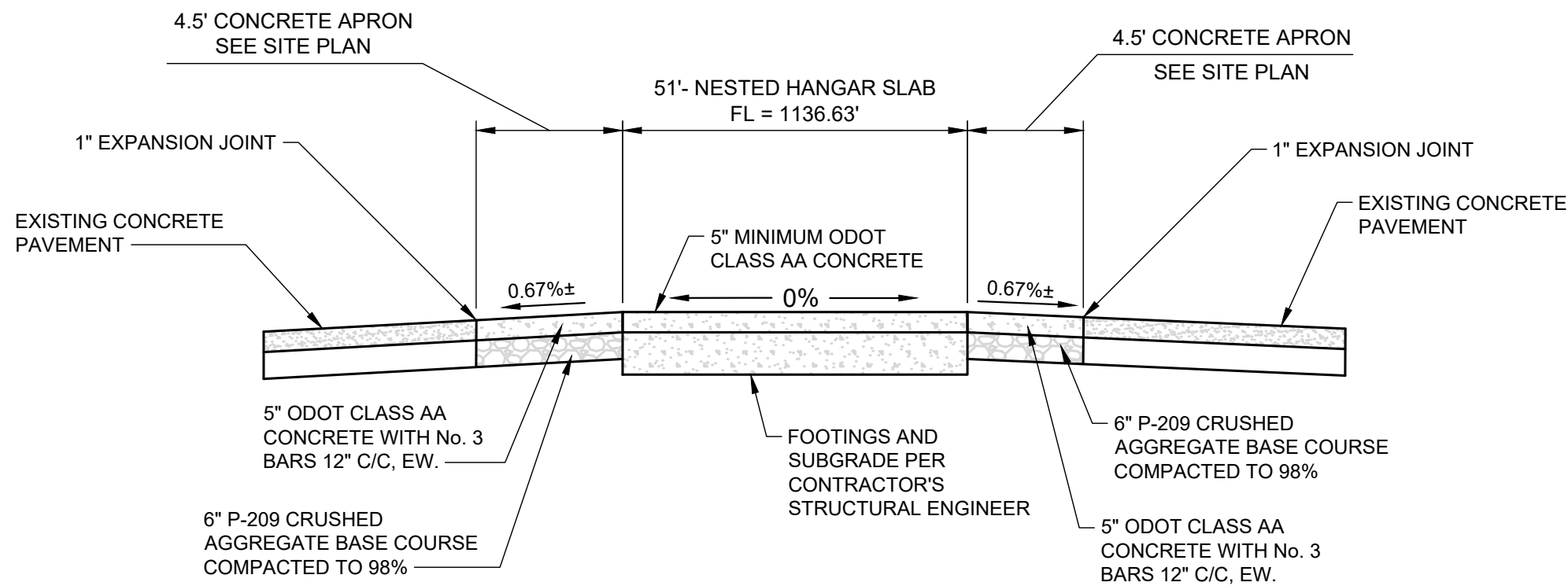
1 8/2/2023 BID SET

DATE DESCRIPTION

Construction
Safety & Phasing
Plan

G-003

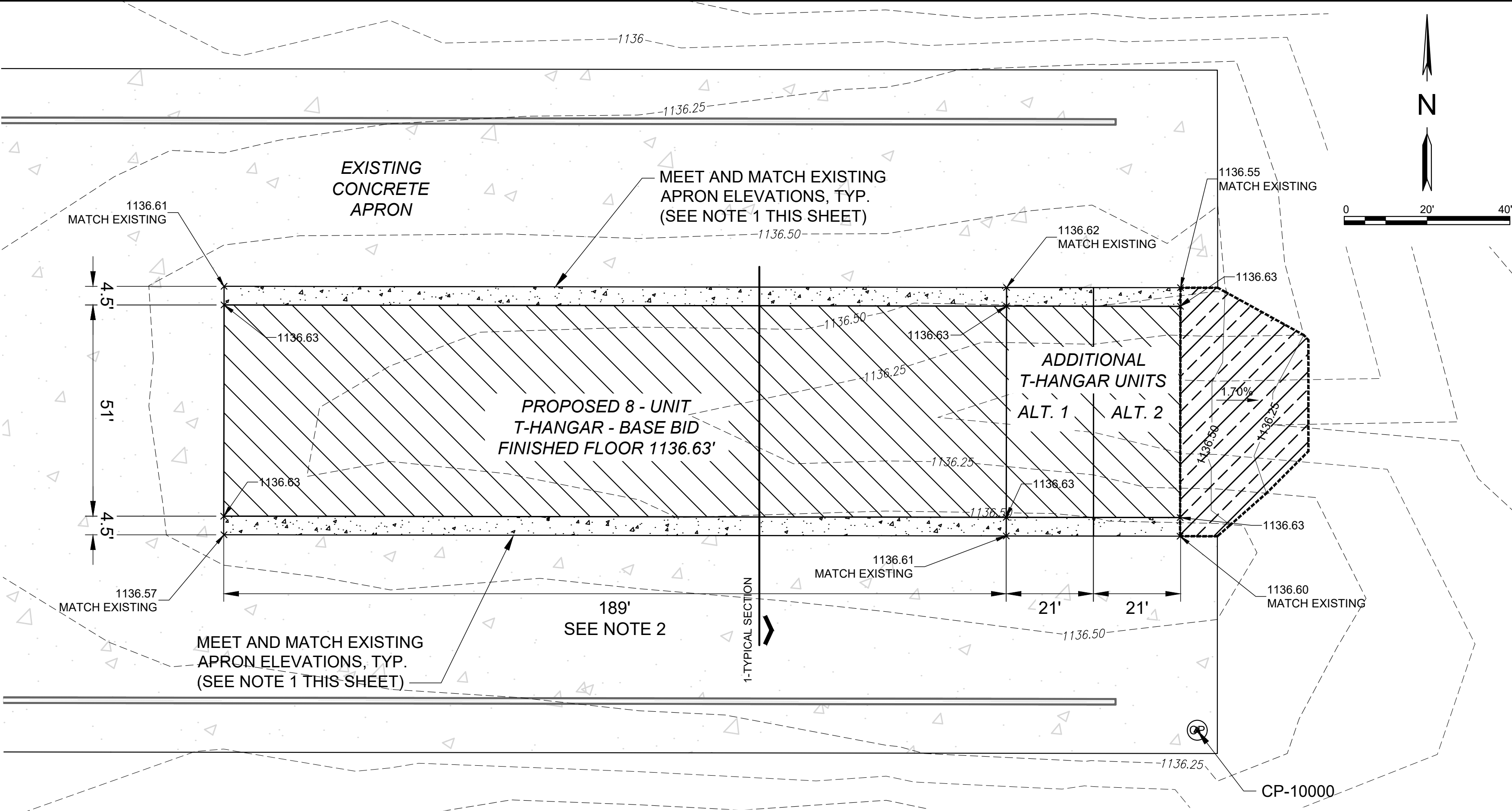
FILE NAME: \\data1\Projects\2022\11929.22\20_CHK_TO2_T-HANGAR\03_DSGN\01_DWG\050_CIVIL\01-101-SITE PLAN.dwg LAYOUT NAME: C-101 PRINTED: Wednesday, August 02, 2023 - 9:22am USER: jdevers



1 TYPICAL SECTION
NOT TO SCALE

SURVEY CONTROL

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
ON-SITE CONTROL				
1	639503.44	1979861.01	1131.24	#5 BAR W/COBB CP CAP
2	639641.67	1979432.46	1133.84	#5 BAR W/COBB CP CAP
52	640549.02	1979562.71	1133.86	#4 BAR W/LEMKE CAP
10000	640127.82	1979350.98	1136.27	CUT X
BENCHMARKS				
51	639791.21	1979120.65	1136.11	BM #5 BAR
50	640546.35	1978919.14	1136.04	BM # 5 BAR
53	639792.19	1979614.32	1132.87	BM CUT SQUARE
54	639877.00	1979113.49	1135.36	BM CUT SQUARE
HORIZONTAL AND VERTICAL DATUM BASED ON CHICKASHA AIRPORT CONTROL MONUMENTS				
HORIZONTAL DATUM: NAD83 (2011), OKLAHOMA STATE PLANE, SOUTH ZONE.				
VERTICAL DATUM: NAVD88				



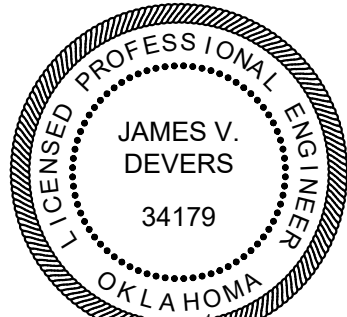
SITE PLAN NOTES

- PROPOSED APRON TO MATCH EXISTING TAXILANE ELEVATIONS WHEN APPLICABLE.
- EXACT DIMENSION TO BE COORDINATED WITH PEMB MANUFACTURER.
- CONTRACTOR TO SUBMIT PROPOSED JOINT LAYOUT PLAN. NEW PAVEMENT OUTSIDE OF BUILDING FOOTPRINT MAY BE INCLUDED IN SAME PLACEMENT AS BUILDING SLAB IF APPROVED BY CONTRACTOR'S ENGINEER, AS LONG AS PROPOSED ELEVATION CHANGES ARE MAINTAINED.

LEGEND

-----	PROPOSED GRADING LIMITS
	PROPOSED SOLID SLAB SODDING
1051.50	PROPOSED 0.25' CONTOUR LINE
	PROPOSED HANGAR
	PROPOSED CONCRETE APRON
1050.75	EXISTING 0.25' CONTOUR LINE
	EXISTING CONCRETE
CP	EXISTING CONTROL POINT

Parkhill



James V. Devers
8-2-2023

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Construct T-Hangar

AIP 3-40-0018-022-2023 | CAA-2302

CLIENT

Chickasha Municipal Airport
City of Chickasha
117 N. 4th Street
Chickasha, OK 73018

PROJECT NO.

40186.22

1 8/2/2023 BID SET

DATE DESCRIPTION

Site Plan

C-101



08/02/2023

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Parkhill
14101 Wireless Way, Suite 350
Oklahoma City, OK 73134
405.832.9900

Construct T-Hanger
AIP 3-40-0018-022-2023

GENERAL NOTES

- A. ALL LIGHTING AND POWER DESIGN ARE SS DIAGRAMS FOR BIDDING PURPOSES ONLY. FINAL DESIGN SHALL BE PROVIDED BY AN ELECTRICAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.
- B. FINISH SLAB ELEVATIONS SHOWN ON ARCHITECTURAL DRAWINGS IS FOR REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR FINAL FLOOR ELEVATION.
- C. BASE BID SHALL BE T-HANGARS 1 THROUGH 8, STORAGE ROOM 1 AND STORAGE ROOM 2. IF ONLY BASE BID IS AWARDED, STORAGE ROOM 2 SHALL BE LOCATED ADJACENT TO UNIT 7.
- D. ALTERNATE NO.1 SHALL ADD A 9TH T-HANGAR UNIT. STORAGE ROOM 2 SHALL BE MIRRORED TO THE NORTH SIDE OF BUILDING ADJACENT TO UNIT 8 IF ONLY ALTERNATE NO.1 IS AWARDED.
- E. ALTERNATE NO.2 SHALL ADD A 10TH T-HANGAR UNIT AND STORAGE ROOM 2 SHALL BE LOCATED ADJACENT TO UNIT 9.
- F. ALL DIMENSIONS ARE FROM CENTER OF COLUMN TO CENTER OF COLUMNS

CODE INFORMATION

IBC 2015

USE GROUP S-1 AIRCRAFT HANGAR

IIB CONSTRUCTION

PROPOSED HANGAR IS ON EXISTING AIRPORT PROPERTY

MAXIMUM SQUARE FOOTAGE FOR TYPE IIB CONSTRUCTION:
17,500 SQ FT (TABLE 506.2)

ACTUAL BUILDING SQUARE FOOTAGE - BASE BID: 9,639 SQ FT
ACTUAL BUILDING SQ FOOTAGE WITH ALTERNATE #1: 10,710 SQ FT
ACTUAL BUILDING SQ FOOTAGE WITH ALTERNATE #1 AND #2: 11,781 SQ FT

OCCUPANT LOADS:
AIRCRAFT HANGARS (500 GSF/OCCUPANT)
STORAGE (300 GSF/OCCUPANT)
HANGAR UNITS -
TYPICAL UNITS = 3 OCCUPANTS PER HANGAR
STORAGE ROOMS = 2 OCCUPANTS PER STORAGE ROOM

COMMON PATH OF TRAVEL IS LESS THAN 100'-0" SINGLE EXIT IS ALLOWED. SEE PATH SHOWN ON ENLARGED PLANS.

ENERGY CODE-
ASHRAE 90.1 - UNCONDITIONED BUILDING, EXEMPT FROM ENVELOPE INSULATION REQUIREMENTS.

KEY NOTES

AS INDICATED BY: (#) →

- 1 41'-6" X 12'-0" CLEAR BI-FOLD HANGAR DOOR, WITH TOP AND BOTTOM RUBBER ASTRAGALS, WITH 3'-0" X 6'-0" STEEL WALK THROUGH DOOR-BY BUILDING MANUFACTURER
- 2 3'-0" X 7'-0" STEEL STANDARD WALK THROUGH DOOR
- 3 12'-0" X 10'-0" OVERHEAD DOOR. BASIS OF DESIGN, OVERHEAD DOOR COMPANY SECTIONAL STEEL DOOR MODEL 430. WHITE, 2" THICK GALVANIZED STEEL EXTERIOR CURTAIN PANELS WITH NO LITES, 16 GAUGE STEEL CENTER AND END STILES AND GALVANIZED STEEL JAMB GUIDES. PULL ROPE OPERATION. INTERNAL MOUNTED SLIDE LOCK
- 5 26 GA WALL PANELS BY BUILDING MANUFACTURER
- 6 29 GA FULL HEIGHT PARTITION SHEETS, ONE SIDE ONLY
- 7 HSS ENDWALL COLUMNS
- 8 HSS PARTITION COLUMNS
- 9 CORNER COLUMNS
- 10 26 GA ROOF PANELS BY BUILDING MANUFACTURER 1:12 SLOPE
- 12 26 GA RAKE TRIM
- 13 26 GA RIDGE CAP
- 14 10" ROOF OVERHANG FROM STEEL CENTERLINE
- 16 DOUBLE DOOR COLUMNS
- 18 QUADPLEX POWER OUTLET LOCATION - 48" AFF
- 19 HANGAR DOOR CONTROLLER
- 20 LED LIGHT FIXTURE, CHAIN MOUNTED AND SUSPENDED FROM STEEL STRUCTURE ABOVE AT 13'-0" AFF MINIMUM, TYPICAL. BASIS OF DESIGN LITHONIA LIGHTING LED LOW BAY FIXTURES, MODEL # MSL-8000LM-L/LV-MVOLT-GZ10-40K-90CRI
- 21 LED LIGHT FIXTURE WITH BATTERY BACKUP, CHAIN MOUNTED AND SUSPENDED FROM STEEL STRUCTURE ABOVE AT 13'-0" AFF MINIMUM, TYPICAL. BASIS OF DESIGN LITHONIA LIGHTING LED WITH BATTERY BACKUP, MODEL # MSL-8000LM-L/LV-MVOLT-GZ10-40K-90CRI-E7W
- 22 EXTERIOR LED WALL PACK WITH PHOTOCELL AND MOTION SENSOR, MOUNT AT 13'-6" AFF ON BUILDING. AT LOCATIONS ON HANGAR DOORS MOUNT ON EXTERIOR OF DOOR AND CONNECT WITH FLEXIBLE CONDUIT TO INSIDE OF BUILDING. BASIS OF DESIGN LITHONIA LIGHTING LED WALL PACK, MODEL #TWP-LED-30C-700-40K-T3M-MVOLT
- 23 SWITCH LOCATION FOR LIGHTING
- 24 200 A 120/240V PANEL. IF ALTERNATE #1 IS NOT SELECTED, LOCATE PANEL IN THE EAST WALL OF STORAGE ROOM 2
- 26 INSTALL AEP-PSO FURNISHED METER BASE. FURNISH AND INSTALL CONDUIT SWEEP TO 5' FROM BUILDING. CONDUIT BEYOND 5' AND ELECTRIC SERVICE TO BE PROVIDED BY OTHERS. COORDINATE ALL REQUIREMENTS WITH AEP-PSO. METER AND PANEL TO BE LOCATED IN STORAGE ROOM 2 REGARDLESS OF ALTERNATE(S) SELECTED.
- 27 50A 240V (NEMA 14-50) RECEPTACLE WITH EXTERIOR RATED COVER, ON EXTERIOR OF HANGAR. LOCATE RECEPTACLE ON THE EAST WALL OF STORAGE ROOM 2.

CLIENT

City of Chickasha
Chickasha Municipal Airport
117 N 4th Street
Chickasha, Oklahoma 73018

PROJECT NO.

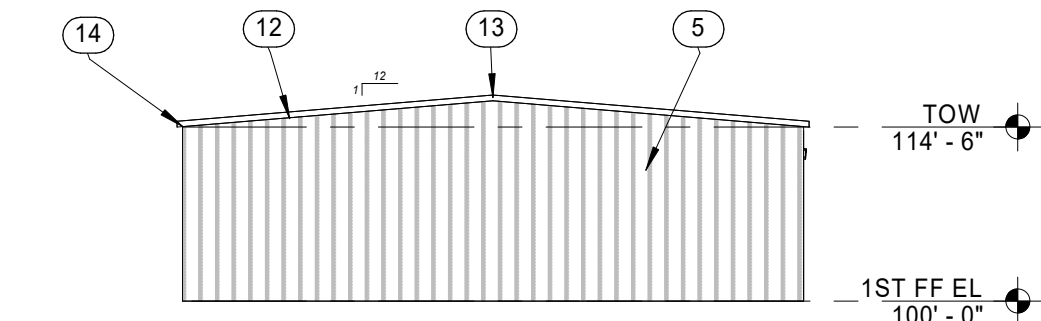
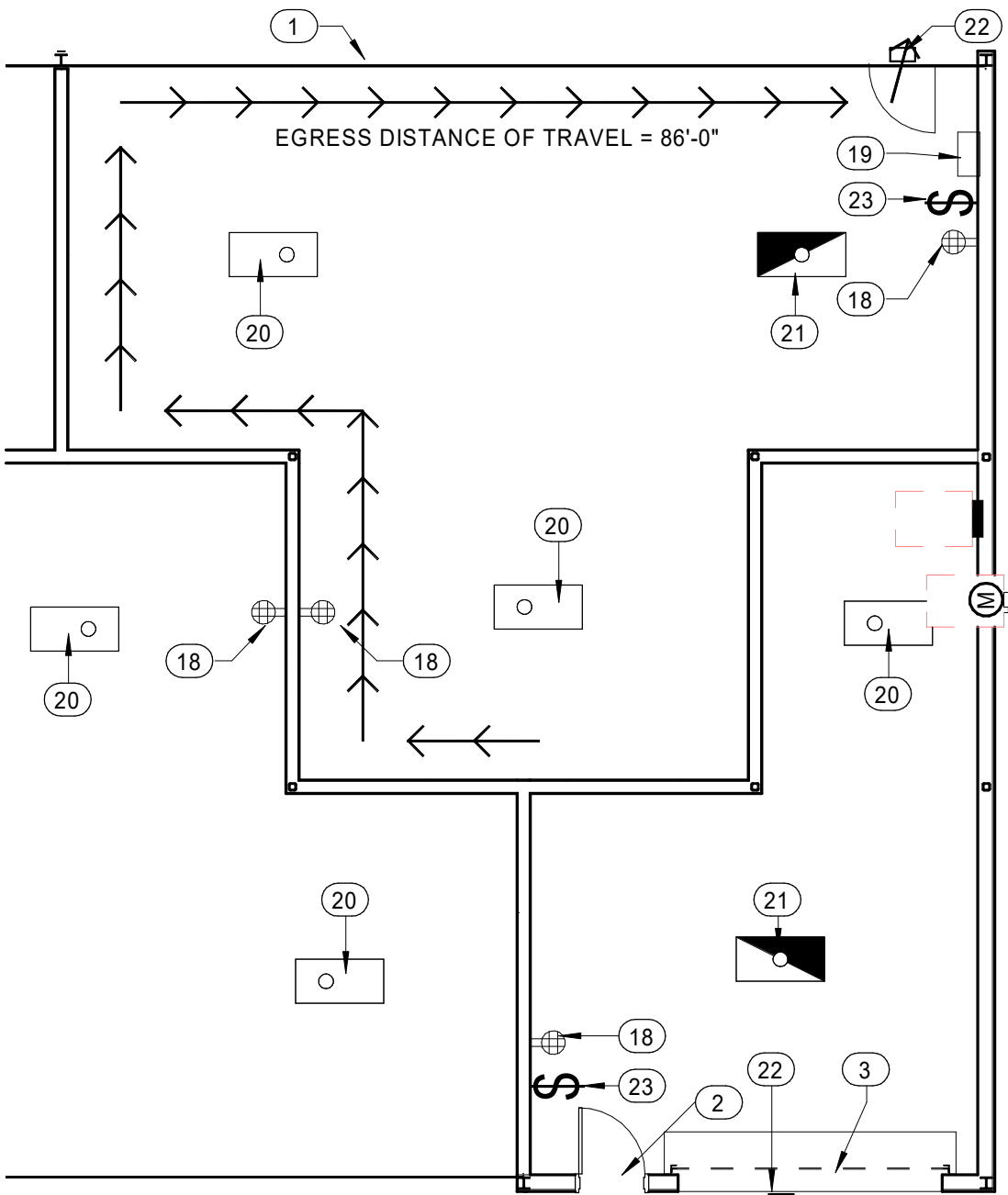
1192922.20

08/02/2023 BID SET

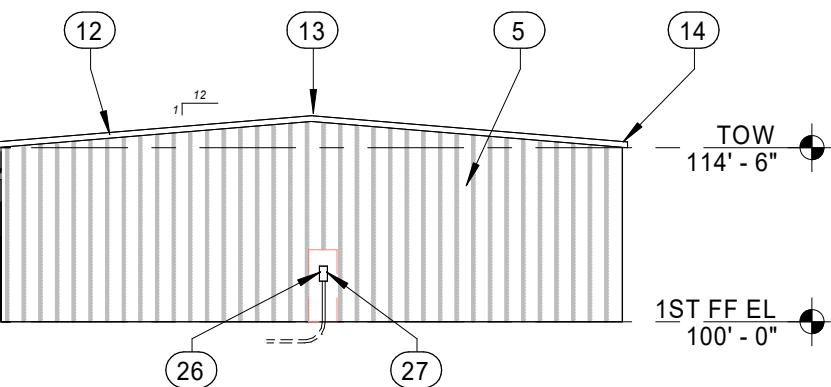
DATE DESCRIPTION

Floor Plan and Elevations

A-111

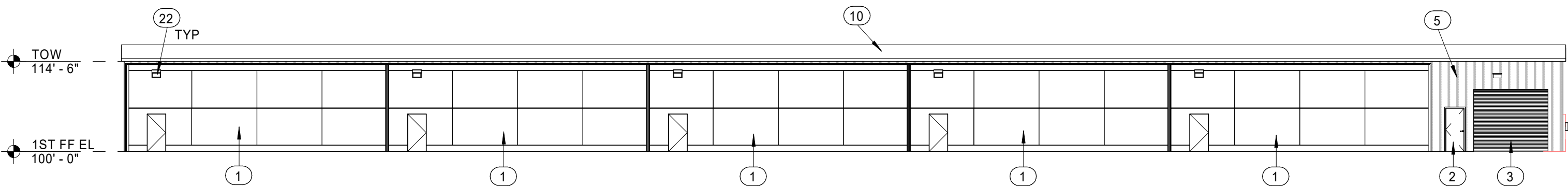


D3 EXTERIOR ELEVATION - WEST
1/16" = 1'-0"

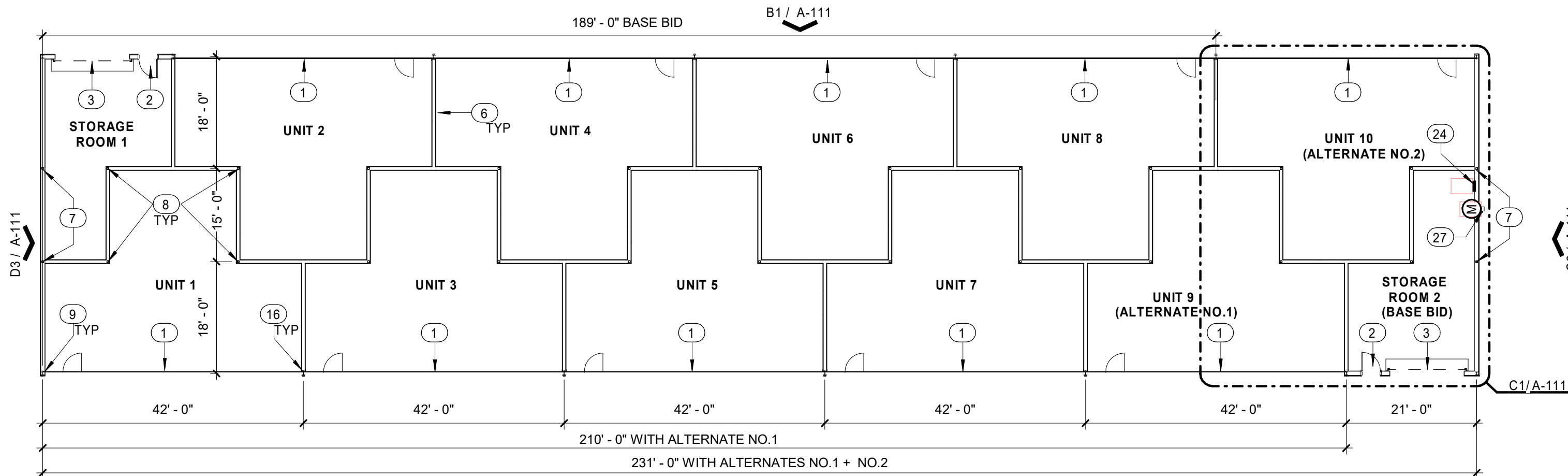


C3 EXTERIOR ELEVATION - EAST
1/16" = 1'-0"

C1 ENLARGED TYPICAL HANGAR PLAN
1/8" = 1'-0"



B1 EXTERIOR ELEVATION - SOUTH / NORTH
1/16" = 1'-0"



A1 ANNOTATED AND DIMENSIONED FLOOR PLAN
1/16" = 1'-0"



PROJECT MANUAL

CHICKASHA MUNICIPAL AIRPORT

Construct T-Hangar

Chickasha, Oklahoma

Parkhill, Smith & Cooper, Inc.
14101 Wireless Way, Suite 350
Oklahoma City, OK 73134
405.832.9900
CA #4935

August | 2023

Parkhill Project #1192922.20

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DESIGN PROFESSIONAL RESPONSIBILITY

The Specification Sections authenticated by my seal and signature are limited to the following:

PART 2 – GENERAL CONSTRUCTION ITEMS

Item C-105 Mobilization

PART 4 – BASE COURSES

Item P-209 Crushed Aggregate Base Course

PART 9 – MISCELLANEOUS

Item P-605 Joint Sealants for Pavements

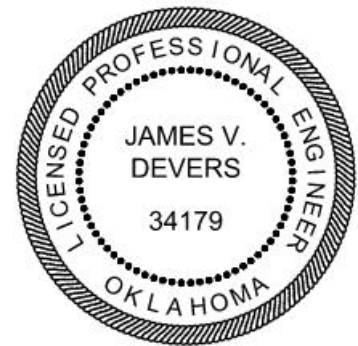
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CHAPTER 400 – GENERAL REQUIREMENTS FOR SURFACES

Section 414 – Portland Cement Concrete Pavement

CHAPTER 700 – MATERIALS

Section 701 – Portland Cement Concrete



James V. Devers
8-2-2023

DESIGN PROFESSIONAL RESPONSIBILITY

The Specification Sections authenticated by my seal and signature are limited to the following:

DIVISION 13 - SPECIAL CONSTRUCTION

13 34 19 Pre-Engineered Metal Aircraft Hangars



NOTICE TO BIDDERS

There will be a Prebid Conference concerning this Project at 10:00 AM, August 23, 2023, in the Terminal Building 2344 Beechcraft Rd., Chickasha Municipal Airport, Chickasha, OK 73018.

Attendance at the Prebid Conference is MANDATORY. Bids will NOT be accepted from Contractors who DO NOT have a representative attending the Prebid Conference. No Plans, Specifications, or Bid Documents will be issued after the Prebid Conference. All Bidders must visit and inspect the construction site and be familiar with the physical characteristics and conditions at the construction site.

For eligibility to Bid Project, Contractors must be listed:

- 1. on official Bidder List by obtaining formal set of Plans and Specifications from Parkhill;
and**
- 2. as an attendee of mandatory Prebid Conference.**

Bids received from Contractors not meeting these requirements will be returned unopened.

Toby J. Baker, PE

END OF NOTICE TO BIDDERS

SOLICITATION FOR BIDS

Notice is hereby given that the City of Chickasha will receive sealed Bids in the office of the City Clerk, 2nd Floor of the City Hall, 117 N. 4th St., Chickasha, OK 73018 until 10:00 AM Local Time on August 30, 2023. Said bids will be opened immediately thereafter in the 2nd floor conference room for:

**Construct T-Hangar
AIP 3-40-0018-022-2023
Bid No. CAA-2302
CHICKASHA MUNICIPAL AIRPORT
Chickasha, Oklahoma**

Bids shall be made in accordance with Solicitation for Bids, Information to Bidders, Plans, Specifications, and Bidder's Proposal, on file and available for examination at the Office of the City Clerk in City Hall, Chickasha, Oklahoma, and made part of this notice as though fully set forth herein. A PDF (hard copies not provided) may be obtained from Parkhill, 14101 Wireless Way, Suite 350, Oklahoma City, Oklahoma 73134, 405.832.9900, at no charge.

Bids filed with the City Clerk shall be publicly opened and considered by the City at time stated herein. Bidder must supply all information required by Bid/Proposal Form.

This Project is subject to the following requirements as referenced in the Special Provisions:

- Buy American Preference (Reference 49 USC § 50101).
- Foreign Trade Restrictions.
- Davis Bacon (Reference: 2 CFR § 200 Appendix II(D)).
- Affirmative Action (Reference: 41 CFR part 60-4. Executive Order 11246).
- Governmentwide Debarment and Suspension (Reference: 2 CFR part 180 (Subpart C), 2 CFR Part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility).
- Government Requirements for Drug-free Workplace.
- Nonsegregated Facilities Requirement (Reference: 41 CFR § 60-1.8).

Sponsor, in accordance with Provisions of Title VI of Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d to 2000d-4) and Regulations, hereby notifies all bidders it will affirmatively ensure any Contract entered into pursuant to this Advertisement, Disadvantaged Business Enterprises (DBE) will be afforded full and fair opportunity to submit bids in response to this invitation and not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

- Title VI Clauses for Compliance with Nondiscrimination Requirements (Source: Appendix A of Appendix 4 of FAA Order 1400.11, Nondiscrimination in Federally Assisted Programs at the Federal Aviation Administration).
- Title VI List of Pertinent Nondiscrimination Statutes and Authorities (Source: Appendix E of Appendix 4 of FAA Order 1400.11, Nondiscrimination in Federally Assisted Programs at the Federal Aviation Administration).

It is the Department of Transportation (DOT) policy that DBEs, as defined in 49 CFR Part 26, shall have the maximum opportunity to participate in performance of contracts financed in whole or in part with Federal funds.

All Bidders/Proposers shall make good faith efforts, as defined in Appendix A of 49 CFR Part 26, Regulations of the Office of the Secretary of Transportation, to subcontract 3.0 percent of the prime contract dollar value to small business concerns owned and controlled by socially and economically disadvantaged individuals (DBE). If Bidder/Proposer for this solicitation qualifies as a DBE, contract goal shall be deemed met. Individuals rebuttably presumed to be socially and economically disadvantaged include women, Blacks, Hispanics, Native Americans, Asian-Pacific Americans, and Asian-Indian Americans. Apparent successful Bidder/Proposer must submit information concerning DBEs to participate in this contract. Information will include name and address for each DBE, description of work to be performed by each named firm, and dollar value of contract (subcontract). If Bidder/Proposer fails to achieve contract goal as stated herein, they must provide documentation demonstrating good faith efforts in attempting to do so. Bid/Proposal failing to meet these requirements will be considered non-responsive. For Contracts \$50,000 or more, Contractor with 50 or more employees and subcontractors with 50 or more employees and who may be awarded a subcontract of \$50,000 or more, will be required to maintain an affirmative action program within 120 days of Contract commencement.

Bids/Proposals received more than 96 hours, (excluding Saturdays, Sundays, and holidays), before set time for opening bids as well as Bids/Proposals received after set time for opening of bids, will not be considered and be returned unopened.

Cashier's check, certified check, surety bond, or irrevocable letter of credit in 5 percent of Bid shall accompany sealed Bid/Proposal of each Bidder/Proposer. Deposits will be returned to unsuccessful Bidder(s)/Proposer(s).

The City of Chickasha reserves the right to reject any/all Bids and waive any/all informalities. Upon receipt of acceptable Bid/Proposal, Contract will be awarded within ninety (90) days after opening Bids/Proposals and written Contract executed within 10 days thereafter.

A Prebid Conference concerning this Project will be held at 10:00 AM, August 23, 2023, in the Terminal Building 2344 Beechcraft Rd., Chickasha Municipal Airport, Chickasha, OK 73018. **Attendance at Prebid Conference is MANDATORY. Bids will NOT be accepted from contractors who do NOT have a representative in attendance. No Plans, Specifications, or Bid Documents will be issued after Prebid Conference. All Bidders/Proposers must visit and inspect construction site and be familiar with site physical characteristics and conditions.**

For eligibility to bid this Project, contractors must be listed:

- on official Bidder List by obtaining an official set of Plans and Specifications from Parkhill;
- AND
- as an attendee of mandatory Project Prebid Conference.

Bids received from Contractors not meeting these requirements will be returned unopened.
City of Chickasha

END OF SOLICITATION FOR BIDS

INFORMATION FOR BIDDERS

1. PROPOSALS

- 1.01 Preparation: Bidder shall submit Proposal and affidavits on furnished forms. Correctly fill in all blank spaces in Proposal forms and Bidder shall state prices, written in ink, both words and numerals, proposed Work contemplated, or furnish materials required. Such prices shall be written distinctively legible. In case of conflict between words and numerals, words shall govern.
- A. If an individual submits Proposal, individual's name must be signed by individual or duly authorized agent and post office address given.
 - B. If firm or partnership submits the Proposal, name and post office address of each member must be given and proposal signed by a member of firm or partnership as person duly authorized.
 - C. If Proposal is made by a company or corporation, company or corporation is chartered, business address must be given, and Proposal signed by an official or agent duly authorized. Power of attorney, authorizing agents, or others to sign proposals must be properly certified, in writing, and on file with Owner.
- 1.02 Affidavits and Bidding Bills:
- A. Bidders shall complete and sign Non-Collusion Affidavit, Business Relationships Affidavit, and Certification of Bidder Regarding Equal Employment Opportunity forms included with Proposal. Bids containing incomplete/unsigned affidavits/certificate will be rejected.
 - B. Bidders and successful Contractor will be required to comply with Public Competitive Bidding Act of 1974, Title 61, Oklahoma Statutes, Sections 101 through 136, both inclusive. Copies of this bill are on file in the Architect/Engineer office where they may be read by all bidders.
- 1.03 Proposal Guarantee: Proposals will not be considered unless accompanied by certified check, cashier's check, acceptable bidder bond, or irrevocable letter of credit in 5 percent of base bid, made payable to Owner. Proposal guaranty is required as evidence of good faith and to guarantee, if awarded the Contract, Bidder will execute required contracts and bonds within required time.
- 1.04 Filing: Owner will not consider Proposals unless they are filed in sealed envelopes, within time limit for receiving proposals, and as stated in the Advertisement. Proposal shall be plainly marked on envelope with "PROPOSAL" and Project name.
- 1.05 Modification: Any Bidder may modify Bid by withdrawing and modifying Bid any time prior to scheduled closing time for receipt of Bids, if Owner receives modified bid prior to said closing time.
- 1.06 Irregular Proposals: Proposals will be considered irregular if they show omission, alterations of forms, additions/conditions not called for, unauthorized alternate bids, irregulars of any kind, or unsigned by Bidder's authorized person. However, Owner reserves the right to waive technicalities as to changes, alterations, or reservations and make award in the best interest of Owner.
- 1.07 Rejection: Owner reserves the right to reject any/all proposals, and all proposals submitted are subject to Owner reservation. Proposals may be rejected for any of the following specific reasons:
- A. Proposals received after time limit for receiving proposals as stated in Advertisement.
 - B. Proposal contain any irregularities.

-
- 1.08 Bidder Disqualification: Bidders may be disqualified and proposal not considered for any of the following specific reasons:
- A. Where more than one proposal for an individual, firm, partnership, or corporation is filed under same or different names and are not identical in every respect.
 - B. Bidder in arrears on existing contracts, interested in any litigation against Owner, or defaulted in previous contract.
 - C. Lack of competency, as revealed by financial statement, experience, equipment questionnaires, etc.
 - D. Uncompleted Work, which, in Owner judgment, will hinder or prevent prompt completion of additional Work, if awarded.

2. CONTRACTOR QUALIFICATIONS

- 2.01 Attention is called to the fact that Bidder, in signing Proposal, represents financial ability and experience to carry Work through several stages, and must show evidence of such ability to be eligible to receive Contract award. Each Bidder with Bid shall furnish a financial statement and experience statement in accordance with form herewith attached, and failing in this, shall not be entitled to further consideration. Owner reserves the right to award Contract to whose statements reveal qualified by experience and finances to successfully carry out Work.
- 2.02 Data enclosed in these statements shall be respected as confidential and each statement will, upon Bidder request, be returned to Bidder except that of successful Bidder.

3. SURETY BONDS

- 3.01 Surety Bonds required as specified.

4. SUBCONTRACT APPROVAL

- 4.01 Owner must approve subcontractors proposed for any part of Work in writing within 30 days after Contract award.

5. CONTRACT DOCUMENTS

- 5.01 Bidders are required to become fully informed of conditions relating to construction and labor under which the Work will be performed, and Contractor must employ, as far as possible, methods and means in carrying out Work to not cause interruption or interference with other Contractor(s).

6. CONSENT TO ASSIGNMENT

- 6.01 Contractor shall obtain prior written consent of Sponsor to any proposed assignment of any interest in or part of Contract.

7. DRAWING, SPECIFICATION, AND CONTRACT DOCUMENT INFORMATION

- 7.01 Submit questions if contemplating submitting a Bid for proposed contract and in doubt as to true meaning of any part of Drawings, Specifications, or other proposed documents, to Architect/Engineer:

Toby J. Baker, P.E.
Parkhill
14101 Wireless Way Suite 350
Oklahoma City Oklahoma 73134
405.832.9900; 405.843.4687 (fax)

as written or phone request for interpretation of any item on Plans or Specifications. Person submitting such request will be responsible for prompt delivery. Interpretation of proposed documents will be made only by Addendum prepared and duly issue by Architect/Engineer. A copy of such Addendum will be mailed, faxed, emailed, or delivered to each person receiving a set of such documents. Owner will not be responsible for other explanations or verbal interpretations of proposed documents.

8. EXAMINATION OF PREMISES

- 8.01 Before submitting proposal for Work, Bidder must examine the premises, confirm all utility locations, sizes, pressures, etc., and be confident as to existing conditions under obligation to operate.

9. CONTRACTOR INSURANCE

- 9.01 Liability Insurance Requirements:

- A. Bidder shall provide with his Contract a listing of both automobile and personal liability insurance coverage currently in force as well as a copy of Certificate of Insurance as verification of that coverage. In addition, Bidder shall provide a statement of premium cost issued by agent or insurance carrier for that coverage.
- B. If Owner determines low Bidder's coverage in force is inadequate, Owner may require low Bidder to procure additional coverage in amounts specified by Owner. Cost of premiums for additional coverage shall be paid by Owner as a reimbursement under the contract.
- C. If after diligent effort, low Bidder is unable to procure such additional coverage as required by Owner, Owner shall provide such additional coverage, naming Contractor as insured or, at Owner option, reduce amount of additional coverage required or waive any requirements for additional coverage.

- 9.02 Third-Party Coverage:

- A. If Bidding Documents require Contractor to name Consultant/Owner as additional insured, Bidder shall show premium cost for additional insured in Proposal in item for additional coverage. Amount shown in bid item for additional premium cost shall be amount of additional premium above premium for coverage shown in Certificate of Insurance submitted with Bid.
- B. If Owner requires additional coverage, Owner shall pay additional premium cost for third-party coverage above amounts shown in Certificate of Insurance as reimbursement under the contract.

10. ELECTRICAL ENERGY OR OTHER HAZARDOUS ENERGY SOURCES

- 10.01 For Projects involving electrical energy or other hazardous energy sources, Contractor shall submit a copy of their Lockout/Tagout program to meet requirements of 29 CFR 1910.331, Safety-Related Work Practices (OSHA). During electrical work, an unannounced inspection is recommended by Airport Sponsor or agent to determine if Lockout/Tagout program is followed. Immediate action shall be taken to correct noncompliance including suspension of Work, if necessary.

11. REQUIRED CONTRACT PROVISIONS

- 11.01 For Airport Improvement Program and Obligated Sponsors required contract provisions, refer to FAA Mandatory Contract Provisions.

12. OTHER DBE REQUIREMENTS

- 12.01 Contract Assurance: Each Contract Owner signs with Contractor (and each subcontract the Prime Contractor signs with subcontractor) must include the following clause:
- A. Contractor or subcontractor shall not discriminate on basis of race, color, national origin, or sex in performance of this Contract. Contractor shall carry out applicable requirements of 49 CFR Part 26 in award and administration of DOT-assisted contracts. Contractor failure to carry out these requirements is a material breach of contract, which may result in termination of this Contract or such other remedy as recipient deems appropriate.
- 12.02 Prompt Payment: Prompt payment clause is required in each DOT-assisted prime contract as follows:
- A. Prime Contractor agrees to pay each subcontractor under this prime Contract for satisfactory performance of Contract no later than 10 days from receipt of each payment Prime Contractor receives from the City. Prime Contractor further agrees to return retainage payments to each subcontractor within 10 days after subcontractor work is satisfactorily completed. Any delay or postponement of payment from referenced time frame may occur only for good cause following written approval of the City. This clause applies to both DBE and non-DBE subcontractors.
- 12.03 Bidder List: City will maintain a DBE bidders list.
- 12.04 Good Faith Efforts:
- A. 49 CFR Part 26 requirements, regulations of U.S. DOT, apply to this contract. It is City policy to practice nondiscrimination based on race, color, sex, or national origin in performance award of this Contract. All firms qualifying under this solicitation are encouraged to submit Bid/Proposals. Award of this Contract will be conditioned upon satisfying requirements of this Bid Specification. Requirements apply to all Bidders/Offerors including those who qualify as a DBE. DBE Contract goal of 3.0% has been established for this Contract. Bidder/Offeror shall make good faith efforts, as defined in Appendix A, 49 CFR Part 26 (see Proposal Attachment 1), to meet the contract goal for DBE participation in performance of this Contract.
 - B. Bidder/Offeror will be required to submit:
 - (1) names and addresses of DBE firms who will participate in the Contract;
 - (2) description of Work each DBE firm will perform;
 - (3) participation dollar amount of each DBE firm participating;

-
- (4) written documentation of Bidder/Offeror commitment to use a DBE subcontractor whose participation it submits to meet Contract goal;
 - (5) written confirmation from DBE regarding contract participation as provided in commitment made under (4); and
 - (6) if Contract goal is not met, evidence of good faith efforts.
- C. DBE participation in this Contract may be in the form of a prime Contract, subcontract, joint venture, or other arrangement that qualifies under 49 CFR Section 26.55, "*How is DBE participation counted toward goals?*" or 26.53 (g), both included as Attachment 2 to the Proposal.

END OF INFORMATION FOR BIDDERS

**Construct T-Hangar
AIP 3-40-0018-022-2023
Bid No. CAA-2302**

**Chickasha Municipal Airport
CHICKASHA, OKLAHOMA**

**PROPOSAL SUMMARY SHEET
OF**

Company Name of Bidder

Base Bid\$

Alternate No. 1\$

Alternate No. 2\$

Check List:

Bidders shall fill in Yes or No

1. Two copies of Proposal are enclosed
2. All items in the Base Bid and Alternates (if applicable) are bid
3. Addendum(a) receipt is acknowledged
4. 5% Bid Security is enclosed
5. Proposal is signed
6. Noncollusion Affidavit is signed
7. Business Relationship Affidavit is signed
8. Equal Employment Opportunity Certificate is signed
9. Bidders' Qualifications Statement is enclosed
10. ALL DBE forms are enclosed

Two copies of this Proposal are to be filed in the office of the City Clerk, 2nd Floor of the City Hall, 117 N. 4th St., Chickasha, OK 73018 by 10:00 AM on August 30, 2023.

PROPOSAL

Construct T-Hangar - AIP 3-40-0018-022-2023, Bid No. CAA-2302, Chickasha Municipal Airport, Chickasha, Oklahoma

Date

Proposal of _____, a corporation organized and existing under the laws of the State of _____, with principal offices at _____.

Proposal of _____, a partnership consisting of _____

with offices at _____.

Proposal of _____, an individual trading as _____ with offices at _____.

TO:

Honorable Mayor and City Council
City of Chickasha
117 N. 4th St.
Chickasha, Oklahoma 73018

Honorable Mayor and City Council:

Having carefully examined the Plans and Specifications and other Contract Documents, and having fully investigated the location, character, and extent of the Work to be done and the materials to be furnished in connection with the construction of the improvements as set forth in the Plans and Specifications and being familiar with the type of construction work involved, the undersigned hereby proposes to furnish all tools, appliances, equipment, materials, labor, and all minor items necessary to provide a finished Project, ready for operation and to construct and complete the Project in a thorough, workmanlike and satisfactory manner in accordance with the Plans and Specifications therefore and the Documents attached hereto, to the satisfaction of Engineer representing Owner and to the satisfaction and acceptance of the Work by Owner for the following unit prices or for the following lump sum per unit as set out herein. Quantities shown are approximate and are for comparison of Bids and to determine approximate amount of the Contract. The amount bid included all payment due for full performance of the Project Work.

**Construct T-Hangar, AIP 3-40-0018-022-2023,
Chickasha Municipal Airport, Chickasha, Oklahoma**

It is understood that the undersigned is bidding on the unit prices stated below:

Item No.	SPEC No.	Item Description and Estimated Quantity	Unit Price	Estimated Amount
BASE BID				
1.	C-105-6.1	Mobilization 1 LS		
			Dollars (\$_____)	\$_____
2.	Special	Low Profile Flag and Flasher Barricades 1 LS		
			Dollars (\$_____)	\$_____
3.	13 34 19	Construct 8-Unit Nested T-Hangar 1 LS		
			Dollars (\$_____)	\$_____
4.	Special	Third Party Insurance 1 LS		
			Dollars (\$_____)	\$_____
TOTAL BASE BID			\$_____	
ALTERNATE NO. 1				
5.	13 34 19	CONSTRUCT ADDITIONAL T-HANGAR UNIT (UNIT 9) 1 LS		
			Dollars (\$_____)	\$_____
TOTAL ALT. NO. 1			\$_____	

**Construct T-Hangar, AIP 3-40-0018-022-2023,
Chickasha Municipal Airport, Chickasha, Oklahoma**

It is understood that the undersigned is bidding on the unit prices stated below:

Item No.	SPEC No.	Item Description and Estimated Quantity	Unit Price	Estimated Amount
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ALTERNATE NO. 2

6. 13 34 19 CONSTRUCT ADDITIONAL T-HANGAR UNIT (UNIT 10)

1 LS

_____ Dollars (\$_____) \$_____

TOTAL ALT. NO. 2 \$_____

DISPUTE RESOLUTION PROGRAM

Any dispute or disagreement which may arise between a DBE and a Prime Contractor related to that DBE's participation in or exclusion from this Project, or any adverse action of non-action taken by a Contractor with regards to a DBE may be subject to the DBE Dispute Resolution Program. Contractor and the DBE shall participate in good faith to resolve the dispute or disagreement.

The Bidder (Proposer) shall complete the following statement by checking the appropriate space.

The Bidder (Proposer) has _____ has not _____ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Orders 10925 or 11114 or 11246.

The Bidder (Proposer) has _____ has not _____ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the Bidder (Proposer) has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the bidder (proposer) shall submit a compliance report on Standard Form 100, "Employee Information Report EEO-1," prior to the award of Contract.

Standard Form 100 is normally furnished Contractors annually, based on a mailing list currently maintained by the Joint Reporting Committee. In the event a Contractor has not received the form, he may obtain it by writing to the following address:

Joint Reporting Committee
1800 G Street
Washington, D.C. 20506

Certification Regarding Foreign Trade Restrictions (49 CFR Part 30)

Contractor or subcontractor, by submission of an offer and/or execution of a Contract, certifies that it:

- a. is not owned or controlled by one or more citizens or nationals of a foreign country included in the list of countries that discriminate against the U.S. firms published by the Office of the United States Trade representatives (USTR);
- b. has not knowingly entered into any contract or subcontract for this Project with a Contractor 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 foreign country on said list.
- c. has not procured any product or 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 subcontract who is unable to certify to the above. If 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; Owner may direct cancellation of the contract at no cost to the Government.

Further, 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. Contractor may rely upon the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

Contractor shall provide immediate written notice to the sponsor if 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 immediate written notice to 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 Contractor or subcontractor knowingly rendered an erroneous certification, Owner may direct cancellation of the contract or subcontract or default as no cost to the Government.

Nothing contained in the forgoing shall be construed to require established 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 are not required to exceed that which is normally possessed by a pursuant 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.

WAGE RATES

All labor employed by Contractor will be paid not less than the minimum wage set out in the Specifications for each particular class of labor.

BUY AMERICAN PREFERENCE (Reference: 49 USC § 50101)

NATIONAL BUY AMERICAN WAIVERS WEBSITE

The FAA Office of Airports maintains a list of equipment that has received waivers from the Buy American preference requirements on the http://www.faa.gov/airports/aip/buy_american/ website. Products listed on the Nationwide Buy American Waivers Issued list do not require a project specific Buy American preference requirement waiver from the FAA.

The mandatory language that must be used on AIP funded project contracts is as follows:

BUY AMERICAN CERTIFICATION

Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP-funded projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

A Bidder or Offeror must submit the appropriate Buy America certification (below) with all bids or offers on AIP funded projects. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive.

Certificate of Buy American Compliance for Manufactured Products

(Non-building construction projects, equipment acquisition projects)

As a matter of bid responsiveness, the Bidder or Offeror must complete, sign, date, and submit this certification statement with their Proposal. The Bidder or Offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X."

- ☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- Only installing steel and manufactured products produced in the United States, or;
 - Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing, or;
 - Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- To provide to Owner evidence that documents the source and origin of the steel and manufactured product.
- To faithfully comply with providing US domestic product.
- To furnish US domestic product for any waiver request that the FAA rejects.
- To refrain from seeking a waiver request after establishment of the Contract, unless extenuating circumstances emerge that the FAA determines justified.

- ☐ The Bidder or Offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent Bidder or Offeror with the apparent low bid agrees:

- To the submit to Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
- That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the Proposal.
- To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
- To refrain from seeking a waiver request after establishment of the Contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver - The cost of the item components and subcomponents produced in the United States is more than 60% of the cost of all components and subcomponents of the "item." The required documentation for a Type 3 Waiver is:

- a) Listing of all product components and subcomponents that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).
- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver - Total cost of Project using US domestic source product exceeds the total Project cost using non-domestic product by 25%. The required documentation for a Type 4 Waiver is:

- a) Detailed cost information for total project using US domestic product.
- b) Detailed cost information for total project using non-domestic product.

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date

Signature

Company Name

Title

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion (49 CFR Part 29)

The Bidder (Offeror) certifies, by submission of this Proposal or acceptance of this Contract, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal or State department or agency. It further agrees that 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.

The City of Chickasha reserves the right to take ninety (90) days from the bid date to award the Contract(s). This Bidder agrees that, if his proposal is accepted, he will enter into a contract with the City of Chickasha within ten (10) days after the acceptance of his bid; and he further agrees to commence Work within ten (10) calendar days after written Notice to Proceed is issued and to complete the Work within:

	Working Days	Liquidated Damages per Calendar Day
Base Bid	120	\$1250

Enclosed is Bidder's (Bid Bond), (Certified Check), (Cashier's Check) or (Irrevocable Letter of Credit) in the amount of 5% of the total Bid:

_____ Dollars (\$_____).
(Enter amount of guaranty)

We hereby acknowledge receipt of Addendum(a) No. _____.

Street or PO Box

Name of Firm

City, State and Zip

Signature

Phone

Typed Name

Fax

Title

THESE TWO AFFIDAVITS MUST BE EXECUTED FOR THE BID TO BE CONSIDERED:

A. Noncollusion Affidavit

STATE OF _____)
) SS.
COUNTY OF _____)

I, _____ of lawful age, being first duly sworn, on oath say:

1. (s)he is the duly authorized agent of _____, the Bidder submitting the competitive Bid which is attached to this statement, for the purpose certifying that facts pertaining to the existence of collusion among Bidders and between Bidders and state officials or employees, as well as facts pertaining to the giving or offering of things of value to government personnel in return for special consideration in the in the letting of any contract pursuant to the Bid to which this statement is attached;
2. (s)he is fully aware of the facts and circumstances surrounding the making of the Bid to which this statement is attached and has been personally and directly involved in the proceedings leading to the submission of such Bid; and
3. neither the Bidder nor anyone subject to the Bidder's direction or control has been a party:
 - a. to any collusion among in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding.
 - b. to any collusion with any state official or employee as to quantity, quality or price in the prospective contract, or as to any other terms of such prospective contract, nor
 - c. in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract.

(Signature)

(Title)

SUBSCRIBED AND SWORN to before me this _____ day of _____, 20_____.

Notary Public (or Clerk or Judge)

My Commission Expires _____.

B. Business Relationships Affidavit

STATE OF _____)
) SS.
COUNTY OF _____)

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the Bidder to submit the attached Bid. Affiant further states that the nature of any partnership, joint venture, or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with Architect, Engineer, or other party to the Project is as follows:

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the bidding company and any officer or director of the architectural or engineering firm or other party to the project is as follows:

Affiant further states that the names of all persons having any such business relationships and the positions they hold with their respective companies or firms are as follows:

(If none of the business relationships hereinabove mentioned exist, affiant should so state.)

Bidder or Agent

SUBSCRIBED AND SWORN to before me this _____ day of _____, 20____.

Notary Public

My Commission Expires:

THIS CERTIFICATE MUST BE EXECUTED FOR THE BID TO BE CONSIDERED

**CERTIFICATION OF BIDDER REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

GENERAL

BIDDERS NAME

ADDRESS

INTERNAL REVENUE SERVICE EMPLOYER IDENTIFICATION NUMBER

NONSEGREGATED FACILITIES

**NOTICE TO PROSPECTIVE FEDERALLY ASSISTED CONSTRUCTION CONTRACTORS
(41 CFR 60-1.8)**

1. A Certification of Nonsegregated Facilities must be submitted prior to the award of a federally assisted construction contract exceeding \$10,000, which is not exempt from the provision of the equal opportunity clause.
2. Contractors receiving federally assisted construction contract awards exceeding \$10,000 that 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
ON NONSEGREGATED FACILITIES:**

1. A Certification of Nonsegregated Facilities must be submitted prior to the award of the subcontract exceeding \$10,000 that 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 he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that 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 further that he will not maintain or provide for his employees any segregated facilities at any establishments, and that 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 branch 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, 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, sex or national origin, because of habit, local custom, or any other reason. The federally assisted construction contractor agrees that (except where he has obtained 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 will retain such certification in his files.

NOTICE TO PROSPECTIVE CONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES:

A Certification of Nonsegregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000 that is not exempt from the provisions of the Equal Opportunity Clause.

Certification – The information above is true and complete to the best of my knowledge and belief.

Name and Title of Signer (Please Type)

Signature

Date

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

THIS STATEMENT MUST BE COMPLETE AND SUBMITTED WITH BID

BIDDERS QUALIFICATIONS STATEMENT

Date _____, 20____

1. Name of Bidder _____

2. Business Address _____

3. Date Organized Under Present Firm Name _____, _____

4. Type of Organization:

Individual

Partnership/LLC consisting of the following members:

Corporation with the following officers:

_____ President _____ Vice President

_____ Secretary _____ Treasurer

5. Background and Experience of Principal Members of Firm:

a. Name _____ Age _____

Years of experience in construction work _____

Duties performed _____

b. Name _____ Age _____

Years of experience in construction work _____

Duties performed _____

c. Name _____ Age _____

Years of experience in construction work _____

Duties performed _____

d. Name _____ Age _____

Years of experience in construction work _____

Duties performed _____

6. Projects Now Under Contract:

Description and Location	Construction Cost	% Comp.	Estimated Comp. Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

7. Projects Completed by Firm:

Description and Location	Construction Cost	Date Constructed
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

8. Bonding Capacity:

- a. Maximum bonding capacity \$ _____
- b. Amount obligated for current work \$ _____
- c. Net capacity available for new work \$ _____

9. Bonds written by:

Company _____ Agent _____
Name Name
Agent _____

10. Banking Connections:

11. Condensed Financial Data:

Current Assets	\$	
Current Liabilities	\$	
Present Net Worth	\$	

12. References:

13. Remarks:

14. Project similar to this Project with Federal Funding participation the last five years:

[illegible]

Signature

Forms 1 & 2 for Demonstration of Good Faith Efforts

Form 1: Disadvantaged Business Enterprise (DBE) Utilization

The undersigned Bidder/Offeror has satisfied the requirements of the Bid Specification in the following manner (please check the appropriate space):

- ☐ The Bidder/Offeror is committed to a minimum of 3.0% DBE utilization on this Contract.
- ☐ The Bidder/Offeror (if unable to meet the DBE goal of 3.0%) is committed to a minimum of _____% utilization on this Contract and submits documentation demonstrating good faith efforts.

Name of Bidder/Offeror's firm: _____

By: _____
(Signature) (Title)

IMPORTANT NOTE: The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the Bidder when a non-DBE subcontractor is selected over a DBE for Work on the Contract

Form 2: LETTER OF INTENT

Name of Bidder/Offeror's Firm:	
Address:	
City, State, Zip:	

Name of DBE Firm:	
Address:	
City, State, Zip:	
Telephone:	
Description of Work to be performed by DBE firm:	

The Bidder/Offeror is committed to utilizing the above-named DBE firm for the Work described above. The estimated dollar value of this Work is \$_____.

Affirmation

The above-named DBE firm affirms that it will perform the portion of the Contract for the estimated value as stated above.

By:

(DBE Firm Signature)

(Title)

If the Bidder/Offeror does not receive award of the Prime Contract, any and all representation in this Letter of Intent and Affirmation shall be null and void.

Submit this page for each DBE subcontractor. Faxed or scanned copies are acceptable.

Bidder's Questionnaire	
Sponsor's Name:	City of Chickasha
Airport Name:	Chickasha Municipal Airport
City, State:	Chickasha, Oklahoma
AIP Number:	3-40-0018-022-2023
Federal Fiscal Year:	2023

In accordance with Section 26.11 Record Keeping Requirements – Bidders List: 26.11(C), this form shall be completed by each firm and all subcontractors quoting on the project as indicated above.

Name of Bidder (Prime and Subcontractors)	Address	DBE Status (Check Box as applicable)	Age of Firm	Type(s) of Work	Annual Gross Receipts (Check Box as applicable)
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above
		☐ DBE ☐ Non DBE			☐ Less than \$500,000 ☐ \$500,000-\$1 million ☐ \$1 million-\$2 million ☐ \$2 million-\$5 million ☐ \$5 million and above

(Duplicate form as necessary).

Schedule of DBE Unavailability
(*Must be submitted at the time of bid*)

AIP No. 3-40-0018-022-2023

NAME OF DBE CONTRACTOR	ADDRESS	TYPE OF WORK (ELECTRICAL, PAVING, ETC.) AND CONTRACT ITEMS OR PARTS THEREOF TO BE PERFORMED	REASON UNAVAILABLE

The undersigned certifies that the above DBE(s) was/were contacted, in good faith, and the said DBE(s) was/were unable to submit an acceptable responsive bid. Failure to fill out DBE forms is a ground for rejection of the bid. The making of a material misrepresentation of fact is a ground for consideration for disqualification.

DATE: _____ **SIGNATURE:** _____ **TITLE:** _____

CONSTRUCTION CONTRACT PACKAGE

This Contract made the Contract Day day of Contract Month, 2023, by and between Contract Winner, LLC herein called Contractor, and the City of Chickasha hereinafter called Owner.

ARTICLE 1 SCOPE OF WORK

- 1.01 Contractor shall furnish all materials and perform all work shown on Drawings and described in Specifications entitled:

**Construct T-Hangar
AIP 3-40-0018-022-2023
Bid No. CAA-2302
CHICKASHA MUNICIPAL AIRPORT
Chickasha, Oklahoma**

hereinafter called the Project, and as prepared by Parkhill, hereinafter called Engineer, and shall do everything required by this Contract, Specifications, and Drawings. Observation of construction of this Contract shall be under Engineer supervision.

ARTICLE 2 TIME OF COMPLETION

- 2.01 Work performed under this contract shall commence within 10 calendar days after Owner issues a written "Notice to Proceed" and be fully complete within _____ calendar days for Base Bid {and Alternate(s) No. _____. Working days shall count beginning date in "Notice to Proceed."

ARTICLE 3 AMORTIZATION PAYMENT REQUIREMENTS

- 3.01 Contractor does hereby agree to pay to Owner liquidated damages for such time, as entire Project is not acceptable for occupancy beyond contract time. Liquidated damages shall be \$1250 per calendar day after stated working days expire after date of "Notice to Proceed," until such time as all Project is acceptable for use and operation.
- 3.02 Any sum of money owed Contractor, under terms of this contract retained by Owner, may be used to pay liquidated damages to Owner.
- 3.03 Engineer shall certify, after consultation with Contractor and Owner, date Project is available for use and operation.
- 3.04 Owner shall furnish site and access to site. Further, Owner shall do all to cooperate with Contractor and facilitate Contractor efforts to complete work as provided in Contract. Contractor is relieved of responsibility for payment of such liquidated damages only to the extent that failure of space available for occupancy in accordance with completion time established in Article 2 is caused by Acts of God.

ARTICLE 4 CONTRACT SUM

- 4.01 Owner shall pay Contractor for performance of Contract in current funds sum of:
_____ (\$_____)

ARTICLE 5 CONTRACT DOCUMENTS

5.01 Drawings and Specifications referred to in Article 1 herein are part of this Contract as if hereto attached and repeated. This Contract is based on Plans and Specifications dated August, 2023 and addenda thereto as follows:

- A. ~~None~~ Addendum No. 01.
- B. Addendum No. 02.

5.02 It is agreed changes, additions, or deletions may be made to Drawings and Specifications and Work performed only upon an agreement executed on a form in writing entered by parties to this Contract.

ARTICLE 6 CLAIM OR INVOICE AFFIDAVIT

6.01 Each monthly estimate for payment must contain or have attached an affidavit as required by Senate Bills 469 and 565 of the 1974 Legislature, executed on a form similar and essentially the same as Specifications page CA-1.

ARTICLE 7 CONTINGENCY AGREEMENT

7.01 Contract is contingent upon "Notice to Proceed."

ARTICLE 8 HOLD HARMLESS, INDEMNIFY, AND DEFEND CLAUSE

8.01 Any Contractor or subcontractor performing work in connection with Drawings and Specifications for this Project shall hold harmless, indemnify, and defend Owner and Engineer, their consultants and each officer, agent, and employee from any and all liability claims, losses, or damage arising out of or alleged to arise from Contractor (or subcontractor) negligence in performance of work described in Contract Documents, but not including liability due to sole negligence of Owner, Engineer, their consultants, officers, agents, or employees.

ARTICLE 9 BUY AMERICAN: STEEL AND MANUFACTURED PRODUCTS FOR CONSTRUCTION CONTRACTS

9.01 Contractor agrees only domestic steel and manufactured products will be used by Contractor, subcontractors, materialmen, and suppliers in performance of this contract, as defined in (B).

9.02.1 Terms that may apply to this clause:

- A. Components: Articles, materials, and supplies incorporated directly into steel and manufactured products.
- B. Cost of Components: Costs for production of components, exclusive of final assembly labor costs.
- C. Steel and Manufactured Products:
 - 1. those produced in the United States; or
 - 2. manufactured product produced in the United States, if cost of components mined, produced, or manufactured in the United States exceeds 60 percent of cost of all components and final assembly takes place in the United States.

ARTICLE 10 DISADVANTAGED BUSINESS ENTERPRISE CONTRACT PROVISIONS

10.01 PART A

- A. Policy. It is the policy of the Department of Transportation (DOT) that disadvantaged business enterprises as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in performance of contracts financed in whole or part with Federal funds provided under this Agreement. Consequently, DBE requirements of 49 CFR Part 26 apply to this agreement.
- B. DBE Obligation. Contractor agrees to ensure disadvantaged business enterprises as defined in 49 CFR Part 26 have maximum opportunity to participate in performance of contracts and subcontracts financed in whole or part with Federal funds provided under this Agreement. In this regard, all Contractors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure disadvantaged business enterprises have maximum opportunity to compete for and perform contracts. Contractors shall not discriminate based on race, color, national origin, or sex in award and performance of DOT-assisted contracts.
- C. Compliance. All Bidders and potential Contractors hereby ensure to include the noted clauses in all subcontracts, which offers further subcontracting opportunities.

10.02 PART B

- A. It is further understood and agreed:
 - 1. award procedure for this solicitation will include selection criteria of 49 CFR Part 26.45(i) to ensure prime contracts are awarded to competitors meeting Disadvantaged Business Enterprise (DBE) goals.
 - 2. notification is hereby given that DBE goals are established for this prime contract. Goal for firms owned and controlled by socially and economically disadvantaged individuals is 3.0% of the dollar value of this Contract.
- B. After opening bids, apparent successful Bidder will be required to submit names and addresses of DBE firms who will participate in the contract along with a description of Work performed by each named firm and dollar value for each contract (subcontract). If responses do not clearly show DBE participation will meet noted goals, apparent successful Bidder must provide documentation clearly demonstrating, to airport sponsor satisfaction, of good faith efforts in attempting to do so and meeting said goals is not reasonably possible. A bid failing to meet requirements is considered nonresponsive.
- C. Agreements between Bidder/Proposer and a DBE who promises not to provide subcontracting quotations to other bidders/proposers are prohibited. All bidders/proposers shall make a good faith effort to replace a DBE subcontractor unable to perform successfully with another DBE subcontractor.
 - 1. Bidder shall establish/maintain records and submit regular reports, as required, to identify and assess progress in achieving DBE subcontract goals and other DBE affirmative action efforts.

IN WITNESS WHEREOF, parties hereto executed this agreement the day and year noted herein.

First Last City of Chickasha

First Last, [Title]

Chris Mosley, Mayor

CONTRACTOR ATTEST

CITY CLERK (ATTEST)

APPROVED as to form and legality this _____ day of _____, 20__.

MUNICIPAL COUNSELOR

AFFIDAVIT

(must be signed and notarized before contract becomes effective)

STATE OF (_____)

COUNTY OF (_____)

I, _____, of lawful age, being first duly sworn on oath say:

- A. I am a duly authorized agent of _____, Contractor, under Contract (attached to this statement), for certifying facts pertaining to giving of things of value to the government personnel to procure said Contract;
- B. I am fully aware of facts and circumstances surrounding the making of contract (attached) and personally and directly involved in proceedings leading to procurement of said Contract; and
- C. Neither Contractor nor anyone subject to Contractor direction or control paid, gave, donated, or agreed to pay, give, or donate to any officer or employee of the State of Oklahoma any money or other thing of value, directly or indirectly, in procuring the contract to which this statement is attached.

First Last, Title

Subscribed as to form and legality this _____ day of _____, 20_____.

Notary Public/Clerk/Judge

My Commission Expires _____

CERTIFICATE OF NON-DISCRIMINATION

In connection with performance of Work under this Contract, Contractor agrees:

- A. not to discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, or ancestry. Contractor shall take affirmative action to ensure employees are treated without regard to race, creed, color, sex, national origin, or ancestry. Such actions shall include but not be limited to employment, upgrading, demotion or transfer, recruiting/recruitment advertising, layoff/termination, rates of pay/other forms of compensation, and selection for training (including apprenticeship). Contractor and subcontractor shall agree to post in a conspicuous place Owner-provided notices setting forth provisions of this section available to employees and applicants for employment.
- B. In the event of Contractor non-compliance with this non-discrimination clause, Owner may cancel or terminate contract. Owner may declare Contractor ineligible for further contracts with the said agency until Contractor provides satisfactory proof of intent to comply.
- C. Contractor agrees to include this non-discrimination clause in any subcontracts connected with performance of this Agreement.

I read stated clause and agree to abide by its requirements:

First Last, Title

ATTEST:

Witness

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

_____, as Principal, hereinafter called Contractor, and _____, a corporation organized and existing under the laws of the State of _____, as Surety, hereinafter called Surety, are held and firmly bound unto _____, as Oblige, hereinafter called Owner, in the amount of _____ Dollars (\$ _____) for payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated Contract Month Contract Day, 2023, entered into a Contract with Owner for: **Construct T-Hangar, AIP 3-40-0018-022-2023**, in accordance with Drawings and Specifications prepared by Parkhill, 14101 Wireless Way, Suite 350, Oklahoma City Oklahoma 73134. Which Contract is by reference made a part hereof and hereinafter referred to as Contract.

NOW, THEREFORE CONDITION OF THIS OBLIGATION is if Contractor shall promptly and faithfully perform said Contract, this obligation shall be null and void, otherwise remaining in full force and effect.

Surety hereby waives notice of any alteration or extension of time made by Owner.

When Contractor shall be and declared by Owner to be in default under Contract, Owner having performed Owner's obligations thereunder, Surety may promptly remedy default or promptly:

- A. Complete Contract in accordance with terms and conditions: or
- B. Obtain bid(s) for completing Contract in accordance with terms and conditions, and upon determination by Surety, of lowest responsible bidder, or, if Owner elects upon determination by Owner and Surety jointly of lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as work progresses (even though a default or succession of sufficient funds pay cost of completion arranged under this paragraph) sufficient funds to pay cost of completion less balance of contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, amount set forth herein. "Balance of contract price," as used in this herein, shall mean total amount payable by Owner to Contractor under Contract and any amendments thereto, less amount properly paid by Owner to Contractor.

Any suit under this Bond must be instituted before expiration of one year from date on which Final Payment under the Contract falls due.

No right of action shall accrue on this bond to or for use of any person or corporation other than Owner named herein or heirs, executors, administrators, or successors of Owner.

Signed and sealed this _____ day of _____, 20____ in the presence of:

Contract Winner, LLC
(Contractor)

(Witness)

By _____ (Seal)

(Surety)

(Witness)

By _____
Attorney-In-Fact

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
_____, as Principal,
and _____, a corporation
authorized under the laws of the State of _____ and authorized
to transact business in the State of Oklahoma, as Surety, are held and firmly bound unto in the penal sum, .
_____ (Owner) of
_____ Dollars
(\$_____)

in lawful money of the United States of America, for the payment of which, well and truly made we bind
ourselves and each of us, our heirs, executors, administrators, trustees, successor, and assigns, jointly and
severally, firmly by these presents:

Dated this _____ day of _____, 20_____.

CONDITION OF FOREGOING OBLIGATION IS SO WHEREAS, said principal entered a
written contract with

(Owner), dated _____, 20_____, for _____

all in compliance with Plans and Specifications, therefore made part of said Contract and on file in the
office of

(Name and Address of Owner)

NOW THEREFORE, if said Principal shall fail or neglect to pay all indebtedness incurred by said
Principal or subcontractor of said Principal who perform Work in performance of such Contract, for labor
and materials, rental of machinery or equipment, and repairs to and parts for equipment used and consumed
in performance of said Contract within 30 days after that same becomes due and payable, person, firm, or
corporation entitled thereto may sue and recover on this Bond, amount so due and unpaid.

It is further expressly agreed and understood by parties hereto that no changes or alterations in said
Contract nor deviations from plan or mode of procedure herein fixed shall release sureties from obligations
of this Bond.

IN WITNESS WHEREOF, said Principal caused these presents executed in its name, and corporate seal to be hereunto affixed, by duly authorized officers, and said Surety caused these presents executed in its name and corporate seal to be hereunto affixed by attorney-in-fact, duly authorized so to do, day and year first written herein.

Contract Winner, LLC

(Contractor)

By _____ (Seal)

(Witness)

(Surety)

By _____
Attorney-In-Fact

(Witness)

DEFECT BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
_____, as Principal, and _____
a corporation authorized under the laws of the State of _____ and authorized
to transact business in the State of Oklahoma, as Surety, are held and firmly bound unto _____
_____ (Owner) in the penal sum of _____
_____ Dollars (\$_____).

in lawful money of the United States of America, said sum being equal to 100 percent of contract price, for
payment of which, well and truly made, we bind ourselves and each of us, our heirs, executors,
administrators, trustees, successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that:

WHEREAS, said Principal entered a written Contract with _____
_____ (Owner) dated _____, 20_____, for:

all in compliance with Plans and Specification therefore, made a part of said Contract and on file in the
office of:

(Name and Address of Owner)

NOW, THEREFORE, if said Principal shall pay or cause to be paid to _____
_____ (Owner) all damage, loss, and expense that may result by reason
of defective materials/workmanship in connection with said work, occurring within one year from and after
acceptance of said Project by _____ (Owner); then
this obligation shall be null and void, otherwise to be and remain in full force and effect.

It is further expressly agreed and understood by parties hereto that no changes or alterations in said Contract nor deviations from plan or mode of procedure herein fixed shall release sureties from obligations of this Bond.

IN WITNESS WHEREOF, said Principal caused these presents executed in its name and corporate seal to be hereunto affixed by its duly authorized officers, and said Surety caused these presents executed in its name and corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year herein written.

Dated this _____ day of _____, 20_____.

Contract Winner, LLC
(Contractor)

(Witness)

By _____ (Seal)

(Surety)

(Witness)

By _____
Attorney-In-Fact

**CERTIFICATE OF COMPLIANCE WITH STATUS VERIFICATION SYSTEM FOR
CONTRACTOR AND SUBCONTRACTOR EMPLOYEES**

Title 25 Oklahoma Statutes Section 1313 B. (enacted by Oklahoma House Bill 1804 effective November 1, 2007) provides that after July 1, 2008, no public employer (City or related public trusts) "shall enter into a contract for the physical performance of services within this state unless the Contractor registers and participates in the Status Verification System to verify the work eligibility status of all new employees."

As a condition of contract award to _____ **Contract Winner, LLC** _____, for

Construct T-Hangar

said Contractor represents and warrants it has used the Status Verification System to verify work eligibility status (i.e. not an unauthorized alien as defined in Section 1324a(h)(3) of Title 8 of the United States Code) of all employees hired since July 1, 2008, who will perform under Contract and verified (or will within 10 days of Bid Award and prior to Notice to Proceed) any subcontractors used also verified work eligibility status of its employees hired since July 1, 2008, it will use in performing services under the above Contract.

Dated this ____ day of _____, _____.

Contract Winner, LLC

First Last, Title

Witness

Name, Title

APPOINTMENT OF AGENT

The City of **Chickasha, Oklahoma**, hereinafter referred to as "City," does hereby appoint "Contract Winner, LLC" an Oklahoma Corporation, acting through officers, employees, and subcontractors, hereinafter referred to as "Agent" of City for the sole purpose of completing **Construct T-Hangar**, AIP 3-40-0018-022-2023, **CHICKASHA MUNICIPAL AIRPORT**, under a contract dated the Contract Day day of Contract Month, Contract Year, being constructed in **Chickasha, Oklahoma**, hereinafter referred to as "Project," for City use. Agent agrees to act as agent for City subject to provisions of this Appointment.

Legal title to all tangible personal property purchased, and right to direct use of all tangible personal property rented, by agent pursuant to this appointment shall pass directly from vendor to City. Agent shall designate on purchase orders and elsewhere as appropriate when making purchases pursuant to this appointment, the following legend:

"Contract Winner, LLC has been appointed agent for **Chickasha, Oklahoma**, for property described herein. Upon passage of title, all such property will be included in Project owned by City. Title to all such property shall pass to said City from vendor F.O.B. place specified in this purchase order. All such property is exempt from Oklahoma sales and use taxes and/or City sales taxes."

Rental agreements relating to such property shall contain suitable provisions which disclose Agent's agency and indicate no Oklahoma sales, use, or City sales tax is payable.

Agent agrees not to purchase or rent any tangible personal property pursuant to this appointment unless such property is authorized for inclusion in or exclusive use in construction of Project described herein. Agent shall not have the power to appoint any other person or entity as agent for City.

Agent shall be responsible in a separate capacity for payment of purchase price or other consideration for property purchased or rented as Agent and not have power to bind City to any financial or other commitments or obligations. Agent shall hold City harmless from liability for, or arising out of, purchase, rental, or use of the property purchased or rented hereunder.

Appointment shall be effective upon execution by City acting through Mayor, by Agent, and binding upon successor of the parties hereto.

Executed by the undersigned Mayor of City of Chickasha, **Oklahoma**, on behalf of City of Chickasha on this Contract Day day of Contract Month, Contract Year.

City of Chickasha

73-6005139

Tax Exemption Number

Chris Mosley, Mayor

Contract Winner, LLC

First Last, Title

AGENT'S MAILING ADDRESS:

Street
City, State Zip
Phone

AFFIDAVIT FOR PAYMENT OF \$1,000.00 OR MORE

STATE OF _____)
) SS.
COUNTY OF _____)

Undersigned Contractor, lawful age, first duly sworn on oath, says this invoice/claim is true and correct. Affiant further states (work, services, or materials) as shown by this invoice/claim have been completed or supplied in accordance with Plans, Specifications, orders, or requests furnished affiant. Affiant further states (s)he made no payment directly/indirectly to any elected official, officer, or employee of the State of Oklahoma, and county or local subdivision of state, money, or any other thing of value to obtain payment.

(Contractor, Supplier, or Engineer)

Subscribes and sworn to before me this _____ day of _____, 20_____.

(Notary Public, Clerk, or Judge)

My Commission Expires _____, 20_____.

Note:

Attach a copy of this Affidavit to any invoice submitted by Architect, Contractor, Engineer, or Supplier for material of \$1,000.00 or more.

RELEASE

(Execute this form of release at Contract completion.)

KNOW ALL MEN BY THESE PRESENTS:

That _____
hereinafter called Contractor, individually and collectively, have in consideration of the sum of _____
_____ Dollars (\$ _____), (retained by Owner hereinafter described for exceptions yet to be performed by Contractor when such exceptions are performed) to us in hand paid by City of Chickasha, hereinafter called Owner, receipt whereof is hereby acknowledged, remised, released, and forever discharged, and by these presents do for heirs, executors, administrators, successors and assigns, remise, release, and forever discharge and said Owner and successors in office and heirs, executors, and administrators, of and from all, and all manner of action and actions, cause and causes of actions, suits, debts, dues, sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, controversies, executions, claims, and demands whatsoever in law or equity which against them, said Owner ever had, now have, or may have reason of contract entered into by and between Contractor and Owner dated _____, 20____, which pertains to construction by Contractor for Owner, for Construct T-Hangar, AIP 3-40-0018-022-2023, at Chickasha Municipal Airport, Chickasha, Oklahoma including change orders covered therein.

This release includes any and all other work or material furnished in connection with such contract and building and other facilities.

Said Contractor(S), individually and collectively, hereby certify Contractor paid in full to each and every person, firm, partnership, corporation, joint venture, and subcontractor, for all labor and material used in performance of foregoing contract.

IN WITNESS WHEREOF, Contractor executed this release on the ____ day of _____, 20____.

CONTRACTOR SIGNATURE

ATTEST:

SPECIAL PROVISIONS

SECTION 301 – GENERAL

1. These Special Provisions are supplemental to General Specifications and considered part of Specifications and Contract. In case of conflict between stipulations of Special Provisions and Specifications, Plans, or General Provisions, Special Provisions take precedence and govern. Engineer shall make interpretation of Plans and Specifications.
2. Contractor's work consists of furnishing all tools, labor, equipment, materials, and performing all Work necessary for construction, complete, of all airport improvements shown on Plans in strict accordance with detailed Plans and Specifications.
3. Plans and Specifications prescribe a complete Work and improvement. Where items of Work are necessary for satisfactory completion of improvement for which specific contract prices are not provided in Proposal and Contract, such Work shall be considered incidental to main construction and any costs involved reflected in such other prices as are provided.
4. **NOTAMs.** Notices to Airmen (NOTAMs) will be issued by the City.
5. General Provisions paragraph 20-02; Prequalification of Bidders shall be construed to mean any bidders as previously prequalified by the Oklahoma Department of Transportation.
6. Each successful bidder shall furnish Performance Bond, Statutory Bond, and Defect Bond each in the amount of 100% of Contract.
7. **Waiver of Legal Rights.** Inspection by Owner or by any of his duly authorized representatives or any order, measurement, or certificate by Engineer of any work or any extension of time or any possession taken by Owner shall not operate as a waiver of any provisions of Contract or any power therein provided. Any waiver of any breach of Contract shall not be held to be a waiver of any other or subsequent breach. Owner reserves the right to correct any error that may be discovered in any estimate that may have been paid and to adjust the same to meet the requirements of Contract and specifications. Owner reserves the right to claim and recover by process of law sums as may be sufficient to correct any error or errors or make good any deficiency in the work resulting from such error or deficiency in the work resulting from such error of deficiency, dishonesty, or collusion discovered in the work after the final payment has been made.
8. **Transportation Tax.** Under provisions of Section 3475 (b) of the Internal Revenue Code, as amended, the State of Oklahoma, its agencies, and political subdivisions are exempt from payment of the three percent (3%) transportation tax levied by Subsection (a) of Section 3475, in either of the following cases:
 - A. When the property (equipment, goods, materials, etc.) is consigned to the State, its agencies, or political subdivisions, or
 - B. When such property is consigned to the State, its agencies, or political subdivisions in care of Contractor.
9. **Subletting of Contract.** Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of Contract or Contracts or any portion thereof, or any of his rights, title, or any interests therein, without written consent of Engineer or his authorized representative. In case such consent to Subcontract is given, Contractor will be permitted to sublet a portion of the Work as specified, but shall perform with his own organization, Work amounting to not less than 50 percent of the total Contract amount based on unit prices bid for the items subcontracted. The mere supply of materials to the Project shall not be considered performance of Work. Any items designated in Contract as "specialty items" may be performed by Subcontract and the cost of any such specialty items so performed by Subcontract may be deducted from the total cost before computing the amount of Work required to be performed by Contractor with his own organization.

Requests for permission to sublet, or otherwise dispose of any portion of Contract work shall be in writing and accompanied by a statement showing that the organization which will perform the Work is particularly experienced and equipped for such work. Contractor shall give assurance that the minimum wage for labor as stated in his Proposal shall apply to labor performed on all work sublet. No Subcontracts, or transfer or Contract, shall in any case release Contractor of his liability under Contract and bonds.

Should Contractor assign any of his right title or interest in Contract said the assignment shall be made only with the full knowledge and written consent of the Surety. It is specifically understood that a violation of this Subsection will constitute an act of default on the part of Contractor.

10. ***Owner will furnish to Contractor a complete Appointment of Agent*** Form (Page AA-1) to eliminate any requirement of Contractor to pay Oklahoma and Local sales tax on materials, equipment and goods furnished on this Project, because the Town is exempt from such sales tax, and since Contractor is an Agent of the City, no sales tax shall be paid.

SECTION 302 – OUT OF STATE CONTRACTORS

1. ***Contractors and Subcontractors who do not have Offices in the State of Oklahoma*** must provide a Non-resident Contractor's Bond with Power of Attorney in the penal sum of 10% of the total Contract Price to the Oklahoma Tax Commission, Business Tax Division, 2501 N. Lincoln, Oklahoma City, Oklahoma 73194 with a copy to Engineer before Contract can be executed by the City. The successful Bidder must also notify the following agencies about this Contract with amount of Contract, with copies to Engineer, before Contract can be awarded.
2.

COUNTY ASSESSOR OKLAHOMA OKLA. EMPLOYMENT SECURITY COMM. 200 WILL ROGERS BLDG. OKLAHOMA CITY, OK 73105 405.557.7226	WORKERS COMPENSATION COURT 1915 NORTH STILES OKLAHOMA CITY, OK 73105 405.557.7600
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SECTION 303 – AWARD OF CONTRACT

1. Contractor must bid all items in all Base Bids and all Alternates to be considered.
2. The Construction Contract will be awarded based on the lowest responsive and responsible bid of Base Bid and Alternate(s) selected by the Owner, in accordance with Section 30 of the General Provisions.

SECTION 304 – CONTRACTOR'S INSURANCE

Contractor shall not commence work under this Contract until he has obtained all insurance required under this Specification and such insurance has been approved by Owner, nor shall Contractor allow any Subcontractor to commence Work on his Subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.

Contractor shall furnish Owner with triplicate copies of Certification of Insurance or triplicate copies of policies, indicating all exclusions; providing for waiver of subrogation claims against Owner and Engineer which waiver(s) shall be subject to approval by Owner on an individual claim basis; and showing that Contractor is carrying at his own expense, in reliable insurance companies satisfactory to Owner and authorized to do business in the State of Oklahoma, the following types of insurance on contract forms approved by Owner with limits not less than shown on the following respective items:

Workmen's Compensation.....	Statutory Limits
Employer's Liability.....	500/500/500
General Liability (including explosions, collapse and underground where applicable and Broad Form CGL Endorsement)	1,000,000 Combined Single Limits
Contractual Liability	1,000,000 Combined Single Limits
Automobile Liability.....	1,000,000 Combined Single Limits

The property damage portion will provide for all damages arising out of injury to or destruction of property of others arising directly or indirectly out of or in connection with the performance of the Work under Contract(s) including explosion, collapse, and underground exposures.

Included in such coverage will be contractual coverage sufficiently broad to ensure the "indemnity" provision under Article 8 of Contract herein. **The comprehensive general liability insurance will include as additional insureds: Owner, Engineer, and each of their officers, agents, and employees.**

Contractor's Liability Insurance Requirements: The successful Bidder shall provide with Contract Documents a listing of both automobile and personal liability insurance coverage currently in force, along with a copy of a Certificate of Insurance as verification of that coverage.

In the event Owner determines that the low Bidder's coverage in force is inadequate, Owner may require the low Bidder to procure additional coverage in amounts specified by Owner. Owner, as a reimbursement under Contract, shall pay the cost of premiums for such additional coverage.

In the event the low Bidder is unable, after diligent effort, to procure such additional coverage as may be required by Owner, Owner shall provide such additional coverage, naming Contractor as insured or, at the option of Owner, reduce the amount of additional coverage required or waive any requirement for additional coverage.

SECTION 305 – FIELD OFFICE (Not Required)

SECTION 306 – CONSTRUCTION MANAGEMENT PROGRAM

Before any Contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition, or manufacture of any or all materials proposed to be used in the construction of the Work, together with samples, which may be subjected to the tests provided for in these specifications to determine their quality and fitness for the Work.

All testing shall be as required by Engineer and/or Owner and shall be in accordance with the Specifications. All testing shall be made by a laboratory approved by Owner. Such tests as Engineer or Owner may order shall be evaluated, in turn, by Engineer, and shall in turn pass on to Owner by notation on the test report the result of his evaluation. Engineer and/or Owner shall have the right to order any number of tests that they may deem necessary to properly determine that the intent of these specifications has been complied with. In all cases where Engineer orders tests or inspections to be made by the testing laboratory and the results of the tests or inspections show that the materials or workmanship tested or inspected fail to meet the requirements of the Specifications, the costs of the tests shall be borne by Contractor.

SECTION 307 – MATERIAL SUBMITTAL

Contractor shall submit two copies plus the number he wishes returned of complete descriptive information, catalog cuts, etc., of all items of materials he proposes to use on this Project. Items shall be presented in the order in which they are specified, i.e., by section number, followed by items described on the Drawings. Identifying marks shall be used on descriptive sheets and catalog cuts to indicate exactly which item is being presented for approval. Any airfield lighting equipment, regulators, cable connectors, insulating transformers, and light bases required by the Project shall be listed in the current FAA Approved Airport Lighting Equipment List; all other items shall be as specified herein or on the Drawings.

SECTION 308 – DISPOSAL OF WASTE MATERIALS AND CLEAN-UP

All waste materials shall be disposed of off airport property in a legal manner. Before Owner accepts the Project, the Project area must be cleaned of all foreign materials that could be picked up in mowers used by the airport personnel. Engineer and Contractor shall make a thorough inspection of the area before final inspection of the Project is made. Failure of Contractor to clean up the jobsite could delay final inspection and thereby delay Final Payment on his Contract. The cleaning up of the Project Work area is incidental to all other work involved, and no separate payment for this Work will be made.

SECTION 309 – CONTRACTOR’S USE OF CITY WATER

Contractor shall be charged for the use of City water. Contractor may request that the City will set a meter on a nearby fire hydrant for Contractor’s use. Contractor will also be responsible for all repairs and maintenance of the meter while in use by Contractor.

SECTION 00 73 43 – WAGE RATE REQUIREMENTS

PART 1 - GENERAL

1.1 WAGE RATE ESTABLISHMENT

- A. Refer to FAA Contract Provision on Davis-Bacon included herein for requirements.
- B. Nothing herein contained, however, shall be construed to prohibit the payment of more than the prevailing rate of wages to any laborer, workman, or mechanic employed on the Work.
- C. Attention is called to the fact that there must be paid on this Project not less than the general prevailing rates which have been established by Owner and verified by Contractor as indicated in the Schedule at the end of this Document.

1.2 POSTING WAGE RATES

- A. Minimum Wage Rates shall be posted on job site in a conspicuous place open for inspection by all workmen.

1.3 EMPLOYEE CLAIMS

- A. Any employee who alleges that he has not been paid the minimum wage rate may file a written claim with Owner.

1.4 PAYMENT OF EMPLOYEES AND PAYROLL RECORDS

- A. Refer to FAA Contract Provisions on Davis-Bacon included herein for requirements.

1.5 PAYROLL RECORDS

- A. Refer to FAA Contract Provision on Davis-Bacon included herein for requirements.

1.6 CLASSIFICATION OF EMPLOYEES

- A. Refer to FAA Contract Provision on "DAVIS-BACON REQUIREMENTS" Section 1(ii)(A).
- B. For classifications needed for Work but not included in the General Decision below, Contractor shall prepare and submit to Owner, Standard Form 1444, "Request for Authorization of Additional Classification Rate."

1.7 WAGE RATE SCHEDULE

- A. See attached General Decision OK20230045 dated June 09, 2023, issued by the Federal Government and any revisions/updates issued for Grady County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

"General Decision Number: OK20230045 06/09/2023

Superseded General Decision Number: OK20220045

State: Oklahoma

Construction Type: Building

Building Construction -does not include residential construction consisting of single family homes and apartments up to and including 4 stories. (Including building projects on treatment plants)

County: Grady County in Oklahoma.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 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 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	01/20/2023
3	01/27/2023
4	02/10/2023
5	04/07/2023
6	05/12/2023
7	06/09/2023

BROK0005-004 06/01/2022

	Rates	Fringes
BRICKLAYER.....	\$ 26.42	12.49

CARP0216-002 01/01/2023		

	Rates	Fringes
MILLWRIGHT.....	\$ 29.75	11.83

CARP0329-003 01/01/2022		

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 24.15	10.15

ELEC1141-007 09/26/2022		

	Rates	Fringes
ELECTRICIAN.....	\$ 36.65	1.25%+3%+12.50%+6.00

ELEC1141-029 06/01/2019		

	Rates	Fringes
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ELECTRICIAN (Low Voltage
Wiring and Alarm Installation
Only).....\$ 21.60 3%+12%+1/2%+8.60

ELEV0063-004 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 46.83	37.335+a+b

PAID HOLIDAYS:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years' service.

* ENGI0627-020 06/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Group 1.....	\$ 35.65	16.50
Group 2.....	\$ 33.80	16.50
Group 3.....	\$ 33.10	16.50
Group 4.....	\$ 31.95	16.50
Group 8.....	\$ 26.90	16.50
Group10.....	\$ 25.45	16.50

POWER EQUIPMENT OPERATOR

GROUP 1: All Crane Type Equipment 200 ton and larger and including 400 ton capacity cranes. All Tower Cranes.

GROUP 2: All Crane Type Equipment 100 ton capacity and larger cranes, and less than 200 ton capacity.

GROUP 3: All Crane Type Equipment 50 ton capacity and larger cranes, and less than 100 ton capacity. Crane Equipment (as rated by mfg.) 3 cu. yd. and over Guy derrick Whirley Power Driven Hole Digger (with 30' and longer mast).

GROUP 4: CRANES with Boom Incl. Jib less than 100 ft and less than 3 cu. Yd.; Overhead Monorail Crane

GROUP 8: FORK-LIFT

GROUP 10:OILER; SEMI-TRAILER TRUCK DRIVER

IRON0048-014 06/01/2019		
	Rates	Fringes
IRONWORKER (Ornamental and Structural).....	\$ 26.00	15.35

PLUM0344-006 07/01/2022		
	Rates	Fringes
PLUMBER (Excludes HVAC Pipe Installation).....	\$ 35.50	15.19

PLUM0344-024 07/01/2022		
	Rates	Fringes
PIPEFITTER (Including HVAC Pipe Installation).....	\$ 35.50	15.19

ROOF0143-001 07/01/2022		
	Rates	Fringes
ROOFER.....	\$ 24.00	9.30

SFOK0669-002 04/01/2023		
	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 36.54	22.89

SHEE0124-010 07/01/2021		
	Rates	Fringes
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 33.38	16.36

* SUOK2012-025 07/30/2012		
	Rates	Fringes
CARPENTER (Acoustical Ceiling Installation Only).....	\$ 14.45 **	0.00

CARPENTER, Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 16.31	2.96
CEMENT MASON/CONCRETE FINISHER...	\$ 16.72	0.00
DRYWALL FINISHER/TAPER.....	\$ 14.25 **	0.00
DRYWALL HANGER, Includes Metal Stud Installation.....	\$ 14.08 **	0.00
FENCE ERECTOR.....	\$ 16.00 **	0.00
GLAZIER.....	\$ 12.02 **	2.42
HVAC MECHANIC (Installation of HVAC Unit Only, Excludes Installation of HVAC Pipe and Duct).....	\$ 21.64	6.46
IRONWORKER, REINFORCING.....	\$ 17.11	0.00
LABORER: Common or General.....	\$ 11.40 **	0.00
LABORER: Landscape.....	\$ 13.75 **	0.00
LABORER: Mason Tender - Brick...	\$ 12.00 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 13.00 **	1.91
LABORER: Pipelayer.....	\$ 12.39 **	0.00
LABORER: Plaster Tender.....	\$ 12.00 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 21.25	4.35
OPERATOR: Bulldozer.....	\$ 20.64	2.35
OPERATOR: Grader/Blade.....	\$ 14.28 **	1.70
OPERATOR: Loader (Front End)....	\$ 16.18 **	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 13.38 **	1.54

PAINTER: Brush, Roller and Spray, Excludes Drywall Finishing/Taping.....	\$ 12.17 **	0.00
PLASTERER.....	\$ 17.50	0.00
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 19.45	6.38
TRUCK DRIVER: Dump and Flatbed Truck.....	\$ 11.60 **	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

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>.

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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an

interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

APPENDIX A – CONTRACT PROVISIONS

A1 ACCESS TO RECORDS AND REPORTS

ACCESS TO RECORDS AND REPORTS

Contractor must maintain an acceptable cost accounting system. Contractor agrees to provide Owner, 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 Contractor which are directly pertinent to the specific Contract for the purpose of making audit, examination, excerpts and transcriptions. 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.

A2 AFFIRMATIVE ACTION REQUIREMENT

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables

Goals for minority participation for each trade, by County:

County	Goal
Adair	3.3%
Alfalfa	9.0%
Atoka	9.0%
Beaver	11.0%
Beckham	9.0%
Blaine	9.0%
Bryan	17.2%
Caddo	9.0%
Canadian	10.2%
Carter	9.0%
Cherokee	10.0%
Choctaw	6.6%
Cimarron	11.0%
Cleveland	10.2%
Coal	9.0%
Comanche	14.8%
Cotton	10.8%
Craig	2.3%
Creek	10.2%
Custer	9.0%
Delaware	3.3%
Dewey	9.0%
Ellis	9.0%
Garfield	9.0%
Garvin	9.0%
Grady	9.0%

Grant	9.0%
Greer	10.8%
Harmon	10.8%
Harper	9.0%
Haskell	6.6%
Hughes	9.0%
Jackson	10.8%
Jefferson	10.8%
Johnston	9.0%
Kay	10.0%
Kingfisher	9.0%
Kiowa	10.8%
Latimer	6.6%
Le Flore	5.6%
Lincoln	9.0%
Logan	9.0%
Love	9.0%
Major	9.0%
Marshall	9.0%
Mayes	10.2%
McClain	10.2%
McCurtain	6.6%
McIntosh	10.0%
Murray	9.0%
Muskogee	10.0%
Noble	10.0%
Nowata	10.0%

Okfuskee	9.0%
Oklahoma	10.2%
Okmulgee	10.0%
Osage	10.2%
Ottawa	2.3%
Pawnee	10.0%
Payne	10.0%
Pittsburg	6.6%
Pontotoc	9.0%
Pottawatomie	10.2%
Pushmataha	6.6%
Roger Mills	9.0%
Rogers	10.2%
Seminole	9.0%
Sequoyah	5.6%
Stephens	10.8%
Texas	11.0%
Tillman	10.8%
Tulsa	10.2%
Wagoner	10.2%
Washington	10.0%
Washita	9.0%
Woods	9.0%
Woodward	9.0%

Goals for female participation in each trade: 6.9%

These goals are applicable to all of Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is City of Chickasha, Grady County, Oklahoma.

A3 BREACH OF CONTRACT TERMS

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this Contract on the part of Contractor or its 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.

Owner will provide Contractor written notice that describes the nature of the breach and corrective actions Contractor must undertake in order to avoid termination of the Contract. Owner reserves the right to withhold payments to Contractor until such time Contractor corrects the breach or Owner elects to terminate the Contract. Owner's notice will identify a specific date by which Contractor must correct the breach. Owner may proceed with termination of the contract if Contractor fails to correct the breach by the deadline indicated in Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

A4 BUY AMERICAN PREFERENCE

FAA BUY AMERICAN PREFERENCE

Contractor certifies that its bid/offer is in compliance with 49 USC § 50101, BABA and other related Made in America Laws,¹ U.S. statutes, guidance, and FAA policies, which provide that Federal funds may not be obligated unless all iron, steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

The Bidder or Offeror must complete and submit the certification of compliance with FAA's Buy American Preference, BABA and Made in America laws included herein with their bid or offer. Airport Sponsor/Owner will reject as nonresponsive any bid or offer that does not include a completed certification of compliance with FAA's Buy American Preference and BABA.

The Bidder or Offeror certifies that all constructions materials, defined to mean an article, material, or supply other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber; or drywall used in the Project are manufactured in the U.S.

¹ Per Executive Order 14005 "Made in America Laws" means all statutes, regulations, rules, and Executive Orders relating to federal financial assistance awards or federal procurement, including those that refer to "Buy America" or "Buy American," that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.

A4.1.1 Certification of Compliance with FAA Buy American Preference – Construction Projects

As a matter of bid responsiveness, the Bidder or Offeror must complete, sign, date, and submit this certification statement with its Proposal. The Bidder or Offeror must indicate how it intends to comply with 49 USC § 50101, BABA and other related Made in America Laws, U.S. statutes, guidance, and FAA policies, by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e., not both) by inserting a checkmark (✓) or the letter "X."

- ☐ Bidder or Offeror hereby certifies that it will comply with 49 USC § 50101, BABA and other related U.S. statutes, guidance, and policies of the FAA by:
- a) Only installing iron, steel and manufactured products produced in the United States;
 - b) Only installing construction materials defined as: an article, material, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber or drywall that have been manufactured in the United States.
 - c) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
 - d) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- a) To provide to the Airport Sponsor or the FAA evidence that documents the source and origin of the iron, steel, and/or manufactured product.
 - b) To faithfully comply with providing U.S. domestic products.
 - c) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
 - d) Certify that all construction materials used in the project are manufactured in the U.S.
- ☐ The bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 USC § 50101(a) but may qualify for a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:
- a) To submit to the Airport Sponsor or FAA within 15 calendar days of being selected as the responsive bidder, a formal waiver request and required documentation that supports the type of waiver being requested.
 - b) That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the Proposal.
 - c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.

- d) To furnish U.S. domestic product for any waiver request that the FAA rejects.
- e) To refrain from seeking a waiver request after establishment of the Contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 2 Waiver (Nonavailability) - The iron, steel, manufactured goods or construction materials or manufactured goods are not available in sufficient quantity or quality in the United States. The required documentation for a Type 2 Nonavailability waiver is

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire.
- b) Record of thorough market research, consideration where appropriate of qualifying alternate items, products, or materials including;
- c) A description of the market research activities and methods used to identify domestically manufactured items capable of satisfying the requirement, including the timing of the research and conclusions reached on the availability of sources.

Type 3 Waiver – The cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the "facility/project." The required documentation for a Type 3 waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire including;
- b) Listing of all manufactured products that are not comprised of 100 percent U.S. domestic content (excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).
- c) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at Project location.
- d) Percentage of non-domestic component and subcomponent cost as compared to total "facility" component and subcomponent costs, excluding labor costs associated with final assembly and installation at Project location.

Type 4 Waiver (Unreasonable Costs) - Applying this provision for iron, steel, manufactured goods, or construction materials would increase the cost of the overall Project by more than 25%. The required documentation for a Type 4 waiver is:

- a) A completed Content Percentage Worksheet and Final Assembly Questionnaire from
- b) At minimum two comparable equal bids and/or offers;
- c) Receipt or record that demonstrates that supplier scouting called for in Executive Order 14005, indicates that no domestic source exists for the project and/or component;
- d) Completed waiver applications for each comparable bid and/or offer.

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date

Signature

Company Name

Title

A4.1.2 Certification of Compliance with FAA Buy American Preference – Equipment/Building Projects

As a matter of bid responsiveness, the Bidder or Offeror must complete, sign, date, and submit this certification statement with their Proposal. The Bidder or Offeror must indicate how they intend to comply with 49 USC § 50101, and other Made in America Laws, U.S. statutes, guidance, and FAA policies by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X."

- ☐ Bidder or Offeror hereby certifies that it will comply with 49 USC § 50101, BABA and other related U.S. statutes, guidance, and policies of the FAA by:
- a) Only installing steel and manufactured products produced in the United States;
 - b) Only installing construction materials defined as: an article, material, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber or drywall that have been manufactured in the United States.
 - c) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
 - d) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- a) To provide to the Airport Sponsor or FAA evidence that documents the source and origin of the steel and manufactured product.
 - b) To faithfully comply with providing U.S. domestic product.
 - c) To furnish U.S. domestic product for any waiver request that the FAA rejects.
 - d) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- ☐ The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for a Type 3 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent Bidder or Offeror with the apparent low bid agrees:
- a) To submit to the Airport Sponsor or FAA within 15 calendar days of being selected as the responsive Bidder, a formal waiver request and required documentation that supports the type of waiver being requested.
 - b) That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the Proposal.
 - c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.

- d) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 2 Waiver (Nonavailability) - The iron, steel, manufactured goods, or construction materials are not available in sufficient quantity or quality in the United States. The required documentation for a Type 2 Nonavailability waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire.
- b) Record of thorough market research, consideration where appropriate of qualifying alternate items, products, or materials including;
- c) A description of the market research activities and methods used to identify domestically manufactured items capable of satisfying the requirement, including the timing of the research and conclusions reached on the availability of sources.

Type 3 Waiver – The cost of the item components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the "item." The required documentation for a Type 3 waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire including;
- b) Listing of all product components and subcomponents that are not comprised of 100% U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108 (products of unknown origin must be considered as non-domestic products in their entirety).
- c) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- d) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver (Unreasonable Costs) - Applying this provision for iron, steel, manufactured goods, or construction materials, would increase the cost of the overall project by more than 25%. The required documentation for a Type 4 waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire from
- b) At minimum two comparable equal bidders and/or offerors;
- c) Receipt or record that demonstrates that supplier scouting called for in Executive Order 14005, indicates that no domestic source exists for the project and/or component;
- d) Completed waiver applications for each comparable bid and/or offer.

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date

Signature

Company Name

Title

A5 CIVIL RIGHTS - GENERAL

GENERAL CIVIL RIGHTS PROVISIONS

In all its activities within the scope of its airport program, Contractor agrees to comply with pertinent statutes, Executive Orders, and such rules as identified in Title VI List of Pertinent Nondiscrimination Acts and Authorities to ensure that no person shall, on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

A6 CIVIL RIGHTS – TITLE VI ASSURANCE

A6.1.1 Title VI Solicitation Notice

Title VI Solicitation Notice:

The **City of Chickasha**, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 USC §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that for any contract entered into pursuant to this advertisement, businesses including disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and no businesses will be discriminated against on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in consideration for an award.

A6.2 MANDATORY CONTRACT CLAUSES

A6.2.1 Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this Contract, Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-Assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27 (Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance);
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-259) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990 (42 USC § 12101, *et seq.*) (prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;

- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations);
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs [70 Fed. Reg. 74087 (2005)];
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC § 1681, et seq).

A6.2.2 Nondiscrimination Requirements/Title VI Clauses for Compliance

Compliance with Nondiscrimination Requirements:

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

1. **Compliance with Regulations:** Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this Contract.
2. **Nondiscrimination:** Contractor, with regard to the Work performed by it during the Contract, will not discriminate on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the Contract covers any activity, Project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by Contractor for Work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by Contractor of Contractor’s obligations under this Contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will 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 to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, Contractor will so certify to the Sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the Sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to Contractor under the contract until Contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. Contractor will take action with respect to any subcontract or procurement as the Sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, Contractor may request the Sponsor to enter into any litigation to protect the interests of the Sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

A7 CLEAN AIR AND WATER POLLUTION CONTROL

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 USC §§ 1251-1387). Contractor agrees to report any violation to Owner immediately upon discovery. Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceed \$150,000.

A8 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

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) of this clause, 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) of this clause, in the sum of \$29 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) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration (FAA) or Owner 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 moneys payable on account of Work performed by 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) of this clause.

4. Subcontractors.

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 clause.

A9 COPELAND "ANTI-KICKBACK" ACT

COPELAND "ANTI-KICKBACK" ACT

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 USC 874 and 40 USC 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the Project to give up any part of the compensation to which the employee is entitled. Contractor and each Subcontractor must submit to Owner, a weekly statement on the wages paid to each employee performing on covered Work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

A10 DAVIS-BACON REQUIREMENTS

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 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 § 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 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;

(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 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, U.S. Department of Labor, Washington, DC 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 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 Contractor does not make payments to a trustee or other third person, 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 Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require 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 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 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 the work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to 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 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, Contractor shall maintain records that 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) Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the Contract, but if the agency is not such a party, Contractor will submit the 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 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.*, the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, Contractor will submit them to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, Sponsor, or Owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by 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 provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), 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 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) 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 Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to 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, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, 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 Office of Apprenticeship Training, Employer and Labor Services 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 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 Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, 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 that provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that 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, 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.

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

6. Subcontracts.

Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR §§ 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 § 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 USC § 1001.

A11 DEBARMENT AND SUSPENSION

CERTIFICATION OF OFFEROR/BIDDER REGARDING DEBARMENT

By submitting a Bid/Proposal under this solicitation, the Bidder or Offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

A11.1.1 Lower Tier Contract Certification

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

The successful Bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction," must confirm each lower tier participant of a "covered transaction" under the Project is not presently debarred or otherwise disqualified from participation in this federally-assisted project. The successful Bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>.
2. Collecting a certification statement similar to the Certification of Offeror /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

A12 DISADVANTAGED BUSINESS ENTERPRISE

A12.1.1 Solicitation Language (Solicitations that include a Contract Goal)

Owner's award of this Contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR § 26.53.

As a condition of responsiveness, the Bidder or Offeror must submit the following information with its proposal on the forms provided herein:

- 1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the Contract;
- 2) A description of the Work that each DBE firm will perform;
- 3) The dollar amount of the participation of each DBE firm listed under (1);
- 4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet Owner's Project goal;
- 5) Written confirmation from each listed DBE firm that it is participating in the contract in the kind and amount of work provided in the Prime Contractor's commitment; and
- 6) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the Bidder when a non-DBE subcontractor was selected over a DBE for Work on the Contract.

A12.1.2 Prime Contracts (Contracts Covered by a DBE Program)

Contract Assurance (49 CFR § 26.13; mandatory text provided) –

Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. 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, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying Contractor from future bidding as non-responsible.

Prompt Payment (49 CFR § 26.29; acceptable/sample text provided) –

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 Prime Contractor receives from the City of Chickasha. 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 City of Chickasha. This clause applies to both DBE and non-DBE subcontractors.

Termination of DBE Subcontracts (49 CFR § 26.53(f); acceptable/sample text provided) –

Prime Contractor must not terminate a DBE subcontractor (or an approved substitute DBE firm) without prior written consent of the City of Chickasha. This includes, but is not limited to, instances in which Prime Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

Prime Contractor shall utilize the specific DBEs listed to perform the Work and supply the materials for which each is listed unless Contractor obtains written consent of the City of Chickasha. Unless the City of Chickasha's consent is provided, Prime Contractor shall not be entitled to any payment for Work or material unless it is performed or supplied by the listed DBE.

The City of Chickasha may provide such written consent only if the City of Chickasha agrees, for reasons stated in the concurrence document, that Prime Contractor has good cause to terminate the DBE firm. For purposes of this paragraph, good cause includes the circumstances listed in 49 CFR §26.53.

Before transmitting to the City of Chickasha its request to terminate and/or substitute a DBE subcontractor, the prime contractor must give notice in writing to the DBE subcontractor, with a copy to the City of Chickasha, of its intent to request to terminate and/or substitute, and the reason for the request.

Prime Contractor must give the DBE five days to respond to Prime Contractor's notice and advise the City of Chickasha and the contractor of the reasons, if any, why it objects to the proposed termination of its

subcontract and why the City of Chickasha should not approve Prime Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the City of Chickasha may provide a response period shorter than five days.

In addition to post-award terminations, the provisions of this Section apply to preaward deletions of or substitutions for DBE firms put forward by offerors in negotiated procurements.

A13 DISTRACTED DRIVING

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving," (10/1/2009) and DOT Order 3902.10, "Text Messaging While Driving," (12/30/2009), the Federal Aviation Administration encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or subgrant.

In support of this initiative, Owner encourages Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the Project. Contractor must include the substance of this clause in all sub-tier contracts exceeding \$10,000 that involve driving a motor vehicle in performance of work activities associated with the Project.

A14 PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to use and procurement of certain telecommunications and video surveillance services or equipment in compliance with the National Defense Authorization Act [Public Law 115-232 § 889(f)(1)].

A15 Not Applicable

A16 EQUAL EMPLOYMENT OPPORTUNITY (EEO)

A16.1.1 EEO Contract Clause

EQUAL OPPORTUNITY CLAUSE

During the performance of this Contract, Contractor agrees as follows:

(1) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. 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, sexual orientation, gender identity, 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. 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) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of Contractor's commitments under this section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

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

(7) In the event of Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and Contractor may be declared ineligible for further Government contracts in accordance with

procedures 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.

(8) Contractor will include the provisions of paragraphs (1) through (8) 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. Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: *Provided*, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

A16.1.2 EEO Specification

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

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 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 Contractor is participating (pursuant to 41 CFR part 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 must 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. Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 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 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 areas 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. 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 Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse Contractor's obligations under these Specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

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

7. Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. 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 Contractor's employees are assigned to work. Contractor, where possible, will assign two or more women to each construction project. Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out 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 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 Contractor by the union or, if referred, not employed by Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which Contractor has a collective bargaining agreement has not referred to Contractor a minority person or woman sent by Contractor, or when Contractor has other information that the union referral process has impeded 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 Contractor's employment needs, especially those programs funded or approved by the Department of Labor. Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting 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 as 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 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 Contractor's EEO policy with other contractors and subcontractors with whom 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 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, 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 work force.
 - 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 Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated 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 (7a through 7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these Specifications provided that 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 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 Contractor. The obligation to comply, however, is Contractor's and failure of such a group to fulfill an obligation shall not be a defense for Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. 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, Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though Contractor has achieved its goals for women generally, Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

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

12. 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. Contractor, in fulfilling its obligations under these Specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If 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 part 60-4.8.

14. 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 numbers, 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).

A17 FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, et seq, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers.

Contractor has full responsibility to monitor compliance to the referenced statute or regulation. Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

A18 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

A18.1 MANDATORY CERTIFICATION CLAUSE

CERTIFICATION REGARDING LOBBYING

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

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an 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 of 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 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 this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

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 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.

A19 PROHIBITION OF SEGREGATED FACILITIES

PROHIBITION OF SEGREGATED FACILITIES

(a) Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, 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 that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this Contract.

A20 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All Contracts and Subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

A21 PROCUREMENT OF RECOVERED MATERIALS

PROCUREMENT OF RECOVERED MATERIALS

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or
- 2) Contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

A22 RIGHT TO INVENTIONS

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This Contract incorporates by reference the patent and inventions rights as specified within 37 CFR § 401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental, or research work.

A23 SEISMIC SAFETY

SEISMIC SAFETY

Contractor agrees to ensure that all Work performed under this Contract, including Work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

A24 TAX DELINQUENCY AND FELONY CONVICTIONS

CERTIFICATION OF OFFEROR/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

- 1) The applicant represents that it is () is not () a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is () is not () a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the Sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to Owner about its tax liability or conviction to Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. Code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 USC § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

A25 TERMINATION OF CONTRACT

A25.1.1 Termination for Convenience

TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS)

Owner may terminate this Contract in whole or in part at any time by providing written notice to Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by Owner, Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to Owner all fabricated and partially fabricated parts, completed, and partially completed Work, supplies, equipment, and materials acquired prior to termination of the Work, and as directed in the written notice.
5. Complete performance of the Work not terminated by the notice.
6. Take action as directed by Owner to protect and preserve property and Work related to this Contract that Owner will take possession.

Owner agrees to pay Contractor for:

1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination;
2. Documented expenses sustained prior to the effective date of termination in performing Work and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work;
3. Reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
4. Reasonable and substantiated expenses to Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this Contract.

A25.1.2 Termination for Default

TERMINATION FOR CAUSE (CONSTRUCTION)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes standard language for conditions, rights, and remedies associated with Owner termination of this contract for cause due to default of Contractor.

A26 TRADE RESTRICTION CERTIFICATION

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

- 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 as 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 included on the list of countries that discriminate against U.S. firms as published by the USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

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 USC § 1001.

The Offeror/Contractor must provide immediate written notice to Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. Contractor must require subcontractors provide immediate written notice to Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

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 an Offeror or subcontractor:

- 1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR; or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list; or
- 3) who incorporates in the public works project any product of a foreign country on such USTR list.

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.

The Offeror agrees that, if awarded a Contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. Contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by USTR, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration (FAA) may direct through the Owner cancellation of the Contract or Subcontract for default at no cost to Owner or the FAA.

A27 VETERAN'S PREFERENCE

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions), Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 USC § 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

A28 DOMESTIC PREFERENCES FOR PROCUREMENTS

CERTIFICATION REGARDING DOMESTIC PREFERENCES FOR PROCUREMENTS

The Bidder or Offeror certifies by signing and submitting this Bid or Proposal that, to the greatest extent practicable, the Bidder or Offeror has provided a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including, but not limited to, iron, aluminum, steel, cement, and other manufactured products) in compliance with 2 CFR § 200.322.

Part 1 – General Contract 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	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.
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.

Paragraph Number	Term	Definition
10-15	Change Order	A written order to 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 Owner and 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.
10-20	Contractors Quality Control (QC) Facilities	Contractor's QC facilities in accordance with 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 Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by 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 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.

Paragraph Number	Term	Definition
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 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 prepared and issued by the General Services Administration.
10-30	Force Account	a. Contract Force Account - A method of payment that addresses extra work performed by Contractor on a time and material basis. b. Owner Force Account - Work performed for the project by Owner's employees.
10-31	Intention of Terms	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 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 Engineer and/or RPR, subject in each case to the final determination of Owner. 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.
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 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.
10-37	Owner	Party of the first part or the contracting agency signatory to the contract. Where "Owner" is capitalized herein, it shall mean airport Sponsor only.

Paragraph Number	Term	Definition
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 Contractor and their own surety as a guaranty that 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 Contractor and their own surety as a guaranty that 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 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 accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of 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 Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of Owner or such other laboratories as may be designated by 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 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 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.

Paragraph Number	Term	Definition
10-53	Safety Plan Compliance Document (SPCD)	Details how 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 and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between Contractor and 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 Contractor, executing payment or performance bonds that are furnished to Owner by 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 Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.

Paragraph Number	Term	Definition
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 Contractor may proceed with regular work for at least six hours toward completion of the contract. When work is suspended for causes beyond Contractor's control, it will not be counted as a working day. Saturdays, Sundays, and holidays on which Contractor's forces engage in regular work will be considered as working days.
10-66	Owner Defined terms	None

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). See Section SB1 and SB2-Notice to Bidders.

20-02 Qualification of Bidders. Each Bidder shall submit evidence of competency and evidence of financial responsibility to perform the Work to 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 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 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.

20-03 Contents of proposal forms. 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. Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by Owner. Bidder actions that may cause Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

Mobilization is limited to 10% of the total Project cost.

A prebid conference is required on this Project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. Meeting time, date, and place described in Section SB1 and SB2-Notice to Bidders.

20-04 Issuance of proposal forms. 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 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 Owner at the time Owner issues the proposal to a prospective Bidder.
- c. Documented record of Contractor default under previous contracts with Owner.
- d. Documented record of unsatisfactory work on previous contracts with 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. 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 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 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 Owner.

20-07 Preparation of proposal. The Bidder shall submit their proposal on the forms furnished by 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 Owner's invitation for bid. It is 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 Owner, or if 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 Owner.

f. If the applicable Disadvantaged Business Enterprise information is incomplete.

Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of 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 Owner.

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 Owner in writing and/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.

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 telegraphic 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 Owner until any such participating Bidder has been reinstated by 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 Owner's Engineer of the matter. A Bidder that has doubt as to the true meaning of a project requirement may submit to Owner's Engineer a written request for interpretation no later than 10 days prior to bid opening.

Any interpretation of the Project Bid documents by Owner's Engineer will be by written addendum issued by Owner. 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, 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, Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of 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 Owner's best interests.

30-02 Award of contract. The award of a Contract, if it is to be awarded, shall be made within **90** calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

If Owner elects to proceed with an award of contract, 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. 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 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 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 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 Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds*.

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful Bidder shall furnish 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 Contractor's performance of the Work. The surety and the form of the bond or bonds shall be acceptable to 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 Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this Section, within 15 calendar days from the date mailed or otherwise delivered to the successful Bidder.

30-07 Approval of contract. Upon receipt of the Contract and Contract Bond or bonds that have been executed by the successful Bidder, Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed Contract to Contractor. Delivery of the fully executed Contract to Contractor shall constitute 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 paragraph 30-06, *Execution of Contract*, of this Section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to 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 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. 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, 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 Contractor's surety and separate performance and payment bonds. If Owner and Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

40-03 Omitted items. Owner, Owner's Engineer or RPR may provide written notice to 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, 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 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 RPR's opinion, is necessary for completion of the extra work.

When determined by RPR to be in Owner's best interest, RPR may order 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 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, 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 Owner.

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

a. It is understood and agreed that 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 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, 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 Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by Contractor's equipment and personnel. 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. 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. Unless otherwise specified herein, Contractor will not be required to furnish snow removal for such existing road, street, or highway.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by 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 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 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 Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should 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, Contractor may at their own option either:

- a. Use such material in another contract item, providing such use is approved by 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 RPR; or
- c. Use such material for Contractor's own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

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

Should RPR approve Contractor's request to exercise option a., b., or c., Contractor shall be paid for the excavation or removal of such material at the applicable contract price. 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. Contractor shall not be charged for use of such material used in the Work or removed from the Site.

Should RPR approve Contractor's exercise of option a., 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 Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

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, Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. 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 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). RPR has final authority regarding the interpretation of Project Specification requirements. 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. 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 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 Owner, RPR will advise Owner of their determination that the affected work be accepted and remain in place. RPR will document the determination and recommend to 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 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 Contractor in accordance with RPR written orders.

The term “reasonably close conformity” shall not be construed as waiving Contractor’s responsibility to complete the work in accordance with the Contract, Plans, and Specifications. The term shall not be construed as waiving RPR responsibility to insist on strict compliance with the requirements of the Contract, Plans, and Specifications during Contractor’s execution of the work, when, in RPR opinion, such compliance is essential to provide an acceptable finished portion of the Work.

The term “reasonably close conformity” is also intended to provide 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.

RPR will not be responsible for 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 Contractor discovers any apparent discrepancy within standard test methods, Contractor shall immediately ask RPR for an interpretation and decision, and such decision shall be final.

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

50-04 Special Provisions. Refer to the Special Provisions Section of this Project Manual.

In case of conflict between the stipulations of the Special Provisions and the Specifications, Plans or General Provisions, the Special Provisions shall take precedence and govern

50-05 Cooperation of Contractor. Contractor shall be supplied with an electronic PDF of the Plans and Specifications. 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 Contractor for the cost of reproduction.

Contractor shall give constant attention to the work to facilitate the progress thereof and shall cooperate with RPR and their inspectors and with other Contractors in every way possible. 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 RPR or their authorized representative.

50-06 Cooperation between Contractors. 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 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.

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. 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. 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 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 Contractor.

Prior to the start of construction, Contractor will check all control points for horizontal and vertical accuracy and certify in writing to RPR that 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 RPR. Contractor is responsible to establish all layout required for the construction of the Project.

Copies of survey notes will be provided to RPR for each area of construction and for each placement of material as specified to allow 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 RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): DWG and PDF.

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 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, Contractor is solely responsible for correction, removal, replacement, and all associated costs at no additional cost to 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 Contractor.

QA Inspectors are authorized to notify 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 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. RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by Contractor as is required to make a complete and detailed inspection.

If RPR requests it, 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, 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 Contractor's expense.

Provide advance written notice to RPR of work Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by RPR may be ordered removed and replaced at 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 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.

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 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 RPR. Work done contrary to the instructions of RPR, work done beyond the lines shown on the plans or as established by 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 Contractor's expense.

Upon failure on the part of Contractor to comply with any order of RPR made under the provisions of this subsection, 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 Contractor.

50-11 Load restrictions. 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 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. Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by Contractor's equipment and personnel.

50-12 Maintenance during construction. 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, 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 Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, RPR shall immediately notify Contractor of such noncompliance. Such notification shall specify a reasonable time within which Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should Contractor fail to respond to RPR notification, Owner may suspend any work necessary for Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by Owner, shall be recovered as a liquidated damage against Contractor.

50-14 Partial acceptance. If at any time during the execution of the project Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit Owner, Contractor may request RPR to make final inspection of that unit. If RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, RPR may accept it as being complete, and Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by Owner shall not void or alter any provision of the Contract.

50-15 Final acceptance. Upon due notice from Contractor of presumptive completion of the entire Project, 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. RPR shall notify 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, RPR will notify Contractor and 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, RPR will make the Final Acceptance and notify Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason 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, Contractor shall notify RPR in writing of their intention to claim such additional compensation before Contractor begins the work on which Contractor bases the claim. If such notification is not given or RPR is not afforded proper opportunity by Contractor for keeping strict account of actual cost as required, then Contractor hereby agrees to waive any claim for such additional compensation. Such notice by Contractor and the fact that 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, Contractor shall, within 10 calendar days, submit a written claim to RPR who will present it to Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

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).

To expedite the inspection and testing of materials, Contractor shall furnish documentation to 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 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, Contractor shall furnish materials from other sources.

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 RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of RPR shall be performed at Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by RPR, shall be removed at Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of 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 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 Contractor's representative at their request after review and approval of RPR.

A copy of all Contractor QC test data shall be provided to RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, Contractor shall submit a final report to RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

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).

60-03 Certification of compliance/analysis (COC/COA). 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 based on 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 RPR.

When a material or assembly is specified by “brand name or equal” and Contractor elects to furnish the specified “or equal,” 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.

RPR shall be the sole judge as to whether the proposed “or equal” is suitable for use in the work.

RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. 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 RPR conduct plant inspections, the following conditions shall exist:

- a. RPR shall have the cooperation and assistance of Contractor and the producer with whom Contractor has contracted for materials.
- b. 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 RPR, 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 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. 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. Contractor shall provide dedicated space for the use of 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 Contractor. Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity.

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. Contractor shall coordinate the storage of all materials with 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 Contractor’s plant and parked equipment or vehicles shall be as directed by RPR. Private property shall not be used for storage purposes without written permission of Owner or lessee of such property. Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, Contractor shall furnish 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 Contractor at their expense, except as otherwise agreed to (in writing) by 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. Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by RPR.

Rejected material or assembly, the defects of which have been corrected by Contractor, shall not be returned to the site of the work until such time as RPR has approved its use in the work.

60-08 Owner furnished materials. Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by Owner. Owner-furnished materials shall be made available to 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, Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during Contractor's handling, storage, or use of such Owner-furnished material. Owner will deduct from any monies due or to become due Contractor any cost incurred by Owner in making good such loss due to Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. 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. Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify 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 Contractor or Contractor's employees.

70-02 Permits, licenses, and taxes. 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 Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. Contractor and the surety shall indemnify and hold harmless 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 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.

70-04 Restoration of surfaces disturbed by others. 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 Owner, such authorized work (by others) must be shown on the Plans and is indicated as follows: **such coordination, if required, will be detailed on the Plans.**

Except as listed above, 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 RPR.

Should 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, 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 RPR, 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 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 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. 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. 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.

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*.

Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of RPR. If RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and Contractor is unable to respond in a prompt and reasonable manner, 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 Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). 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. CSPP is on sheets "Construction Safety and Phasing Plan" of the Project Plans.

70-09 Use of explosives. The use of explosives is not permitted on this Project.

70-10 Protection and restoration of property and landscape. 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 Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

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 Contractor, 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 Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. Contractor shall indemnify and hold harmless Engineer/RPR and 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 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 Contractor under and by virtue of their own contract considered necessary by Owner for such purpose may be retained for the use of 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 Owner, except that money due Contractor will not be withheld when Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

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 Contractor to complete portions of the Contract Work for the beneficial occupancy of 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, Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Upon completion of any portion of Work listed above, such portion shall be accepted by Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the Work may be opened by Contractor until directed by 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 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 Owner shall be repaired by Contractor at their expense.

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.

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 sections of work to traffic.

70-14 Contractor’s responsibility for work. Until RPR 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*, 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. 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 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, Contractor shall be responsible for the Work and shall take such precautions necessary to prevent damage to the Work. 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, 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*, Contractor shall cooperate with Owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by Owner to construct, reconstruct, or maintain such utility services or facilities during the progress of the work. In addition, 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.

It is understood and agreed that 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 Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that Contractor shall, upon execution of the contract, notify 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 RPR.

In addition to the general written notification provided, it shall be the responsibility of 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, Contractor shall again notify each such Owner of their plan of operation. If, in Contractor's opinion, Owner's assistance is needed to locate the utility service or facility or the presence of a representative of 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 Contractor's commencement of operations in such general vicinity. Contractor shall furnish a written summary of the notification to RPR.

Contractor's failure to give the two days' notice shall be cause for Owner to suspend 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, Contractor shall be required to use hand excavation methods within 3 feet of such outside limits at such points as may be required to ensure protection from damage due to Contractor's operations.

Should Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, Contractor shall immediately notify the proper authority and RPR and shall take all reasonable measures to prevent further damage or interruption of service. Contractor, in such events, shall cooperate with the utility service or facility owner and RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

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. Owner reserves the right to deduct such costs from any monies due or which may become due Contractor, or their own surety.

70-15.1 FAA facilities and cable runs. 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. Contractor, during the execution of the project work, shall comply with the following:

a. 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. Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport a minimum of seven (7) 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, 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 Contractor's equipment or personnel whether by negligence or accident will require Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. 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 Owner. 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, Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 Furnishing rights-of-way. Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of 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 Engineer, RPR, their authorized representatives, or any officials of Owner either personally or as an official of Owner. It is understood that in such matters they act solely as agents and representatives of Owner.

70-18 No waiver of legal rights. Upon completion of the Work, Owner will expeditiously make final inspection and notify Contractor of final acceptance. Such Final Acceptance, however, shall not preclude or stop Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall Owner be precluded or stopped from recovering from Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of Contractor to fulfill their obligations under the Contract. A waiver on the part of Owner of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

Contractor, without prejudice to the terms of the Contract, shall be liable to Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards Owner's rights under any warranty or guaranty.

70-19 Environmental protection. Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. 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, 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 Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, Contractor shall immediately cease operations in that location and notify RPR. RPR will immediately investigate Contractor's finding and Owner will direct Contractor to either resume operations or to suspend operations as directed.

Should Owner order suspension of Contractor's operations in order to protect an archaeological or historical finding, or order 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*.

70-21 Insurance Requirements. Refer to special provisions section 304.

END OF SECTION 70

Section 80 Execution and Progress

80-01 Subletting of contract. Owner will not recognize any subcontractor on the Work. 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).

Contractor shall perform, with his organization, an amount of work equal to at least **50** percent of the total Contract cost.

Should Contractor elect to assign their Contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of Owner, and shall be consummated only on the written approval of Owner.

Contractor shall provide copies of all subcontracts to 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). Owner's Notice to Proceed will state the date on which contract time commences. Contractor is expected to commence Project operations within 10 days of the NTP date. Contractor shall notify RPR at least 48 hours in advance of the time contract operations begins. Contractor shall not commence any actual operations prior to the date on which the Notice to Proceed is issued by Owner.

80-03 Execution and progress. Unless otherwise specified, Contractor shall submit their coordinated construction schedule showing all Work activities for RPR review and acceptance at least 10 days prior to the start of Work. Contractor's progress schedule, once accepted by RPR, will represent Contractor's baseline plan to accomplish the Project in accordance with the terms and conditions of the Contract. RPR will compare actual Contractor progress against the baseline schedule to determine that status of Contractor's performance. 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 Contractor falls significantly behind the submitted schedule, Contractor shall, upon RPR 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, Contractor shall notify RPR at least 24 hours in advance of resuming operations.

Contractor shall not commence any actual construction prior to the date on which the NTP is issued by Owner.

The Project Schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified. It shall include information on the sequence of work activities, milestone dates, and activity duration. The schedule shall show all work items identified in the Project Proposal for each work area and shall include the Project start date and end date.

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 Contractor of overall responsibility for scheduling, sequencing, and coordinating all Work to comply with the requirements of the Contract.

80-04 Limitation of operations. 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 Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through RPR) at least 48 hours prior to commencement of such work. Contractor shall not close an AOA until so authorized by 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 Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), 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 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 Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as shown in the CSPP.

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. Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. Contractor shall conduct routine checks to assure compliance with the safety plan measures.

Contractor is responsible to Owner for the conduct of all subcontractors it employs on the Project. 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 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. 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 Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of RPR, be removed immediately by Contractor or subcontractor employing such person, and shall not be employed again in any portion of the Work without approval of RPR.

Should Contractor fail to remove such person or persons or fail to furnish suitable and sufficient personnel for the proper execution of the Work, 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 Contractor in accomplishing the work are not prescribed in the Contract, 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 RPR. If Contractor desires to use a method or type of equipment other than specified in the Contract, Contractor may request authority from 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 Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, RPR determines that the work produced does not meet contract requirements, Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. Contractor shall remove any deficient work and replace it with work of specified quality or take such other corrective action as 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.

80-06 Temporary suspension of the work. Owner shall have the authority to suspend the Work wholly, or in part, for such period or periods 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 Contractor to carry out orders given or perform any or all provisions of the Contract.

In the event that Contractor is ordered by Owner, in writing, to suspend Work for some unforeseen cause not otherwise provided for in the Contract and over which Contractor has no control, 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 RPR within time stated in RPR order to resume work. Contractor shall submit with their own claim information substantiating the amount shown on the claim. RPR will forward Contractor's claim to Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling 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, Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the Work. Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

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.

If the Contract Time requires extension for reasons beyond Contractor's control, it shall be adjusted as follows:

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

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 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 Owner should Contractor fail to complete the Work in the time provided in their Contract. Liquidated damages shall be as specified in the Proposal Section.

The maximum construction time allowed is indicated for each phase in the plans. Permitting 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 Owner of any of its rights under the Contract.

80-09 Default and termination of contract. Contractor shall be considered in default of their contract and such default will be considered as cause for Owner to terminate the contract for any of the following reasons, if 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 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 Owner consider Contractor in default of the contract for any reason above, Owner shall immediately give written notice to Contractor and Contractor's surety as to the reasons for considering Contractor in default and Owner's intentions to terminate the Contract.

If Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then Owner will, upon written notification from RPR of the facts of such delay, neglect, or default and 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 Contractor. 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 RPR will be required for the completion of said Contract in an acceptable manner.

All costs and charges incurred by Owner, together with the cost of completing the Work under Contract, will be deducted from any monies due or which may become due Contractor. If such expense exceeds the sum which would have been payable under the Contract, then Contractor and the surety shall be liable and shall pay to Owner the amount of such excess.

80-10 Termination for national emergencies. Owner shall terminate the Contract or portion thereof by written notice when 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 Contractor.

Acceptable materials obtained or ordered by Contractor for the Work and that are not incorporated in the Work shall, at the option of Contractor, be purchased from Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by RPR.

Termination of the Contract or a portion thereof shall neither relieve 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. Contractor shall obtain approval from 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. 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 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 or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or ordered in writing by 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 Contractor and approved by RPR in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by RPR and shall be agreed to by 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	“Ton” will mean the short ton consisting of 2,000 pounds 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 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 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 delivery.

Term	Description
Asphalt Material	Asphalt materials will be measured by gallon or ton. When measured by volume, such volumes will be measured at 60°F or will be corrected to the volume at 60°F 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 ton or hundredweight.
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	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 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. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. Contractor shall have the scales checked under the observation of 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 1 pound. The use of spring balances will not be permitted. In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received after last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. 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 Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and RPR can safely and conveniently view them. Scale installations shall have available ten standard 50-pound weights for testing the weighing equipment or suitable weights and devices for other approved equipment. 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.
Rental Equipment	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> .

Term	Description
Pay Quantities	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 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.

90-02 Scope of payment. 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, 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 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*, RPR shall have the right to omit from the work (order nonperformance) any contract item, except major Contract items, in the best interest of Owner.

Should RPR omit or order nonperformance of a Contract item or portion of such item from the Work, Contractor shall accept payment in full at the Contract prices for any Work actually completed and acceptable prior to RPR order to omit or non-perform such Contract item.

Acceptable materials ordered by Contractor or delivered on the Work prior to the date of RPR order will be paid for at the actual cost to Contractor and shall thereupon become the property of Owner.

In addition to the reimbursement hereinbefore provided, Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted Contract item prior to the date of RPR order. Such additional costs incurred by Contractor must be directly related to the deleted Contract item and shall be supported by certified statements by 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.

90-06 Partial payments. Partial payments will be made to Contractor at least once each month as the Work progresses. Said payments will be based upon estimates, prepared by 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 Contractor since the last estimate amounts to less than five hundred dollars.

(1) Contractor may request release of retainage on work that has been partially accepted by Owner per Section 50-03. Contractor must provide a certified invoice to RPR that supports the value of retainage held by Owner for partially accepted Work.

It is understood and agreed that 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 RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind 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*.

Contractor shall deliver to 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, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees Owner may be compelled to pay in discharging any such lien or claim.

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 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 RPR at or on an approved site.
- b. Contractor has furnished RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. Contractor has furnished RPR with satisfactory evidence that the material and transportation costs have been paid.
- d. Contractor has furnished Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.
- e. Contractor has furnished 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 Owner's payment for such stored or stockpiled materials shall in no way relieve 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.

Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

90-08 Payment of withheld funds. At Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, Contractor may request that Owner deposit the retainage into an escrow account. Owner's deposit of retainage into an escrow account is subject to the following conditions:

- a. Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to Owner.
- b. Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

- c. Contractor shall enter into an escrow agreement satisfactory to Owner.
- d. 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*, RPR will prepare the final estimate of the items of work actually performed. Contractor shall approve RPR final estimate or advise RPR of 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. Contractor and RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of Contractor's receipt of RPR final estimate. If, after such 30-day period, a dispute still exists, Contractor may approve RPR estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After Contractor has approved, or approved under protest, RPR final estimate, and after RPR 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 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 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 Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, 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 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 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 Owner takes possession. However, this will not relieve Contractor from corrective items required by the final acceptance of the project work. Light Emitting Diode emitting diode (LED) light fixtures with the exception of obstruction lighting, must be warranted by the manufacturer for a minimum of four years after date of installation inclusive of all electronics.

c. Contractor shall remedy at Contractor's expense any failure to conform, or any defect. In addition, Contractor shall remedy at Contractor's expense any damage to Owner real or personal property, when that damage is the result of Contractor's failure to conform to Contract requirements; or any defect of equipment, material, workmanship, or design furnished by Contractor.

d. Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. Owner will notify Contractor, in writing, within seven days after the discovery of any failure, defect, or damage.

f. If Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at 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, 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 Owner, as directed by Owner, and (3) Enforce all warranties for the benefit of Owner.

h. This warranty shall not limit Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Contractor Final Project Documentation. Approval of Final Payment to Contractor is contingent upon completion and submittal of the items listed below. The Final Payment will not be approved until RPR approves Contractor's final submittal. Contractor shall:

a. Provide two copies of all manufacturer 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

Item C-105 Mobilization

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.

105-2 Mobilization limit. Mobilization shall be limited to 10 percent of the total project cost.

105-3 Posted notices. Before construction activities, 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 Owner.

105-4 Engineer/RPR field office. An Engineer/RPR Field office is not required.

METHOD OF MEASUREMENT

105-5 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

105-6.1 Payment will be made under:

Item C-105 Mobilization – 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 P-209 Crushed Aggregate Base Course

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregate base constructed on a prepared course in accordance with these specifications and in conformity to the dimensions and typical cross-sections shown on the plans.

MATERIALS

209-2.1 Crushed aggregate base. Crushed aggregate shall consist of clean, sound, durable particles of crushed stone, crushed gravel, or crushed slag and shall be free from coatings of clay, silt, organic material, clay lumps or balls or other deleterious materials or coatings. The method used to produce the crushed gravel shall result in the fractured particles in the finished product as consistent and uniform as practicable. Fine aggregate portion, defined as the portion passing the No. 4 sieve shall consist of fines from the coarse aggregate crushing operation. The fine aggregate shall be produced by crushing stone, gravel, or crushed slag that meets the coarse aggregate requirements for wear and soundness. Aggregate base material requirements are listed in the following table.

Crushed Aggregate Base Material Requirements

Material Test	Requirement	Standard
Coarse Aggregate		
Resistance to Degradation	Loss: 45% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Percentage of Fractured Particles	Minimum 90% by weight of particles with at least two fractured faces and 100% with at least one fractured face ¹	ASTM D5821
Flat Particles, Elongated Particles, or Flat and Elongated Particles	10% maximum, by weight, of flat, elongated, or flat and elongated particles ²	ASTM D4791
Fine Aggregate		
Liquid limit	Less than or equal to 25	ASTM D4318
Plasticity Index	Not more than five (5)	ASTM D4318

¹ The area of each face shall be equal to at least 75 percent of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

209-2.2 Gradation requirements. The gradation of the aggregate base material shall meet the requirements of the gradation given in the following table when tested per ASTM C117 and ASTM C136. The gradation shall be well graded from coarse to fine and shall not vary from the lower limit on one sieve to the high limit on an adjacent sieve or vice versa.

Gradation of Aggregate Base

Sieve Size	Design Range Percentage by Weight passing	Contractor's Final Gradation	Job Control Grading Band Tolerances ¹ (Percent)
2 inch	100		0
1-1/2 inch	95-100		±5
1 inch	70-95		±8
3/4 inch	55-85		±8
No. 4	30-60		±8
No. 40 ²	10-30		±5
No. 200 ²	0-10		±3

¹ The "Job Control Grading Band Tolerances for Contractor's Final Gradation" in the table shall be applied to "Contractor's Final Gradation" to establish a job control grading band. The full tolerance still applies if application of the tolerances results in a job control grading band outside the design range.

² The fraction of material passing the No 200 sieve shall not exceed two-thirds the fraction passing the No 40 sieve.

209-2.3 Sampling and Testing.

a. Aggregate base materials. The Contractor shall take samples of the aggregate base in accordance with ASTM D75 to verify initial aggregate base requirements and gradation. Material shall meet the requirements in Paragraph 209-2.1. This sampling and testing will be the basis for approval of the aggregate base quality requirements.

b. Gradation requirements. The Contractor shall take at least two aggregate base samples per day in the presence of the Resident Project Representative (RPR) to check the final gradation. Sampling shall be per ASTM D75. Material shall meet the requirements in Paragraph 209-2.2. The samples shall be taken from the in-place, un-compacted material at sampling points and intervals designated by the RPR.

209-2.4 Separation Geotextile. Not used.

CONSTRUCTION METHODS

209-3.1 Control strip. The first half-day of construction shall be considered the control strip. The Contractor shall demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of the 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 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 continue 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 by the RPR.

209-3.2 Preparing underlying subgrade and/or subbase. The underlying subgrade and/or subbase shall be checked and accepted by the RPR before base course placing and spreading operations begin. Re-proof rolling of the subgrade or proof rolling of the subbase in accordance with Item P-152, at the Contractor's expense, may be required by the RPR if the Contractor fails to ensure proper drainage or protect the subgrade and/or subbase. Any ruts or soft, yielding areas due to improper drainage conditions, hauling, or any other cause, shall be corrected before the base course is placed. To ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

209-3.3 Production. The aggregate shall be uniformly blended and, when at a satisfactory moisture content per Paragraph 209-3.5, the approved material may be transported directly to the placement.

209-3.4 Placement. The aggregate shall be placed and spread on the prepared underlying layer by spreader boxes or other devices as approved by the RPR, to a uniform thickness and width. The equipment shall have positive thickness controls to minimize the need for additional manipulation of the material. Dumping from vehicles that require re-handling shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

The aggregate shall meet gradation and moisture requirements prior to compaction. The base course shall be constructed in lifts as established in the control strip, but not less than 4 inches nor more than 12 inches 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 at the Contractor's expense.

209-3.5 Compaction. Immediately after completion of the spreading operations, compact each layer of the base course, as specified, with approved compaction equipment. The number, type, and weight of rollers shall be sufficient to compact the material to the required density within the same day that the aggregate is placed on the subgrade.

The field density of each compacted lift of material shall be at least 98% of the maximum density of laboratory specimens prepared from samples of the subbase material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with ASTM D698. The moisture content of the material during placing operations shall be within ± 2 percentage points of the optimum moisture content as determined by ASTM D698. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

209-3.6 Weather limitations. Material shall not be placed unless the ambient air temperature is at least 40°F and rising. Work on base course shall not be conducted when the subgrade or subbase is wet or frozen or the base material contains frozen material.

209-3.7 Maintenance. The base course shall be maintained in a condition that will meet all specification requirements. When material has been exposed to excessive rain, snow, or freeze-thaw conditions, prior to placement of additional material, the Contractor shall verify that materials still meet all specification requirements. Equipment may be routed over completed sections of base course, provided that no damage results and the equipment is routed over the full width of the completed base course. Any damage resulting

to the base course from routing equipment over the base course shall be repaired by the Contractor at the Contractor's expense.

209-3.8 Surface tolerances. After the course has been compacted, 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, reshaped and recompact to grade until the required smoothness and accuracy are obtained and approved by the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8-inch when tested with a 12-foot 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 straightedge for the full length of each line on a 50-foot grid.

b. Grade. The grade and crown shall be measured on a 50-foot grid and shall be within +0 and -1/2 inch of the specified grade.

209-3.9 Acceptance sampling and testing. Crushed aggregate base course shall be accepted for density and thickness on an area basis. Two tests shall be made for density and thickness for each 2400 square yards. Sampling locations will be determined on a random basis per ASTM D3665

a. Density. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the tests results upon completion to the RPR for acceptance.

Each area shall be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens compacted and tested per ASTM D698. The in-place field density shall be determined per 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. If the specified density is not attained, the area represented by the failed test must be reworked and/or recompact and two additional random tests made. This procedure shall be followed until the specified density is reached. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

b. Thickness. Depth tests shall be made by test holes at least 3 inches in diameter that extend through the base. The thickness of the base course shall be within +0 and -1/2 inch of the specified thickness as determined by depth tests taken by the Contractor in the presence of the RPR for each area. Where the thickness is deficient by more than 1/2-inch, the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches, adding new material of proper gradation, and the material shall be blended and recompact to grade. The Contractor shall replace, at his expense, base material where depth tests have been taken.

METHOD OF MEASUREMENT

209-4.1 No separate measurement shall be made for this item, but shall be considered subsidiary to price bid for hangar.

BASIS OF PAYMENT

209-5.1 No separate payment shall be made for this item but shall be considered subsidiary to price bid for hangar.

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 C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))
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/ft ³ (2700 kN-m/m ³))
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4491	Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D4643	Standard Test Method for Determination of Water Content of Soil and Rock by Microwave Oven Heating
ASTM D4751	Standard Test Methods for Determining Apparent Opening Size of a Geotextile
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate

ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
American Association of State Highway and Transportation Officials (AASHTO)	
M288	Standard Specification for Geosynthetic Specification for Highway Applications

END OF ITEM P-209

Item P-605 Joint Sealants for Pavements

DESCRIPTION

605-1.1 This item shall consist of providing and installing a resilient and adhesive joint sealing material capable of effectively sealing joints in pavement; joints between different types of pavements; and cracks in existing pavement.

MATERIALS

605-2.1 Joint sealants. Joint sealant materials shall meet the requirements of ASTM D5893 Standard Specifications for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements.

Each lot or batch of sealant shall be delivered to the jobsite in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, the safe heating temperature, and shall be accompanied by the manufacturer's certification stating that the sealant meets the requirements of this specification.

605-2.2 Backer rod. The material furnished shall be a compressible, non-shrinking, non-staining, non-absorbing material that is non-reactive with the joint sealant in accordance with ASTM D5249. The backer-rod material shall be 25 percent $\pm$ 5 percent larger in diameter than the nominal width of the joint.

605-2.3 Bond breaking tapes. Provide a bond-breaking tape or separating material that is flexible, non-shrinkable, non-absorbing, non-staining, and non-reacting adhesive-backed tape. The material shall have a melting point at least 5 degrees F greater than the pouring temperature of the sealant being used when tested in accordance with ASTM D789. The bond breaker tape shall be approximately 1/8-inch wider than the nominal width of the joint and shall not bond to the joint sealant.

CONSTRUCTION METHODS

605-3.1 Time of application. Joints shall be sealed as soon after completion of the curing period as feasible and before the pavement is opened to traffic, including construction equipment. The pavement temperature shall be 50 degrees F and rising at the time of application of the poured joint sealing material. Do not apply sealant if moisture is observed in the joint.

605-3.2 Equipment. Machines, tools, and equipment used in the performance of the work required by this section shall be approved before the work is started and maintained in satisfactory condition at all times. Submit a list of proposed equipment to be used in performance of construction work including descriptive data, 21 days prior to use on the project.

a. Tractor-mounted routing tool. Provide a routing tool, used for removing old sealant from the joints, of such shape and dimensions and so mounted on the tractor so that it will not damage the sides of the joints. The tool shall be designed so that it can be adjusted to remove the old material to varying depths as required. The use of V-shaped tools or rotary impact routing devices will not be permitted. Hand-operated spindle routing devices may be used to clean and enlarge random cracks.

b. Concrete saw. Provide a self-propelled power saw, with water-cooled diamond or abrasive saw blades, for cutting joints to the depths and widths specified.

c. Sandblasting equipment. The Contractor must demonstrate sandblasting equipment including the air compressor, hose, guide and nozzle size, under job conditions, before approval in accordance with Paragraph 605-3.3. The Contractor shall demonstrate, in the presence of the Resident Project Representative (RPR), that the method cleans the joint and does not damage the joint.

d. Waterblasting equipment. The Contractor must demonstrate water-blasting equipment including the pumps, hose, guide, and nozzle size, under job conditions, before approval in accordance with Paragraph 605-3.3. The Contractor shall demonstrate, in the presence of the RPR, that the method cleans the joint and does not damage the joint.

e. Hand tools. Hand tools may be used, when approved, for removing defective sealant from a crack and repairing or cleaning the crack faces. Hand tools should be carefully evaluated for potential spalling effects prior to approval for use.

f. Hot-poured sealing equipment. Not used.

g. Cold-applied, single-component sealing equipment. The equipment for installing ASTM D5893 single component joint sealants shall consist of an extrusion pump, air compressor, following plate, hoses, and nozzle for transferring the sealant from the storage container into the joint opening. The dimension of the nozzle shall be such that the tip of the nozzle will extend into the joint to allow sealing from the bottom of the joint to the top. Maintain the initially approved equipment in good working condition, serviced in accordance with the supplier's instructions, and unaltered in any way without obtaining prior approval. Small hand-held air-powered equipment (i.e., caulking guns) may be used for small applications.

605-3.3 Preparation of joints. Pavement joints for application of material in this specification must be dry, clean of all scale, dirt, dust, curing compound, and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method cleans the joint and does not damage the joint.

a. Sawing. All joints shall be sawed in accordance with specifications and plan details. Immediately after sawing the joint, the resulting slurry shall be completely removed from joint and adjacent area by flushing with a jet of water, and by use of other tools as necessary.

b. Sealing. Immediately before sealing, the joints shall be thoroughly cleaned of all remaining laitance, curing compound, filler, protrusions of hardened concrete, old sealant, and other foreign material from the sides and upper edges of the joint space to be sealed. Cleaning shall be accomplished by sandblasting as specified in Paragraph 605-3.2. The newly exposed concrete joint faces and the pavement surface extending a minimum of 1/2-inch from the joint edge shall be sandblasted clean. Sandblasting shall be accomplished in a minimum of two passes. One pass per joint face with the nozzle held at an angle directly toward the joint face and not more than 3 inches from it. After final cleaning and immediately prior to sealing, blow out the joints with compressed air and leave them completely free of debris and water. The joint faces shall be surface dry when the seal is applied.

c. Backer Rod. When the joint opening is of a greater depth than indicated for the sealant depth, plug or seal off the lower portion of the joint opening using a backer rod in accordance with Paragraph 605-2.2 to prevent the entrance of the sealant below the specified depth. Take care to ensure that the backer rod is placed at the specified depth and is not stretched or twisted during installation.

d. Bond-breaking tape. Where inserts or filler materials contain bitumen, or the depth of the joint opening does not allow for the use of a backup material, insert a bond-separating tape breaker in accordance with Paragraph 605-2.3 to prevent incompatibility with the filler materials and three-sided adhesion of the sealant. Securely bond the tape to the bottom of the joint opening so it will not float up into the new sealant.

605-3.4 Installation of sealants. Joints shall be inspected for proper width, depth, alignment, and preparation, and shall be approved by the RPR before sealing is allowed. Sealants shall be installed in accordance with the following requirements:

Immediately preceding, but not more than 50 feet ahead of the joint sealing operations, perform a final cleaning with compressed air. Fill the joints from the bottom up to 1/8- to 1/4-inch below the top of pavement surface; or bottom of groove for grooved pavement. Remove and discard excess or spilled sealant from the pavement by approved methods. Install the sealant in such a manner as to prevent the formation of voids and entrapped air. In no case shall gravity methods or pouring pots be used to install the sealant material. Traffic shall not be permitted over newly sealed pavement until authorized by the RPR. When a primer is recommended by the manufacturer, apply it evenly to the joint faces in accordance with the manufacturer's instructions. Check the joints frequently to ensure that the newly installed sealant is cured to a tack-free condition within the time specified.

605-3.5 Inspection. The Contractor shall inspect the joint sealant for proper rate of cure and set, bonding to the joint walls, cohesive separation within the sealant, reversion to liquid, entrapped air and voids. Sealants exhibiting any of these deficiencies at any time prior to the final acceptance of the project shall be removed from the joint, wasted, and replaced as specified at no additional cost to the airport.

605-3.6 Clean-up. Upon completion of the project, remove all unused materials from the site and leave the pavement in a clean condition.

METHOD OF MEASUREMENT

605-4.1 Joint sealing material shall not be measured for payment, but shall be considered subsidiary to price bid for concrete.

BASIS OF PAYMENT

605-5.1 No separate payment shall be made for this item.

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 D789	Standard Test Method for Determination of Relative Viscosity of Polyamide (PA)
ASTM D5249	Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints
ASTM D5893	Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt

Advisory Circulars (AC)

AC 150/5340-30

Design and Installation Details for Airport Visual Aids

END ITEM P-605

SECTION 414

PORTLAND CEMENT CONCRETE PAVEMENT

414.01 DESCRIPTION

This work consists of constructing the following types of Portland cement concrete (PCC) pavement on a prepared base:

- Plain jointed (doweled or undoweled),
- Continuously reinforced,
- Bonded overlay (over existing PCC or asphalt pavements), and
- Unbonded overlay (over existing PCC or asphalt pavements).

414.02 MATERIALS

Provide materials in accordance with the following sections and subsections:

Materials:	Section or Subsection:
Portland Cement Concrete	701
Fly Ash	702.01
Steel Reinforcement, Dowel Bars & Tie Bars	702.03

Provide bent tie bars in accordance with AASHTO M 31, "Deformed Billet-Steel Bars for Concrete Reinforcement," Grade 40.

Obtain written approval from Engineer if using reclaimed PCC materials. Engineer will allow the use of reclaimed PCC materials only on temporary pavement. Provide the materials in accordance with Section 701, "Portland Cement Concrete."

414.03 EQUIPMENT

Ensure the equipment is at the job site before construction begins.

A. Plants and Equipment

Ensure batching plant includes bins, weighing hoppers, and scales for each size of fine and coarse aggregate. If using cement in bulk, include a bin, hopper, and separate scale for cement. Seal and vent weighing hoppers to prevent dusting. Ensure gauges and dials function properly.

Give Engineer documented evidence that the batching plant produces quality concrete. Ensure the mixing plant is in accordance with AASHTO M 157, "Concrete Uniformity Requirements."

Regularly clean the mixers. Repair or replace the pickup and throw-over blades that are worn 1/6 or more of the original blade width. Provide the manufacturer's design or permanent marks on the blades to show the blade's dimensions and configurations in reference to original height and depth. Engineer recommends

drilling holes with a diameter of 1/4-inch near the ends and midpoint of each blade as reference points.

Vent storage silos for cementitious materials during filling or use. If using a pressurized air system for discharge, ensure that it has moisture traps to reduce caking of materials during storage.

Engineer will inspect the plants every six months or after every move. Provide certification of scales every six months or after every move, unless otherwise directed by Engineer.

B. Placing and Finishing Equipment

Provide a slip-form paver or fixed-form method to spread, strike-off, and finish concrete, unless otherwise approved by Engineer.

(1) Slip Form Paver

Provide a slip-form paver to spread, consolidate, screed, and float-finish the concrete in one pass of the machine, to minimize hand-finishing. Provide a machine that uses vibrating tubes or arms working in the concrete or with a vibrating screed or pan operating on the surface. Ensure the machine vibrates for the full width and depth of the pavement. Provide vibrating machines with following frequency ratings:

Table 414:1	
Vibrator Frequencies	
Vibrator type	Minimum frequency rating, <i>Impulses/min</i>
Surface Vibrators	3,500
Internal Type Tube Vibrators	5,000
Spud Vibrators	7,000
Spud Type Internal Vibrators	3,500

Ensure spud vibrators do not meet joint, load transfer devices, subgrade, or side forms. Prevent sliding forms from spreading using a rigid, lateral connection.

(2) Fixed Form Method

(a) Finishing Machine

Provide a finishing machine equipped with at least two oscillating-type transverse screeds for finishing surface to tolerances required by Contract.

Provide surface pan-type vibrators for pavement thicknesses no greater than 8 inches or internal-type vibrators with immersed tubes or multiple spuds to consolidate full width and depth of pavement. Attach vibrators to spreader or finishing machine or mount them on a separate carriage.

Ensure frequency ratings are in accordance with Table 414:1, "Vibrator Frequencies." Ensure vibrators do not meet joint, load transfer devices, subgrade, or side forms.

(b) Vibrating or Rotary Strike-Off Screeds

Provide forms and vibrating or rotary strike-off screeds to construct radii, inlet basins, gore areas, lane tapers, intersection quadrants, and areas inaccessible to mainline paving equipment. Engineer will not allow segregation or grout buildup. To achieve thorough consolidation and uniformity of pavement, ensure spud-type hand-operated vibrators have a frequency rating of at least 3,500 impulses per minute.

(3) Texturing Equipment

(a) Burlap Drag

Provide fabric texturing equipment that consists of a drag of seamless strips of burlap or cotton that produces a uniform, gritty texture. Ensure a strip of fabric with a width of at least 3 feet is in contact with the full width of the pavement during texturing. Ensure drag consists of at least two layers of fabric. Ensure bottom layer of fabric is 6 inches wider than the top.

(b) Transverse Finish

Provide a texturing machine that is a vibrating roller or a comb, equipped with steel tines. Ensure machine is self-propelled and automatically lifts roller or tine comb bar near the edge of the pavement. Engineer will allow hand-texturing in areas inaccessible to mechanical equipment.

(c) Longitudinal Tining

When longitudinally tining concrete pavement, use a mechanically operated tining machine with a single row of metal tines that covers the full width in a single pass at a uniform speed and depth. Provide a tining machine with automatic horizontal and vertical controls to ensure straight and uniform grooves. Ensure tines produced meet dimensional requirements of 414.04.1.(6)(a).

C. Concrete Saw

Provide a concrete saw that is conventional wet cut type or early entry dry cut type. Provide at least one standby saw. Maintain an ample supply of saw blades at work site during sawing operations. Provide artificial lighting for night sawing.

D. Forms

Provide metal straight-side forms with thicknesses of at least 7/32-inch and lengths of at least 10 feet. Construct forms to a depth equal to the concrete thickness shown on the Plans, and capable of supporting equipment operating on the forms.

Use flexible or curved forms with devices for secure settings capable of withstanding equipment impact and vibration for curves with a radius of 100 feet or less.

Ensure the flange braces extend out on the base at least two-thirds of the form height. Remove damaged forms and use repaired forms that Engineer has inspected and approved.

Ensure the top face of the form varies no more than 1/8-inch in 10 feet from a true plane, and alignment varies no more than 1/4-inch in 10 feet. Clean the forms of concrete, grout, and other materials. Before use, cover the forms with a form-release agent.

E. Header Boards

Set header boards, cut to the cross-section of the paving slab, parallel to transverse joint if stopping paving operations and header boards are used. Design boards to ensure accurate installation of dowels or tie bars as shown on Plans.

F. Floats

Provide mechanical or hand-operated floats to smooth the concrete after strike-off and consolidation. Ensure the trowel blade of hand-operated floats are rigid, straightedge, 12- to 18-foot long, and 8- to 12-inch wide. Ensure the float can work longitudinally or transversely.

A finishing machine with the float pan type finisher may be used instead of a mechanical or hand-operated float if this method obtains the surface tolerances required by the Contract.

G. Hand Tools

Provide work bridges, 10-foot straightedges, and other hand tools to complete the pavement as required by the Contract. Replace warped floats or straightedges and defective finishing tools.

H. Spraying Equipment

Provide fully atomizing equipment to apply the white-pigmented curing membrane. Ensure it is equipped with a tank agitator that will keep the compound mixed. Ensure Engineer can verify the application rate based on tank capacity. Use pressure tank hand sprayers to apply the curing membrane to vertical surfaces, irregular areas, or edges after form removal.

I. Joint Sealing Equipment

Provide joint sealing equipment in accordance with Subsection 415.03, "Equipment."

J. Milling Machine

Provide milling machine in accordance with Subsection 412.03, "Equipment."

K. Shot Blasting Equipment

Provide shot blasting equipment capable of collecting used shot and waste material.. Dispose of materials removed in cleaning operation in accordance with Subsection 104.09, "Removal and Disposal of Salvaged Materials, Structures, and Obstructions."

414.04 CONSTRUCTION METHODS**A. Removal of existing pavement.**

Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under pavement.

Concrete pavement removal. Full depth saw cuts shall be made perpendicular to the slab surface. Contractor shall saw through the full depth of the slab including any dowels at the joint, removing pavement, and installing new dowels as shown on Plans and per Specifications. Where the perimeter of removal limits is not located on the joint and there are no dowels present, perimeter shall be saw cut the full depth of pavement. The pavement inside the saw cut shall be removed by methods that will not cause distress in the pavement which is to remain in place. Concrete slabs damaged by under breaking shall be repaired or removed and replaced as directed by RPR.

The edge of existing concrete pavement against which new pavement abuts shall be protected from damage at all times. Spall and underbreak repair shall be in accordance with plans. Any underlying material to remain in place, shall be recompact and/or replaced as shown on the plans. Adjacent areas damaged during repair shall be repaired or replaced at Contractor expense.

B. Preparation of Existing Surface or Grade**(1) General**

Trim grade to elevation shown on Plans after grading and compacting roadbed. Extend work at least 3 feet beyond edges of concrete pavement. Ensure subgrades and bases are in accordance with Subsection 401.04.Q, "Tolerances." Ensure asphalt base, bond breaker, and leveling course are in accordance with Subsection 401.04.Q, "Tolerances." Ensure milled surfaces are in accordance with Section 412, "Cold-Milling Pavement."

Correct alignment and grade elevations of forms and string lines immediately before placing concrete. Reset and check disturbed forms or string lines. Fill low areas with concrete during paving operations, not with material trimmed from bases or subgrades. Keep grade smooth and compacted until pavement placement. Ensure subgrade or base is uniformly moist when placing concrete unless waterproof subgrade or base course cover material is required by Contract.

C. Handling, Measuring, and Batching Materials

Ensure batch plant and hauling equipment continuously supply material to work site. Deliver fine and coarse aggregate to plant in advance to allow time for sampling and testing. Ensure concrete plant contains enough material for a full day of paving operations. Deliver and stockpile materials in accordance with Subsection 106.08, "Storage and Handling of Materials."

Measure and batch materials for concrete in accordance with AASHTO M 157, unless otherwise required by Contract. Weigh different aggregate sizes in separate hoppers. Measure cementitious material by weight. Use separate scales and hoppers with devices that indicate the complete discharge of the batch.

Provide batch tickets for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, quantity, and amount of water added. Use an electronically controlled automatic batch weight and printer system that indicates net batch weight of material delivered to transporting truck. Ensure weights are printed on a ticket that includes quantities (cement and supplementary cementitious material within ± 1 percent of desired weight) of admixtures (discharged separately within a volumetric tolerance of ± 3 percent using a method that does not allow concentrated admixtures to contact each other) and volume of water incorporated into load. Ensure system is calibrated, inspected, and certified in accordance with Subsection 109.01.A, "Measurement of Quantities, General." Ensure combined weights of materials, when converted to a volume, are within 2 percent of volume on ticket, minus target air content.

D. Mixing Concrete

Mix and deliver concrete in accordance with AASHTO M 157, unless otherwise required by Contract. Mix concrete at work site, in a central-mix plant, or in truck mixers. A central plant will be required on all projects with concrete volume exceeding 2,500 cubic yards. Obtain Engineer's approval for type of truck mixer. Do not exceed manufacturer recommended capacity. Place mixed concrete no more than 1 hour after water, cement, and aggregate are combined.

Mix concrete 45-90 seconds if at work site or a central mixing plant. Mixing time ends when discharge chute opens. For multiple drum mixers, include transfer time as part of mixing time. Remove contents of mixer drum before starting next batch.

Control mixer's drum speed per manufacturer recommendations. Engineer may allow 10 percent overload of mixer if concrete does not spill and concrete test data are satisfactory.

Ensure a portion of mixing water enters drum before cement and aggregates. Keep a uniform flow of water and ensure all water is in drum within first 15 seconds of mixing. Keep throat of drum free from accumulations that restrict flow of materials.

Adjust water to improve workability if transit mixers or agitators deliver PCC. Increase mixing by 30 revolutions when adding water and maintain water to cementitious material ratio.

E. Light and Weather Limitations

Mix, place, and finish concrete when there is enough natural light, unless using artificial lighting approved by Engineer.

(1) Concrete Temperature

Ensure temperature of mixed concrete is 50-90°F during mixing, delivery, and placement. Protect concrete quality through all weather conditions.

(2) Base Surface or Foundation Course Temperature

Place concrete when base temperature is below 110 degrees F when placing an unbonded overlay. Reduce temperature by spraying a fine water fog on base. Ensure water does not pond in front of the plastic concrete. For waterproof bases, Engineer will also allow following temperature control measures:

- Apply white curing compound, or
- Apply lime slurry.

Do not place concrete if frost exists in base. Place concrete when base temperature is below 110 degrees F if using bonded overlays. Cease paving operations if base temperature exceeds 110 degrees F; do not attempt to reduce base temperature because water and other agents prevent proper concrete bonding.

F. Setting Forms

If using formed paving equipment, set forms to line and grade by shimming, or other methods approved by Engineer. Correct variations in foundation course that prevent placing forms to line or grade shown on Plans. Stake forms in place with at least three pins per 10-foot section. Place a pin at each side of joints. Tightly lock form sections and ensure there is no movement. Ensure forms do not deviate from true line by more than 1/4-inch. Engineer will not approve forms that move under the finishing machine. Clean and oil forms before placing the concrete.

G. Placing Concrete**(1) General**

Minimize rehandling when placing concrete on the grade. Discharge concrete into a spreading device and mechanically spread onto the grade to prevent segregation. Use truck mixers, truck agitators, or non-agitating hauling equipment capable of discharging concrete without segregation. Between transverse joints, place the concrete continuously without using intermediate bulkheads. Hand spread concrete with appropriate tools; do not use handheld vibrators to spread concrete.

Ensure soil or foreign materials are not tracked onto recently placed concrete. Ensure concrete cures for at least three days before allowing finishing equipment on it for placement of adjacent lanes. Before allowing other equipment onto the pavement, ensure that the concrete attains a strength in accordance with Subsection 414.04.N, "Opening to Traffic."

Ensure continuous forward movement if using a slip-form paver. Coordinate mixing, delivering, and spreading operations to provide uniform progress, minimizing stopping and starting. Stop vibratory and tamping elements if the forward movement of the paver stops.

Consolidate concrete against the grade, face of the forms, and joint assemblies. Minimize the operation of vibrators in a single location to that required for consolidation. Deposit concrete near expansion and contraction joints without displacing the joint assemblies. Remove foreign materials that fall onto completed slab as approved by Engineer. Do not place concrete without an inspector present, unless otherwise approved by Engineer.

(2) Continuously Reinforced Concrete Pavement (CRCP)

Use a standard, white, wax-based curing compound on asphalt at rate of 1 gallon per 150 ft² to disrupt bond between asphalt and CRCP. Allow bond breaker to dry before placing the reinforcing steel bars.

(a) Preparation of Steel Reinforcement

Remove dirt, oil, paint, grease, mill scale, and loose or thick rust from reinforcing steel. Engineer does not consider minor, thin, powdery rust that does not reduce the effective cross section to be detrimental.

(b) Placement of Reinforcement for Continuously Reinforced Concrete Pavement

Place reinforcement on chairs or highchair bars. Ensure horizontal position is within 1/2-inch of longitudinal dimensions and within 2 inches of transverse dimensions shown on Plans. Place quantity of longitudinal and transverse members as shown on Plans. Ensure vertical position is within 1/2-inch of longitudinal and transverse dimensions shown on Plans.

Handle reinforcement so bars remain flat and undistorted during concrete placement. Ensure bars are free from kinks or bends that prevent assembly or installation. If using forms, oil before placing reinforcement.

Install chairs or highchair bars to support reinforcement as shown on Plans. Arrange chairs to ensure reinforcement is not permanently displaced during placement and consolidation. Ensure base supports chairs and prevents overturning and penetration into the base.

Space highchair bars adjacent to other transverse members to allow for proper concrete placement, especially important at reinforcement laps. Do not weld chairs to transverse bars. Provide Engineer with a sample of chair or highchair bar if requested.

Show chairs and layout on Working Drawings. If chairs do not support reinforcement during concrete placement and finishing, take corrective action to ensure final position of steel as required by Contract.

If reinforcement consists of loose bars constructed on grade, secure longitudinal bars to transverse bars using wire ties or clips to maintain horizontal and vertical positions as indicated.

(c) Lap Splices in Reinforcing Steel

Lap longitudinal reinforcing bars in a staggered pattern as shown on Plans. Secure laps in the longitudinal reinforcement by tying, fastening with clips, or otherwise securely fastening to ensure continuous reinforcement.

H. Test Specimens

Provide concrete necessary for acceptance testing.

I. Joints

Construct joints perpendicular to surface of slab of the type, dimensions, and locations shown on Plans. Align joints using guidelines or devices approved by Engineer.

Ensure sawed joints are straight and true to line; repair joints that are not. Seal sawed joints in accordance with Subsection 415.04, "Construction Methods."

(1) Longitudinal Joints

Saw and seal longitudinal contraction joints. Do not construct joints by any other method. Place deformed steel tie bars of length, size, spacing, and material as indicated, perpendicular to the longitudinal joint. Place tie bars using mechanical equipment after concrete placement, or secure tie bars using supports to prevent displacement during concrete placement. Repair or replace loose bars at no additional cost to Engineer. Engineer will not allow bars to be painted, coated, or enclosed in tubes or sleeves.

Saw longitudinal contraction joint to depth shown on Plans, without damaging pavement or joint. Clean sawed areas of dust, chalk, and contaminants and fill with an approved joint-sealing material. Allow joint sealant to cure before allowing construction equipment and other vehicles on pavement. Adjacent surfaces should not vary by more than 1/8-inch using a 10-foot straightedge.

(2) Transverse Joints

(a) Expansion or Isolation Joint

Make expansion joint filler continuous from form to form. Shape it along form from base to the keyway. Provide lengths of joint filler equal to width of pavement, or width of one lane. Use joint filler not damaged or repaired.

Punch premolded joint filler to diameter of dowels. Unless otherwise directed by Engineer, use lengths equal to width of pavement. If placing two or more traffic lanes of pavement, use premolded filler in sections equal to width of one lane. Clip or lace joint filler sections together if there is more than one section per joint. Extend bottom edge of filler to below bottom of slab. Unless otherwise required by Contract, ensure top edge is 1 inch below surface of pavement. While concrete is placed, protect top of filler using a metal channel cap of at least 10-gauge material, with flanges at least 1.5 inch deep.

Withdraw installing bar after striking off and placing concrete on both sides of joint and leave premolded filler in place. Before removing installing bar and channel cap, vibrate concrete and incorporate additional, freshly mixed concrete into depressions left by installing bar. Expose filler for full width of slab. Clean and recoil installing bar before installing next joint. After removing side forms, open ends of transverse joints at edges of pavement for depth of slab. Before opening pavement to traffic, seal or top out premolded joints with joint-sealing filler required by Contract. Leave a uniform strip of joint-sealing filler slightly below pavement surface.

Use steel templates or other joint-forming dividers to construct concrete curbing joints that cannot be sawed and install at locations indicated during concrete placement.

(b) Contraction Joints

Form transverse contraction joints by sawing to depth indicated without damaging pavement or joint. Saw succeeding joints consecutively from beginning to end of day's run and saw all transverse joints soon enough to prevent uncontrolled transverse cracking.

Clean and dry the sawed area. Keep free from dust, chalk, contaminants, and spalling. Fill sawed area with joint sealing material. Ensure curing period for joints is complete before allowing construction equipment and vehicles on pavement.

(c) Transverse Construction Joints for Jointed Pavement

Construct transverse construction joints when concrete operations are interrupted more than 30 minutes, or as field conditions require during concrete operations. Ensure transverse construction joints are not constructed within 10 feet of expansion or contraction joints. If, at time of interruption, not enough concrete has been placed to form a slab at least 10 feet long, remove concrete to preceding joint and dispose of in accordance with Subsection 104.09, "Removal and Disposal of Salvaged Materials, Structures, and Obstructions."

Provide a rigid header with holes or slots for dowel bars with same spacing and dimensions of an expansion joint. Submit alternative header construction methods to Engineer for approval.

(d) Transverse Construction Joints for Continuously Reinforced Concrete Pavement

Install a transverse construction joint at the end of each workday or when paving operations are interrupted more than 30 minutes, or as field conditions require during concrete operations. Form joint by placing concrete against a header board. Extend the longitudinal reinforcing steel through header board and support from base to prevent deflections.

Cover reinforcement that extends beyond header board with sheets of plywood or other material so workers can walk on steel without displacing it and concrete does not spill on base during screeding operations.

Make construction joints and lap splices as shown on Plans.

Use hand vibrators to consolidate pavement areas adjacent to sides of transverse construction joints and refinish surface. Extend these areas at least 10 feet from joint. Ensure adjacent surfaces do not vary by more than 1/8-inch using a 10-foot straightedge.

(3) Lightweight Early-Entry Saw Joints

Engineer will allow construction of transverse joints using a lightweight, early-entry saw. Ensure blade is 1/8-inch thick and sawed joint is at least 1.5 inches deep. Saw joints in accordance with manufacturer recommendation. Begin sawing joint when concrete is hard enough to cut without raveling, chipping, spalling, or tearing. RPR will inspect sawed faces to ensure early cutting does not cause joint undercutting. Delay sawing if undercutting is deep enough to cause structural weakness or excessive joint roughness. Saw joints consecutively at spacing required by Contract.

Immediately after sawing, clean cut and adjacent concrete surface. Respray damaged membrane-cured surfaces. Inspect lightweight early-entry saw joints the next day. If crack not evident within 24 hours, resaw joint to a depth of T/3. Clean and seal joints per manufacturer recommendations, unless otherwise required by Contract. Saw joints directly over existing transverse and longitudinal joints for bonded concrete overlays, using these methods:

- Overlay sections equal to or less than 4 inches thick; saw joints 1/2-inch deeper than the overlay concrete; and
- Overlay sections thicker than 4 inches; saw joints to a depth of T/3.

Saw joints without causing excessive raveling, chipping, spalling, or tearing. Clean and seal joints in accordance with manufacturer recommendations, unless otherwise required by Contract.

(4) Load Transfer Devices

Placement method of load transfer devices is optional. Hold or mechanically place load transfer devices as shown on Plans. Place dowels parallel to surface and centerline of slab and vary no more than 3/8-inch from position shown on Plans. Cap expansion joint dowels as shown on Plans. Check placement of mechanically injected dowel bars using a SOILTEST Model CT-4950A Micro-Covermeter, or approved equivalent.

J. Final Strike off, Consolidation, and Finishing

(1) General

Perform strike off, consolidation, and finishing in the following sequence:

- Strike off and consolidate,
- Float and remove laitance,
- Straightedge, and
- Finish the final surface.

Do not apply water to the concrete surface to assist in finishing operations unless Engineer approves otherwise. If application of water is approved, apply as a fog spray using approved spray equipment.

(2) Finishing at Joints

Compact concrete adjacent to the joints using mechanical vibrators to prevent voids between concrete and joint material, load transfer devices, and joint assembly units.

(3) Slip-Form Paving

Use slip-form paver to strike-off, consolidate, and initially finish concrete. At beginning of day's paving operation, straightedge construction joint and initial slab longitudinally and transversely until machine produces slab smoothness in accordance with Subsection 401.04.A, "Tolerances."

Ensure edge of pavement slab meets elevations indicated, and test using a 10-foot straightedge perpendicular to centerline of roadway. Ensure outer 6 inches of pavement does not deviate more than 1/4-inch from bottom of straightedge.

Test for compliance throughout paving operation. Correct valleys or depressions that do not drain, at no additional cost to Owner. Limit hand-finishing to correction of surface defects.

(4) Fixed-Form Paving

(a) Machine Finishing

Strike-off and screed freshly placed concrete using a finishing machine. Ensure machine consolidates pavement and creates a uniform texture. Keep tops of forms clean. To prevent an irregular finish, ensure machine travels on forms without lifting, wobbling, or moving unnecessarily.

Maintain a uniform ridge of concrete in front of screed during first pass of finishing machine. Use a vibrator in accordance with Subsection 414.03.B, "Placing and Finishing Equipment," to vibrate full width of concrete paving slabs.

(b) Hand Finishing

Engineer will allow hand-finishing methods under these conditions:

- If paving equipment breaks down, concrete deposited on grade and in transit; and
- In narrow or irregular areas.

Hand finish in accordance with Subsection 401.04.A, "Tolerances." Use a portable screed to strike-off freshly placed concrete. Use a screed at least 2 feet longer than maximum width of slab. Use a vibrator or other equipment to consolidate freshly placed concrete.

Move screed on forms, in same direction as paving operation, with combination of longitudinal and transverse shearing motions. Ensure ends of screed do not rise from side forms during strike-off. Repeat process to produce a uniform surface and texture, free of porous areas.

(c) Floating

Use a float to smooth and true concrete after consolidating and striking off concrete. Use long-handled floats to smooth and fill-in porous areas. Maintain crown in pavement. After floating, remove excess water and laitance with a straightedge. Lap successive passes one-half the length of float blade.

(5) Straightedge Testing and Surface Correction

Use a 10-foot straightedge to test concrete surface smoothness while concrete is still plastic and after floating and removing excess water. Hold straightedge against surface parallel to the road centerline. Advance straightedge in successive stages no more than one-half length of straightedge. Fill depressions with freshly mixed concrete then strike-off, consolidate, and refinish. Cut and refinish high areas. Ensure adjacent surfaces across joints are smooth. Continue straightedge testing and surface corrections until entire surface conforms to grade and typical section shown on Plans.

(6) Texturing

Use a texture drag before pavement final finish to produce a uniform surface of gritty texture on the entire pavement surface. For pavement at least 16 feet wide, mount drag on a bridge. Clean drag of encrusted mortar; Replace permanently encrusted drags with new ones.

(a) Final Groove Finish

Mechanically groove and texture driving lanes and ramps in a transverse direction when dragging is complete, as approved by Engineer. Unless otherwise required by Contract, Engineer will not require transverse grooves on shoulders.

Tine surface as specified herein, on any roads or streets with a posted speed limit of 45 mph or less or obtain written approval from appropriate local official to provide an alternate finish. At least 14 days before beginning paving, submit proposal with documentation of local support to Engineer. Written approval from Engineer replaces need for a change order, price adjustment, or both.

1) Transverse Finish

Construct transverse grooves perpendicular to centerline of pavement. Transverse grooving consists of creating transverse grooves 1/8- to 3/16-inch wide, 1/8- to 3/16-inch deep and spaced on a rake as shown on Plans.

Repeat grooving pattern across pavement. Form grooves in plastic concrete without tearing or bringing coarse aggregate to surface. Ensure machine automatically lifts roller or tines near edge of pavement. Ensure overlap between grooving passes is less than 3 inches.

Use hand-groove methods in areas inaccessible to mechanical grooving equipment. Identify the location of transverse contraction joints and ensure nearest grooves are 1 to 3 inches from contraction joints before tining transverse grooves.

2) Longitudinal Finish

Construct longitudinal grooves parallel to centerline of pavement when specified in Contract. Longitudinal tining consists of creating longitudinal grooves 1/8- to 3/16-inch wide, 1/8- to 3/16-inch deep and spaced 1/2- to 1 inch apart. Ensure tining operation is done at such a time and manner so desired surface texture is achieved while minimizing displacement of larger aggregate particles and before surface permanently sets. Start grooves at least 6 inches from edge of pavement. If concrete pavement has concrete curbs, start grooves at least 12 inches from face of curb. Ensure a 2- to 3-inch-wide strip of pavement, centered about any intermediate longitudinal joints in concrete pavement surface, is protected from longitudinal surface tining for length of concrete pavement surface.

Use hand-tining methods in small, isolated areas inaccessible to mechanical grooving equipment. Alternates to longitudinal tining may be allowed with Engineer approval.

(b) Edging at Forms and Joints

Round edges of pavement along sides of slab to radius as shown on Plans after final finish, but before concrete sets. Produce well-defined and continuous radius and obtain smooth, dense mortar finish. At joints, broom surface to eliminate tool marks adjacent to joints without damaging joint edges. Test joint smoothness before concrete sets and make corrections in accordance with Subsection 414.04.H, "Joints."

K. Curing

Cover and cure entire surface of newly placed concrete immediately after completing texturing operations so marring of concrete will not occur, in accordance with one of the following methods:

- Cotton or burlap mats,
- Impervious membrane method,
- White polyethylene sheeting, or
- Curing for cold weather.

Failure to provide sufficient cover material, or lack of water to adequately take care of both curing and other requirements, shall be cause for immediate suspension of concrete operations. Engineer will not allow concrete left exposed for more than 30 minutes between stages of curing or during curing period.

(1) Cotton or Burlap Mats

Cover pavement surface with mats. Use mats long enough or wide enough to extend beyond the edges of the slab by at least twice the thickness of pavement. Saturate mats with water. Secure mats to keep in contact with the surface. Ensure mats are moist for 72 hours after concrete placement, unless otherwise required by Contract or directed by Engineer.

(2) Impervious Membrane

Uniformly spray pavement with white-pigmented curing compound in accordance with Subsection 701.07.C, "Liquid Membrane Curing Compounds" immediately after texturing operations and before concrete sets. If pavement is initially cured with cotton or burlap mats, apply curing compound after removing mats. Avoid applying curing compound during rain.

Use a mechanical sprayer, in accordance with Subsection 414.03.H, "Spraying Equipment" to apply the curing compound at a minimum rate of 1 gallon per 200 ft². If temperature on roadway is more than 100 degrees F, apply curing compound at a minimum rate of 1 gallon per 150 ft².

Ensure compound is thoroughly mixed and pigment is uniformly dispersed. Engineer will allow hand spraying irregular widths, shapes, and surfaces exposed by removed forms. Ensure curing compound is not applied to inside faces of joints.

Ensure curing compound creates a film that will harden within 4 hours of application. Use additional compound to repair damage to membrane that occurs during the curing period.

Apply curing compound to sides of slabs upon removing side forms. Apply curing compound immediately after texturing operations for bonded overlays at a minimum rate of 1 gallon per 100 ft², or as recommended by manufacturer, to prevent moisture loss.

Cover an 8- by 8-foot (or larger) area with 8-mil-thick (or thicker) clear polyethylene barrier and seal all edges to concrete surface with duct tape. If moisture collects beneath polyethylene barrier any time during a 72 hours after application of barrier, decrease coverage rate (thicker film of curing compound) and repeat test until appropriate application rate determined. Appropriate coverage rate is when no moisture collects beneath barrier within the 72-hour period. Repeat this test every 10 working days (concrete placement days) to reconfirm coverage rate.

(3) White Polyethylene Sheeting

Cover surface and sides of pavement with polyethylene sheeting. Use sheeting long enough or wide enough to extend beyond edges of slab by at least twice the thickness of the pavement. Overlap adjacent sheeting units at least 18 inches. Secure sheeting to keep it in contact with surface. Ensure

sheeting remains in place for 72 hours after concrete placement, unless otherwise required by Contract or directed by Engineer.

(4) Curing for Cold Weather

Maintain quality and strength of concrete during cold weather. Replace frost-damaged concrete at no additional cost.

L. Removing Forms

Avoid damaging pavement while removing forms. Cure sides of slab per Subsection 414.04.J(2), "Impervious Membrane." Repair honeycombed areas.

M. Sawing and Sealing Joints

Saw and seal joints in accordance with Subsection 415.04, "Construction Methods." Provide joints as shown on the Plans.

N. Protection of Pavement

Protect pavement from damage due to any traffic. If damage occurs to pavement before area is open to traffic, repair or replace damaged sections at no additional cost to Owner.

O. Opening to Traffic

Do not allow traffic on pavement at least 14 days after concrete placement, unless otherwise approved by Engineer. Engineer may approve opening pavement to traffic when it reaches strength requirement in accordance with Subsection 701.01, "Mix Design and Proportioning." Contractor shall bear cost of molding and testing additional test specimens for early opening testing. With Engineer approval, Contractor may use maturity meters for basis of form removal or opening roadways to traffic, at no additional cost. Submit a plan for use of maturity meters.

P. High-Early-Strength Concrete Pavement

Use high early-strength concrete pavement per Section 701, "Portland Cement Concrete." Do not allow traffic on pavement until it reaches strength requirement in accordance with Subsection 701.01, "Mix Design and Proportioning."

Q. Protection Against Rain

Protect surface from rain. Repair or replace damage due to rain, at no additional cost.

R. Tolerances. Provide required surface construction in accordance with:

(1) Surface Elevation and Smoothness

(2) Finish surface elevations for a new pavement construction within 1/2 inch of elevations as shown on Plans. Ensure surface smoothness is within 1/8 in in 10 feet. Test for surface smoothness by placing a straightedge

between two contacts on finished surface and measuring distance from surface to straightedge. Width

Finish surfaces to minimum width as shown on Plans

(3) Thickness

Determine thickness of pavement after grinding operations using average of three caliper measurements of cores, tested per AASHTO T 24. Thickness will be per Subsection 414.04.R, "Acceptance of Pavement."

(a) Corrections

Correct material dimensions that exceed specified surface tolerance using methods approved by Engineer only, at no additional cost.

(b) Surface Protections

Submit a plan to Engineer to protect pavement from damage by paving operations before paving operations. If paving operations spall, crack, chip, rut, or deface pavement, repair pavement at no additional cost.

S. Acceptance of Pavement

While Contractor shall be fully and exclusively responsible for producing an acceptable product, acceptance responsibility rests with Engineer. Determination of acceptability and pay factors for gradation, air content, strength, and thickness will be made in accordance with Table 414:2, "Acceptance Schedule." The pay adjustments for the characteristics will be based on the following equations:

$$CPF = \frac{4(S + T) + G + AC}{10}$$

$$PA = (CPF - 1)(Q_C \times CUP_C + Q_P \times CUP_P)$$

Where

CPF = Combined pay factor,

S = Pay factor for strength,

T = Pay factor for thickness,

G = Pay factor for gradation,

AC = Pay factor for air content,

PA = Pay adjustment,

Q_C = Cubic yards of concrete in a 2,500 yd² lot (partial lots prorated),

CUP_C = Cubic Contract unit price of concrete only (\$/yd³),

Q_P = Square yards of concrete in a 2,500 yd² lot (partial lots prorated), and

CUP_P = Contract unit price of concrete placement (\$/yd²).

Note: CUP_C and Q_C include only concrete material. CUP_P and Q_P include all other labor and materials required in concrete pavement (reinforcing steel, dowels, curing compound, etc.).

Pay adjustments will be based on individual pay factors shown in Table 414:2 on a lot-to-lot basis. A lot will normally be defined as 2,500 yd². To ensure overall quality of material and workmanship, Engineer may reduce size of a lot when multiple concrete placements occur. If test results are incomplete at that time, Engineer will make an interim adjustment assuming pay factors of 1.00 for then unknown characteristics and will correct later when testing is complete. Total adjustment in pay for four characteristics (gradation, air content, strength, and thickness) in Table 414:2 will be sum of pay adjustments on individual lots.

Engineer will use random samples to test concrete and will test for all control test characteristics except smoothness on a lot-to-lot basis in accordance with the following requirements. Determination of acceptability and pay adjustments for smoothness, when applicable, will be covered by separate specifications. However, Engineer will reject any load of mixture visually unacceptable for reasons of being too wet, excessively segregated, or otherwise obviously deficient. Furthermore, Engineer will extensively test sections of completed pavement that appear seriously inadequate based on visual observation or knowledge of other deficiencies. Owner will not use results of such tests for pay adjustment purposes but will use them to determine whether section is totally unacceptable and must be removed. Engineer may reject pavement slabs with unsound concrete, uncontrolled cracking, malfunctioning sawed joints, spalling, honeycombing, surface irregularities, insufficient thickness, or other deficiencies associated with poor quality pavements.

(a) Engineer's Acceptance Procedures

Once a lot is defined, maintain identity throughout mixing and placement process. Engineer will use pay factors, determined from random sampling and testing of a lot at appropriate locations, in computing its pay adjustment. Engineer will use Table 414:2 for acceptance and calculating pay factors.

Table 414:2 Acceptance Schedule		
Characteristics	1 Test	Pay Factor ^a
Gradation ^c - Deviation from the target (without regard to signs):		
Coarse or fine aggregates % passing No. 200 sieve Target Spec. Range, %	0	1
	0.01–0.60	1–0.10x
	0.61–1.80	1.03–0.15x
	>1.80	Unacceptable ^b
Air content ^c - Deviation from the target (without regard to signs):		
Target = 6.0%	0–1.50	1
	1.51–3.00	$-0.10x^2 + 0.29x + 0.79$
	>3.00	Unacceptable ^b
Strength ^d – Deviation from minimum strength of target (considering signs):		
Target = 3,000 psi	0–1,000 psi	Pay Factor = (Actual Strength/Specified Strength)
	>1,000 psi	Unacceptable ^b
Thickness ^e – Deviation from minimum (considering signs) (English):		
% Deficient	0–2.0	1
	2.1–4.0	1.10–0.05(PD)
	4.1–6.0	1.30–0.10(PD)
	6.1–8.0	1.60–0.15(PD)
	>8.0	Unacceptable ^b
^a Where x is the Average of Deviations and PD is Percent Deficient. ^b Unless Engineer directs otherwise, products testing in this range are unacceptable. Remove and replace at no additional cost to Owner. ^c Gradation and air content – 1 specimen and 1 test for each characteristic per subplot. ^d Strength – 3 cylinders per lot averaged and considered as 1 test in Table 414:2. ^e Thickness – After grinding operations, determine pavement thickness using average of 3 cores at times and locations directed by Engineer.		

To determine average thickness for a lot, Department will only consider minimum thickness plus 2 percent for core thicknesses greater than 2 percent thicker than minimum thickness (e.g. if minimum thickness shown on Plans equals 10 inches, Engineer will only consider 10.2 inches for average thickness determination for a core thickness of 10.3 inches).

Engineer will not include average thickness determination measurements more than 8 percent thinner than minimum thickness shown on Plans, or measurements from exploratory cores. If measurement of any core is thinner than minimum thickness shown on Plans by 8 percent or more, take exploratory cores at intervals of at least 10 feet, parallel to the centerline until Engineer finds a core less than 8 percent thinner than minimum thickness. Fill core holes with concrete as required by Contract.

(b) Unacceptable or Rejected Work

Replace rejected slabs with new pavement at no additional cost to Engineer. When replacing rejected slabs, remove a width of at least one lane and length at least 15 feet. If removal is within 15 feet of any transverse joint, remove slab to joint. If a deficient unit does not warrant removal, as directed by Engineer, Engineer will not pay for deficient unit.

414.05 METHOD OF MEASUREMENT

- (A) No Separate measurement shall be made for this item, but shall be considered subsidiary to price bid for hangar.

414.06 BASIS OF PAYMENT

No separate payment shall be made for this item.

SECTION 701

PORTLAND CEMENT CONCRETE

701.01 MIX DESIGN AND PROPORTIONING

Engineer requires that all Portland cement concrete be air entrained. Engineer will allow Portland cement concrete produced using Portland cements, blended hydraulic cements, and hydraulic cements.

A. Classes of Concrete

If Plans do not show the concrete class, provide concrete in accordance with:

Class AA. Use Class AA concrete in superstructures.

Table 701:1 specifies the requirements for each concrete class:

Table 701:1 Concrete Classes					
Class of Concrete	Minimum Cement Content, <i>lb/yd³</i>	Air Content, %	Water/Cement Ratio ^a , <i>lb/lb</i>	Slump ^b , <i>in [mm]</i>	Minimum 28-day Compressive Strength ^c , <i>psi</i>
AA	564	6.5 ±1.5	0.25 – 0.44	2 ±1	4,000
^a Use the weight of each material to calculate the water to cement ratio (W/C) using the following equation: $W/C = \text{Water} / (\text{Cement} + \text{Cement Substitutes})$ Determine the water use by adding the water measured into the batch, the water used in admixtures, and the free water on wet aggregate and subtracting the water absorbed by dry aggregate. ^b Ensure the slump reflects a workability appropriate for the application. If using a high-range water-reducing admixture, limit the slump to a maximum of 9 in provided no segregation occurs. ^c Compressive strength is based on the average of the results of three test cylinders. The contract documents specify Class P concrete compressive strengths.					

B. Cement Substitution

Engineer will allow a substitution of a portion of the cement content at the concrete batch plant. Provide cement substitutes in accordance with Section 702, "Supplementary Cementitious Materials." Make cement substitutions on a one-to-one basis by weight in accordance with Table 701:2. Refer to Subsection

701.02.A(1), "Portland Cement," and Subsection 701.02.A(3), "Hydraulic Cement," for Portland cement and hydraulic cement specifications.

Table 701:2 Cement Substitutes for Portland and Hydraulic Cement	
Cement Substitutes	Maximum Percent by Weight
Fly ash or pozzolans only	20
Silica fume only	10
Combination of fly ash or pozzolans, and silica fume	30
Combination of fly ash or pozzolans and silica fume	50

Refer to Subsection 701.02.A(2), "Blended Hydraulic Cement," for blended hydraulic cement specifications.

Table 701:3 Cement Substitutes for Blended Hydraulic Cement		
Cement Type	Material	Maximum Percent by Weight
IP (XX)	Fly ash	30 – (XX)
	Silica fume	10
	Combinations	See Table 701:2
IS (XX)	Fly ash	20
	Silica fume	10
	Combinations	See Table 701:2
IL(XX)	Fly ash	20
	Silica fume	10
	Combinations	See Table 701:2
Note: (XX) is the percentage of pozzolan in the IP cement.		

Ensure Portland cement is at least 50 percent of the cementitious materials including substitutions at the cement production and the concrete batch plant. For concrete mix design purposes, consider the intended concrete use and weather conditions when determining cement substitutes.

Ensure the substitutions do not exceed the limits specified in Table 701:2 and Table 701:3. Limit combinations to individual limits.

C. Proportioning

Design and produce concrete mixtures in accordance with Table 701:1, "Concrete Classes." Base the mix design on absolute volume for the concrete class required by the Contract and the consistency for concrete placement. Proportion the coarse and fine aggregate in accordance with ACI 211.1. Use the least amount of fine aggregate and mixing water to produce the workability for placement conditions. Ensure high early strength concrete meets the minimum strength within 72 hours of placement. Submit the mix design to Engineer at least 14 days before production. Engineer will not allow placing PCC to begin until the Engineer approves the mix design. Include the following information with each mix design:

- Project identification,
 - Contractor's and Producer's name and address,
 - Mix design designation,
 - Mix design intended use,
 - Expected travel time from batch to placement,
 - If the concrete will be pumped,
 - Aggregate sources, gradation, moisture content, and saturated surface dry batch mass,
 - Water source and test reports required by Subsection 701.04, "Water,"
 - Fine aggregate fineness modulus,
 - Cement type and source,
 - Type of cement substitutions, if used, and source,
 - Type of admixtures and sources,
 - High Range Water Reducer, if used in accordance with Subsection 701.03
 - Material proportions,
 - Unit weight,
 - Air content,
 - Slump,
 - Water to cement ratio,
 - Compressive strengths at seven days and 28 days,
 - Compressive strengths at 72 hours for high early strength concrete, and
 - Flexural strength at 28 days or 56 days for Class A used for concrete paving.
- Submit new mix designs if:
- Engineer rejects the mix design,
 - Material sources change, or
 - The mix design produces unacceptable workability or production test results.

D. Tests and Samples

For concrete sampling and testing, use the procedures in Table 701:4.

Table 701:4 Concrete Sampling and Testing	
Property Tested	AASHTO Test Procedure
Sampling	R 60
Slump	T 119
Air	T 152 or T 196
Curing of specimens ^a	T 23
Temperature	ASTM C 1064
Strength:	
Compressive ^b	T 22
Flexural ^c	T 97
^a Maintain the initial curing temperature at 40°F or greater. Engineer will not require a recording thermometer. Maintain the final cure 40-85°F until tested. ^b Base compressive strengths on the average of three test cylinders. ^c Base flexural strengths on the average of two test beams.	

E. Mix Identification

Reference authorized mix identifications on batch tickets, test results, reports, and correspondence.

701.02 PORTLAND CEMENT**A. General**

Provide cement that meets the specifications for the following types, as required by the Contract:

- Portland Cement,
- Blended Hydraulic Cement,
- Hydraulic Cement, or
- Rapid Setting Cement (for bridge deck overlays and repairs only).

(1) Portland Cement (must conform to AASHTO M 85 requirements except as modified by Specifications)

Provide Portland cement in accordance with except as modified by the following: Ensure the tricalcium aluminate (C3A) content in Type I cement does not exceed 15 percent. Report amount of Portland cement retained on the No. 325 sieve in accordance with AASHTO T 192 on mill test reports.

Ensure the total equivalent alkalis do not exceed 0.95 percent. Engineer may waive this limit on a per project basis if the proposed concrete mix design meets

the expansion limits in Option R of ASTM C1157 when tested in accordance with ASTM C1260.

Provide Types IV and V cements to meet optional physical requirements. Supply supporting data for cement provided under optimum SO₃ requirements, as described in footnoted of Table 1 of AASHTO M 85, quarterly to Engineer.

B. General Construction Requirements

Table 701:6 specifies cement for each application. Use these cement types as shown on the Plans.

Table 701:6 Cement Properties	
Cement Type	Use
I, II, V, GU, IP(XX), IS(XX), IL(XX)	General construction
I, II, III, HE, GU, IP(XX), IL(XX)	High early strength

If required by Contract, provide white Portland cement in accordance with the requirements for Type I cement. Use the product from one mill for one hydraulic cement brand and type on structures. Provide a storage unit that protects the cement against dampness. Engineer will reject partially set cement or cement with caked lumps. The Engineer will not allow salvaged cement. Ensure the cement manufacturer identifies the types and amounts of cement substitutions on each shipping ticket.

All tests shall be performed by a qualified domestic manufacturer. Contractor shall reimburse Engineer for all inspection expenses incurred outside the United States and additional expenses incurred using foreign cement. Use sampling and test methods in accordance with AASHTO M 85, AASHTO M 240, or ASTM C1157 except as modified by Engineer's acceptance policy, "Approval Procedure for Hydraulic Cement." The procedure is available at www.okladot.state.ok.us.

701.03 ADMIXTURES

This subsection does not cover specifications for fly ash, or silica fume. Use admixtures included in the approved mix design. Engineer will not allow using admixtures to replace cement or using admixtures containing more than 10,000 ppm of chloride in prestressed or reinforced concrete. Provide admixtures in accordance with the following:

- Accurately measure admixture dosages into each batch.
- Dispense admixtures in liquid form. Provide dispensers large enough to measure the quantity for each batch. Unless liquid admixtures are added to pre-measured

- water, arrange the discharge to uniformly flow into the water stream.
- Store admixtures to prevent freezing. Agitate admixtures to prevent solids from separating or settling. Do not use air agitation.
- Use separate equipment to provide and dispense each admixture if using more than one admixture. Ensure that admixtures are compatible when used in combination.

A. Air Entraining Admixtures

Provide air entraining admixtures in accordance with AASHTO M 154. Engineer may allow an exception if the manufacturer provides certification that the product is neutralized vinsol resin with caustic soda and contains no other additive. Add air entraining admixture during initial batching. If air content is below the specification minimum, additional air entraining admixture may be added directly to the concrete surface (not the drum or fins) in a ready-mix truck at the jobsite followed by a minimum of 30 revolutions at mixing speed provided the revolution limit of 300 is not exceeded.

B. Chemical Admixtures

Provide chemical admixtures (water reducers, retarders, accelerators, etc.) in accordance with AASHTO M 194 for the type of admixture supplied.

When concrete mix designs contain a High Range Water Reducer (HRWR) admixture (Mid-range water reducers are to be considered HRWR's), Type F or G, define the following:

- The purpose for its use,
- Whether it will be added to the mix at the plant or jobsite and,
- The maximum slump after addition.

Do not add water to the concrete after the addition of the HRWR to increase or maintain the slump. Provide a concrete mixture design in accordance with Subsection 701.01, "Mix Design and Proportioning," before adding the admixture.

C. Corrosion-Inhibiting Admixtures

If required by Contract, provide corrosion-inhibiting admixtures with characteristics specified in Table 701:7 when tested in accordance with AASHTO M 194.

Table 701:7 Physical Requirements for Corrosion-Inhibiting Admixture	
Characteristic	Value
Calcium nitrite content, percent by weight [mass]	30±2
Time of setting, allowable deviation from control:	
Initial	-1 hr/+3.5 hr
Final	-1 hr/+3.5 hr
Strength, minimum percent of the control (any time):	
Compressive	90
Flexural	90
Length change, maximum shrinkage, percent of control	135
Relative Durability Factor, minimum	80

Ensure the corrosion inhibitor-protected specimens have an average corrosion current less than 2 μA when tested in accordance with ASTM G109. Run the test for three cycles in accordance with Section 8, "Period of Testing," after the control specimens fail.

Ensure the protection potentials (E_p) are greater than -280 mV versus SCE when tested in accordance with ASTM G 61. Modify the test medium to contain a 12.5 pH calcium hydroxide ($\text{Ca}(\text{OH})_2$) solution and sodium chloride (NaCl) content equal to approximately 5 lb/yd³ of concrete.

After five years of testing, ensure the corrosion inhibitor-protected test specimens have a corrosion current in micro amps of less than 10 percent of the control when tested in accordance with

ASTM G109. Make concrete test specimens with at least 1 inch of cover over the reinforcement and ensure a maximum water to cement ratio of 0.40.

Provide concrete containing 4.0 gal/yd³ of corrosion inhibiting admixture unless otherwise required by Contract. Account for possible set acceleration effects from calcium nitrite-based admixture. Engineer will allow the use of set-retarding admixtures to counter the acceleration effects.

D. Latex Emulsion Admixtures

Provide a water based, homogenous, nontoxic, film forming, polymeric emulsion formulated latex admixture to which all stabilizers were added at the point of manufacture. Provide the latex modifier in accordance with Table 701:8.

Table 701:8	
Latex Modifier Properties — Polymer Type Styrene Butadiene Stabilizers	
(1) Latex	Nonionic surfactant
(2) Portland cement composition	Poly-dimethyl siloxane
Percent solids	46.0 – 49.0
Mass per unit volume, lb/gal at 77°F	8.4
Color	White

Store latex admixture in suitable enclosures and completely cover with insulating blankets to protect from freezing and exposure to temperatures greater than 85 degrees F. Engineer will not allow storage of latex admixture containers at the project site more than 10 days.

701.04 WATER

Provide water in accordance with AASHTO M 157, except as modified by the following:

Engineer will not require additional quality testing if the water used is from an approved ODEQ public water source. Submit test reports from the concrete producer showing compliance with AASHTO M 157 and Table 701:9, “Chemical Limits for Mix Water,” before use, if using water from another source.

Engineer will allow a blend of concrete wash water and other water sources as mix water if the concrete producer submits certification that the water meets the requirements of AASHTO M 157, Table 701:9, “Chemical Limits for Mix Water,” and Table 701:10, “Acceptance Criteria for Questionable Water Supplies.” Test the blended water weekly for 4 weeks or provide previous test reports. Test blended water monthly for compliance. Provide water test results when requested by Engineer.

Table 701:9 Chemical Limits for Mix Water		
Contaminant	Test Method	Maximum Concentration, <i>ppm</i>
Chloride (Cl)	ASTM D512	
Prestressed concrete	—	500
Bridge decks and superstructure	—	500
All other concrete	—	1,000
Sulfate (SO ₄)	ASTM D516	1,000
Alkalis (NA ₂ O + 0.658K ₂ O)	ASTM D4191 and D4192	600
Total solids	AASHTO T 26	50,000

Table 701:10 Acceptance Criteria for Questionable Water Supplies		
Property	Limits	Test Method
Compressive strength, minimum percent of control (at 7 days)	90%	AASHTO T 106
Time of set, deviation from control, <i>hr</i>	-1/+1.5	AASHTO T 131

701.05 FINE AGGREGATE

A. Materials Covered

This subsection covers fine aggregate quality and size for PCC pavements or bases, highway bridges, and incidental structures.

Provide mortar sand in accordance with AASHTO M 45.

B. General Requirements

Provide fine aggregate that consists of a single-source natural sand in accordance with AASHTO M 6, Class A, except as modified by Subsection 701.05.C, "Gradation."

Alternatively, provide a fine aggregate that consists of a combination of natural sands or a combination of natural and manufactured sands in accordance with AASHTO M 6, Class A, except as modified by the following:

- Mix the two materials under controlled conditions and stockpile as a finished aggregate. Alternatively, the two materials may be combined from separate stockpiles during batching operations at a hydraulic cement concrete plant.
- Ensure the combined fine aggregate meets gradation requirements of Subsection 701.05.C,
 - "Gradation."

- Ensure the fine aggregate blend has an acid insoluble residue of at least 60 percent by weight when tested in accordance with OHD L-25, if using a manufactured sand in combination with natural sand.
- Obtain crushed fine aggregate (manufactured sand) from a coarse aggregate source, on the Materials Division's "Approved Products List," for use in hydraulic cement concrete.
- Fine Aggregate used in Section 701.19, "Controlled Low Strength Material," may be made from 100 percent manufactured sand meeting all other requirements of this Section.

C. Gradation

Provide fine aggregate with a fineness modulus between 2.3 and 3.1, that is well graded from coarse to fine, and when tested in accordance with AASHTO T 27 and AASHTO T 11 meets the requirements of Table 701:11.

Table 701:11	
Fine Aggregate Gradation	
Sieve Size	Percent Passing
$\frac{3}{8}$ in	100
No. 4	95 – 100
No. 8	80 – 100
No. 16	50 – 85
No. 30	25 – 60
No. 50	5 – 30
No. 100	0 – 10
No. 200	0.0 – 3.0

The gradation requirements specified in Table 701:11 represent the extreme limits of suitability. Ensure gradation from one source does not have large changes in percentages of gradation. Use the average fineness modulus to determine the uniformity of the fine aggregate. The average fineness modulus is the average of the last 10 tests by Engineer and maintained by his office. The Resident Engineer will not accept fine aggregate represented by a test result with a fineness modulus that deviates more than 0.20 from the average. Determine the aggregate fineness modulus by adding the total percentage of sample material that is coarser than each of the following sieve sizes and dividing by 100:

- No. 100,
- No. 50,
- No. 30,
- No. 16,
- No. 8,
- No. 4, and
- $\frac{3}{8}$ -inch.

701.06 COARSE AGGREGATE

This subsection covers coarse aggregate quality and size for use in PCC pavements or bases, highway bridges, and incidental structures.

Provide coarse aggregate in accordance with AASHTO M 80, Class A, consisting of crushed gravel or stone, or when approved by Engineer in writing, a combination of crushed gravel or stone from different sources, except as modified by the following:

- Ensure coarse aggregate produces Class A concrete with a durability factor of at least 50. Determine the durability factor after 350 cycles of alternate freezing and thawing in accordance with AASHTO T 161, Procedure A.
- Limit the Los Angeles Abrasion percent wear to a maximum of 40 percent after 500 revolutions when tested in accordance with AASHTO T 96.
- The Resident Engineer will not apply the sodium sulfate soundness requirement.
- Ensure that at least 70 percent of the coarse aggregate retained on the No. 4 sieve is crushed stone or mechanically crushed gravel with at least two fractured faces.
- Limit the quantity of flat or elongated pieces to 15 percent or less, at a ratio of 1:5, when tested in accordance with ASTM D 4791.
- Provide coarse aggregate graded in accordance with Table 701:12.

Table 701:12 Coarse Aggregate Gradation					
Sieve Size	Percent Passing per Processed Aggregate Size Number				
	357	57	67	7	8
2½ in	100	—	—	—	—
2 in	95 – 100	—	—	—	—
1½ in	—	100	—	—	—
1 in	35 – 70	95 – 100	100	—	—
¾ in	—	—	90 – 100	100	—
½ in	10 – 30	25 – 60	—	90 – 100	100
⅜ in	—	—	20 – 55	40 – 70	85 – 100
No. 4	0 – 5	0 – 10	0 – 10	0 – 15	10 – 30
No. 8	—	0 – 5	0 – 5	0 – 5	0 – 10
No. 16	—	—	—	—	0 – 5
No. 200	0 – 1.5	0 – 2.0	0 – 2.0	0 – 2.0	0 – 2.0

Provide the specified sizes of coarse aggregate for the following types of concrete:

- No. 57 for Class A and Class AP concrete;
- No. 357 for massive Class A concrete;
- No. 57, No. 67, or No. 357 for Class C concrete;

- No. 7 or No. 8 for thin overlays, details, and thin sections if allowed by the Engineer;
- No. 67 for Class AA or Class P concrete; and
- No. 57, No. 7 or No. 8 for Class P concrete if the specified 28-day compressive strength is greater than 6,000 psi or the Contract requires permeability limits.

701.07 CURING AGENTS

Provide concrete curing agents consisting of the following:

- Burlap,
- Cotton mats,
- White or red-pigmented membrane curing compound,
- Waterproof paper,
- Polyethylene film,
- Linseed oil emulsion, or
- Water for ponding.

Keep the curing agents free of material that may damage the concrete surface.

D. Burlap

Provide Class 3 burlap cloth in accordance with AASHTO M 182.

Provide new burlap free of starch, filler, or other substances added during the manufacturing process. If the burlap contains these substances, wash it by repeatedly rinsing in clear water.

Alternatively, Engineer will allow old burlap if its only previous use was for curing concrete. Engineer will not allow the use of worn burlap or burlap with holes. Provide burlap that is at least 2 feet longer than the width of the concrete to be covered.

E. Cotton Mats

Provide new cotton mats, or used cotton mats, used only for curing concrete. Engineer will not allow the use of worn cotton mats or cotton mats with holes.

F. Liquid Membrane Curing Compounds

Provide liquid membrane curing compounds in accordance with ASTM C309, Type 2 or Type 1-D, except as modified by the following:

- Ensure Type 2, white-pigmented compound hiding power has a daylight reflectance of at least 65 percent of magnesium oxide reflectance in accordance with ASTM E 97.
- Color Type 1-D compound with a red fugitive dye so inspection indicates complete coverage. Ensure the color remains for at least 4 hr and then gradually disappears.
- Ensure the curing compound has at least 90 percent water retention when tested in accordance with OHD L-17.

G. Sheet Materials

Provide sheet materials in accordance with ASTM C171. Engineer may approve a sheet material type not specified in ASTM C171 if it meets all other requirements of ASTM C171. Cut the sheet material into sheets wide enough that they completely cover the exposed concrete surface. Provide a lap joint of at least 2 feet, if it is necessary to have joints in the sheets. Engineer will not allow the use of sheet sections that have lost their moisture-retaining qualities.

H. Linseed Oil Emulsion

Provide linseed oil emulsion in accordance with AASHTO M 233: Ensure emulsion is stable at the time of application.

Color linseed oil emulsion with a red fugitive dye to indicate complete coverage for inspection. Ensure color remains for at least 4 hours then gradually disappears within two weeks.

Ensure curing compound has at least 90 percent water retention at a coverage rate of 175 ft²/gal and tested in accordance with OHD L-17.

Store and transport linseed oil emulsion in plastic containers marked with manufacturer name, contents, lot number, and date of manufacture.

I. Water for Ponding and Material for Dikes

Provide water for ponding in accordance with Subsection 701.04, "Water." Construct dikes from a combination of loam, sand, or clay. Ensure dikes are free of rocks, sticks, or objects that may prevent a watertight dike.

701.08 JOINT FILLERS AND SEALANTS

This subsection covers the requirements for joint fillers and sealants for PCC.

A. Preformed Expansion Joint Filler for Concrete (Bituminous Type) Not used.**B. (Not used)****C. Preformed Elastomeric Compression Joint Sealant**

This subsection covers preformed elastomeric compression joint sealants for PCC pavements and concrete bridge floors.

(1) Preformed Joint Seals

Provide joint seals manufactured from an elastomeric material that is resistant to heat, oil, jet fuel, and ozone. Ensure the material is compatible with concrete and is in accordance with ASTM D2628.

(2) Shape and Dimensions

Make the molded joint seals to the cross-sectional dimensions, lengths, and tolerances as shown on the Plans. Place the sealant in one piece for the full length of transverse joint and in practical lengths to suit field conditions for longitudinal joints.

(3) Inspection

Engineer will inspect the surface and dimensions of representative sections of each lot to determine visual compliance. Replace preformed elastomeric compression joint sealant that elongates more than 2 percent during placement, at no additional cost.

(4) Lubrication Adhesive

Provide lubricant adhesive, if necessary, that maintains consistency at the installation temperature and is compatible with the sealant and concrete. Ensure the lubricant remains unaffected by the normal moisture in the concrete. Ensure the lubricant adhesive consists of the same base polymer as the sealant, blended with a volatile solvent.

D. Hot Poured Joint Sealant Not used.**E. Low Modulus Silicone Joint Sealant (Non-Sag) Not used. Low Modulus Silicone Joint Sealant (Self-Leveling)**

This subsection covers self-leveling, low modulus silicone joint sealants and polyethylene backer rod for sealing PCC pavement joints, PCC to asphalt concrete pavement joints, or both. Provide self-leveling silicone sealant in a one-part silicone formulation. Acid cure sealants is not allowed.

(1) Silicone Sealant

Provide a silicone sealant in accordance with ASTM D 5893 Standard Specification for Cold-Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements, Type SL.

(2) Backer Rod

Provide a backer rod that is compatible with the joint sealant and does not bond or react with the sealant. Provide a backer rod in accordance with ASTM D 5249.

F. Not used.**701.10 HIGH DENSITY CONCRETE FOR BRIDGE DECK REPAIR AND OVERLAY (Not Used)****701.11 LATEX MODIFIED CONCRETE FOR BRIDGE DECK OVERLAYS (Not Used)**

701.10 PENETRATING WATER REPELLENT FOR TREATMENT OF CONCRETE SURFACES (Not Used)**701.12 EPOXY RESIN AND OTHER ADHESIVES FOR GENERAL USE WITH CONCRETE**

This subsection covers epoxy-resin and related bonding systems for PCC.

A. General

If the epoxy-resin type, grade, and class are shown on the Plans provide an epoxy meeting those requirements. If the epoxy-resin system is not specified, provide the appropriate type, with the approval of the Resident Engineer, for the intended purpose as follows:

- **Type A.** An epoxy-resin for bonding hardened concrete to hardened concrete.
- **Type B.** An epoxy-resin for bonding fresh concrete to hardened concrete.
- **Type C.** An epoxy-resin for bonding traffic markers to hardened concrete and asphalt concrete.
- **Type D.** A fluid epoxy for crack injection in old structures repair.
- **Type E.** An epoxy for repairing spalled areas on vertical concrete structures without forms.
- **Type F.** An epoxy for repairing spalled areas on concrete structures with forms.
- **Type G.** An epoxy for filling small holes in concrete.
- **Type H.** An epoxy for installing rebar and anchor bolts in hardened concrete except when exposed to suspended or sustained tension loads.
- **Type J.** An epoxy for post-tensioning anchorage protection systems.
- **Type K.** High Molecular Weight Methacrylate (HMWM): A monomer which, when polymerized, can structurally re-bond cracks and act as a film forming sealant against chloride ions on concrete surfaces.
- **Type L.** Epoxy Penetrant: A two-part, low viscosity, epoxy resin penetrating sealant that re-bonds cracks and acts as a film forming sealant against chloride ions on concrete surfaces.
- **Type M.** An epoxy for sealing cracks before an epoxy bridge deck overlay.
- **Type N.** An epoxy or epoxy-urethane for multiple layer polymer concrete bridge deck overlays.

B. Specification Requirements for Epoxy-Resin and Related Bonding Systems

- **Type A.** Provide Type A epoxy in accordance with AASHTO M 235 for Type IV, Grade 2.
- **Type B.** Provide Type B epoxy in accordance with AASHTO M 235 for Type V, Grade 2.
- **Type C.** Provide Type C epoxy in accordance with AASHTO M 237 for Type IV.
- **Type D.** Provide Type D epoxy in accordance with AASHTO M 235 for Type IV Grade 1 with a maximum viscosity of 600 cP at 77 degrees F.

- **Type E.** Provide Type E epoxy in accordance with AASHTO M 235 for Type IV Grade 3, except with an elongation in tension of at least 10 percent. Mix no greater than 2.25 parts sand to 1 part epoxy by volume. Match to the color of No. 36622 in Federal Standard No. 595.
- **Type F.** Provide Type F epoxy in accordance with AASHTO M 235 for Type IV Grade 1 or Grade 2 with an elongation in tension of at least 10 percent. Mix no greater than 2.25 parts sand to 1 part epoxy by volume. Match to the color of No. 36622 in Federal Standard No. 595.
- **Type G.** Provide Type G epoxy in accordance with AASHTO M 235 for Type II Grade 1, Grade 2, or Grade 3 at hole location as shown on the Plans.
- **Type H.** Provide Type H epoxy in accordance with AASHTO M 235 for Type IV Grade 3.
- **Type J.**
 - Provide Type J epoxy that will produce a low exothermic reaction and have characteristics for machine base plate applications. Extend the material with the aggregate supplied by the manufacturer. Use all the aggregate supplied.
 - Provide factory preportioned epoxy compound with aggregate. Deliver epoxy and aggregate in the original containers, labeled with manufacturer's name, date of manufacture, product identification, and batch numbers. Store, condition, and use the product in accordance with the manufacturer's recommendations.
 - Provide epoxy grout and aggregate mix for Type J epoxy in accordance with Table 701:21.

Table 701:21 Epoxy Grout and Aggregate Mix Properties		
Property	Test Value	Test Method
Compressive strength cubes 7 day cure at 77°F	≥10,000 psi	ASTM C579B
Tensile strength at 7 day	≥2,100 psi	ASTM C307
Flexural strength 7 day cure at 77°F	≥3,600 psi	ASTM C580
Modulus of Elasticity 7 day cure at 77°F	<2,100,000 psi	ASTM C580
Coefficient of thermal expansion from 74°F to 210°F	<20×10 ⁻⁶ in/in/°F	ASTM C531
Peak Exotherm, specimen 12 in × 12 in × 3 in	<150°F	ASTM D2471
Slant shear at 7 day (bond strength to concrete)	>3,000 psi	ASTM C882
Thermal compatibility	5 cycles passed	ASTM C884
Linear shrinkage at 7 day	≤0.025%	ASTM C531
Flowability and bearing area	90% Contact area	ASTM C1339
Gel time, specimen 12 in × 12 in × 3 in	<4 hr	ASTM D2471

(1) Type K — Monomer Materials for HMWM

Provide a low viscosity, low odor, HMWM monomer system in accordance with Table 701:22.

Ensure standard Methyl Methacrylate (MMA) resins are not used due to volatility. Provide a compatible promoter/initiator system that has a deck surface cure time 40 minutes to 6 hours at surface application temperature. Formulate the promoter/initiator system to allow for adjustment of the gel time to compensate for the temperature changes during treatment application. Submit to Engineer a table showing correct promoter and initiator proportions to be added to the monomer to achieve the cure time requirements based on the surface temperature. Ship materials within 6 months of the date of manufacture. Engineer will accept two component materials if the material requirements of Table 701:22 are met.

Table 701:22 HMWM Properties		
Property	Requirement	ASTM Test Method
Viscosity (Brookfield) ^a	10 cP – 25 cP	D 1824
Density (Pensky Martens CC), at 77°F	>8.4 lb/gal	D 2849
Flash point	>200°F	D 93
Vapor pressure, at 77°F	<1.0 mm Hg	D 323
Shelf life	≥1 year	—

Table 701:22 HMWM Properties		
Property	Requirement	ASTM Test Method
Gel time, 100 g mass to a thin film	>40 min	D 2471
Tensile elongation	≥30%	D 638
Cure time at deck temperature:		
Bulk	40 min – 150 min	—
Surface	40 min – 360 min	—
Bond strength	>750 psi	C 882
Percent volatiles	≤30%	D 2369
^a Brookfield viscometer, Model RVT with a UL adaptor or Model LVF, No. 1 spindle and UL adaptor at 77°F.		

(2) Type L - Materials for Epoxy-Resin

Supply a two-part epoxy-resin in accordance with Table 701:23, "Epoxy-Mixed System Properties." Add a fluorescent tracer dye to provide evidence of crack penetration.

Table 701:23 Epoxy-Mixed System Properties		
Property	Requirement	Standard
Mixing ratio	1:01	—
Viscosity (Brookfield)	≤50 cP	ASTM C881
Bond strength (14 day cure)	≥1,500 psi	ASTM C882
Water adsorption (24 hr)	≤1.0%	ASTM D570
Tensile strength (10 mil thickness)	≥2,500 psi	ASTM D638
Elongation	≥2%	ASTM D638
Gel time in mass at 72°F	≥30 min	AASHTO M 235
Percent volatile	≤30%	ASTM D2369

(3) Type M — Hairline Cracks and Encapsulating Steel Grid

Provide Type M epoxy, as a two component, hybrid polymer system, free of fillers and volatile solvents that can provide a simple volumetric ratio. Formulate Type M epoxy so that it has an extremely low viscosity and surface tension, and an affinity for concrete and steel.

Mix component A and component B in the appropriate ratio so the cured resin is in accordance with Table 701:24.

Table 701:24		
Physical Properties of the Cured System		
Property	Value	Standard
Strength:		
Compressive (7 days)	5,500 psi – 7,500 psi	AASHTO T 106
Tensile	3,000 psi – 4,000 psi	ASTM D638
Tensile elongation	30 – 40%	ASTM D638
Water absorption	≤0.1%wt.	ASTM D570
Shore D Hardness, 77°F	65 – 75	ASTM D2240
Gel time	40 min – 60 min	Gel Time Procedure ^a
Adhesion to concrete, percent failure in concrete	100	ASTM C1583
Surface tension	26 Dynes/cc – 32 Dynes/cc	ASTM D971
Percent solids	100	ASTM D2369
^a Measure a 6-oz sample of epoxy into unwaxed paper cup, in recommended proportions at 77°F. Record time and mix immediately for specified duration. Pour 3.5 oz. of mixture into new 6-oz unwaxed paper cup and place on a wooden surface. Starting 20 min from recorded time, probe mixture every 2 min with a small stick until small ball forms in center of container. Gel Time is total time from pouring the mix to ball formation. Perform test in enclosed area with a temperature of 77 ±3.6°F and relative humidity of 50 ±5 percent.		

(4) Type N — Physical Requirements of Epoxy or Epoxy-Urethane Copolymer Overlay System

Provide a two-component epoxy or epoxy-urethane system in accordance with Table 701:25.

Table 701:25		
Physical Properties of the Cured System		
Property	Value	Standard
Compressive strength with aggregate:		
At 5 hr	≥1,000 psi	ASTM C579 ^a
At 2 days	≥5,000 psi	ASTM C579 ^a
Tensile strength (7 day)	1,800–5,000 psi	ASTM D638
Elongation (neat)(7 day)	25 – 100%	ASTM D638

Table 701:25 Physical Properties of the Cured System		
Property	Value	Standard
Absorption (neat) (1 day)	≤1.0%	ASTM D570
Shore D Hardness, 77°F	≥60	ASTM D2240
Gel time	15 min – 45 min	ASTM C881
Adhesion to concrete, percent failure in concrete	100	ASTM C1583
Viscosity	7 P – 70 P	Brookfield RVT, spindle No. 3 at 20 rpm.
Thermal compatibility	No delamination of overlay	ASTM C884
^a Modified with plastic inserts.		

701.13 WHITE CONCRETE

This subsection covers the requirements for providing white PCC for median barriers specified in Section 627, “Concrete Longitudinal Barrier.”

A. Materials

If white PCC is shown on the Plans, use the following requirements to supplement the general provision for PCC.

(1) Cement

Provide white Portland cement in accordance with AASHTO M 85 for Type 1 Portland cement. Ensure the Portland cement contains no more than 0.50 percent of ferric oxide (Fe₂O₃) by mass.

(2) Fine Aggregate

Provide light colored fine aggregate in accordance with Subsection 701.05, “Fine Aggregate.”

(3) Coarse Aggregate

Provide light colored coarse aggregate. Use No. 57 or No. 67 coarse aggregate in accordance with Subsection 701.06, “Coarse Aggregate.”

(4) Water

Use mixing water in accordance with Subsection 701.04, “Water,” that is free of impurities that may cause staining.

B. Proportioning

Proportion white concrete mixes in accordance with ACI 211.1. For barrier construction, ensure the white concrete mix contains 660 lb/yd³ of white Type 1 cement with an air content of 6 percent $\pm$ 1 percentage point, and a slump of 3 in $\pm$ 1 in. Ensure a maximum water to cement ratio of 0.53, and a minimum compression strength of 3,000 psi at 28 days.

C. Batching and Mixing

Provide clean mixing and batching equipment to prevent white concrete contamination and discoloration. Use cement bins, truck mixer drums, and weigh hoppers that are free of loose, gray Portland cement.

D. Surface Finish

Use form oil that will not stain the surface to construct white concrete median barriers in metal forms. Treat the surface with a penetrating water repellent solution at the rate recommended by the manufacturer in accordance with Section 515, "Penetrating Water Repellent Treatment."

E. Acceptance

Ensure the white concrete barrier or parapet is at least as white as 10Y91 in accordance with the Munsell Book of Color. Before white concrete barrier or parapet production, submit to the Resident Engineer a 1 ft² [test panel of material for the construction. Use the test panel as a standard as approved by Engineer.

701.14 FIBER REINFORCEMENT FOR PCC**A. General Requirements**

This subsection covers fiber reinforcement added to PCC. Provide polypropylene fibers or steel fibers in accordance with the Subsection 701.15.A(1) and Subsection 701.15.A(2).

(1) Polypropylene Fibers

Use synthetic fibers that are 100 percent polypropylene, collated, fibrillated fibers manufactured to graduated lengths of equal proportions for secondary reinforcement. Provide fibers in accordance with ASTM C1116 for Type III.

(2) Steel Fibers

Use steel fiber in accordance with ASTM A820, for Type II, cut-sheet steel. Provide steel fibers with an aspect ratio of 30:60 and from 1½ - 2 in long.

B. Application

Add the fibers to the PCC at a rate specified by the manufacturer. Mix the concrete to uniformly distribute the fiber.

701.15 DOWEL BAR RETROFIT MORTAR

Provide a mortar for retrofitting Portland cement concrete pavements with dowel bars in accordance with Table 701:26. Combine the mortar mix with an aggregate extender in accordance with Subsection 701.06, "Coarse Aggregate," size No. 8, to form a concrete.

Table 701:26 Mortar Properties		
Property	Test Value	ASSHTO / ASTM Test Method
Compressive strength @ 3 hours without aggregate extender	≥4,000 psi	T106
Compressive strength @ 7 days without aggregate extender	≥6,000 psi	T106
Compressive strength @ 3 hours with aggregate extender	≥3,000 psi	T106
Compressive strength @ 7 days with aggregate extender	≥5,000 psi	T106
Freeze-thaw Durability Factor with and without aggregate extender @ 300 cycles	≥90.0%	T161, procedure B
Bond Strength by Slant Shear with and without aggregate extender @ 7 days	≥3,000 psi	C882 ^a
Linear Shrinkage with and without aggregate extender @ 7 days	≤0.180%	C531
^a Referenced from ASTM C928.		

701.10 TEMPORARY CONCRETE MIX DESIGN AND PROPORTIONING (Not Used)**701.16 POST-TENSIONING GROUT (Not Used)****701.17 CONTROLLED LOW-STRENGTH MATERIAL****A. General**

Controlled Low-Strength Material (CLSM): A low strength grout backfill material consisting of Portland cement, fly ash, fine aggregate, and water. Engineer will allow the use of an air entraining agent.

B. Mix Design

Design the mix using absolute volumes. Use at least 20 lb/yd³ of Portland cement in the mix design. Submit the proposed mix design with trial batch testing data before use. Include the weight, specific gravity, material source, and material requirements for each ingredient.

Include the flowability results, unit weight, and trial batch strength tests. Engineer will allow the submittal of previously used and successful mix designs without retesting if material sources have not changed. Provide materials in accordance with the following sections and subsections for CLSM:

Material:	Section or Subsection:
<u>Portland Cement</u>	<u>701.02</u>
<u>Fly Ash</u>	<u>702.01</u>
<u>Fine Aggregate</u>	<u>701.05</u>
<u>Water</u>	<u>701.04</u>
<u>Air Entraining Agents</u>	<u>701.03.A</u>

C. Sampling and Testing

Test CLSM in accordance with the following methods:

- Conduct the flow test in accordance with ASTM D6103. Provide a CLSM spread diameter of 8 in or greater.
- Conduct the unit weight tests in accordance with ASTM D6023. The Resident Engineer will reject batches with a unit weight that deviates 5 percent or more from the mix design value.
- Conduct the compressive strength tests in accordance with OHD L-62. Provide a CLSM compressive strength at 28 days from 100-800 psi. Earlier strength tests may be performed to confirm that the material reaches the minimum strength, but are not required by the Contract.

701.18 EARLY STRENGTH CONCRETE FOR BRIDGE DECK PATCHING AND OVERLAYS (Not Used)

701.19 MAGNESIUM AMMONIUM PHOSPHATE CONCRETE FOR CONCRETE REPAIR

This subsection covers magnesium ammonium phosphate concrete (MAPC) for repairing block-outs, holes, and defects in post-tensioned boxes and girders. Follow the manufacturer's recommendations for preparing surfaces, mixing, placing, and curing concrete. Provide MAPC in

accordance with Table 701:29.

Table 701:29 Physical Properties		
Requirement	Test Value	Test Method
Strength at 28 day (air curing instead of moist curing):		
Compressive	≥8,500 psi	ASTM C109
Flexural	≥600 psi	ASTM C348
Slant shear bond at 14 day (air curing instead of moist curing)	≥2,500 psi	ASTM C882
Time of setting, initial set (at least 95°F)	≥15 min	ASTM C266
Scaling resistance	No scaling	ASTM C672
Maximum length change:		
Wet cure at 28 days	0.03%	ASTM C157
Dry cure at 28 days	0.03%	ASTM C596
Sulfate resistance after 52 weeks of immersion	0.10%	ASTM C1012
Maximum chloride absorption at 21 days (use cubes meeting ASTM C 109)	1.50%	NCHRP T-244

SECTION 13 34 19 - PRE-ENGINEERED METAL AIRCRAFT HANGARS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pre-engineered aircraft T-hangar with steel framing, metal roof and wall panels.
 - 2. Bi-folding hangar doors.
 - 3. Personnel doors and frames.
 - 4. Thermal insulation.
 - 5. Accessories.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7-10 - Minimum Design Loads for Buildings and Other Structures.
- B. Metal Building Manufacturer's Association (MBMA):
 - 1. Metal Building Systems Manual.
- C. American National Standards Institute (ANSI):
 - 1. A156.2 - Mortise Locks and Latches.
- D. ASTM International:
 - 1. ASTM A36 - Standard Specification for Carbon Structural Steel.
 - 2. ASTM A446 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) By the Hot-Dip Process, Structural (Physical) Quality.
 - 3. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon.
 - 4. Steel Structural Tubing in Rounds and Shapes.
 - 5. ASTM A570 - Standard Specification for Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality.
 - 6. ASTM A572-Standard Specification for High-Strength Low -Alloy.
 - 7. Columbium-Vanadium Structural Steel.
 - 8. ASTM A792 - Standard Specification for Steel Sheet, 55 percent Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 9. ASTM C 1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
 - 10. ASTM D2244 -Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
 - 11. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior.
 - 12. Paint Films.
 - 13. ASTM F3125 - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength.

1.3 DEFINITIONS

- A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

1.4 COORDINATION

- A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Section 03 30 00 "Cast-in-Place Concrete."
- B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and non-corrosive installation.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Chickasha Municipal Airport, Chickasha, OK.
 - 1. Review methods and procedures related to metal building systems including, but not limited to, the following:
 - a. Condition of foundations and other preparatory work performed by other trades.
 - b. Structural load limitations.
 - c. Construction Schedule: Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.

1.6 SUBMITTALS

- A. Product Data: For each type of metal building system component.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and available finish options for the following:
 - a. Metal roof panels.
 - b. Metal wall panels.
 - c. Bi-fold hangar door.
 - d. Thermal insulation and vapor-retarder facings.
 - e. Personnel doors and frames.
 - f. Ridge cap/Roof ventilators.
- B. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details, and the following:
 - 1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins.
 - 2. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
 - 3. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.
 - 4. Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods

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6. of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
 - a. Show wall-mounted items including hangar doors, personnel doors, and lighting fixtures.
 - C. Anchor Bolt Plan: Provide anchor layout plan and building column reactions.
 - D. Delegated Design Submittals:
 1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer responsible for their preparation who is licensed in the State of Oklahoma.
 - E. Letter of Design Certification: Signed and sealed by a qualified Professional Engineer. Include the following:
 1. Name and location of Project.
 2. Order number.
 3. Name of manufacturer.
 4. Name of Contractor.
 5. Building dimensions including width, length, height, and roof slope.
 6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
 7. Governing building code and year of edition.
 8. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration and hangar door loads.
 9. Load Combinations: Indicate that loads were applied acting simultaneously with
 10. concentrated loads, according to governing building code.
 11. Building-Use Category: Indicate category of building use and its effect on load importance factors.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panel finishes and bi-fold hangar door to include with maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Provide T-hangars or consecutive row rectangular hangars from a manufacturer who is regularly engaged in the manufacturing of aircraft hangar buildings and bi-fold hangar door systems.
- B. Provide hangar package as a complete, integral system and furnished by a manufacturer who designs and manufactures bi-fold doors and hangar buildings.
- C. Provide documented evidence that manufacturer has been engaged in the manufacture of T-hangars for a minimum of 15 years. If requested, provide a list of completed hangar projects including Owner's and Contractor's contact information.
- D. Engineering Responsibility: Preparation of comprehensive engineering analysis and Shop Drawings by a Professional Engineer who is legally qualified to practice in jurisdiction where Project is located.

1.9 BUILDING DESIGN

- A. Design loads shall be as stated below and as stated on order document and in accordance with International Building Code (IBC) and ASCE 7-10.

Ground Snow Load	10 psf (reducible)
Live Load	20 psf
Dead Load	4 psf
Collateral Load	0 psf
Ultimate Wind Speed	115 mph
Exposure	C
Seismic Zone	B
Building Classification	Aircraft Hangar
Construction Type	II B
Occupancy/Risk Category	II
Use Group	S-1
NFPA Construction Type	II (000)
Importance Factors	1.0

- B. Design calculations, Drawings, and documents shall contain information requested for permits approvals and sufficient information for building erection and applied to products furnished.
- C. Building manufacturer, supplied shall furnish building reactions. Design of floors and foundation shall be responsibility of foundation designer, not hangar manufacturer.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

1.11 WARRANTY

- A. Special Warranty on Metal Panel Finishes: Manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
- Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - Color fading more than five Hunter units when tested according to ASTM D2244.
 - Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - Finish Warranty Period:
 - Wall Panels and Bi-fold Door finish: Minimum 35-year limited warranty.
 - Interior panels: Minimum 20-year limited warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Products, systems, equipment, and materials listed are based on T-hangars and bi-fold doors manufactured by Erect-A-Tube, Inc. Website: <https://erect-a-tube.com>. Phone: 800.624.9219. Products from other manufacturers with equivalent quality, performance, and features will be considered subject to approval by Engineer and Owner.
- B. If required by an alternative manufacturer, costs for re-design and installation modifications to the foundation or other building components will be hangar supplier's responsibility.

2.2 HANGAR DIMENSIONS

- A. Hangar Sizes:

Building Model Number	N51-42
Number of Units	8, 9, or 10 units
Building Length	189'-0", 210'-0", or 231'-0"
Building Width	51'-0"
Building Eave Height	14'-6"
MINIMUM CLEAR UNIT DIMENSIONS	
Clear Door Opening	41'-6" x 12'-0"
Wing Depth	18'-0"
Tail Bay Depth	15'-0"
Tail Bay Width	21'-0"
Overall Unit Depth	33'-0"

- B. Building width is measured from center line to center line of end wall columns.
- C. Building length is measured from center line to center line of end wall columns.
- D. Eave height is measured from the top of the eave purlin or door truss to the bottom of column base plate.
- E. Bi-fold hangar door size is 41 feet - 6 inches by 12 feet - 0 inches minimum clearances as indicated on Plans.
- F. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication tolerances unless more stringent tolerances are noted herein.

2.3 PRIMARY STRUCTURE:

- A. Primary structural framing shall be main load carrying structural members and include door trusses, rafters, interior columns, and exterior columns.
 - 1. Minimum design deflection of door truss: $L/240$.
- B. Rafters: ASTM A36 steel wide flange beams "W" shaped and pre-punched for purlin connections, door truss, and interior column connections. Provide rafters with factory welded ridge splice plates and designed to support specified loads.

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- C. Bi-fold door truss shall span width of hangar door opening and be shipped full length to accommodate installation. Design door truss integral with door design. Factory weld door truss with chords 4-inch by 4-inch by 1/8-inch minimum square structural welded steel tube ASTM A500 GR.B. and 3-inch by 1-inch by 1/8-inch minimum diagonal webbing. Pre-punch door truss for column connection and bi-fold door hinges pre-located on upper door truss chord. Field welding of bi-fold door frames, door hinges, or pick-up plates is not acceptable.
 - D. Manufacturer door columns of ASTM A36 steel wide flange beams "W" shapes and be W6 by 15 pounds per foot minimum with pre-welded base plate and door truss saddles. Field welding of components is not acceptable.
 - E. Fabricate interior columns of square ASTM A500 structural welded steel tube with pre-welded four-bolt base plates and girt clips.
 - F. Shop prime all members with manufacturer's standard red oxide primer.

2.4 SECONDARY STRUCTURE:

- A. Secondary framing are structural members that carry loads to the primary framing systems and include the purlins, girts, wind bracing, and miscellaneous structural members.
- B. Purlins: Nominal 8-inch, 10-inch, or 12-inch deep "Z" shaped members; and manufactured of 16, 14, or 12 gauge steel designed for specified loads, be fabricated of material complying with ASTM A570 or ASTM A572 standards as applicable.
- C. Fabricate exterior wall girts from 4-inch or 6-inch square structural weld steel tube or rolling formed CEE sections of ASTM 570 or ASTM A572 as applicable, flush mount design.
- D. Fabricate interior partition girts from 4-inch or 6-inch by 16, 14, or 16 gauge red oxide steel "CEE" sections, when specified.
- E. Provide wind bracing, rafter bracing, sheeting angles where required by design loads.
- F. Shop prime all members with manufacturer's standard red oxide primer.

2.5 EXTERIOR WALL PANELS

- A. Roof Panels: Fabricated of 26 gauge galvalume coating conforming to ASTM A792 with a minimum yield of 80 ksi and configuration of 1-1/4-inch minimum high major ribs 12 inches on center.
 - 1. Panel Coverage: 36-inch width furnished full length from building eave to ridge purlin with no butt seams. Provide pre-formed ridge caps. Extend roof panels 12 inches beyond the eave line.
- B. Wall Panels and Hangar Bi-Fold Doors Panels: Fabricated 26 gauge galvalume coating conforming to ASTM A446 with a minimum yield of 80 ksi and a silicone polyester coating.
 - 1. Panel Coverage: 36-inch width and furnished full length and profile configuration of 1-1/4-inch minimum major ribs at 12 inches on center spacing. Provide wall panels full height with no butt seams.

2.6 INTERIOR WALL PANELS

- A. Partition Panels: Fabricated 26 gauge galvalume with minimum yield of 80 ksi and profile configuration of 5/8-inch minimum and major ribs at 9 inches on center spacing to provide 36-inch-wide panel coverage.
 - 1. Provide partition panels full-height or as specified. Furnish panels full height with no butt seams and include bird-proofing trim between partition panels and roof decking. Provide space at base to prevent buckling of panel.

2.7 BI-FOLD DOORS

- A. Provide Bi-fold doors that are integral to hangar building design.
 - 1. Door Framing Members: Square tube jig welded in full-size panels to eliminate any field welding. Provide factory pre-located top hinges to align with pre-located door truss hinges on door header to eliminate field welding.
 - a. Door Framing Structural Steel: ASTM A500 Grade B square structural welded steel tubing.
- B. Bi-Fold Door Operator: Top mounted operator on center of door truss including adjustable turnbuckles and securely fastened.
 - 1. Motor: Totally enclosed capacitor start 3/4 H.P. (minimum) 230 V.A.C. single-phase thermally protected and supplied with a reset button.
 - 2. Cable Drum: Direct drive drum by shaft-mounted gearbox.
 - 3. Gearbox: Oil bath two-stage gearbox, bronze worm gear, hardened steel spur gears, tapered roller, and ball bearings.
 - 4. Pre-wire door operator at factory complete with 24 V.A.C. momentary up and down push-button control, magnetic controllers, geared rotary limit switch attached to cable drum designed to coordinate reversing operation, spring set electric brake, and up-stop safety switch; over-ride safety mercury tilt switch to disconnect power in case of over travel. Provide heavy-duty 230-volt plug power connection for easy connection.
- C. Bi-fold Door Hardware: Provide 3-inch diameter bottom guide roller with sealed bearing and column followers, manual cam locks of bi-fold door, center cane bolt pin 1-inch diameter minimum and embedded floor sockets, 16-inch minimum center plated door poppers and skid plates, all required hinge pins, 3/16-inch diameter 7 by 19 galvanized aircraft cables with wire rope clips and thimbles, bottom, and top 2-ply rubber astragals, 5-inch diameter steel sheave wheels with ball bearings.
- D. Provide bi-fold doors with 3 feet by 6 feet white steel flush entry door, 1-3/4-inch 24 gauge polyurethane foam core thermal broke leaf with R-12 insulation, 16 gauge white thermal broke frame, dual seal bulb weather-stripping, and ANSI A156.2 Series 4000, Grade 2 lever lockset keyed, master keyed, and 3 UL-rated, Grade 2 square steel plated spring hinges with radius corners in satin nickel finish. Include hex wrench for spring adjustment.
- E. Provide manual latches on each side of bi-fold door.
- F. Provide lock-out safety switches on manual door latches of bi-fold doors to prevent bi-fold door system from opening unless both latches are unlocked.
- G. Weather Seals: Provide 2-ply rubber seals on sides and center of bi-fold doors.
- H. Required on vertical laps with trim strips to cover lap material for aesthetics.

2.8 BID-FOLD DOOR LIGHT PANELS

- A. N/A – this project.

2.9 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Building Trim: Provide eave trim, gable trim, corner trim, service door trim, and bi-fold hangar door trim fabricated from 26 gauge flat stock material equal in quality to wall sheets and color as selected from manufacturer's standard color chart. Hem all trim and package pieces for shipment at factory.
- B. Roof Sealant Tape: Pre-formed butyl rubber base, 3/16-inch by 3/8-inch extruded shape.
 - 1. Install sealant on roof panel side laps and at pre-formed ridge caps.
- C. Bird-Proofing: Provide inside and outside semi-rigid cross-linked polyethylene foam closure. Provide self-adhesive closures on bi-fold doors, gable end walls, side walls, roof overhang, eave, and rake of end wall.
- D. Provide 3-inch by 6-inch by 16 gauge fuel containment galvanized angle at the base of all interior partition walls to prevent fuel spills from penetrating adjacent units, installed with fuel-resistant sealant. Anchors supplied by erector.
- E. Provide 2-inch by 4-inch by 16 gauge R-90 Galvanized base angle for two end walls and short side walls, installed with sealant. Anchors supplied by erector.
- F. Fasteners:
 - 1. Roof Fasteners: #12-14 by 1-inch Scotts 310 stainless steel head on carbon steel shank, hex head, with dual seal washer.
 - 2. Roof Stitch Screws: #12 by 3/4-inch Scotts 310 stainless steel head screws with washers.
 - 3. Wall Fasteners: #12-14 by 1-inch zinc plated hex head color match self-drilling sheet metal screws with washer.
 - 4. Wall Panel Stitch Screws: 1/4-inch to #14 by 3/4-inch Zinc plated hex head color match self-drilling lap screw with washer.
 - 5. Partition Sheet Fasteners: #12 to 3/4-inch Zinc plated hex head self-drilling screws.
 - 6. Install sheet metal screws as indicated on building manufacturer's erection plans.

2.10 PASSAGE DOORS

- A. Doors: ADA compliant, 3-foot by 7-foot white steel flush entry door, 1-3/4-inch 24 gauge with R-12 polyurethane foam core insulation, thermal broken leaf. Provide blocking for future door closer.
 - 1. Provide ANSI A156.2 Series 4000, Grade 2 lever lockset keyed and master keyed.
- B. Frame: 16 gauge thermally broken frame in white finish, dual seal bulb weather-stripping, and low profile ADA-compliant sill.
- C. Provide door closer for each storage unit entry door: ANSI Grade I Series 70 Heavy Duty Door closer, parallel, and top installation, US4 Satin finish, with adjustable sweep, latch, and back check, adjustable delayed action, and 10-year limited warranty, equivalent to LCN "4040" or Norton "8301/8501."

2.11 CONTINUOUS AIRFLOW RIDGE CAP VENT

- A. Description: 26 gauge galvalume or color finish ridge vent cap, "ProfileVent" ventilation core, roof sealant and mounting components.

2.12 INSULATION

- A. Roof Insulation: 2-3/4-inch (R-8) fiberglass insulation laminated to a white Metalized Polypropylene Scrim Kraft vapor barrier facing complying with ASTM C 1136.

2.13 STORAGE UNITS

- A. "L" Shaped storage unit fully partitioned off from the adjacent T-Hangar. Includes one framed opening for an overhead door and one 3070 entry door.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Before erection proceeds, survey elevations and locations of concrete- surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances
- C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

- A. Erect metal building system according to manufacturer's written instructions and Shop Drawings.
- B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's Professional Engineer.
- C. Set structural framing accurately in locations and to elevations indicated. Maintain structural stability of frame during erection.
- D. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
- E. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
 - 1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
 - 2. Locate and space wall girts to suit openings such as doors.
 - 3. Provide supplemental framing at entire perimeter of openings, including doors, ventilators, and other penetrations of roof and walls.
- F. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

-
- G. Structural Field Connections: Bolt field connections unless otherwise noted. Provide high-strength zinc-plated bolts conforming to the physical specifications of ASTM A-325 or shall be Grade 5 for primary bolted connections, as shown on manufacturer's Shop Drawing.
 - H. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 METAL WALL PANEL INSTALLATION

- A. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.
 - 1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.
- B. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 1. Field-cut metal panels as required for doors and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.
 - a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.
 - 2. Install metal panels perpendicular to structural supports unless otherwise indicated.
 - 3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
 - 4. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 5. Locate metal panel splices over structural supports with end laps in alignment.
 - 6. Lap metal flashing over metal panels to allow moisture to run over and off the material.
- C. Provide inside and outside "L" 26 gauge corner trim at interior partition walls to seal gaps and cover exposed rough edges of partition sheeting.
- D. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.
 - 1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.

3.5 METAL ROOF PANEL INSTALLATION

- A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
 - 1. Install ridge caps as metal roof panel work proceeds.
 - 2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.
- B. Lap-Seam Metal Roof Panels: Fasten metal roof panels to supports with exposed fasteners at each lapped joint, at location and spacing recommended by manufacturer.
 - 1. Provide metal-backed sealing washers under heads of exposed fasteners bearing on weather side of metal roof panels.
 - 2. Provide sealant tape at lapped joints of metal roof panels and between panels and protruding equipment, vents, and accessories.

-
3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps and on side laps of nesting-type metal panels, on side laps of ribbed or fluted metal panels, and elsewhere as needed to make metal panels weatherproof to driving rains.

3.6 THERMAL INSULATION INSTALLATION

- A. Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, according to manufacturer's written instructions.
 1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces.
 2. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
 3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.

3.7 BI-FOLD DOOR INSTALLATION

- A. Install bi-fold door in accordance to manufacturer's installation instructions.

3.8 DOOR AND FRAME INSTALLATION

- A. Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each door frame with elastomeric sealant used for metal wall panels.

3.9 ACCESSORY INSTALLATION

- A. Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
 1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
 2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- B. Continuous Roof Ventilators: Set ventilators complete with necessary hardware, anchors, dampers, weather guards, rain caps, and equipment supports. Join sections with splice plates and end-cap skirt assemblies where required to achieve indicated length. Install preformed filler strips at base to seal ridge cap ventilator to metal roof panels.

3.10 ADJUSTING

- A. Doors and Bi-fold Hangar Door Operator: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion.
- B. Door Hardware: Adjust and check each operating item of door hardware and each door to ensure proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended.

END OF SECTION

APPENDIX A

GEOTECHNICAL REPORT

**SUBSURFACE EXPLORATION AND
GEOTECHNICAL ENGINEERING REPORT**

**PROPOSED TAXILANE & HANGAR
MUNICIPAL AIRPORT**

CHICKASHA, OKLAHOMA

PROJECT NO. CEC-19-12



PREPARED FOR:

**CEC CORPORATION
OKLAHOMA CITY**

APRIL 30, 2019

April 30, 2019

CEC Corporation
4555 West Memorial Road
Oklahoma City, OK 73142

Attn: Mr. Toby Baker, P.E.

**Re: Subsurface Exploration & Geotechnical Engineering Report
Proposed Taxilane & Hangar
Municipal Airport
Chickasha, Oklahoma
HGE Project No. CEC-19-12**

Dear Mr. Baker:

The Subsurface Exploration & Geotechnical Engineering Report has been completed for the proposed taxilane and hangar to be constructed at the Municipal Airport in Chickasha, Oklahoma. Our services and fee were detailed in email correspondence dated February 18 & 21, 2019. Acceptance of the scope and fee were provided by issuance of CEC Task Order No. 69, dated February 21, 2019. Notice to proceed was issued via email correspondence dated April 3, 2019.

The purpose of the attached report is to provide a summary of the field investigation methods used and provide recommendations for earthwork and the design and construction of on-grade slabs, foundations and pavement subgrade. Logs of the borings and test results are provided in the appendices of this report.

Mr. Baker, please do not hesitate to contact HGE at (405) 942-4090 should you have questions regarding this report.

Respectfully:

HINDERLITER GEOTECHNICAL ENGINEERING, LLC
Certificate of Authorization No. 5528, Expires 30-June-2019



Mark H. Hinderliter, P.E.
Oklahoma No. 21327

P:\HGE\Reports\2019 Geo\April\CEC-19-12 Report

Copies: toby.baker@connectcec.com; craig.boyer@connectcec.com (1 + pdf report & invoice)

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1.0 EXECUTIVE SUMMARY

The subsurface exploration and laboratory soil testing are complete for the proposed Taxilane and Hangar to be constructed at the Municipal Airport in Chickasha, Oklahoma. We understand a new hangar with dimensions of 60 feet by 240 feet will be erected. The hangar is expected to have an on-grade concrete floor slab and steel framing. Taxilane pavements may be either Portland cement concrete or asphaltic cement concrete over crushed aggregate base, stabilized subgrade or both.

Two soil test borings were advanced to depths of 20 feet for the proposed hangar and one boring advanced to 10 feet was advanced within the taxilane. One bulk composite soil sample was obtained from the borings for subgrade strength testing. HGE personnel located the borings in the field using a measuring wheel based on the boring location exhibit provided to us by the Client. The approximate location of each boring is displayed on the boring location diagram and is recorded on the boring logs, both attached within Appendix A of this report.

In general, the borings encountered sandy lean clay soils and sandy silts from the surficial vegetation to depths of approximately 5 feet to 6 feet where the subsurface materials transitioned to silty sands. The silty sands persisted to the boring termination depths. Soil colors tended to be dark red, dark reddish-brown or reddish-brown. Fine-grained soils tended to be medium stiff to very stiff while coarse-grained soils tended to be loose to medium dense. No hard, geologic materials were encountered prior to boring termination.

Based on the NRCS Soil Map – Grady County, the subgrade soils within the project area consist of Norge silt loam, 0 to 1 percent slopes. The bulk, composite soil sample obtained from the borings classified as an A-4 soil by the AASHTO system, Sandy Silt (ML) by the Unified Soil Classification System and displayed an Oklahoma Subgrade Index value of 2. The soil displayed a standard-effort maximum dry density of 111.5 pounds per cubic feet with an optimum moisture content of 15.3 percent. Bearing ratio values ranged from 0.9 to 6.2 with a design CBR value based on 95 percent compaction of 3.6. The soluble sulfate content was less than 200 parts per million.

The borings were monitored for groundwater while drilling and after boring completion. Groundwater was not encountered within the borings at these times. The borings were plugged or backfilled per OWRB requirements immediately after boring completion.

Based on the test results obtained within the laboratory, the subgrade soils could be stabilized using cement kiln dust (CKD) or fly ash. Pavements could also be supported on aggregate base over compacted subgrade. Specific recommendations concerning earthwork, on-grade slabs, foundations and subgrade stabilization are presented subsequently in this report.

2.0 PROJECT DESCRIPTION

Chickasha Municipal Airport is located at 2344 Beechcraft Road in Chickasha, Oklahoma. We understand a new hangar with dimensions of 60 feet by 240 feet will be erected. The hangar is expected to have an on-grade concrete floor slab and steel framing. Taxilane pavements may be either Portland cement concrete or asphaltic cement concrete over crushed aggregate base, stabilized subgrade or both.

3.0 SITE EXPLORATION

3.1 Boring Layout & Elevations

Two soil test borings were advanced to depths of 20 feet for the proposed hangar and one boring advanced to 10 feet was advanced within the taxilane. One bulk composite soil sample was obtained from the borings for subgrade strength testing. The approximate locations of the borings are displayed on the boring location diagram and are recorded on the boring logs, both attached within Appendix A of this report. Borings were located in the field using a measuring wheel based on the boring location exhibit provided to us; right angles were estimated.

Elevations at the boring locations were determined using a common surveyor's level and grade rod. The top nut of the existing fire hydrant, located approximately as displayed on the boring location diagram, was used as a benchmark and was assigned a relative elevation of 100 feet. Based on this benchmark, elevations at the boring locations ranged from approximately 97.5 feet to 97.8 feet.

Boring locations and elevations should be considered only roughly accurate and not survey quality. Borings are often offset in the field by drill operators to locations accessible to the drill rig or to avoid utilities. Significant offsets are typically noted on the boring logs.

3.2 Subsurface Investigation

A truck-mounted, CME-45 rotary drill rig outfitted with 4" solid augers was used to advance the boreholes. Representative soil samples were obtained using both the split-barrel and the thin-walled tube sampling procedures generally as detailed in test methods ASTM D-1586 and ASTM D-1587. The bulk composite soil sample was obtained from the augers.

ASTM D 1586 is commonly referred to as the Standard Penetration Test (SPT). The split-barrel sampling process requires a two-piece sampling tube be used to obtain soil samples. A two-inch outside diameter sampling tube is hammered into the bottom of the boring with a 140-pound weight

falling 30 inches. The number of blows required to advance the sampling tube the last 12 inches, or less, of an 18-inch sampling interval is recorded as the SPT resistance value, N. The in-situ relative density of granular soils, consistency of cohesive soils, and the hardness of weathered bedrock can be estimated from the N value. The N values recorded for each test are displayed on the attached boring logs adjacent to their relative sampling depths.

An automatic drive hammer was used to advance the split-barrel sampler. A greater mechanical efficiency is achieved using an automatic drive hammer when compared to a conventional safety drive hammer operated with a cathead and rope. The effect of this higher efficiency on the N values has been considered in our interpretation and analysis of the subsurface information provided with this report.

In the thin-walled tube sampling procedure, a seamless steel tube with a sharpened cutting end is pushed into the bottom of the borehole using the hydraulic drill head. The sampler is carefully removed from the hole and the ends are capped and sealed to prevent moisture loss. Tubes are labeled for identification and returned to the laboratory to be extruded using an hydraulic ram.

An HGE drill crew prepared field boring logs as part of the subsurface exploration operations. Samples retrieved during drilling operations were examined and a material description was recorded on the field logs. The samples were packaged in plastic bags to reduce moisture loss, tagged for identification and transported to our laboratory for further evaluation. The field logs also include visual classifications of the cutting materials encountered during drilling which include the driller's interpretation of the subsurface conditions between bagged samples. This report contains the final boring logs that represent modifications based on the engineer's observations and laboratory test results.

The borings were backfilled or plugged per OWRB requirements after the drilling operations were completed. Groundwater level measurements are included in Section 5.3 of this report.

4.0 LABORATORY EVALUATION

As part of the geotechnical investigation, soil samples obtained from the borings were evaluated for moisture content. Selected samples were classified according to the Unified Soil Classification System. Samples obtained within thin-walled tubes were subjected to density evaluations and unconfined compressive strength testing. The moisture-density relationship, bearing ratio (CBR) strength and the soluble sulfate content of the bulk sample was also determined. The following sections provide brief information about the tests performed.

4.1 In-Situ Moisture Content

The in-situ moisture content of soil samples was determined in the laboratory in general accordance with specification ASTM D 2216. The moisture content is expressed as a percentage and is the ratio of the weight of water in a given amount of soil to the weight of solid particles.

4.2 Liquid & Plastic Limits

The Liquid Limit (LL) and Plastic Limit (PL) of selected soil samples were determined in the laboratory in general accordance with ASTM D 4318. The Liquid Limit (LL) of a soil is the water content at which the soil passes from a liquid state to a plastic state while the Plastic Limit (PL) of a soil is the water content at which the soil passes from a plastic state to a semi-solid state. The Plasticity Index (PI) is the difference between the Liquid Limit and the Plastic Limit ($PI = LL - PL$). There is a correlation between these limits and experimental shrink / swell data.

4.3 Sieve Analysis Test

The amount of material passing the No. 4, No. 10, No. 40 and No. 200 U.S. Standard Sieves was determined in the laboratory in general accordance with ASTM D 1140. Determination of the material grading, combined with the LL, PL and PI provide the information needed to classify the soil according to the Unified Soil Classification System (USCS).

4.4 Unconfined Compressive Strength

The in-situ density of cohesive soils sampled using thin-walled tubes was estimated and the unconfined compressive strength of representative specimens was determined per ASTM D 2166. The results of these tests are reported on the boring logs located within Appendix A of this report. Once extruded, the sample was trimmed, measured and weighed. The trimmed specimen was subjected to an axial loading at a constant rate of strain until failure or 15 percent strain occurred. The maximum load at failure or at 15 percent strain is reported herein as the unconfined compressive strength.

4.5 Moisture-Density Relationship

The moisture-density relationship of the bulk soil sample obtained from the site was determined in general accordance with ASTM D 698 (commonly referred to as the standard-effort Proctor test). Results of this test are included in Appendix B of this report. The maximum dry density and optimum

moisture content are determined from this test by constructing a curve from a plot of density vs. moisture. These values are used to determine the target molding properties of CBR specimens.

4.6 Bearing Ratio (CBR)

The bearing ratio (CBR) was determined in general accordance with ASTM D 1883. In the CBR test, a bulk sample is compacted in lifts using a standard-effort Proctor hammer. After the sample has been compacted, a surcharge weight equivalent to the estimated weight of pavement and base is placed on the sample, and the entire assembly is immersed in water for four days. While soaking, the swell of the specimen is measured. At the completion of this soaking period, the sample is removed from the water and allowed to drain. The sample, with the surcharge imposed on it, is subjected to penetration by a 1.95-inch diameter piston moving at a speed of 0.05 in/min. A load penetration curve is drawn, any necessary corrections made, and the corrected value of the unit load corresponding to 0.1-inch penetration is recorded as the CBR value.

5.0 FINDINGS & RECOMMENDATIONS

5.1 Site Conditions

Chickasha Municipal Airport is located at 2344 Beechcraft Road in Chickasha, Oklahoma. At the time of our investigation, the airport was open and the proposed construction area was covered with grass. The site and surrounding terrain appeared to be relatively flat.

5.2 Subsurface Conditions

In general, the borings encountered sandy lean clay soils and sandy silts from the surficial vegetation to depths of approximately 5 feet to 6 feet where the subsurface materials transitioned to silty sands. The silty sands persisted to the boring termination depths. Soil colors tended to be dark red, dark reddish-brown or reddish-brown. Fine-grained soils tended to be medium stiff to very stiff while coarse-grained soils tended to be loose to medium dense. No hard, geologic materials were encountered prior to boring termination.

Based on the NRCS Soil Map – Grady County, the subgrade soils within the project area consist of Norge silt loam, 0 to 1 percent slopes. The bulk, composite soil sample obtained from the borings classified as an A-4 soil by the AASHTO system, Sandy Silt (ML) by the Unified Soil Classification System and displayed an Oklahoma Subgrade Index value of 2. The soil displayed a standard-effort maximum dry density of 111.5 pounds per cubic feet with an optimum moisture content of 15.3

percent. Bearing ratio values ranged from 0.9 to 6.2 with a design CBR value based on 95 percent compaction of 3.6. The soluble sulfate content was less than 200 parts per million.

Results of each boring are included in Appendix A of this report; laboratory test reports are located in Appendix B. Every attempt is made to accurately reflect the depths of material change; however, stratification boundaries should be considered approximate. Specific recommendations concerning pavement subgrade are presented in the following sections of this report.

5.3 Groundwater Conditions

The borings were monitored for groundwater while drilling and after boring completion. Groundwater was not encountered within the borings at these times. The borings were backfilled or plugged per Oklahoma Water Resources Board requirements immediately after boring completion.

To obtain more accurate groundwater level information, long-term observations in a well or piezometer that is sealed from the influence of surface water would be needed. Groundwater level fluctuations and / or perched water conditions may occur due to seasonal variations in the amount of rainfall and other factors such as drainage characteristics. The possibility of groundwater level fluctuations should be considered during the preparation of construction plans.

5.4 General Site Development

Site preparation for the proposed taxilane and hangar should include removing all existing vegetation and topsoil to a depth of approximately 8 inches. Any roots larger than 1 inch in diameter, rocks larger than 3 inches in diameter, and any matted roots should also be removed from the proposed construction area. Any other unsuitable materials encountered during construction operations should be removed.

After removing the recommended deleterious materials and before placing concrete, pavement or fill, we recommend the site be proof-rolled to identify any soft or loose areas. Proof-rolling operations should be observed by qualified geotechnical personnel to identify soft or loose areas to be removed or stabilized, and to verify that all unsuitable materials have been removed. Proof-rolling should be performed using a loaded, tandem-axle dump truck having a minimum gross weight of 25 tons, or other equipment having a similar subgrade loading. Proof-rolling should be performed slowly and in overlapping passes, repeating the process in a perpendicular direction. Any areas of rutting or pumping should be removed and replaced with moisture-conditioned, low volume change soil (defined in section 5.5 of this report).

The soils encountered on site are susceptible to becoming soft or loose with the addition of moisture. During periods of rain, the site may become unworkable and difficult to travel across. If wet subgrade conditions are encountered during construction, we recommend reducing the soil's moisture content by aeration. If the construction schedule cannot accommodate the time required to reduce the soil moisture content by aeration, addition of a calcium-based admixture (lime, fly ash, cement kiln dust, etc.) to dry the soil can be discussed if needed.

5.5 On-Grade Slab Subgrade

The existing near surface soils at the boring locations consist of low plasticity clays, silts and non-plastic sands for which significant volume changes due to variations in subgrade moisture content are not expected to occur. Therefore, the existing subgrade soils are considered to be suitable for direct support of floor slabs. We recommend constructing a moisture-conditioned, compacted soil support zone immediately beneath the on-grade slab.

After performing any required cuts, but before placing any fill, the exposed subgrade should be scarified to a minimum depth of 8 inches and compacted to at least 95 percent of its maximum dry density as determined by test method ASTM D 698 (commonly referred to as the standard Proctor) at a moisture content within two percent of optimum. Any soft or loose areas observed, or over-saturated, rutting or pumping soils observed during the compaction operation should be removed and replaced with moisture-controlled, low volume change soils.

All fill required to develop design grades should consist of suitable low volume change (LVC) fill materials. The LVC pad should extend laterally at least one foot outside the slab footprint for every foot of fill placed. Suitable LVC soils are considered to be lean, cohesive materials with a liquid limit less than 40 and a plasticity index between 5 and 18, or cohesion-less materials with at least 25 percent passing the standard No. 200 sieve. The on-site soils encountered within the borings meet this requirement.

Crushed aggregate materials can also be considered LVC material. All fill should be placed in lifts not exceeding 6 inches in thickness and should be compacted to at least 95 percent of the material's maximum dry density. Fill soils should be placed at a moisture content within two percent of optimum (test method ASTM D 698).

During compaction operations, the exposed subgrade and each lift of compacted fill should be tested for moisture and density and reworked as necessary until the lift is approved by the geotechnical engineer's representative prior to the placement of additional material. We recommend the scarified surface and each lift of fill be tested for density and moisture content at a rate of one test per 2,500

square feet of compacted area with a minimum of two tests per compacted area. In addition, we recommend one test per lift for every 100 linear feet of compacted utility trench backfill.

The ground surface should be sloped away from on-grade slabs on all sides to prevent water collection. Water should not be allowed to pond near the slab during or after construction. The moisture content of the soil pad should be maintained near optimum until the slab is constructed. We recommend the moisture content of the on-grade slab subgrade be evaluated just before concrete for the slab is placed.

5.6 Shallow Footing Foundations

Shallow footing foundations can also be used to support the proposed hangar. To provide protection against frost heave and shrinking or swelling of the subgrade soils due to moisture change, footings should bear at a depth of at least 2-1/2 feet below the final adjacent subgrade elevation. For the design of footings bearing within undisturbed, native soils at the recommended depth, a maximum net allowable bearing pressure of 1,500 pounds per square foot can be used for foundation design. This is the pressure at the base of the footing in excess of the adjacent overburden pressure. A representative of the geotechnical engineer should be retained to evaluate that footings bear on soils suitable for the design pressure prior the placement of concrete.

Continuous formed footings should have a minimum width of at least 16 inches, and isolated column footings should have a minimum width of at least 30 inches. Earth formed trench footings also could be used and should have a minimum width of at least 12 inches.

Care should be taken to prevent wetting or drying of the bearing materials during construction. Any extremely wet or dry material, or any loose or disturbed material in the bottom of the footing excavations, should be removed prior to placing concrete.

Long-term movement is expected to be less than 1 inch for footings bearing within the materials described above and proportioned for the recommended maximum net allowable bearing pressure. Differential footing movement across the building is not expected to exceed approximately 1/2 of this value.

5.7 Pavement Subgrade Development

Based on laboratory testing of the subgrade soils, a CBR value of 3.6 is recommended for the design of pavements at this site. Using the relationship $((1500 \cdot \text{CBR})/26)^{0.7788}$, a k value of 63.8 pci could be used for pavement design.

The soluble sulfate content of the bulk sample obtained from the site was low at less than 200 ppm. Once design grades are established, the top 8 inches of the subgrade soils could be stabilized using an estimated 10 percent cement kiln dust (CKD) or 12 percent fly ash. The estimated percentage of stabilizing agent should be verified at the time of construction for the actual exposed soils. After final mixing, the stabilized soil should be compacted to at least 100 percent of the materials maximum dry density at moisture contents within 2 percent of optimum.

Crushed aggregate materials conforming to FAA specification P-209 could also be used as pavement base. Crushed Aggregate Base should be compacted to 100 percent of the maximum dry density (per ASTM D698) at a moisture content within 2 percent of optimum.

Each lift of fill, stabilized subgrade or crushed aggregate base should be tested for moisture content and compaction at the rate of one test per approximately 10,000 square feet. Areas smaller than 10,000 square feet should be evaluated at a minimum of 2 locations.

Minimizing subgrade saturation is an important factor in maintaining subgrade strength. Water allowed to pond on or adjacent to pavements could saturate the subgrade and cause premature pavement deterioration. The pavement and subgrade should be sloped approximately $\frac{1}{4}$ inch per foot to provide rapid surface drainage, and positive surface drainage should be maintained away from the edge of the paved areas. Design alternatives that would reduce the risk of subgrade saturation and improve long-term pavement performance include crowning the pavement subgrade to drain toward the edges, rather than to the center of the pavement areas and installing surface drains next to any areas where surface water could pond. Additional subgrade support could be achieved by using a geogrid layer between the compacted subgrade and the crushed aggregate base.

Maintenance of the pavement will be required to obtain a satisfactory design life. Maintenance should include crack sealing, surface sealing and patching of any deteriorated areas. In addition, thicker pavement sections could be used to reduce the required maintenance and extend the service life of the pavement.

6.0 CONCLUDING REMARKS

Recommendations provided in this report are based on information from discrete borings (generally 4 to 8 inches in diameter) and, in some cases, from an engineer's general surficial observations. All site conditions cannot be detailed based on a limited number of borings and increasing the number of borings so that all site conditions can be defined is generally not practical. Variations in site conditions between boring locations should be expected and, on occasion, revised recommendations will be

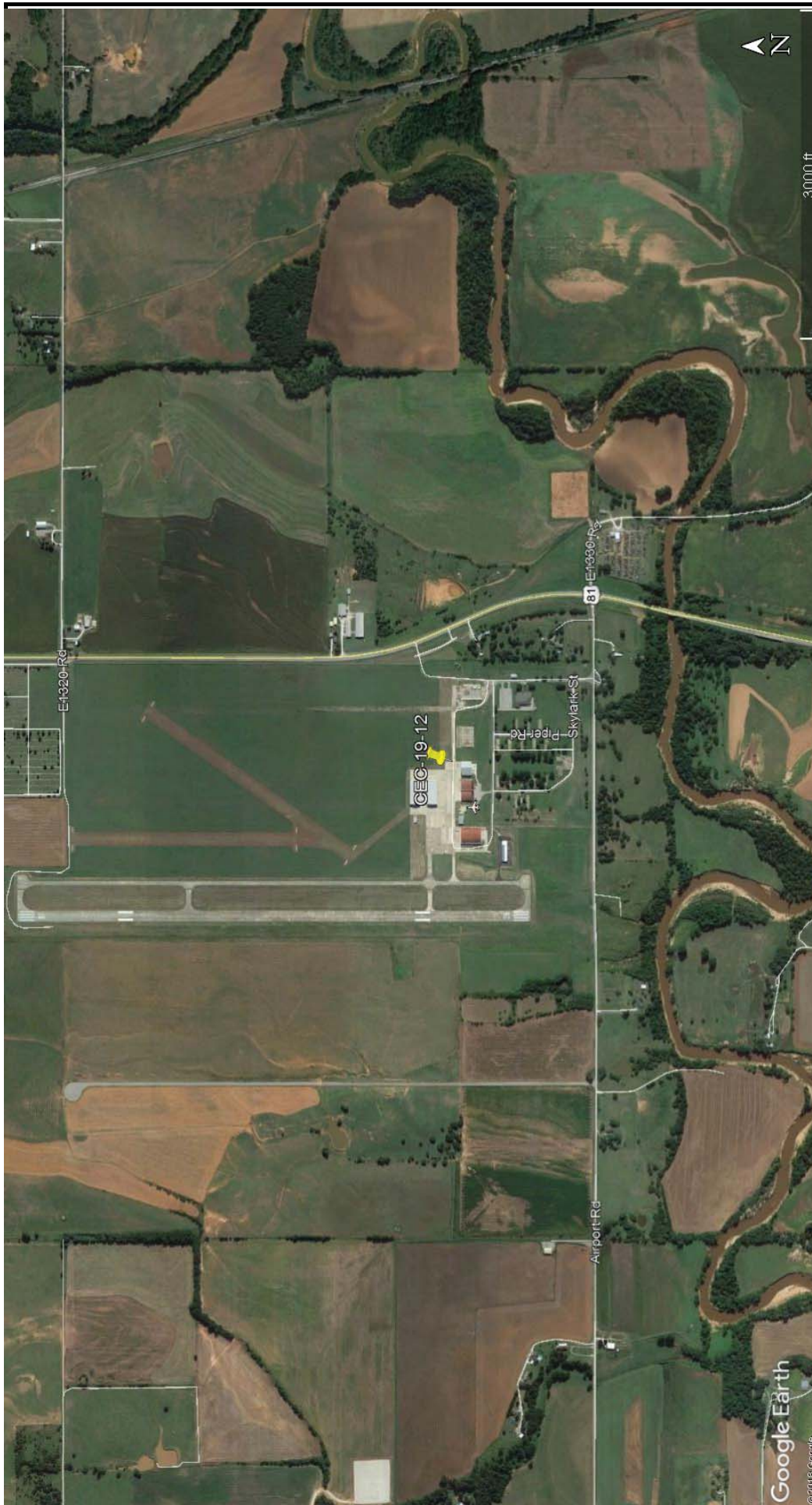
required. Hinderliter Geotechnical Engineering, LLC (HGE) should be retained to review final plans and specifications so that comments can be provided regarding the implementation of recommendations provided in this report. HGE should also be retained to provide monitoring of site construction.

This report provides recommendations concerning site construction and, while it may provide limited analysis of soil corrosiveness and / or contaminant content, is not an Environmental Site Assessment (ESA). If the Owner is concerned about environmental and / or biological assessment, a separate study specifically focused on environmental issues should be undertaken.

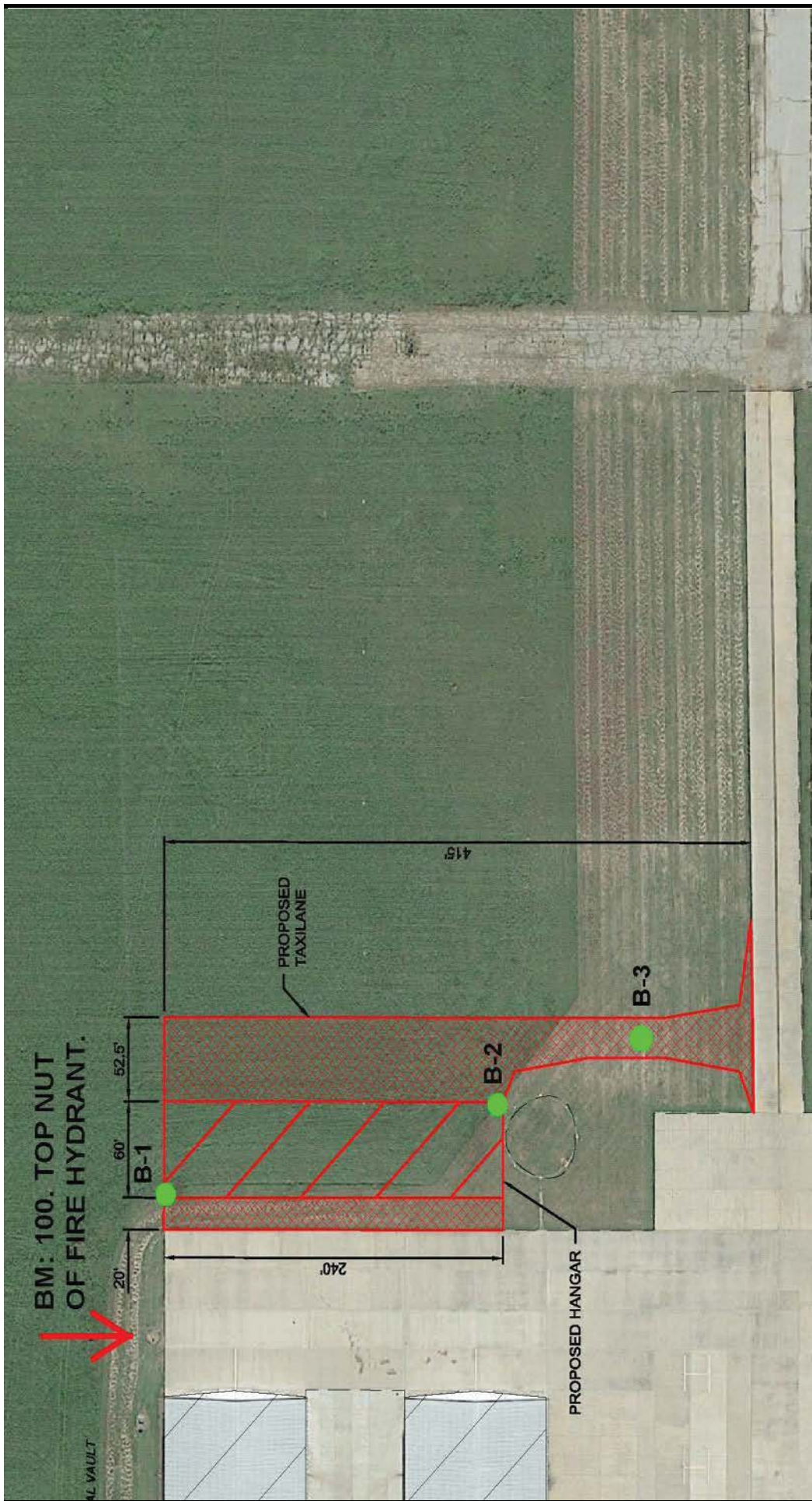
This report has been prepared specifically for the referenced project and for the exclusive use of our Client. Third-party reliance may be granted upon specific written request of the Client. This report has been prepared using locally specific and generally accepted geotechnical engineering practices based on structural information provided by the Client and information gained from the site. No warranties are implied or granted regarding site recommendations not specifically discussed in this report.

APPENDIX A

**SITE VICINITY MAP
APPROXIMATE BORING LOCATIONS
SUBSURFACE FENCE DIAGRAM
BORING LOGS**



SITE VICINITY MAP		PROPOSED TAXILANE & HANGAR MUNICIPAL AIRPORT CHICKASHA, OKLAHOMA	ENGINEER		SCALE	NTS
			M-H			
			DRAWN BY		PROJECT NO.	CEC-19-12
			M-H			
			REVISIONS		DATE	APRIL 2019

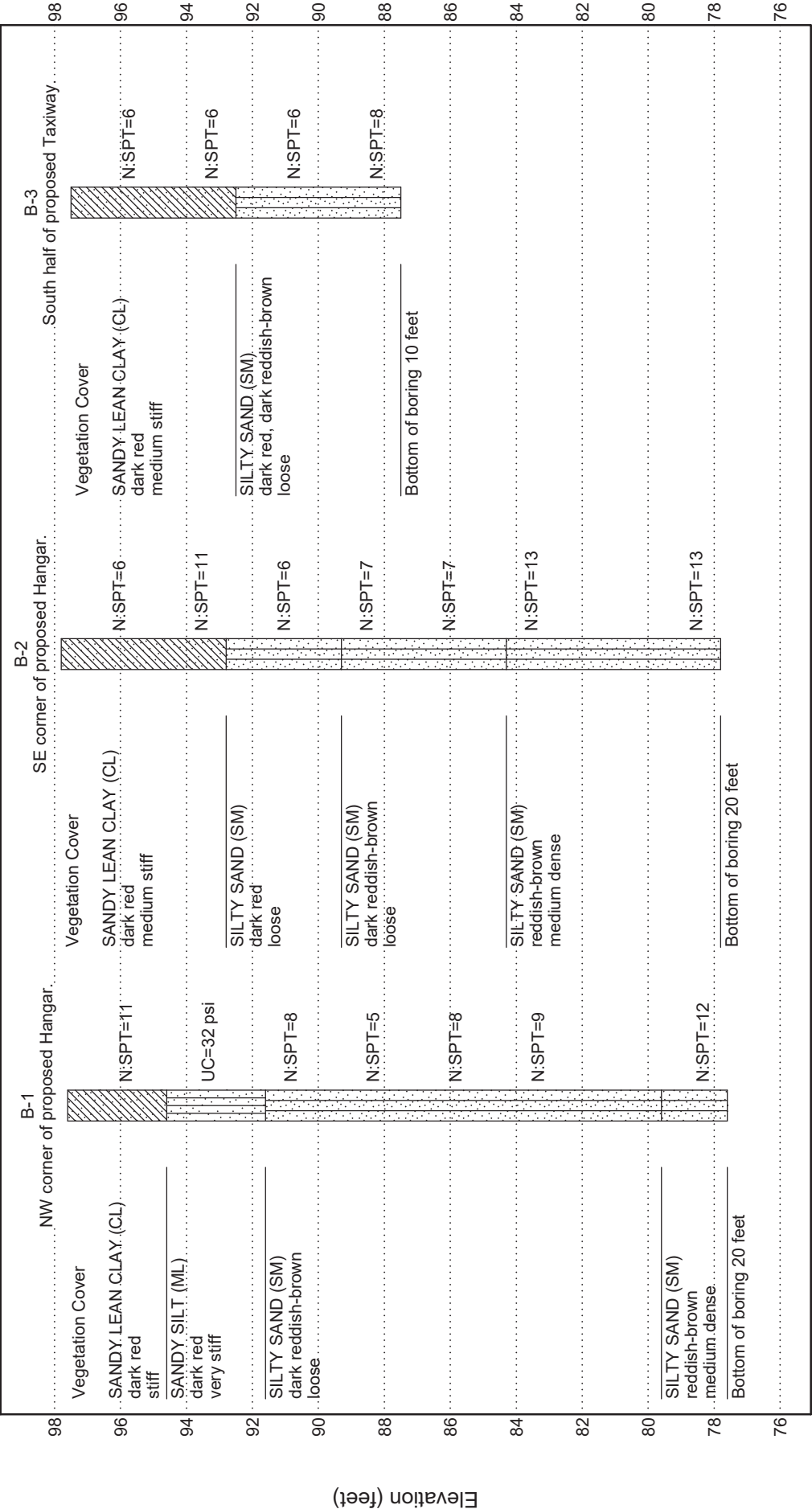


APPROXIMATE BORING LOCATIONS



PROPOSED TAXILANE & HANGAR MUNICIPAL AIRPORT CHICKASHA, OKLAHOMA

ENGINEER		SCALE	
MHH		NTS	
DRAWN BY		PROJECT NO.	
MHH		CEC-19-12	
REVISIONS		DATE	
		APRIL 2019	



LEGEND:

- N:SPT=Standard Penetration Test
- TCP=Texas Cone Penetrometer
- R=Recovery
- RQD=Rock Quality Designation
- UC=Unconfined Compressive Strength

SUBSURFACE FENCE DIAGRAM

Project: Taxilane & Hangar
Location: Chickasha, Oklahoma
Number: CEC-19-12

Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: HinderliterGeo.com



LOG OF BORING B-1

SHEET 1 of 1



Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: Taxilane & Hangar
LOCATION: Chickasha, Oklahoma
NUMBER: CEC-19-12

DATE(S) DRILLED: 4/9/19

	FIELD DATA				LABORATORY DATA								DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	CME-45 truck-mounted drill. 4" solid augers. SPT penetration testing & sampling. Steel tube sampling.	
					LL	PL	PI						GROUNDWATER INFORMATION:	
													No groundwater encountered.	
													SURFACE ELEVATION: 97.6	
													DESCRIPTION OF STRATUM	
	5		N = 11 P = 1.5	16.4										Vegetation Cover
			P = 3.5 UC=32 psi	14.2	16	15	1	114.0		100	99	58.2	SANDY LEAN CLAY (CL) dark red stiff	
	10		N = 8	7.3										SANDY SILT (ML) dark red very stiff
			N = 5	6.3										
			N = 8	5.8										
			N = 9	12.1										
	15													SILTY SAND (SM) dark reddish-brown loose
	20		N = 12	6.1										SILTY SAND (SM) reddish-brown medium dense
														Bottom of boring 20 feet
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: Approximate Boring Location: NW corner of proposed Hangar.	

LOG A GNNL01 CEC-19-12.GPJ DT HINDERLITER 20180222.GDT 4/29/19

LOG OF BORING B-2

SHEET 1 of 1



Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: Taxilane & Hangar
LOCATION: Chickasha, Oklahoma
NUMBER: CEC-19-12

DATE(S) DRILLED: 4/9/19

	FIELD DATA				LABORATORY DATA								DRILLING METHOD(S): CME-45 truck-mounted drill. 4" solid augers. SPT penetration testing & sampling.	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: No groundwater encountered.	
					LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX						SURFACE ELEVATION: 97.8	
					LL	PL	PI						DESCRIPTION OF STRATUM	
	5		N = 6 P = 1.0	19.1									Vegetation Cover	
			N = 11 P = 3.5	18.4									SANDY LEAN CLAY (CL) dark red medium stiff	
	10		N = 6 P = 0.25	9.7	NP	NP	NP			100	97	37.3	SILTY SAND (SM) dark red loose	
			N = 7	7.2									SILTY SAND (SM) dark reddish-brown loose	
	15		N = 7	5.2									SILTY SAND (SM) dark reddish-brown loose	
			N = 13	15.2									SILTY SAND (SM) reddish-brown medium dense	
	20		N = 13	3.2									SILTY SAND (SM) reddish-brown medium dense	
													Bottom of boring 20 feet	
	N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION												REMARKS: Approximate Boring Location: SE corner of proposed Hangar.	

LOG A GNNL01 CEC-19-12.GPJ DT HINDERLITER 20180222.GDT 4/29/19

LOG OF BORING B-3

SHEET 1 of 1



Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: Taxilane & Hangar
LOCATION: Chickasha, Oklahoma
NUMBER: CEC-19-12

DATE(S) DRILLED: 4/9/19

	FIELD DATA										LABORATORY DATA										DRILLING METHOD(S): CME-45 truck-mounted drill. 4" solid augers. SPT penetration testing & sampling.
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: No groundwater encountered.								
					LL	PL	PI						SURFACE ELEVATION: 97.5								
													DESCRIPTION OF STRATUM								
	5		N = 6 P = 1.5	16.7	24	13	11			100	99	66.4	Vegetation Cover								
			N = 6 P = 1.0	15.4									SANDY LEAN CLAY (CL) dark red medium stiff								
			N = 6	10.9									SILTY SAND (SM) dark red, dark reddish-brown loose								
			N = 8	12.0									Bottom of boring 10 feet								
	10																				
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: Approximate Boring Location: South half of proposed Taxiway.								

LOG A GNNL01 CEC-19-12.GPJ DT HINDERLITER_20180222.GDT 4/29/19

APPENDIX B

SUMMARY OF LABORATORY TESTS SOIL CLASSIFICATION MOISTURE-DENSITY RELATIONSHIP BEARING RATIO (CBR) TEST RESULTS

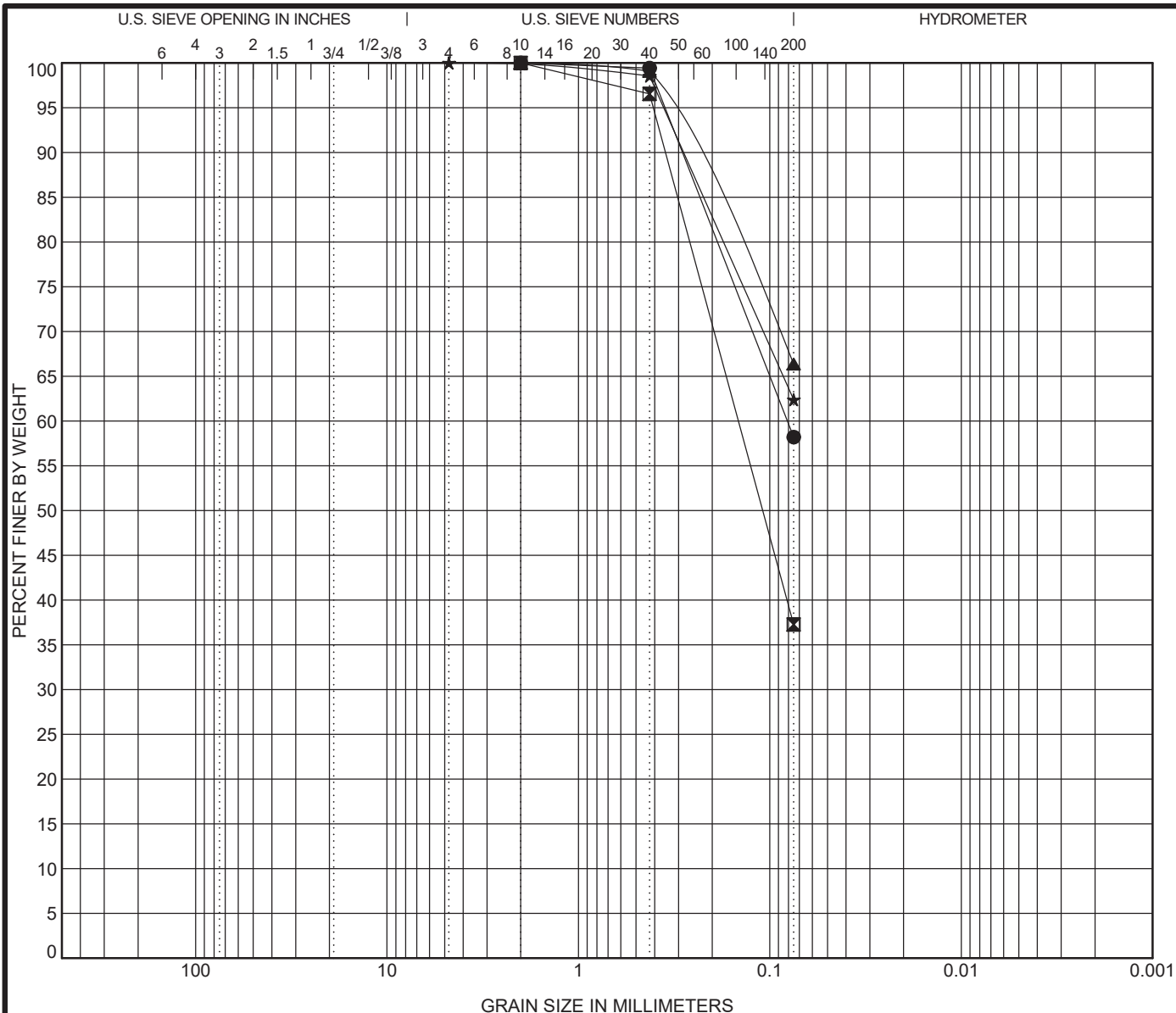
Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Class-ification	Water Content (%)	Dry Density (pcf)	Satur-ation (%)	Void Ratio
B-1	1.0							16.4			
B-1	3.5	16	15	1	2	58	ML	14.2	114.0	81	0.467
B-1	6.0							7.3			
B-1	8.5							6.3			
B-1	11.0							5.8			
B-1	13.5							12.1			
B-1	18.5							6.1			
B-2	1.0							19.1			
B-2	3.5							18.4			
B-2	6.0	NP	NP	NP	2	37	SM	9.7			
B-2	8.5							7.2			
B-2	11.0							5.2			
B-2	13.5							15.2			
B-2	18.5							3.2			
B-3	1.0	24	13	11	2	66	CL	16.7			
B-3	3.5							15.4			
B-3	6.0							10.9			
B-3	8.5							12.0			
BCS-1	1.0	15	14	1	4.75	62	ML				



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Summary of Laboratory Results

Project: Taxilane & Hangar
 Location: Chickasha, Oklahoma
 Number: CEC-19-12



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

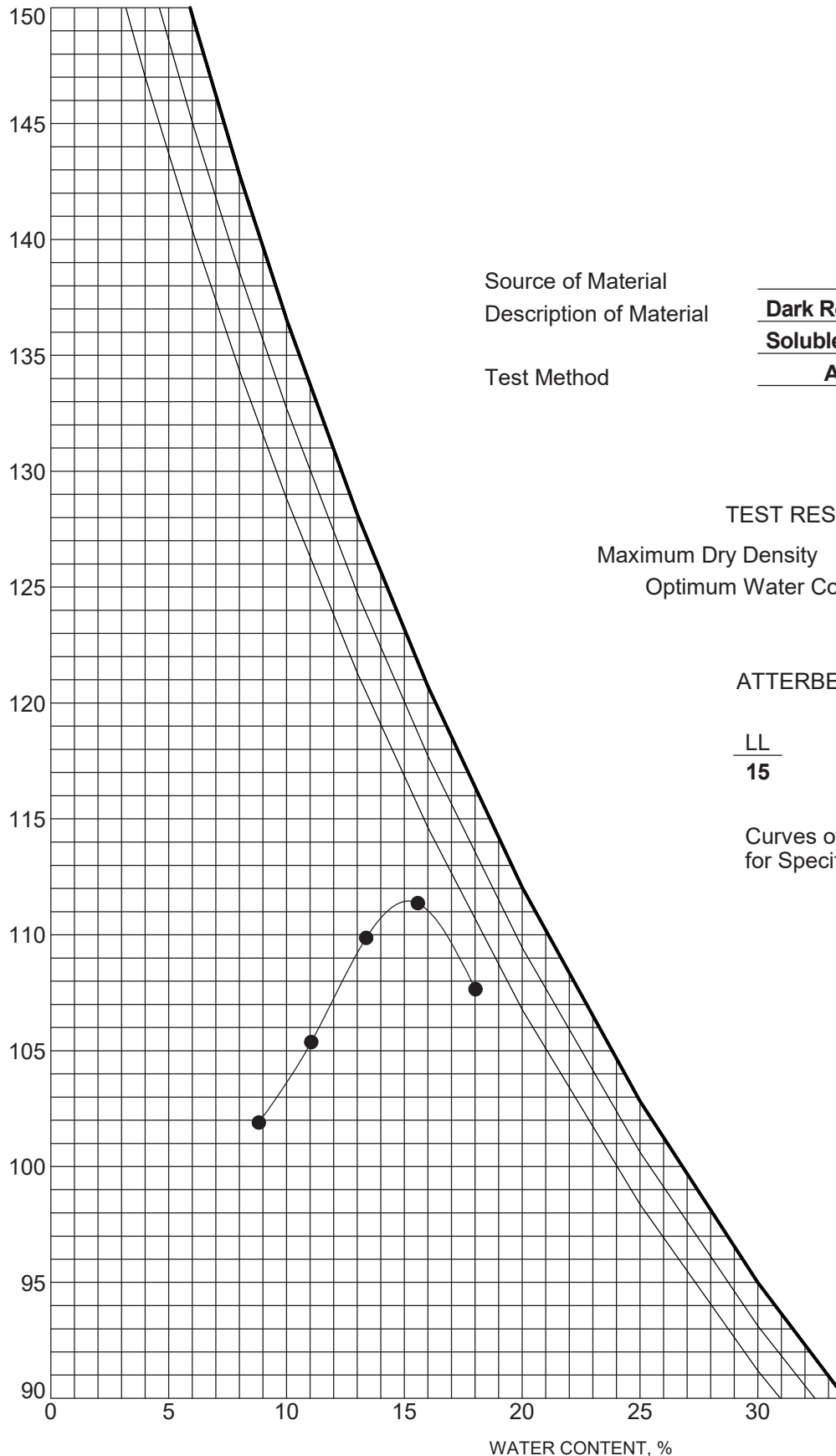
[illegible][illegible]

 Hinderliter Geotechnical Engineering
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SOIL CLASSIFICATION RESULTS

Project: Taxilane & Hangar
Location: Chickasha, Oklahoma
Number: CEC-19-12

DRY DENSITY, pcf



Source of Material
Description of Material
Test Method

BCS-1 1.0
Dark Red Sandy Silt (ML)
Soluble Sulfates <200 ppm
ASTM D698 Method A

TEST RESULTS

Maximum Dry Density **111.5 PCF**
Optimum Water Content **15.3 %**

ATTERBERG LIMITS

LL **PL** **PI**
15 **14** **1**

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80
2.70
2.60

US COMPACTION CEC-19-12.GPJ DT HINDERLITER 20180222.GDT 4/29/19



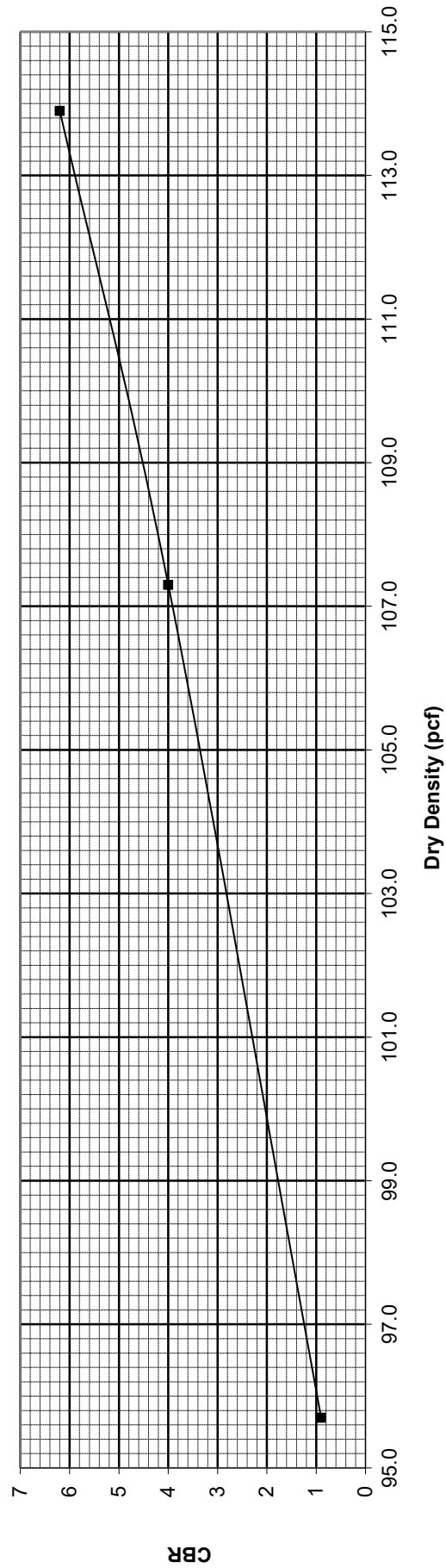
Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: HinderliterGeo.com

MOISTURE-DENSITY RELATIONSHIP

Project: Taxilane & Hangar
Location: Chickasha, Oklahoma
Number: CEC-19-12

BEARING RATIO (CBR) TEST RESULTS														
CLIENT:		CEC Corporation		SAMPLE LOCATION:		Bulk composite sample from top 5' of borings.								
PROJECT NAME:		Taxiway & Hangar		NRCS SOIL SERIES NAME:		Norge silt loam, 0 to 1 percent slopes								
PROJECT NUMBER:		CEC-19-12		AASHTO / OSI / USCS CLASS:		A-4(0) / 2 / ML								
LOCATION / EXTENTS:		East side of existing concrete apron.												
BORING NO.	DEPTH (ft)	ATTERBERG LIMITS			% PASSING NO. 200 SIEVE	PROCTOR DATA		MOLDING BLOWS	INITIAL SAMPLE CONDITIONS			FINAL SWELL (%)	CBR	DESIGN CBR VALUE
		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		MAX. DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)		MOLDED MOISTURE CONTENT (%)	DRY DENSITY (pcf)	COMPACTION (% of proctor)			
BCS-1	1 - 5	15	14	1	111.5	15.3	10	14.1	95.7	85.8	0.6	0.9	3.6	
							26	14.4	107.3	96.2	0.5	4.0		
							56	14.2	113.9	102.1	0.5	6.2		

Dry Density vs. CBR



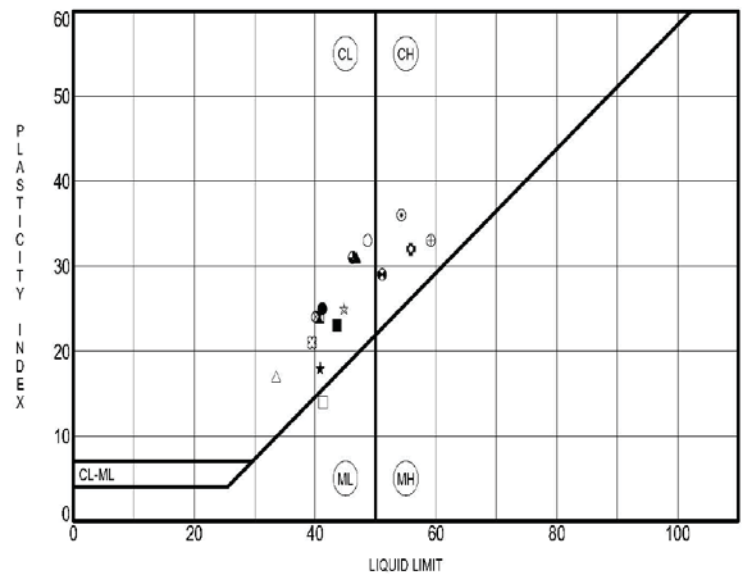
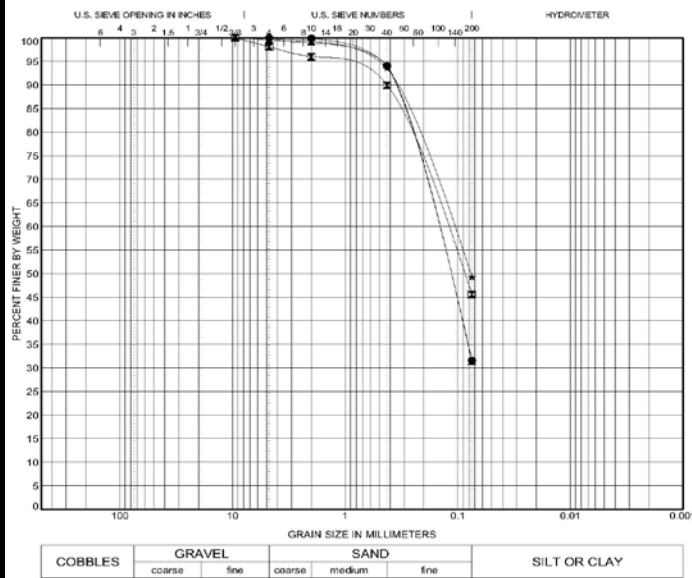
APPENDIX C

GENERAL NOTES ON SOIL CLASSIFICATION

GENERAL NOTES ON SOIL CLASSIFICATION

Hinderliter Geotechnical Engineering classifies soils in accordance with the Unified Soil Classification System (USCS). In some cases, the AASHTO Classification System is also used.

USCS soil classifications are derived from soil grain size and material plasticity. Materials with more than 50 percent passing the No. 200 U.S. Sieve (aperture opening = 0.075 mm) are considered to be fine-grained soils (silts or clays). Materials with less than 50 percent passing the No. 200 sieve are considered to be coarse-grained soils (sands, gravels, etc). Coarse-grained soils are classified by the USCS System by plotting the Grain Size in Millimeters vs. Percent Finer by Weight. Depending on the grain size, the materials are classified as cobbles, gravel, sand, or silt / clay. Material plasticity is determined from the Liquid Limit test and the Plastic Limit test. The Liquid Limit (LL) of a soil is the point where, when mixed with water, a pat of soil transitions from a liquid state to a plastic state. The Plastic Limit (PL) is the point where the soil transitions from a plastic state to a solid state. The difference between the LL and PL is known as the Plasticity Index (PI).



Most naturally-occurring materials have some portion of fine-grained and coarse-grained materials. Modifiers are used to describe the relative percentage of minor-occurring materials in the following fashion:

Fine-Grained Soil Modifiers		Coarse-Grained Soil Modifiers	
Modifier	Percentage of Dry Weight	Modifier	Percentage of Dry Weight
Trace	< 15	Trace	< 5
With	15 - 29	With	5-12
Sandy, Gravelly, etc.	> 30	Silty, Clayey, etc.	> 12

The consistency of fine-grained soils and the relative density of coarse-grained soils is generally included on the boring logs as part of the material description. Consistency and relative density are generally defined as follows:

Fine-Grained Soils			Coarse-Grained Soils	
Unconfined Compressive Strength, Q_u , psf	Consistency	Standard Penetration Test, N, blows / foot	Standard Penetration Test, N, blows / foot	Relative Density
< 500	Very Soft	< 2	0 - 3	Very Loose
500 - 1000	Soft	2 - 4	4 - 9	Loose
1000 - 2000	Medium	5 - 7	10 - 29	Medium Dense
2000 - 4000	Stiff	8 - 15	30 - 49	Dense
4000 - 8000	Very Stiff	16 - 30	50+	Very Dense
8000+	Hard	30+		

APPENDIX B

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

CHICKASHA MUNICIPAL AIRPORT

Contract T-Hangar

Chickasha, Oklahoma

Parkhill CA #4934
14101 Wireless Way, Suite 350
Oklahoma City, OK 73134

August | 2023

Parkhill Project #1192922.20

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Project Name: Construct T-Hangar

Sponsor's Agent: Keith Johnson, City Manager
Chickasha Municipal Airport
2344 Beechcraft Rd., Chickasha, OK 73018
Chickasha, Oklahoma 73018
405-222-6020

Consultant/Engineer: Toby Baker, P.E.
PARKHILL
14101 Wireless Way, Suite 350
Oklahoma City, Oklahoma 73134
405.832.9900

Craig Boyer, P.E.
PARKHILL
14101 Wireless Way, Suite 350
Oklahoma City, Oklahoma 73134
405.832.9900

Grant/Project Numbers: AIP 3-40-0018-022-2023

Engineer's Project No.: 11929.22

1. COORDINATION

A. PROJECT MEETINGS

Prebid Conference will be held in accordance with FAA AC 150/5300-12B, Prebid Conference will be held for Consulting Engineer, City of Alva, to go over Project details and allow contractors to ask Project-specific questions. Prebid conference will be led by City of Chickasha with assistance from Parkhill.

Preconstruction Meeting will be held before issuance of the Notice to Proceed (NTP) in accordance with FAA AC 150/5370-12B. At minimum, required attendees will be Airport Manager, Consulting Engineer, Resident Project Representative (RPR), Prime Contractor, and all subcontractors.

Contractor progress meetings will provide update on construction progress provided by Contractor. Safety shall always be a top priority and standing agenda item. These will be performed as required by the Owner or Engineer. Progress updates provided on the weekly inspection report will generally be sufficient.

B. SCOPE

- Construct T-Hangars

Any changes in Project Scope will require a revision to the CSPP, which must be approved by CHK and the FAA.

C. FAA AIR TRAFFIC CONTROL TOWER (ATCT) COORDINATION

CHK does not have an active air traffic control tower; therefore, Contractor shall coordinate all communication with CHK, Consulting Engineer, Aviation Division, and/or FAA.

2. PHASING

Refer to Phasing Plans included in Appendix A for limits of each phase.

A. BID PACKAGE (120 CALENDAR DAYS TOTAL)

- The runway's shall be open for the duration of the project.
- Contractor shall complete all work located in the Phase 1 limits as shown on the construction safety plan. Phase 1 shall be completed in 120 working days. Liquidated damages of \$1,200 per calendar day shall be charged after working days have expired for this phase.
- Construction Phasing Drawings may be reviewed in Appendix A.
- The building slab shall be completed in 30 calendar days, and those 30 calendar days are included in the 120 calendar days for the project.

B. PROJECT SCHEDULE

Contractor must submit a Project Schedule and Phasing Plan at/before the preconstruction meeting. Any changes made to Project Schedule or Phasing will require a revision to the CSPP, which must be approved by CHK and the FAA.

3. AREAS/OPERATIONS AFFECTED BY CONSTRUCTION

No protected surfaces will be affected by construction this Project.

4. NAVIGATION AID (NAVAID) PROTECTION

A. NAVAIDS IN CLOSE PROXIMITY TO WORK AREA

No NAVAIDS are near work area; therefore, no physical impact to any NAVAIDS is anticipated.

5. CONTRACTOR ACCESS

A. GENERAL

CHK to provide Airport visitor/contractor access procedures.

B. AIRPORT OPERATIONS AREA (AOA)

Airport Operations Area (AOA) is defined as any portion of Airport property normally secured against unauthorized entry. AOA includes all areas specifically reserved for operations of aircraft, aircraft support equipment, and personnel. Generally, AOA is defined by the Airport's outer security fencing and any building forming part of secured perimeter. When necessary to cross pavement surface on airfield, Contractor shall inspect all paved surfaces for Foreign Object Debris (FOD) daily and before reopening pavement surface to air traffic. Final inspection shall be by CHK. Contractor shall not leave opening in secure fence at any time.

C. CONTRACTOR'S ENTRANCE GATE

Adjacent to Contractor's entrance gate and outside AOA, Contractor shall provide a parking area for Contractor employees' personal automobiles. Engineer directs limits of parking/storage area. At Project completion, any damage done by Contractor to this area shall be repaired to Engineer satisfaction at no additional cost to Owner. Repairs shall include but not be limited to regrading, reseeding, or repaving damaged areas.

D. CONTRACTOR'S PLANT SITE, STORAGE, AND OFFICE AREA

Contractor will be held completely responsible for any damage or deterioration in areas allowed for Contractor use as well as maintenance of areas and dust control for Project duration. Direct negotiation may be conducted with Airport Manager for areas desired. Areas used by Contractor may be subject to rental rates and fees as identified by Airport Manager.

Areas occupied by Contractor and forces must be completely restored by Contractor, at Contractor expense, including but not limited to regrading disturbed areas, complete removal of debris or any other material brought onto site by Contractor, and complete replacement of topsoil, turf, asphalt pavement, concrete slabs, or drives, etc. that is worn, deteriorated, or damaged while Contractor and forces occupy the area. All restoration shall be to Airport Manager satisfaction.

Accomplish all restoration activities in accordance with applicable Technical Specifications.

E. VEHICLE ESCORT

All vehicles (such as supplier vehicles), responsible to Contractor, entering AOA, shall be escorted by an approved Contractor escort vehicle from point of AOA entry to construction site. Escort vehicle shall be clearly identified with standard FAA markings/flags and Contractor name.

Escort vehicle will be responsible for leading supply, delivery, or other vehicles across active airfield. Further, Escort vehicle driver shall be familiar with airport security and safety procedures.

F. TWO-WAY RADIO COMMUNICATIONS

No radio communications are required for this project.

G. CONTRACTOR'S SAFETY PLAN (CSP)

Contractor shall submit a Contractor's Safety Plan (CSP) as part of the submittal process before starting construction which must always be followed. CHK reserves the right to have Contractor amend CSP at any time if concerns arise.

6. WILDLIFE MANAGEMENT**A. TRASH**

Contractor must dispose all trash in a covered trash can or other method, not allowing trash to become a hazard or animal attractant.

B. STANDING WATER

Contractor shall minimize standing water.

C. TALL GRASS AND SEEDS

Contractor must maintain construction area grass to height required by CHK.

D. POORLY MAINTAINED FENCING AND GATES

Contractor shall maintain any fencing or gates in good condition, proper working order, and gap under fence or gate shall not exceed 3 inches.

E. DISRUPTION OF EXISTING WILDLIFE HABITAT

In event of wildlife habitat, Contractor will notify CHK and Engineer immediately.

7. FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

Contractor shall train and emphasize to construction site employees the need for continuous Foreign Object Debris (FOD) checks on or near active airfield pavement.

Contractor must conduct FOD checks before and after each construction shift at a minimum and monitor nearby active pavements throughout construction shift.

8. HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

Hazardous materials will be handled and stored per latest revision to FAA Advisory Circular 150/5370-2G - Operational Safety on Airports during Construction. Contractor must be prepared to immediately contain and clean spills resulting from fuel, oil, petroleum products, or hydraulic fluid leaks. Transportation and handling of other hazardous materials on the Airport requires additional special procedures as addressed in latest revisions to FAA Advisory Circular 150/5320-15 - Management of Airport Industrial Waste. All spills must be immediately reported to CHK at 405-222-6020.

9. CONSTRUCTION ACTIVITY NOTIFICATIONS**A. RESPONSIBLE REPRESENTATIVES / POINTS OF CONTACT****Chickasha Municipal Airport**

Name	Position	Phone
Keith Johnson	City Manager	405-222-6020

Parkhill, Engineer/Consultant

Name	Position	Phone
Toby Baker, P.E.	Project Manager	405.832.9903
Craig Boyer, P.E.	Project Engineer	405.832.9904

TBD, Resident Engineer

Name	Position	Phone

TBD, Quality Assurance Testing		
Name	Position	Phone

***** Insert Contractor and subcontractor personnel information upon Project award. *****

, Contractor		
Name	Position/Trade	Phone

, Subcontractor		
Name	Position/Trade	Phone

, Subcontractor		
Name	Position/Trade	Phone

B. NOTICES TO AIRMEN (NOTAM)

CHK is responsible for issuing any Notice to Airmen (NOTAM) required before Project begins, as Project progresses, and will cancel NOTAMs at completion of intermediate construction phases of Project, as required. Contractor shall closely coordinate anticipated and required NOTAMs with CHK, and provide CHK at least 72 hours' notice of necessary NOTAMs.

C. EMERGENCY NOTIFICATION PROCEDURES

In case of emergency, Contractor shall immediately call 911 first then CHK at 405-222-6020.

D. FAA NOTIFICATION

Contractor will notify Consulting Engineer and CHK 72 hours in advance of any workaround NAVAIDs or shutdowns affecting NAVAIDs owned by FAA. Contractor shall notify NAVAIDs owned by a separate party 72 hours in advance of any work around or shutdowns of NAVAIDs.

10. INSPECTION REQUIREMENTS

A. DAILY INSPECTIONS

Contractor shall perform daily safety, security, and phasing inspections to ensure CSPP compliance. Document inspections in Contractor's Daily Logs/Quality Control Logs.

Contractor is required to submit a Quality Control Plan (QCP) for Owner or designated representative review before any construction. QCP will address specific requirements for inspection of individual specification/pay items including test method, sampling point, testing frequency for each item, and proposed remediation action for each item if it does not meet Specification requirements. QCP will also provide direction on developing inspection reports and what to include. QCP will likely be developed in whole or in conjunction with selected Quality Control firm. QCP shall include and address Construction Management Plan (CMP) requirement.

B. FINAL INSPECTIONS

CHK will perform final safety inspection before opening any airfield pavement to aircraft.

11. UNDERGROUND UTILITIES

Contractor shall locate, mark, and protect all utilities and infrastructure during construction. Location of utilities shall include notification of Okie One-Call system, as well as coordination with CHK.

12. PENALTIES

Contractor pays all penalty fines associated with any safety violation.

13. SPECIAL CONDITIONS

A. FAA FORM 7460-1

- Consulting Engineer will prepare and submit FAA Form 7460-1 for Project scope and proposed Construction Safety and Phasing Plan (CSPP).
- Contractor shall submit Form 7460-1 on all equipment over 20 feet high.
- A blank Form 7460-1 - Notice of Proposed Construction or Alteration, is included in Appendix D. Contractor shall submit supplemental FAA Form 7460-1 to FAA at least 45 days prior to utilization of equipment in excess of 20 feet in height.

B. ONSITE BURNING AND BLASTING

Onsite burning and blasting are prohibited.

C. GUN PROHIBITION ON AIRPORT PROPERTY

No firearms or guns are allowed on CHK property.

14. RUNWAY AND TAXIWAY VISUAL AIDS

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

Lighting, signs, and NAVAIDs located within object-free area must be frangible.

15. MARKING AND SIGNS

A. ACCESS ROUTE

Contractor required to mark access routes and haul routes with lathes and flag tape.

B. APPROVED WORK AREAS

Contractor must mark approved work areas with lathes and flag tape to ensure construction personnel and equipment remain in approved areas.

16. HAZARD MARKING AND LIGHTING

A. EQUIPMENT

- Contractor vehicles shall be clearly identified with Contractor name, standard FAA marking, lighting, and/or flags. Rotating amber beacons are required for all nighttime work.
- Contractor shall submit 7460s on all equipment over 20 feet in height.
- Any request to use nighttime lighting will be provided in writing two weeks prior to requested start time, from Contractor to Engineer and CHK approval.

B. WORK AREAS

- Contractor shall provide temporary, low-profile barricades to delineate safe operating areas for aircrafts.
- Barricades shall have flashing red lights.
- Contractor must inspect lights each evening and immediately replace any lights not operating correctly.
- Contractor will be fined for non-working lights as indicated in Project Specifications.
- Line perimeter construction area with low-profile aviation barricades spaced at 5 feet.

17. WORK ZONE LIGHTING FOR NIGHT CONSTRUCTION

If accomplishing work at night, Contractor-provided lighting equipment must adequately illuminate work area. Present a Lighting Plan to CHK, Engineer, and FAA at least 14 days before commencing nighttime construction activities. Requirement for Lighting Plan are stated in Section 3.22 of FAA AC 150/5370-2G.

18. PROTECTION

A. RUNWAY SAFETY AREA (RSA)

No construction or material stockpile shall occur within an active RSA.

B. RUNWAY OBJECT FREE AREA (ROFA)

No material stockpile will occur within an active ROFA.

C. TAXIWAY SAFETY AREA (TSA)

No construction or material stockpile shall occur within an active TSA.

D. TAXIWAY OBJECT FREE AREA (TOFA)

No material stockpile shall occur within an active TOFA.

E. OBSTACLE FREE ZONE (OFZ)

No construction activity or material stockpile will penetrate OFZ.

F. RUNWAY APPROACH/DEPARTURE SURFACES

No construction activities will penetrate approach/departure surfaces.

G. OPEN TRENCHES

Open trenches are not permitted within RSA of an open runway or TSA of an open taxiway. Contractor shall prominently mark any open trench or excavation at construction site with lighted barricades.

H. SAFETY INFORMATION

Refer to Appendix B - Safety Details, for safety information.

I. JET BLAST

Contractor shall take precautions to minimize effects of jet blast, particularly in areas near runway threshold.

J. ELECTRICAL LOCK OUT/TAG OUT REQUIREMENTS

Contractor shall prepare lockout/tag out plan and communicate procedures to all staff.

K. UNUSED RUNWAY

Where shown on Construction/Safety Plan, Contractor shall denote unusable runway pavement using low-profile aviation barricades. Refer to Plans for details.

19. OTHER CONSTRUCTION LIMITATIONS

A. PROHIBITIONS

- No use of tall equipment over 20 feet unless a 7460-1 determination letter is issued for such equipment.
- No use of open-flame welding or torches.
- No use of electrical blasting caps.
- No use of flare pots.

B. RESTRICTIONS

- Any construction suspension required during specific airport operations will be coordinated by Engineer, Owner, and Contractor during construction.
- Areas that cannot be worked on simultaneously, will be coordinated by Engineer, Owner, and Contractor during construction.
- Refer to Article 16 – Hazard Marking and Lighting, for night construction requirements.
- Seasonal construction restrictions will be coordinated by Engineer, Owner, and Contractor during construction.

